

Expressive Structure: The Life and Work of Matthew Nowicki

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Abstract

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Matthew Nowicki (1910-1950) developed an approach to architecture that negotiated the architectural and engineering fields through his use of expressive structural forms. As more than an optimized materialist exploration, Nowicki's approach was a reasoned response to the technical and societal challenges facing Modern architecture, and the broader conditions of the postwar world of which he was a part. Through his work, Nowicki broadened the array of possible Modern design solutions available to architects in the postwar period. Widely respected and well published, Nowicki's work is significant because it embraced both engineering and architectural concerns, and opened the door to an expanded field of expressive structural systems within Modern architecture. Matthew Nowicki's structurally expressive Modern architecture set the stage for many other formally expressive structures in the years that followed.

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Introduction

Maturity brings a ‘sense of the medium,’ and mature architecture (has) discovered the difference between painting and the art of organizing accessible space. As a result, we now rely in our expression on the potentialities of materials and structures, almost picking up the trend of the nineteenth century. This interest in structure and material may find within the building medium decorative qualities of ornament that are much too involved for the purist of yesterday.

Matthew Nowicki, “Origins and Trends in Modern Architecture,” 1951¹

Published in 1951 shortly after his death, “Origins and Trends in Modern Architecture” by Matthew Nowicki (1910-1950) served as the theoretical culmination of his shortened career. In this article, Nowicki reflected on the origins of Modern architecture, considered its current course, and discussed his ideas for a “mature” postwar Modern architecture. Addressing a wide range of topics, Nowicki focused his comments on the expression of the “material and structures” of architecture as a new direction for Modern architecture.

In the article, Nowicki summarized his own approach to Modern architecture, an approach that had been developing over the course of his short, yet substantial career. Polish by birth, Nowicki was educated as an architect at the Warsaw Polytechnic with a strong background in both design studies and structural engineering, graduating in 1936. Nowicki had begun an architectural practice in Warsaw and started teaching at the Warsaw Polytechnic, when the Nazi invasion in September 1939 initiated World War II. During the war, Nowicki became active in the underground network of resistance, continuing to design (and teach) modern architecture. After the liberation of Warsaw in February 1945, Nowicki contributed significantly to the official design for the reconstruction of central Warsaw as the capitol of democratic Poland.

However, sensing the impending Soviet takeover, he left for the United States in November 1945.

In the years that followed, Nowicki became involved with a wide range of Modern architectural projects, across a broad geographical area. With an impressive drawing ability, international design experience, and a knack for making friends quickly, Nowicki became a widely respected architect in a short amount of time. Between 1945 and 1950, Nowicki emerged as a promising figure in the modern architectural scene and a colleague to Eero Saarinen and Philip Johnson, a position that was aided by a powerful friendship with the writer and critic Lewis Mumford. By 1950, less than five years after his arrival in the United States, Nowicki had design projects in New York City, southern California, Massachusetts, North Carolina, and India, in addition to a teaching position as Chair of the School of Design at North Carolina State College. Nowicki's early death in an airplane crash in 1950 shocked the architectural profession, leaving many of his projects unrealized and the full implications of his writings little understood.

The article "Origins and Trends in Modern Architecture" was Nowicki's last major statement. Although many architects, writers and theorists have cited and interpreted this article since Nowicki's death, its message and significance have not been deeply explored, and different scholars have emphasized different aspects of Nowicki's article. Correspondingly, interpretations of Nowicki's life and brief career also have varied widely. For example, after his death, Eero Saarinen called Nowicki a "poet-philosopher of form," while Lewis Mumford claimed he "sought to bring together the regional and the universal, the mechanical and the personal."² Philip Johnson believed he "represented equally engineering innovation and the form of past architecture."³ While certainly laudatory, disparate comments such as these do not suggest a consistent understanding of Nowicki's career or his contributions.

Thus, Matthew Nowicki's role in postwar Modern architecture and the overall significance of his work have remained unclear. Given the scale of work in which he participated, it is clear that Nowicki was a highly respected figure in the late 1940s. However, the impact of his work within the changing context of the postwar world has not been clearly discerned, and his significance is not well understood. This dissertation aims to bring together and analyze the diverse elements of Nowicki's life and to propose a coherent framework for understanding of his life, career and architectural significance. Through a comprehensive assessment of Nowicki's life and work, culminating in his article "Origins and Trends in Modern Architecture," this dissertation aims to describe Nowicki's approach to Modern architecture and to analyze and interpret his lasting significance.

As this dissertation shows, Nowicki championed expressive structural systems in Modern architecture throughout his life, which suggests a strand of continuity through his diverse range of his projects and writings. Culminating in the design of the Livestock Pavilion in Raleigh, North Carolina, his work explored a wide range of structural systems and materials, including high-strength steel cables, thin shell concrete, aluminum frames, and thin masonry arches and others, in a variety of expressive ways. Just as it can be said that the painter finds expression through the medium of paint and brush on canvas and the sculptor through the stone and chisel, Nowicki's Modern architecture expressed his convictions through a deep understanding of the potentials of structure and materials, and their adaptation to human-centered demands.

Nowicki's writings describe his search for structural expression as more than an optimized materialistic exploration, but as a reasoned response to the technical and societal challenges facing Modern architecture. This was the central theme of his essay "Origins and Trends in Modern Architecture." Nowicki described his work as a re-exploration of the early

principles of Modern architecture, rather than a completely new direction. His designs indicate a faith that Modern architecture could meet contemporaneous demands, and express them in simple, powerful forms.

Through his work, Nowicki broadened the array of possible Modern design solutions available to architects in the postwar period. By allowing expressive structural forms to guide his work, Nowicki created architecture that established different form-function relationships than had been evident in prewar functionalist architecture, while also creating the architectural permanence that he desired. Widely respected and well published, Nowicki's work is significant because it opened the door to an expanded field of expressive structural systems within Modern architecture, setting the stage for many other expressive structures in the 1950s and 1960s.

With structurally expressive architecture at the forefront, this dissertation also recognizes the difficulty that comes with categorizing an individual's complex life and work through a single theme. Within his work, Nowicki touched on a broad range of issues, and, as others have recognized, he had diverse interests. Yet from an analysis of the full breadth of Nowicki's life and career, this dissertation argues that structurally expressive modern architecture is a useful theme, one that can help gather seemingly divergent projects together into a cohesive understanding of Nowicki's achievement. This approach, and the inclusion of a wide range of Nowicki's work, makes this dissertation distinct from previous scholarship.

The Postwar Condition

Matthew Nowicki practiced architecture against the backdrop of the uncertain social and political environment of the post-World War II era. After World War II, the economic prosperity of the United States contrasted with the extreme destruction and resultant destitution

throughout Europe and the Far East. The excitement of victory was tempered by a need to rebuild and recover, as well as to try to comprehend tremendous losses. The strong wartime leadership of Roosevelt and Churchill disappeared after victory in Europe with the death of Roosevelt in April 1945 and election loss by Churchill the following July. Optimism about a postwar world on both sides of the Atlantic was quickly challenged by the rising power of the Soviet Union, the fall of the Iron Curtain, and the emergence the Cold War.

Immigrants flocked to the United States, before, during and after the war. Many of these individuals, although displaced (either by necessity or choice), remained tied to their homelands and opened up international relationships on a more personal level. As nationalities changed, new allegiances were formed that blurred the earlier country-specific designations of identity. Refugees to the United States impacted many different industries and professions.⁴ Within the architectural profession, several prominent individuals had immigrated to the United States before the war including Walter Gropius (in 1937), Marcel Breuer (in 1937), Lazlo and Sybl Moholy-Nagy (in 1937) and Ludwig Mies van der Rohe (in 1937). These architects and designers quickly became major contributors to the American architectural scene, taking leadership roles in academic institutions and designing prominent projects on American soil. Thus, when Nowicki arrived in the United States after the war (in December 1946), the architectural culture of the United States was already open to the contribution of European refugees, easing his transition.

The possibility of creating a global community after the war is exemplified in the creation of the United Nations in 1945, with specific aim to promote international standards of citizenship and to prevent future world wars. Gathering representatives from many different countries, the United Nations promoted humanist values that, it was hoped, would bind the global community

to a cohesive whole. The complex reality of such aspirations in the United Nations was embodied in the design and construction of a headquarters in New York City, a project with which Nowicki was deeply involved. Despite lofty ambitions, the UN and its headquarters building revealed that Wendell Willkie's optimistic vision of a global "One World" quickly became fantasy.⁵ Having won peace in 1945, tensions between the United States and the Soviet Union only increased after the war. In 1948, the Soviet Union tested its first atomic weapon and with the outbreak of the Korean War in June 1950, the dream of a peaceful global community was lost.

In the postwar world people also held widely varying views of technology and its role in civic life. Having observed both the rapid destruction enabled by technological means (blitzkrieg, and the atomic bomb), and the ultimate triumph of the Western Allies over the Nazi and Fascist regimes through superior technology, the postwar understanding of technology was split between an American acceptance of technology as a means for positive change and a European skepticism based on its destructive potential. In the United States, the transference of wartime technology and production to the domestic practice of building provided a visible, material link between the effects of the war and emerging postwar culture. Yet images of wartime destruction, and the published effects of advanced weaponry (the atomic bomb) which became known only once the war ended, reminded everyone of the volatile character of technological systems. The consequences of technology (both good and bad) and the ability to control or manage its effects for social gain or for destruction appeared uncertain. In 1948, Sigfried Giedion published *Mechanization Takes Command*, a historical discussion of the mechanization of everyday life. In the conclusion he stated "Like the powers of nature, mechanization depends on man's capacity to make use of it and to protect himself against its

inherent perils. Because mechanization sprang entirely from the mind of man, it is more dangerous to him.”⁶

In turn, these questions of technology became questions for architecture. While earlier architects had celebrated “the machine” as a symbol of progressive change, postwar architects became more mindful of the detrimental effects of “machine” architecture – becoming more concerned with the human-centered reception, rather than the pure expression of technological achievement. The rigid rectilinearity of pre-war architecture (a consequence of industrially produced materials) was heavily questioned.

The documentation and analysis of Nowicki’s life and career presented in this dissertation reveals many of the stresses of the postwar period and the issues of postwar architecture, as manifested in the experiences and work of a single individual. Born in 1910, into the upper class family of a Polish diplomat, Nowicki grew up surrounded by the Polish struggle for independence (before and during World War I). Resisting the German occupation in World War II in the Polish underground, Nowicki developed his personal architectural perspective amid the crumbling infrastructure of Warsaw. After the war, Nowicki assisted in the design for the city center of a liberated Warsaw, enlisting modern forms to embody the drive for a democratic Poland. Foreseeing the impending Communist takeover in late 1945, Nowicki chose to come to the United States, where he served as the Polish representative on the design team for the United Nations Headquarters, and began to establish his academic and professional career. Soon after arriving in the United States, Nowicki wrote several articles in prominent architectural journals, such as the *Magazine of Art* and *Architectural Forum*, and was a frequent speaker to various professional organizations including the Architectural League of New York and the

Pennsylvania Society of Architects. An aspiring American citizen, Nowicki shared architectural projects with Eero Saarinen and Clarence Stein, encountering a diverse group of design challenges, and demonstrating a wide range of solutions. Nowicki's success culminated in his selection, in 1950, as a designer for the new city of Chandigarh, in newly democratic India.

Nowicki experienced the tumultuous postwar years as a practitioner of architecture, and this perspective was deeply affected his understanding of events such as the bombing of Warsaw and the establishment of the United Nations. As a result, Nowicki focused on responding to the changes he witnessed by searching for ways to use architecture to support a better world. Throughout his shortened career, Nowicki was continually seeking to respond to postwar conditions in the architecture he created.

Architectural Debates

Within the context of Modern architecture in the immediate postwar years, Nowicki occupied an unusual position because appealed to individuals with widely varying ideas about the definition and direction of Modern architecture. His writings and designs show that he shared ideas with practitioners of the increasingly divergent strands of Modernism of the 1940s and 1950s. While other architects and theorists openly debated the differences and discrepancies within Modernism, Nowicki sought to frame a new direction under his idea of a “mature” modern architecture.

In order to understand Nowicki's contributions to postwar debates, it is necessary to place Nowicki's life and career within the trajectory of Modern architecture, particularly in relation to those events that shaped ideas in building design and construction in the years following World War II. While a full narrative history of the development of the Modern Movement is beyond

the scope of this dissertation, an abbreviated background of important dates and events can set the stage for the Modern architecture debates in the postwar period.

The precursors to Modern architecture emerged in Europe the mid to late 19th century.⁷ Architects and builders looked to advancing industrial technology for new construction possibilities, and sought new forms better suited to their changing societal needs. The construction of the Crystal Palace in 1851, an immense (though temporary) exhibition hall built in just five months for the Great Exhibition in London, sparked the imagination of many designers. It demonstrated a new type of architectural space realized through new industrial materials technology, new manufacturing technologies, and served as a harbinger of things to come.⁸ By 1892, when Francois Hennebique patented a system for reinforced concrete, that material was also opening other means of building construction. In 1889, the construction and use of the Eiffel Tower and Galerie des Machines at the Paris World Exposition advanced construction possibilities on a new scale, though intended to be temporary.⁹ In Paris, La Samaritaine Department store, built in 1900, was an early application of exterior metal frame for a permanent work of architecture, though its influence on later modern work was minimal.¹⁰

Several scholars claim the Modern Movement began around 1890, with architects acknowledging new modes of practice that defined a different direction for their profession, away from the traditional approach.¹¹ At its core, Modern architecture promoted an architecture that acknowledged the present and looked forward, not backward.¹²

In the early 20th century, many different individuals, primarily in Europe, were seeking a new direction and producing a wide range of design work now recognized as Modern. Some Modern architects looked to the visual arts for the form and composition of Modern architecture, like the Cubist painters Georges Braques and Pablo Picasso, and others like Theo van Doesberg

and Piet Mondrian in the 1920s.¹³ Others focused on the specific housing and urban needs for which architecture should provide (many architects of *Congres International d'Architecture Moderne - C.I.A.M*) founded in 1928.¹⁴ Walter Gropius began the Bauhaus as an arts and crafts school in 1919, but by 1923, shifted focus to embrace new artistic directions, industrial technology and production for industry.¹⁵ In 1927, Le Corbusier described a desire to create a “machine for living,” and outlined “Five Points” to achieve a “new” architecture.¹⁶ Russian constructivism offered visionary projects that drew on advanced engineering techniques to address socialist ideologies of unity and order.¹⁷ In the United States, Frank Lloyd Wright found inspiration in the organic forms and forged a closer relationship between built forms and their surrounding landscape.¹⁸

In the late 1920s, European Modernism began to coalesce around a few significant events and buildings. One such event was the organized building of the Weissenhof Siedlung in 1927.¹⁹ This Modernist housing estate contained buildings by architects Mies van der Rohe, Walter Gropius, Le Corbusier, J. J. P. Oud, and others, yet displayed a similarity of form – most notably flat roofs, planar facades, free-flow of space, use of new technology, the absence of ornament – all with the intent of improving social conditions.²⁰ The remarkably similar buildings provided the appearance that Modern architects maintained a common mission, and a singular approach.

In the 1930s, architects and critics began to identify further commonalities between different groups of designers. In the United States, Philip Johnson and Henry-Russell Hitchcock recognized formal similarities like simplified volumes (instead of mass), asymmetrical compositions (in both plan and elevation) and the complete expulsion of historical ornament. Johnson and Hitchcock summarized their findings in the 1932 exhibition at the Museum of Modern Art (MoMA), titled “The International Style: Architecture since 1922.”²¹ With this

exhibition, Johnson and Hitchcock provided a formal, aesthetic interpretation of Modern architecture. With many visual similarities, this understanding of Modern architecture (promoted by Johnson and Hitchcock) transcended national boundaries, and suggested little or no focus on the particularities of individual sites. The MoMA exhibition was a clear attempt to articulate a singular definition of Modern architecture.

This aesthetic classification (as a style) suited many different types of Modern architecture, but excluded others. The work of Frank Lloyd Wright, with its close relationship to the land, was excluded, as was the structurally expressive work of Auguste Perret.²² Indeed, it can be argued that the “International Style” excluded much of what is now considered seminal work of Modern architecture.

In the decade of the 1930s Modern architecture began to spread to many different parts of the world. The MoMA exhibition firmly established the aesthetic of European Modernism in the United States, although a few American practitioners had been practicing their own Modernist work, with significant differences, before this time.²³ In other locations such as Brazil (with the work of Oscar Niemeyer), Finland (with Alvar Aalto), and Japan (with Antonin Raymond), Modern architects produced work that blended regional influences and the particularities of each site with Modernist ideas, such as the use of technology and free-flowing space.²⁴ These projects further expanded the range of Modernist work, and demonstrated how regional influences could influence Modernist work that did not adhere to the similarity of form seen at Weissenhof or described by the “International Style.”

Modernist architects in the 1930s and 1940s also began to become acutely aware of Modernism's own history. In addition to the retrospective MoMA exhibition, historians and theorists wrote books that profoundly impacted the understanding of what Modern architecture

was. Historians Nikolas Pevsner (in 1937) and Sigfried Giedion (in 1941) proposed their own descriptions of Modern architecture, each presenting his own particular perspective on Modernism.²⁵ While Giedion focused on Modernism as a link between separated modes of “thinking and feeling,” and emphasized origins in nineteenth century advances in engineering Pevsner highlighted the social and moral mission of Modernism to improve the quality of life. With these histories, Modern designers in the late 1930s and the 1940s began to respond to the earlier Modernist work of the 1910s and 1920s, and establish positions, arguing for the further development of Modernism as either a continuation of the earlier trends or a break from them. Modernism had established a sense of its own beginnings, of having a past of its own, and architects’ awareness of this past would influence their proposals for its future direction.

In the 1930s, the emergence of totalitarian regimes in Europe and the beginnings of World War II brought about other interpretations of Modern architecture. Nazism in Germany, led by Hitler, saw Modern architecture as an ahistorical, inhumane manner of building, unconnected to the nationalist rhetoric of the party, and unconnected to the German people. Nazism's general hostility towards Modernism (along with other complexities) led to the closing of the Bauhaus in 1933, and the forced immigration of many Modern architects. Some moved to England, and several would go on to the United States; others tried the Soviet Union, Palestine, or other locations. In Germany, Hitler sought to use monumental forms, with a classical aesthetic, to communicate the power of the Third Reich. In Italy, Mussolini and the Fascist government had initially accepted Modernism, but later came to favor classical architecture for the same reasons as Hitler.

The use of monumental architecture by these regimes sparked an extensive discussion in the architectural community over the relationship between Modern architecture and

monumentality. Lewis Mumford's "Death of the Monument" chapter in his 1939 book, *The Culture of Cities*, declared, "if it is modern it is not a monument, and if it is a monument it is not modern."²⁶ Mumford highlighted the usefulness of Modern architecture in serving social needs, contrasting it with the static symbology of past architectural forms. This article triggered a larger debate surrounding the issue of monumentality.

In the late 1930s, Walter Gropius and Joseph Hudnut at the Harvard University Graduate School of Design lobbied for a unified Modern architecture through changes in the education of architects.²⁷ Despite the many different variations of Modern architecture practiced at the time, Hudnut felt that "architectural schools should stand together," and "implicit in the changing educational system was the ambition to change not merely America, but a world convulsed with war."²⁸ This professed unity smoothed over many fundamental differences of opinion, although Hudnut and Gropius would significantly disagree on many issues (including on the merits of the International Style) in the years after 1945.

After World War II, Modern architects faced new challenges due to new political and economic conditions. With Modernism emerging as the dominant mode of architectural design, significant differences in design approaches among modern architects began to appear. These differences ranged from issues of style, to regional adaptations (international versus local conditions), and caused large divisions among different practitioners and educators. Although appearing united in the late 1930s and during the war, these distinct strands of Modernism had always been present – simply overlooked or neglected in favor of an emphasis on shared characteristics. These differences can clearly be seen in the separation of Joseph Hudnut and Walter Gropius at Harvard's Graduate School of Design after the war, described by the scholar

Jill Pearlman as "the Battle over Basic Design."²⁹ The two clashed over fundamental issues such as the role of history in design education and the meaning of tradition in architecture.³⁰

Post-World War II Modernism in architecture has been the subject of different interpretations in recent years. The period is often understood as a time of confusion. Joan Ockman, in *Architecture Culture 1943-68* (1993), describes the years after 1945 and before 1968 as an "interregnum," or a gap between two more theoretically coherent movements "between modernism and post-modernism."³¹ With the wartime destruction engendering a "crisis of rational thought," Ockman saw post-war architecture as primarily based in challenging pre-war ideas of functionalism – a theme that is present in Matthew Nowicki's writings. She argued that although architects developed new methods for the "determination of form" that were different from the rectilinear forms of the pre-war period this experimentation was largely unstructured.³² In contrast to Ockman, this dissertation argues that Nowicki's questioning of functionalism led to a re-interpretation of Modernist origins and a focused attention to materials, structure and technology. It suggests that Nowicki did not fear technological advancement, but rather sought to harness technology for more humanistic ends. While Ockman suggested a dispersion of Modernist principles, this dissertation argues that Nowicki promoted a thoughtful re-examination of them.

More recently, as the diverse strands of Modern architecture of the period have been explored, Goldhagen and Legault in *Anxious Modernisms* (2000) have claimed it was a period of great "anxiety," with architects simply lacking certainty in their modern design decisions. Goldhagen and Legault argue that the "internal critique of modernism" was becoming a larger concern, but claim this "only partly explains its reconfiguration after the war."³³ These authors state that the transformations in Modernism came as a "response" to the "changes and

uncertainties of the late 1940s and 1950s.”³⁴ These uncertainties (political, global, cultural in nature) created “anxiety” in the minds of post-war architects (and others), an anxiety that “affected the discourse of modernism as a whole.”³⁵

Despite this “anxiety” described by Goldhagen and Legault, Nowicki’s work does not appear to be particularly “anxious.” Although experiencing the traumatic events of World War II, Nowicki expressed confidence in his approach to Modern architecture, and its ability to adapt to new cultural/social demands. He continually wrote that Modern architecture was coming into a state of “maturity,” capable and appropriate for the changing times.

This confidence may have been his response to the surrounding anxiety about the future of architecture, his own bulwark against uncertainty. Nowicki acknowledged the uncertainty of his time in his writings, and at times became disillusioned with the political changes surrounding him. It is possible that Nowicki redirected his cultural anxiety into his approach to architecture – prioritizing the permanence of structure and construction in architecture, addressing what he perceived as its weaknesses in a way that others were not, at least not yet). Nowicki experienced a loss of country after World War II, and was keenly aware of the impending Cold War condition. Rather than reflecting anxiety in his architecture, Nowicki looked to re-theorize Modern architecture to promote an alternative. Instead of succumbing to that anxiety, he sought to respond to it, by proposing a solution through a more permanent architecture. Only during the summer of 1950, while living in India as the Korean War began, did Nowicki describe disillusionment with the postwar world.

Still, other scholars have focused on a sense of a reduced (or weakened) Modernism after the war. Alan Colquhoun included a chapter titled “Pax Americana: Architecture in America 1945-65” in his book *Modern Architecture* (2002).³⁶ In this chapter, he divided his discussion of

the period in to three sections: the Case Study House Program, corporate office buildings, and critiques of Modernist rationalism. Ultimately though, Colquhoun explains, “private agencies... inhibited, though did not altogether eliminate, the development of an ideology-driven Modernism.”³⁷ Colquhoun argues that, driven by ulterior motives, Modern architecture became an instrument of capitalism and, although not abandoning a theoretical basis altogether, continued in a weakened condition.³⁸

Manfredo Tafuri, in his *Modern Architecture* (1979), claimed that “the purported crisis of international architecture” in the post-war era, was actually “a positive dimensioning of the roles” to be more aligned with changes in urban planning and the post-war capitalist motivations.³⁹ Modern architecture was no longer a revolutionary action, but rather had become an instrument of the capitalist establishment. The idea that the post-war change is responsive, implies the dependency of architecture on its surrounding conditions, and argues that it is a mistake to view architecture in isolation. Tafuri, however, set limits for the extension of his premise, stating “There is no pretense of completeness” and acknowledged “having simplified events that were in dynamic transformation and on which any judgment can be at best provisional.”⁴⁰ Tafuri claimed that the work of the previous “masters” of modernism (Gropius, Wright, Mies, Le Corbusier) during this time is simply “ambiguous.”⁴¹ An “architecture of bureaucracy” extended across the globe as the “demand” for modernism necessitated “a drastic reduction in the time of planning and building.”⁴² The issue of bureaucracy suggests that Tafuri sees much less space for individual agency--something Nowicki would not have accepted, as indeed, Nowicki's career suggests that the individual could still make a difference.

Marvin Trachtenberg and Isabelle Hyman, in their book *Architecture: From Prehistory to Postmodernity* (2002) look at the architecture after 1937 as a “Late Modernism,” coming after a

“high” period and suggesting advanced age or decline. Their focus on postwar work, is framed through the topic of “corporate headquarters and other works,” but extensively uses revivalist terms like “Neo-Corbusian,” “Neo-Futurism,” and “Neo-Expressionist” to describe the work of Marcel Breuer, I.M. Pei John Portman, and Eero Saarinen.⁴³ Understanding post-war architecture as “derivative” of earlier advancements appears to parallel the argument by Ockman for an interregnum and limits the understanding of post-1945 modern architecture to simply an re-interpretation of what came before. This thesis argues that, in fact, this interpretation overlooks new directions in work after 1945, including in the work of Nowicki.

In *The Future of Architecture Since 1889* (2012), Jean-Louis Cohen described postwar Modernism in his chapter “The fatal crisis of the Modern Movement, and the alternatives.”⁴⁴ Cohen described a “consolidation of modern architecture everywhere” (except in the Soviet Union) as a widespread method of building, yet a movement that was “in no way homogenous.”⁴⁵ With the expanding geography of the Modern Movement, and the uncertain political conditions around the world into the 1960s, “confrontations between generations of architects led to sometimes fatal ruptures within modernism’s existing networks and organizations,” referring primarily to the dissolution of CIAM and the rise of Team X. While Le Corbusier was “reinvented and reinterpreted,” American capitalism gave rise to a “second skyscraper age.” Gropius and Breuer were involved in American “assimilation of the Bauhaus,” Saarinen was “lyrical,” Johnson was “anxious,” and Kahn was “solitary.”

One characteristic of all these interpretations is their tendency to look at the period from 1945 to about 1970 as a single, unified period. However, Nowicki’s career demands a focus on a shorter range of years, from 1945 to 1950. Seen in a tighter range of dates, Nowicki's career

offers the potential to uncover new insights into those early postwar years and to suggest different interpretations of the two decades that followed.

A few authors recognize the vitality of postwar architecture and seem to echo Nowicki's own ideas of the possibility of a "mature" Modern architecture developing. In *Modern Architecture since 1900*, (1996) William J. R. Curtis included a chapter titled "Modern Architecture in the USA: Immigration and Consolidation."⁴⁶ Similar to Ockman, Curtis believed that given the technology-aided destruction of World War II, "optimism in architectural innovation had been severely undermined."⁴⁷ Architects, then, were left to "seek forms" on "the basis of, or in reaction to, the earlier modern movement," a summation that does not suit Nowicki's work. But then, observing the "battle between factions" within Modernism (the "tired international formula" as opposed to the "revitalization" based on a "post-war state of mind"), Curtis recognized the developing diversity in contrast to the pre-war, more unified Modernism.⁴⁸ Nowicki was a part of – possibly the leader of – Curtis's second group, pushing for a revitalized and more wide-ranging Modern architecture.

This revitalization of Modernism comes to the forefront in still other surveys. Vikram Prakash, Mark Jarzombek and Francis D. K. Ching, in *A Global History of Architecture* (2007), claim that it was "only after WWII that modern architecture came into its own and began to make significant and sustained contributions to urban space."⁴⁹ Corporate architecture revealed the "coherency and anonymity of post-WWII architecture" while single, prestigious projects "introduced bold, exciting forms."⁵⁰ They claim that it was not until the 1960s that the "conventions of modernism began breaking down."⁵¹ For Prakash, Jarzombek, and Ching, the postwar period was a time of flowering of Modernism, with simultaneous unity and diversity contained within modernist approaches.

Kenneth Frampton's *Modern Architecture: A Critical History* (rev, ed. 2007) offered no overall assessment of post-war architecture, choosing to discuss individuals and discrete movements separately.⁵² Frampton's book contains chapters on the International Style and its variations, New Brutalism, CIAM and Team X, and specific architects like Louis Kahn, Philip Johnson, Buckminster Fuller, Mies van der Rohe, and Le Corbusier.

These scholars have most often addressed the years from 1945 to about 1970 as a single time period in Modern architecture. However, to understand Nowicki, and his contribution to Modernism, it is necessary to examine the debates of the 1940s in much more detail. As the various divisions within Modernism were being explored before 1950, two key topics of discussion emerged – monumentality and regionalism.

Addressing Mumford's earlier comments about the "monument," in 1943 Jose Luis Sert, Fernand Leger and Giedion co-authored "Nine Points on Monumentality."⁵³ Contrary to Mumford, they asserted that only the "misuse of monumentality" had led to its rejection by Modernist architects.⁵⁴ Here, these authors engaged the issues of symbolism, tradition and expression in modern architecture through the term "monumentality." Devalued over the last hundred years, they called for monuments that "represent their social and community life," and provide more than "functional fulfillment."⁵⁵ To achieve this new monumentality, structure and materials should lead the way: "Modern materials and new techniques are at hand: light metal structures; curved, laminated wooden arches; panels of different textures, colours and sizes; light elements like ceilings which can be suspended from big trusses covering practically unlimited spans." Structure should become integrated with landscapes and natural forms, murals and artistic displays to "attain a new freedom and develop new creative possibilities."⁵⁶

In his 1944 essay “The Need for a New Monumentality,” Giedion stated that the next step for Modern architecture was “the re-conquest of the monumental expression,” where buildings provide more than “functional fulfillment.”⁵⁷ Modern culture had “lost” its “sense of monumentality,” replaced by a hollow, bureaucratic “pseudo-monumentality.” According to Giedion, architects (“the real creators”) must “build the lacking civic centers, again to instill the public with the old love for festivals, and to incorporate all the new materials, movement, color and the abundant technical possibilities.”⁵⁸ These civic centers, places of public interaction, would become places of “collective emotional events,” where “a unity of the architectural background, the people and the symbols conveyed by the spectacles will arise.” In this essay, Giedion looked to structure and technology to shape a new expressive architecture.

Monumentality became a common point of discussion in the late 1940s and in the 1950s, with other modern architects (such as Louis Kahn) weighing in on both its appropriateness in modern architecture and how it might be accomplished.⁵⁹ Nowicki’s work emerged within the context of these discussions, often engaging themes of the monumentality debate. In his plans for a redesigned Warsaw, his involvement with the United Nations, and sketches for Chandigarh, Nowicki aspired to an architectural expression that transcended functional use. Nowicki recognized the significance of these projects, and proposed a Modern architecture that would use monumental form, supported through the latest technological means, to create places to serve social and ceremonial “community life” as argued just a few years earlier by Giedion. Nowicki continually looked to expressive structural forms to create his “monumentality” – using a dramatic cable roof in Warsaw, a central dome structure at the United Nations, a tension-cable roof in North Carolina, and a parabolic arch in Chandigarh.

Another significant debate that arose in the 1940s was the issue of regionalism – or the degree to which architectural form should respond to the specific conditions of a place. The Modernist work that emerged in many different parts of the world (as mentioned above) contained significant variations from the “International Style.” Architects, like William Wurster in California and Pietro Belluschi in the Pacific Northwest, who had been practicing a regional approach to Modern architecture since the late 1930s, started to gain national attention.⁶⁰ These variations were brought to the forefront of discussion in October 1947, when Lewis Mumford presented the architecture of the “Bay Region” in his "Skyline" column of the *New Yorker* as a regional variation of Modern architecture.⁶¹ Mumford described the work of Bernard Maybeck and William Wurster, in the San Francisco Bay Area, as “native and humane,” displaying a “free yet unobtrusive expression of the terrain, the climate and the way of life on the Coast.” Claiming that this work offered a stark contrast to the “International Style,” Mumford argued that Modern architecture should directly relate to the particularities of each site. This position was consistent with his book *The Culture of Cities*, which stressed the importance of regional issues in design considerations.

With this essay, Mumford entered into the architectural dialogue surrounding a place-based, “regional” versus “International” architecture. In response, the Museum of Modern Art in New York organized a symposium titled “What is Happening to Modern Architecture?” in February 1948, inviting panelists including Walter Gropius, Marcel Breuer as well as Hitchcock and Johnson. The discussion ranged from a critique of the “Bay Region Style” as a domesticated “cottage style” by Alfred H. Barr Jr., to a claim by Walter Gropius that there was no difference between a regional Modernism and international Modernism.

While, the discussions of monumentality explored the meaning or significance of architecture in general, the debate over regionalism focused on the location of projects – and the appropriate use of materials, forms and characteristics of Modern architecture. Mumford concluded the event claiming that the Bay Region style was “nothing but an example of a form of modern architecture which came into existence with our growth and which is so native that people, when they ask for a building, do not ask for it in any style. That is a healthy state that we should have in every part of the world.” The debate of “international” versus “regional” continued into the 1950s, with Giedion’s 1954 article in *Architectural Record*, describing “The Regional Approach” as one element of the state of contemporary architecture.

Nowicki was also an invited panelist to the MoMA symposium (“What is Happening...”). The issue of design addressing regional factors as opposed to a more international or universal approach as championed by Gropius, Breuer and others, is particularly acute in Nowicki’s own architecture. While, on one hand, Nowicki did apply what have been often been called the “universal” principles of Modernism, he also sought to address specific conditions as he developed designs for different sites in different regions around the world. He also sought to address the social conditions in particular places. Nowicki, thus, displays a more complex set of intentions within his work than either position in the MoMA debate. Similar in some ways to Wurster and Belluschi, Nowicki “walked a fine line” between attending to universal, human-centered demands (unchanging regardless of location) and attending to the needs and desires of a specific community of people or specific regional condition. His extensive travel, first from Poland to the United States, and subsequently his travels to India, fostered an international perspective, and yet the ease with which he gained widespread appreciation indicates his openness to new design directions. As with his approach to

monumentality, Nowicki looked to expressive structural forms to communicate his understanding of regionally-appropriate Modern architecture.

Within these tumultuous years for Modern architecture, surrounded by debates on monumentality and regionalism, Nowicki gained remarkable success. In just under five years in the United States (1945-1950), Nowicki went from a Polish immigrant working in a consular office in Chicago to become the head of an emerging architecture school, commissioned with designing a post-colonial capital city. His supporters were as diverse as they were numerous – from Lewis Mumford to Eero Saarinen, from the English modernist Charles Reilly to Wallace K. Harrison. These individuals spanned the field of modern design, encompassing both sides of many debates – monumental and functional, regional and international.

Historiography/ Understanding Matthew Nowicki

Within the history of architecture, Nowicki has been understood in a variety of ways. The most dominant understanding of Nowicki's life has been shaped, both directly and indirectly, by his friendship with Lewis Mumford. Nowicki had read Mumford's *The Culture of Cities* and *Technics and Civilization* while still in Poland, and considered Mumford his favorite writer. Once in the United States, Nowicki met Mumford in fall 1947 and the two became close friends. Mumford repeatedly promoted Nowicki within architectural circles and played a large part in creating new opportunities for Nowicki. Mumford took an almost paternalistic interest in Nowicki (Mumford had lost his son, Geddes, in World War II) and Mumford was devastated by Nowicki's sudden death in 1950. With a prominent publication platform (a regular column in the *New Yorker*, multiple books), Mumford used many opportunities to define Nowicki's legacy,

which reflected both his relationship with Nowicki and, inevitably, his own architectural perspective.

Mumford republished “Origins and Trends in Modern Architecture” in an anthology *Roots of Contemporary American Architecture* in 1952, just a year after it was published in the *Magazine of Art*.⁶² Yet Mumford published the article under a different title – choosing “Function and Form” instead. This editorial adaptation of Nowicki’s essay indicates Mumford’s role in both disseminating and interpreting Nowicki’s work. Mumford also included Nowicki’s earlier article “Composition in Modern Architecture,” published in 1949, using these two articles to conclude the anthology.

In 1954, Mumford wrote a four-part article for *Architectural Record* titled “The Life, Teaching and Architecture of Matthew Nowicki.”⁶³ Mumford’s account of Nowicki’s life and career strongly reflects Mumford’s own views on architecture and his great sadness following Nowicki’s death. Mumford defined Nowicki as a “humanist architect,” stating,

Perhaps the life of no other architect so well reveals the dilemmas and choices that have presented themselves to the modern architect; or so sensitively indicates the direction that a more humane culture must take, if it is to save itself from the sterility and dehumanization that now threatens our civilization.⁶⁴

Mumford clearly projected many of his own hopes and desires on to the work of Nowicki. As an author (not an architect) with strong views on architecture, city planning, and technology, Mumford saw Nowicki as the architect who could make his theories a reality. Mumford felt that Nowicki embodied his architectural perspective, and as a result, minimized Nowicki’s interest in structurally expressive forms. Mumford continued to reference Nowicki in his writings for many years after.

In the 1960s, even critics of Nowicki's work recognized both his influence and Mumford's acclaim. For example, in the essay "Notes of American Architecture," published in *Perspecta* in 1961 architect James Gowan wrote:

Matthew Nowicki appears to have had wide influence. He has certainly been most fully praised by Lewis Mumford with an enthusiasm which is difficult to understand, the buildings appearing to be so often monuments to impress and the values, those of effect. ... So many of the large projects, particularly Chandigarh, are wild structurally, bad formally and indifferent spatially.⁶⁵

Gowan was in a partnership at the time with James Stirling, and would later produce work after the 1970s that would come to be called postmodern. His criticism of Nowicki's structure, form and space, in 1961, a time when Modernism was still widely praised, is intriguing – perhaps serving as a precursor to the significant changes in the architectural culture to come.

The influence of Mumford's humanistic view of Nowicki has persisted through other scholarship as well. Norma Evenson devoted a chapter to Nowicki and his contributions to the Chandigarh project in her 1966 book *Chandigarh*.⁶⁶ Evenson drew on documents in the Albert Mayer Papers (University of Chicago), and she published several of Nowicki's drawings for Chandigarh (originals at the Chandigarh Architecture Museum). Evenson praised Nowicki for his vision of Chandigarh, and quoted Mumford's *Architectural Record* articles. This approach set the tone for her intense critique of Le Corbusier's eventual city, stating how "the city would have benefited from [Nowicki's] freshness of vision and willingness to experiment, and [would have] been spared the deadly formula which has governed construction in the present city."⁶⁷ Evenson overlooked the similarity between the two men's designs as well as Nowicki's deep admiration for Le Corbusier in her analysis, and said little about Nowicki's underlying interest in structure.

In the 1970s, postmodern architects referred to Nowicki's work in a variety of ways, often interpreting his comments to support their own architectural positions. In 1971, Charles Jencks cited Nowicki in his *Modern Movements in Architecture*.⁶⁸ Jencks described Nowicki as a "transitional figure" who had "a moral commitment to technology and the social ideals of the twenties."⁶⁹ Jencks stated: "The technical ideal is pursued by Buckminster Fuller, Konrad Wachsmann, Charles Eames and Myron Goldsmith and the social by Richard Neutra, Marcel Breuer and Matthew Nowicki."⁷⁰ Despite Nowicki's exploration of innovative structure, Jencks claimed Nowicki was more interested in the social, behavioral aspects of Modern architecture, than the "technical." Jencks does not explain this claim further.

In 1973, the architect Bruce Shaefer published a book titled *The Writings and Sketches of Matthew Nowicki*.⁷¹ This book has only a short interpretive "Introduction" and "Conclusion"; the primary texts are Nowicki's "Composition" and "Origins and Trends" articles, as well as a previously unpublished speech from 1949 on "Remarks on Architectural Education in Europe," in which Nowicki described curriculum changes in Europe over the previous 30 years. The Introduction was only one- and-a-half paragraphs in length, describing, in general the advantages of "looking back", and did not offer an interpretation of Nowicki's life. The book does contain many of Nowicki's sketches included those for North Carolina State Fairgrounds, Chandigarh, Brandeis University, Southern California Shopping Center, a synagogue, and the Student Union at North Carolina State University. The conclusion takes a postmodern view, claiming: "Shrouded in the criticism of this seventh decade of the twentieth century is an implicit condemnation of the three-dimensional world, ... of the architecture which stands. What went wrong?"⁷²

The author claimed that the goal of architecture was to “create a way of life worth living” and “Matthew Nowicki, in his writings and sketches, searched for a way.” Critical of other Modern architecture (“the architecture which stands”), Shaefer looked to Nowicki for inspiration towards a new approach.

In 1976, Colin Rowe argued that Nowicki had, in his essays, exposed the circular logic of the International Style in the 1940s and early 1950s.

[The International Style] was to inaugurate a new vision; but, otherwise, its behavior was not seriously to affect a rationalistic program. Thus, there arose the anomaly of a theory which seemed to be unable but which was really only unwilling to provide adequate explanation of the phenomena which it purported to sponsor; and there appeared the dilemma to which Matthew Nowicki called attention, the problem ‘that even when form results from a functional analysis this analysis follows a pattern that leads to the discovery of the same function whether in a factory or a museum.’ A glossing over of this problem, as Nowicki well recognized, is of no service to modern architecture.⁷³

With these comments, Rowe argued that Nowicki exposed the “precarious” philosophical foundations of Modern architecture, setting the stage for a different approach. Rowe interpreted Nowicki’s statement as subverting Modernism, rather than a call for an expanded Modern architecture, using expressive structural forms, as this dissertation contends.

Postmodern thinkers continued to refer to Nowicki into the 2000s. In 2004, architect Denise Scott Brown cited Nowicki in a discussion of form and function, in her article “The Redefinition of Functionalism.”⁷⁴ Addressing the Frank Furness Library at the University of Pennsylvania, Scott Brown stated: “Its form does not exactly follow its function, but it does adapt to functional change. Its functions both follow and are evoked by its form. Are its form and function one? This was a favorite formulation of Matthew Nowicki, but I think it’s too simple.”⁷⁵

Scott Brown pulled this quote “Form and function are one” from Nowicki’s “Composition in Modern Architecture” article, but failed to reference the fact the Nowicki himself attributed the quote to Frank Lloyd Wright. Yet it is interesting that Scott Brown associated the quote with Nowicki, recalling his challenge to the “form follows function” mantra. Scott Brown used this quote (and Nowicki’s name) to transition to a discussion of “communication as function,” and then to her work (with others) on the Las Vegas strip, using Nowicki as a transitional figure between Modernism and postmodernism.⁷⁶

From the 1970s and beyond, Nowicki’s writings were continually pulled into discussions of postmodernism. While he certainly critiqued Modern architecture, Nowicki fundamentally believed in Modernism. Postmodern architects and theorists appear to have used Nowicki’s words to attack Modernism, disregarding his underlying faith in the Modern Movement.

The most significant effort in determining Nowicki’s contributions has been undertaken by the scholar Joan Ockman. Following Mumford’s lead, Ockman has focused primarily on the topic of “humanism” in Nowicki’s work, although she has interpreted Nowicki in subtly different ways, recognizing his attention to structure. In 1993, she included Nowicki’s “Origins and Trends in Modern Architecture” in her anthology *Architecture Culture: 1943-1968*.⁷⁷ In her introductory essay to his article, she stated:

Matthew Nowicki’s untimely death in 1950 at age forty cut short a very promising career. ... But despite the brevity of a professional life spanning barely a decade and a half, Nowicki embodies – in the view of a critic like Lewis Mumford – a twentieth century ideal of the humanist architect.⁷⁸

Ockman drew heavily on the friendship between Mumford and Nowicki as the basis for her assessment. In the essay, Ockman stated that Nowicki focused on the “humanities” in his

development of the architectural curriculum at North Carolina State University in 1949.⁷⁹ In her discussion of the Raleigh Livestock Pavilion, Ockman described the building's structure and compared it to Freyssinet's structurally-impressive concrete airship hangars in Orly (1916-1923). She recognized the building as an "audacious engineering construction," but, in her analysis, chose to cite Lewis Mumford's comments on the building, which described it as "'an architecture of democracy.'"⁸⁰

Ockman interpreted Nowicki's "Origins and Trends" article as describing the "evolution of modern design," where "functionalist architecture" was "sidetracked by earlier twentieth-century aesthetics."⁸¹ In her summary of the article, Ockman again emphasized humanism: "Nowicki ends by calling for a further evolution of the idea of function from physical exactitude to the greater humanism of the 'minute exigencies of life.'"⁸² Ockman finished her discussion of Nowicki by citing Lewis Mumford's four-part article in *Architectural Record*.⁸³

In her analysis, Ockman rightly recognized the humanistic elements of Nowicki's writings. With so few built structures, this interpretation of Nowicki (primarily a literary analysis) is certainly justified, as Lewis Mumford significantly influenced Nowicki, and many Mumfordian themes (like regionalism, humanism, history) are present in Nowicki's work.

In 1998, Ockman expanded her discussion of Nowicki. In her article "Form without Utopia: Contextualizing Colin Rowe" in *The Journal of the Society of Architectural Historians*, where she discussed "the implications of modern architecture's postwar transformation."⁸⁴ Here, Ockman began to engage Nowicki's approach to structure through his comments in "Origins and Trends." She stated:

Nowicki proceeded to suggest that in the postwar period modern architecture had moved from the 'decoration of function' to the 'decoration of structure,' noting with approval that architects had rediscovered the symbolic meaning of a column. With the curious

locution ‘decoration’ – by which he meant something like ‘preoccupation’ or ‘fetishization’ ... Nowicki put an optimistic interpretation on the new architectural formalism.⁸⁵

With this discussion, Ockman began to link Nowicki’s ideas of structure to new formal possibilities. Ockman's discussion of the fetishism of the column likely refers to the emphasis found in the work of Mies and his followers (such as SOM) in the period, but Nowicki sought to move away from that approach to use of a wider range of structural forms for a formally expressive architecture. After this statement, Ockman moved to Nowicki’s influence on the emergence of post-modernism, claiming Nowicki’s article “looks directly to the celebratory postmodernism of Robert Venturi,” and the “decorated shed.”⁸⁶ Ockman then discussed other Modernist architects who “decorated” Modern architecture, but did not discuss those who sought to move away from the "decoration of structure" to expressive structure and form. In this interpretation, Nowicki’s comments on structure indicate a direction away from Modern architecture, towards a distinctly non-structural “postmodern” approach. Here, Ockman focuses on a different aspect of Nowicki’s writings (form and structure rather than humanism) to support a point about Colin Rowe. As such, Ockman’s work demonstrates the many different facets of Nowicki’s architectural perspective, and suggests challenge of finding a cohesive lens of interpretation.

In the 2012 publication of *Architecture School*, Ockman revisited her interpretation of Nowicki as a “humanist” architect in the article “1940-1968: Modernism Takes Command,” written with Avigail Sachs.⁸⁷ The authors claimed Nowicki “embodied the ‘new humanism’ of the early postwar era”⁸⁸ and cited Nowicki’s curriculum at North Carolina State College, which Nowicki centered on ““the variety and fullness of human need.””⁸⁹ Nowicki had developed this curriculum with advice from Lewis Mumford. Mumford was instrumental in Nowicki being

hired at North Carolina State College, and Nowicki explicitly stated that he sought to create a “school of Lewis Mumford”.

While Nowicki’s curriculum did include courses on contemporary civilization, architectural history, urban sociology and other humanities courses, structures education remained central. Nowicki’s diagram of the curriculum, (in the form of a tree) placed “Structures” and “Descriptive Drawing” as the tree’s trunk, both required in each year of study.⁹⁰ Nowicki made the study of structure fundamental to understanding architecture, aspiring to teach students to treat “all problems of design as problems of structure.”⁹¹ Only after Nowicki’s death, do the authors claim that the “emphasis on structural innovation” emerged, under the direction of Eduardo Catalano.⁹² This suggests that Nowicki’s focus on structure at NCSC was more nuanced than Catalano’s, who pursued a more engineering-based approach. Nowicki was not only promoting innovating structures, but structures within a humanistic context.

Nowicki’s work has also been appreciated specifically for its structural innovation. Structural engineers, and those interested in issues of structure, have described Nowicki’s work completely apart from Lewis Mumford or humanism. As early as October 1952, just two years after Nowicki’s death, his Livestock Pavilion was published in *Architectural Forum* under the headline: “Parabolic Pavilion: a spectacular testimonial to architect-engineer collaboration” in October 1952.⁹³

This article recognized the collaboration between Nowicki and engineer Fred Severud (who continued to work on the building after Nowicki’s death), but rightly attributed the concept and design to Nowicki. The article claimed that the “warping” of the roof surface and the space below “marked a new epoch in architecture.” In April 1954, *Architectural Forum* published the

Pavilion after its completion, with a critique written by Paul Rudolph.⁹⁴ Appreciative of the “bold construction,” Rudolph felt it was a “magnificent space.”⁹⁵

In 1962, the German engineer Frei Otto acknowledged Nowicki’s Livestock Pavilion as an “extremely important structure in the field of suspended roofs with long spans.”⁹⁶ A prominent designer of suspension roofs himself in the 1960s and 1970s, Otto acknowledged that he had been influenced by Nowicki’s design. In his own publication of his work and theories, Otto stated: “The author saw Nowicki’s preliminary design in the Severud [engineering] offices in 1950, and was thereby given impetus to begin systematic development of tension-loaded structures.”⁹⁷

Here Nowicki’s work, sketches, structures and collaboration with Severud, inspired a completely different response, one of spatial and structural innovation. The Livestock Pavilion is also cited in the German architect Curt Siegel’s 1962 *Structure and Form in Modern Architecture*.⁹⁸ This book included extensive diagrams and explanations of structural systems used throughout Modern architecture; it gave Nowicki’s Pavilion two pages of discussion. Siegel described the Pavilion as a “Cable System Curved in Two Mutually Opposed Directions,” and explained many of the geometrical and structural features. Siegel also claimed that the building was a seminal work of tension-architecture.

Philip Drew reinforced this structures-based assessment in 1979, with his book *Tensile Architecture*, in which he stated, “Matthew Nowicki’s livestock pavilion at Raleigh, North Carolina in 1952 announced the opening of the season of tensile architecture. ... Nowicki’s pavilion did not initiate the new tensile architecture, but provided a focus for the rising wave of structural experimentation in the 1950s.”⁹⁹ Drew continued to describe Nowicki’s Livestock Pavilion as “a germinal structure whose classic saddle-shaped roof supplied the prototype for

later prestressed cable roofs.”¹⁰⁰ Focusing purely on the structural system, Drew recognized the wider influence of Nowicki’s innovative structural thinking, but did not engage other topics of architecture.

More recently, the engineering historian Henry Petroski has recognized Nowicki’s structural influence. Petroski included the Livestock Pavilion in his 2004 book *Pushing the Limits: New Adventures in Engineering*.¹⁰¹ Petroski called the building “one of the most significant engineering and architectural structures ... in the world.”¹⁰² Andrew Saint, in his 2007 *Architect and Engineer*, also cited the building as a landmark in long-span construction.¹⁰³ The 2011 publication *Fifty Years of Progress for Shell and Spatial Structures* edited by engineers Ihsan Mungan and John F. Abel, also cites the Pavilion in a similar manner.¹⁰⁴

Different scholars seem to focus on different aspects of Nowicki’s achievements. A few scholars have addressed both Nowicki’s humanism and his interest in structure, but often these scholars downplay his structural innovation. In the 2005 *Modern Architectural Theory: A Historical Survey, 1673-1968*, Harry Francis Mallgrave described Nowicki’s importance as tied to Mumford’s “humanist and regionalist critique of the contemporary architecture.”¹⁰⁵ In discussing the Dorton Arena (Livestock Pavilion), Malgrave claims that the building “represents the structuralist side of humanism, but it is misleading if it suggests a preoccupation with structure.”¹⁰⁶ Malgrave acknowledges Nowicki’s interest is not pure structure (in engineering terms) but structural forms that address human concerns. This comment illustrates the ambiguous understanding of Nowicki’s work, and the difficulty that comes with attempting to combine issues of structure with culturally sensitive, humanistic values into a single assessment.

Nowicki has received some treatment from scholars in his native Poland, but they have tended to follow the “humanist” interpretation. In 2000, Marta Urbanska published a doctoral

dissertation in architecture at the Cracow University of Technology, titled “Matthew Nowicki: Humanist Visionary.”¹⁰⁷ The dissertation contains analysis of his formation as an architect, selected works, and discussion of his essays. This dissertation described the various aspects of Nowicki’s life primarily from a Mumfordian- humanist perspective.¹⁰⁸

In 2010, Tadeuz Barucki, a Polish architectural historian, published a short book titled *Matthew Nowicki: Poland, USA, India*.¹⁰⁹ The majority of this book focuses on Nowicki’s work in Poland, and on Nowicki’s status as an ambassador of Polish values that were appreciated around the world. Information in the book derives primarily from anecdotes and interviews with Nowicki’s former students, so its contribution to historical scholarship is limited.

Barucki had published two earlier booklets, both in Polish. One, for an encyclopedia (1980), contains a chronological narrative of Nowicki’s career, with color photos of some of his sketches and buildings.¹¹⁰ A longer version was published in 1986 as part of a series on modern artists.¹¹¹ Both publications contain a significant number of Nowicki’s initial sketches and drawings from his early work, but contain little reflection on the overall significance of Nowicki’s life and career.

A series of obituaries and retrospective articles on Nowicki’s life were published in the years after his death. *Polish Perspectives*, a Warsaw cultural journal published monthly, included an article on Nowicki in June 1961. Titled “Inspired Architect” this article asked, considering all the “deeply pensive” and celebratory remembrances of Nowicki, “was he indeed a creature of flesh an blood?” Briefly recounting his life, highlighting his Polish origins, the author, Stefan Holowko, celebrated Nowicki as full of “imagination” and “having every chance of becoming one of the leading architects of the present generation.”¹¹² In 1969, Laura Pilarski

published *They Came from Poland: Stories of Famous Polish-Americans*, with an entry on Nowicki titled “Matthew Nowicki: Poet and Philosopher of Form.”¹¹³

A few scholars have brought these varied understandings of Nowicki together by discussing an expanded understanding of structure. In 2005, Jane Merkel discussed the “unusually close friendship and working relationship” between Nowicki and Eero Saarinen.¹¹⁴ The two worked side-by-side as co-designers on the Brandeis University campus design (1949) and, according to Merkel, shared a similar architectural vision. Hinting at Nowicki’s interest in structure, she described Brandeis designs as having a “playful spirit” and a “structural boldness.” She continued, “There are entire sculpturesque structures – an auditorium with a domed roof perched on columns, a perforated bell tower, and a vaguely hexagonal chapel... These buildings pulsate.”¹¹⁵ Merkel also commented on Nowicki’s impact on Saarinen’s later career. She stated: “Clearly, Nowicki, who was interested in expressive form and saw architecture as a humanizing art, helped Saarinen break out of the International Style straightjacket that never quite provided an outlet for his sculptural impulses. Saarinen was not intimidated by Nowicki’s genius but, rather, liberated by it.”¹¹⁶

Merkel recognized Nowicki’s interest in architectural expression and acknowledged the “humanizing” aspects of his designs (likely in response to Mumford and Ockman), but also mentioned his interest in structure and material. Merkel stated that part of Nowicki’s influence in the “liberation” of Saarinen’s sculptural impulses, hinting at the parallel theme of structure in Saarinen’s later designs. This assessment of the influence of Nowicki on Saarinen was reinforced in 2006, by the authors of *Eero Saarinen: Shaping the Future*, Eeva Liisa Pelkonen and Donald Albrecht.¹¹⁷ These authors provide links to Nowicki in Saarinen’s chronology,

documenting their first meeting at the February 1948 symposium “What’s Happening to Modern Architecture?” followed by their collaboration on Brandeis University. This book quoted Saarinen, stating that Nowicki was the third-greatest influence on his career – after his father and Charles Eames.¹¹⁸

In 2007, Timothy Rohan discussed Nowicki’s interest in structure, but acknowledged that it was part of a broader architectural approach, in his article “Challenging the Curtain Wall: Paul Rudolph’s Blue Cross and Blue Shield Building” in the *Journal of the Society of Architectural Historians*.¹¹⁹ In the context of Paul Rudolph’s experimentation with “symbols of structure,” and citing “Origins and Trends,” Rohan stated:

Nowicki believed that modern architecture could become more flexible and expressive, and suggested an imminent return to a structural rationalism that could be functional, expressive and decorative... Structural rationalism could even be considered art, an aspect previously neglected by a narrow definition of structure and functionalism.¹²⁰

Rohan suggested that the diversity that Nowicki sought through structure was creative and imaginative, and distinct from the more rigid approach of architects like Mies van der Rohe. Rohan also claimed that Rudolph had these ideas “in mind” as he designed in the mid 1950s, further evidence of Nowicki’s influence beyond his death. Thus, recent scholarship by Merkel, Pelkonen and Rohan has begun to address the structural characteristics of Nowicki’s design work and some of its motivations, though none have explored these in depth.

This chronology clearly shows that different scholars have emphasized different aspects of Nowicki’s life over the 65 years since his death. It seems that no single account has brought together the diverse elements of Nowicki’s life into a single work of scholarship, nor has any

account suggested a comprehensive framework for understanding Nowicki's career as an architect. Thus, this dissertation considers Nowicki's full career, and seeks to demonstrate the extent to which Nowicki looked to expressive structure as a means to create a “mature” Modern architecture.

Chapter Outline

Nowicki developed his structurally expressive modern architecture from the circumstances and conditions of his life, and his idea of the role of structure in Modern architecture was a unifying theme through his projects. This dissertation examines Nowicki's distinct theoretical approach to postwar Modern architecture, tracing its development over several decades and highlighting the structural and material strategies envisioned to realize it in built and unbuilt works. Through the idea of structurally expressive modern architecture, this dissertation establishes a discussion of Nowicki's approach to architecture and offers a means to gain a greater understanding of the postwar modern architecture to which he was a contributor.

Chapter 1 defines the theoretical position of Nowicki's structurally expressive modern architecture, focusing on the culmination of his ideas in the article “Origins and Trends in Modern Architecture,” presented as a lecture in 1950 and published soon after his death.

Chapter 2 addresses Nowicki's childhood and early education, including a close examination of his thesis project and designs for a pilgrimage church on the outskirts of Warsaw. These projects demonstrate Nowicki's influences, and show his early explorations of structure as a determinant of form. Chapter 3 begins with the reconstruction of Warsaw. Designing and teaching in the underground system, Nowicki saw architecture as an act of resistance. Charged with reconstructing the city center after the war, Nowicki used expressed structural forms in his

architecture to shape a modern urban space, attuned to the humanistic use and experienced image of the city. By combining prefabricated office blocks with the rubble of destroyed buildings, contrasting low-lying buildings with skyscrapers and aligning a tension-roof assembly hall with a view of the river valley, Nowicki revealed his dependence on structure and material for the aesthetic appearance of the city, arising from both necessity and principle.

Chapter 4 addresses Nowicki's departure from Poland and arrival in the United States. It focuses on his work as a member of both the original and second design teams for the United Nations Headquarters. Despite significant political and budgetary restrictions, as well as the need to subordinate his work to the efforts of the team, Nowicki's influence on the project is most evident in highly visible structural modifications made to the Assembly Hall dome and interior.

Chapter 5 examines Nowicki's American design work. Settled in the United States, and teaching in North Carolina, Nowicki began to build a significant practice. Through his work with Clarence Stein, Nowicki showed a willingness to experiment structurally, embracing a flexible structural perspective that is not driven by efficiency alone, but rather the dynamic interaction of structure, space and program. During a summer designing with Eero Saarinen, Nowicki made significant design contributions to Brandeis University, and left a lasting influence on Saarinen's architectural career. Chapter 6 addresses Nowicki's work at the North Carolina State Fair, including the tension-hung roof of the Livestock Pavilion.

Chapter 7 addresses Nowicki's contributions to the Indian city of Chandigarh. Designing for a post-colonial city, with limited industrial technology, Nowicki embraced structural form as the primary symbol for the city – relying on structure to both shape and represent the knowledge, lifestyle and aspirations of the newly independent citizens. Chapter 8 describes the impact of

Nowicki's work after his death, focusing on particular architects and theorists who were profoundly affected by his work.

Chapter 9 reflects on Nowicki's structurally expressive modern architecture. It also reiterates the significance of Matthew Nowicki and his contribution to a nuanced understanding of postwar architectural design.

Literature Review: Structure in Modern Architecture

This dissertation's theme of Nowicki's structurally expressive modern architecture brings the role of structure in architecture to the forefront. Thus, this dissertation engages the long-standing relationship between the architecture and structural engineering, especially as it pertains to the development of modern architecture.

Nowicki explicitly looked to the beginnings of modern architecture in the late 19th century as an inspiration for his work. During this time, many individuals professed faith in new technologies and structural techniques to drive a new way of building. Eugene Emmanuel Viollet-le-Duc stated that architecture must be necessarily "true" to the program of a building and the methods of construction – a "structural rationalism."¹²¹ Joseph Paxton, in his designs for the Crystal Palace, used the modular assembly of prefabricated elements that collectively defined the architecture of an expansive pavilion. Gustav Eiffel applied his expertise from bridge building to design a monumental tower with a shape derived from structural forces. Despite their significant differences, these designers all emphasized structure in their own way. Nowicki admired the work of these nineteenth century designers, and in many ways saw himself as reviving their design approach in the post World War II era.

In the first two decades of the 20th century, architects like Auguste Perret and Tony Garnier experimented with the spatial and tactile potential of reinforced concrete as an expressive medium. In 1923, Le Corbusier first published *Vers une architecture*, an architecture treatise celebrating the “Engineer’s Aesthetic.”

The engineer’s aesthetic and architecture, are two things that march together and follow one from the other: the one being now at its full height, the other in an unhappy state of retrogression. ... The engineer, inspired by the law of Economy and governed by mathematical calculation, puts us in accord with universal law. The architect, by his arrangement of forms, realizes an order which is a pure creation of his spirit.¹²²

Le Corbusier looked to engineers (at least theoretically) for a new way forward in architecture. He acknowledged their link, as they “march together,” yet did not aspire to become an engineer nor accept completely engineering design as architecture, highlighting their different design roles. However, he sees engineering, when operating in accordance to “universal,” “natural law,” creating harmony and under these circumstances “our engineers produce architecture.”¹²³

This sentiment is echoed by another prominent figure in the emergence of architectural Modernism, art historian and writer Sigfried Giedion. Through a variety of publications including *Building in France, building iron, building in ferroconcrete* (1928) Giedion emphasized the connection between “construction” and the developing modern “architecture.” In *Space, Time and Architecture*, (1st ed. 1941), Giedion described the material and structural elements of architecture (its “construction”) as “the subconscious of architecture.”¹²⁴ While the “modern engineering constructions” certainly have “useful purposes,” they also contain “feeling” that is “prophetic of architectonic expressions which come later.”¹²⁵ In Giedion's interpretation, structure is not simply about serving a purpose, but also expressing the physical nature of the

built world. This approach to structure is consistent with Giedion's overall attempt to unify the separation between "thinking and feeling" in modern architecture.¹²⁶ Giedion felt that construction is where architecture begins (and town planning is where it ends). "The new potentialities of the period are shown much more clearly in its engineering constructions than in its strictly architectural works... it is construction and not architecture which offers the best guide posts through the century."¹²⁷

Thus, some theories of Modern architecture, from its coalescence in the 1920s, have always argued for a close relationship between architecture and engineering, particularly between architectural form and structure. However, precise interpretations varied depending on the interpretation by individual writers. One architect who forged a particularly close tie between the two was Ludwig Mies van der Rohe (1886-1969). In the 1920s, Mies expressed a belief in paying attention to the "honest" use of structural materials to develop a "skin and bones" architecture – where concrete and steel became the structural "bones" and curtain wall glass became a "skin."¹²⁸ As he developed his career in the United States, Mies became particularly interested in the relationship between structure and architecture, seeing structure as way to clearly conceive a building. "To me, structure is something like logic. It is the best way to do things (architecture) and to express them."¹²⁹ Mies also found meaning and social significance in the appropriate use of structure and technology. "Wherever technology reaches its real fulfillment, it transcends in to architecture... (Architecture) is the crystallization of its inner structure."¹³⁰ Mies focused on structure and a belief in "universal space" (one where the uncertainty of future use called for an adaptable building space). As a result, Mies designing remarkably similar buildings with significantly different functions – a major point that Nowicki would come to criticize. In a sense, Mies can serve as a useful "foil" for Nowicki's ideas and

work; they shared many ideas on the integration of structure and architecture, yet Mies focused on refinement of a few simple types and perfection of repetitive details, while Nowicki would create a variety of structurally expressive forms.

Structure maintained a presence in the discussions of modern architecture through the 1940s, even as other aspects of architecture were criticized.

Thus, Nowicki's approach to modern architecture aligned with ideas that were developing during the War such as searching for a different approach to modern architecture through structure. Yet, Nowicki's work had attributes that set it apart. This dissertation argues that Nowicki shared a belief in the adaptability of architecture (to accommodate unknown future uses), but he argued for a structurally expressive Modern architecture that could provide a diversity of form. This position contrasts with many earlier approaches to structure. While Viljolet-le-Duc stated that "aesthetic questions" were only secondary to rational decisions, Nowicki openly embraced aesthetic considerations in his structural choices. While Mies focused on repetition and refinement of a few basic form types and stated, "if something works, why change it", Nowicki opposingly stated that "every opportunity stands alone." With many structural options to choose from, Nowicki evaluated different structural forms on their appearance and human-centered reception.

Nowicki's writings also speak to a deeper consideration of architecture and structure, beyond functionalism or material culture. As built, structural form responding to the forces of gravity and climate as well as human comfort, structurally expressive Modern architecture had the power, both physical and symbolically, to provide permanence in the face of social and political uncertainty, yet accommodate the diverse needs of a rapidly changing world. This argument is further discussed in Chapter 1.

Literature Review: Writings by Matthew Nowicki

Nowicki published three articles, in Polish, in the magazine *Skarpa*, in fall 1945, after World War II, but before leaving Warsaw. The most significant of these articles “W poszukiwaniu nowego funkcjonalizmu” (“In Search of a New Functionalism”) describes the emergence of his structurally expressive Modern architecture in the wake of World War II.¹³¹ In this article, Nowicki stated that “while believing in the immortality of the building, we must realize that its current program will often be just a short episode in its entire lifespan. A new functionalism will come which can not be foreseen.” Looking to embody both “the transient and permanent values” of a civilization, Nowicki argued for “construction” as the point of departure for “inspiration for designing new genuine forms.”

The other two articles "O sztuce umiaru" ("The Art of Moderation") and “Uspolecznienie architektury” (“Socialization of Architecture”) address the role of architecture within civilizations, emphasizing how even new architecture is tied to its time of construction (more than its individual author), and how healthy cities require good architecture.¹³² Both articles show the early influence of Lewis Mumford on Nowicki.

Other articles in the same journal, titled “Praca architektoniczna - srodmiescie Warszawy” (“Architectural Work – Downtown Warsaw”) and “Na marginesie projektu” (“A side Project”) were written by journalist Wanda Telakowski (in November 1945) and describe Nowicki’s conceptual design work for the city center as part of the Warsaw reconstruction effort. Telakowski stated that Nowicki's designs are the preparatory stage for the specific design of individual buildings – discussing the overall composition of the city (layout, building heights, relationship to the river) and differences between districts (business, civic, residential).

In February 1947, the British journal, *Building* republished Nowicki's sketches, plans and models for the reconstruction of Warsaw with a new description by Nowicki.¹³³ The article, simply titled "Warsaw" contains an introduction by the British modernist Sir Charles Reilly.¹³⁴ Many of Nowicki's sketches that appeared in the earlier *Skarpa* article were included. Nowicki described his sketches, including perspective and eye-level views of a new Warsaw, as a "visual example of the future city".¹³⁵ Sensing the impending Soviet takeover, Nowicki chose to leave Poland for the United States in fall 1946 by accepting a Consulate position in Chicago.

Between 1946 and 1948, after arriving in the United States, Nowicki often spoke on the Warsaw reconstruction project, to a variety of audiences, but none of his lectures were published. An unpublished manuscript of one speech, titled "Speech on Warsaw Reconstruction," given to the Architectural League of New York in August 1947, is found in the "Wallace K. Harrison Architectural Drawings and Papers," in the Avery Library at Columbia University. The speech describes Nowicki's engagement with city planners in determining the architectural layout for the city center, and notes the general principles of the reconstruction effort. Speaking as a representative of Poland, Nowicki did not give much attention to his own contributions (though he did address his design of the business district), focusing on the broader issues facing the city such as land values and financing.

On May 26, 1948, Nowicki gave a lecture at the Pratt Institute of Design, titled "Remarks on the Problem of Composition in Modern Architecture." In this talk Nowicki argued the need for composition in modern architecture, a subject often disregarded in favor of a "functionally-driven" layout and form. The unpublished manuscript is found in the "Douglas Putnam Haskell Papers," in the Avery Library at Columbia. Nowicki gave the same speech in May to the Pennsylvania Society of Architects, and they partially published it in their newsletter *Charette* in

June.¹³⁶ These lectures formed the basis for Nowicki's article "Composition in Modern Architecture," published in March 1949 in the *Magazine of Art*.¹³⁷ Much of Nowicki's earlier arguments from the Polish journal *Skarpa* were re-communicated here.

In 1948, Nowicki collaborated with Helene and Szymon Syrkus for an article in the Harvard Graduate School of Design publication *Task*, titled "Reconstruction: Warsaw."¹³⁸ This article contained a description of the rebuilding efforts of Warsaw, including the organization of Warsaw in to "neighborhood units," the development of a "City-Region" transportation network for expansion ,and extensive "Neighborhood planning" statistics. Nowicki included his plans and sketches for the Warsaw business district, but given the tone and focus on a "Functional Warsaw" (Syrkus' earlier proposal to CIAM), it is unclear what Nowicki's contributions to the text may have been.

In November 1948, while a member of the United Nations Headquarters Design Team, Nowicki wrote a review of the *Manual on Wood Construction for Prefabricated Houses*, a product manual issued by the Forest Products Laboratory of the Department of Agriculture.¹³⁹ This review was published in the first Bulletin of the United Nations publication *Housing and Town and Country Planning*, issued by its Department of Social Affairs. Many of Nowicki's statements here may have derived from his previous proposals for prefabrication in his Warsaw designs, but demonstrate his openness to new structural systems and construction technologies.

In fall 1948 and spring 1949, Nowicki developed the curriculum for the North Carolina State College, School of Design, summarized in a *Bulletin* published by the school in summer of 1949.¹⁴⁰ This extensive document, with heavy influence and commentary by Lewis Mumford, Clarence Stein, Albert Mayer and others, outlined a Modern architecture curriculum contemporary with ones developed at the Harvard GSD (by Gropius and Hudnut) and IIT (by

Mies, Hilberseimer and Moholy-Nagy). The intent was to create an “American” architecture school, based on the “organic” approach promoted by Lewis Mumford.

With his wife, Stanislava, Matthew Nowicki illustrated two books titled *Eleanor of Aquitaine* by Curtis How Walker and *Made in Poland: Living tradition of the Land* by Lousie Llewellyn Jarecka.¹⁴¹ In these strictly illustrative ventures, Matthew and Stanislava developed a shared signature “M.S. Nowicki.” Their illustrations (maps, historical scenes, individuals) compliment the historical texts written by others.

In January 1950, Nowicki wrote a review of Henry-Russell Hitchcock’s book *Painting Toward Architecture*, which was published in the *Magazine of Art*. Nowicki had previously published his “Composition in Modern architecture” article in the *Magazine of Art*, and knew Hitchcock from the “What’s Happening to Modern Architecture?” symposium. Hitchcock’s book outlined the contributions of painting to the modern space conceptions in architecture.¹⁴² Nowicki’s review celebrated Hitchcock’s book, praising the awareness Hitchcock brings to the influence of painting on early modern work, calling it a “significant step in the growing maturity and self-consciousness of a civilization.” Moving forward however, Nowicki argued elsewhere that architecture should look away from painting and other two-dimensional media and more towards structure and construction.

In early 1950, Nowicki was hired by the American firm of Mayer and Whittesley to assist in the architectural design of the Indian city Chandigarh. As a part of the design team with Albert Mayer, Clarence Stein and others, Nowicki wrote several documents that show his approach to the new city. On March 15, 1950, Nowicki wrote a letter to Albert Mayer critiquing their own planning process for Chandigarh. In it, Nowicki described his theory of “the holiday and the everyday” as the defining functions of any great city (the play and the work) and

addressed their implications for the design. This letter was republished much later in 1959 in the Yale journal *Perspecta*.¹⁴³ The reasons for its republication are not apparent, although Chandigarh (after Le Corbusier took over) was a widely discussed topic, and Nowicki's comments provide an interesting alternative perspective. In this vein, his "Supplementary notes to the Architectural study of super-block L-37," were part of a larger "Report on Master Plan of the New Punjab Capital" issued by Albert Mayer and Julian Whittesley on May 12, 1950.¹⁴⁴ These comments describe the basis for his architectural designs, focused on creating a vibrant, socially active city that can adapt to future change.

Nowicki's comments on Chandigarh are also found in the "Report on the designs of the Capital city of East Punjab," found in the *Meeting Minutes of the Capitol Sub Committee of the Cabinet*, Simla, dated August 9, 1950. This report is found in the archives of the Chandigarh Government Museum and Art Gallery (Sub Committee Meetings 1949-50). These brief comments re-present Nowicki's design principles discussed in the "Supplementary Notes," and discuss the construction difficulties of India.

Nowicki's final piece of writing was published after his death. The article, titled "Origins and Trends in Modern Architecture" appeared in the November 1951 issue of the *Magazine of Art*.¹⁴⁵ Lewis Mumford facilitated the publication, although the editorial board contained several architects and writers who had previous contact with Nowicki, including Henry-Russell Hitchcock and Philip Johnson. (This article is discussed in depth in the next chapter.)

In 1951, the first issue of a student publication of the North Carolina State College, School of Design (Raleigh, NC) was dedicated to remembering Matthew Nowicki.¹⁴⁶ The publication included an introduction by Lewis Mumford, in which he declared that Nowicki's architecture "recognized no provinciality of time or place or method: it took the measure of man

and sought to bring together the regional and the universal, the mechanical and the personal.” The publication also included a reprinting of Nowicki’s “Origins and Trends in Modern Architecture,” under the alternate title of “Exactitude and Flexibility.” The publication also included studies done by Nowicki for the North Carolina State Fair and Chandigarh. Fellow professor George Qualls wrote an essay on Nowicki’s teaching, titled “—and gladly teach.” His collaborator on the Livestock Pavilion, William H. Deitrick wrote an essay titled “Matthew at the Fair,” and Albert Mayer, the lead planner with the Chandigarh project, provided an essay titled “Matthew’s Last Eight Weeks were Spent in India.”

Literature Review: Publication of Nowicki’s work by others

Nowicki’s work was published by others both during his life and in the years immediately following. In 1946, Nowicki’s Warsaw work was published in the booklet “Warsaw Lives Again!” by Stanislaw Albrect. The published images of Warsaw city center are identical in Nowicki’s earlier publication in the journal *Building*, though Nowicki’s name was included.¹⁴⁷ Similarly, in the June issue of *Architectural Forum*, the article “Warsaw’s Long Heroic History” includes images of Nowicki’s Warsaw models and incorporates his design into a larger map of the Region, though no specific credit to Nowicki was given. The lack of credit was not unique to Nowicki, as many designers worked on different aspects of the Warsaw reconstruction and also went unacknowledged.

In April 1947, the British magazine *Building*, published “A Polish Church” designed by Nowicki.¹⁴⁸ This church, listed as designed by Nowicki with “S. S. Putowski,” was intended for a “site on a well-known pilgrimage center,” and displayed extensive use of reinforced concrete

and an innovative structure, inspired by Gothic cathedrals. Its design is discussed in detail in Chapter 2.

In January 1948, the French journal *Architecture D'aujourd'hui* published Nowicki's design (sketches and model) for a chapel in rural Poland.¹⁴⁹ This chapel, at a site where Nowicki took refuge during World War II, is also described in an un-published letter to Douglas Haskell, written while Nowicki was seeking publication in *Architectural Record*. Haskell was associate editor of *Architectural Record* at the time (1948), though he would become the editor of *Architectural Forum* in 1949. Nowicki called the building an example of "regional architecture," in which he looked to local materials and traditions to shape the structure of the church.

In August 1949, the magazine *Architectural Forum* asked Nowicki to design prototype schools using inexpensive "warehouse construction."¹⁵⁰ The results of Nowicki's designs were published in an article titled "Forum's School for 1950." In two designs (one with simple framing, one using a lift-slab technique), Nowicki started with available materials and structural forms, and used those elements to accommodate the necessary program.

In fall 1950, Nowicki's contributions to the design of Brandeis University, undertaken with Eero Saarinen were published in a booklet titled "A Foundation for Learning."¹⁵¹ While listing "Eero Saarinen and Associates" as architects, the booklet acknowledges "the late Matthew Nowicki collaborated in the development of the design." Nowicki's sketches heavily illustrate the booklet, providing plans, eye-level perspectives and interior views for all of the major buildings. The Brandeis project was republished in the journal *American School and University*, in October 1951 – again making extensive use of Nowicki's drawings, but this time without explicit credit given.¹⁵²

Nowicki's death was widely reported. The front page of the *New York Times* reported the TWA crash that killed Nowicki while returning from India on September 1 – “Airliner Crash in Egypt Kills 55; 23 of the Victims Were Americans”. On page 12, detailing the passengers lost, the paper described Nowicki as “acting head of the Architecture Department of the School of Design of North Carolina State College,” and “carrying with him plans for a new capital city for the Punjab province of India.”

On September 27, 1950 the Museum of Modern Art in New York City opened an exhibition of Nowicki's work, curated by Philip Johnson as a “tribute to the young Polish architect who was killed in a plane crash last August.” The exhibition included models and sketches of Chandigarh, Columbus Circle, the North Carolina State Fairgrounds, and the Los Angeles Shopping Center.

In October 1950, *Architectural Forum* published a four-page obituary for Nowicki, reproducing the projects presented at the MoMA exhibition.¹⁵³ The article included memorial quotes from Wallace K. Harrison, William H. Deitrick, Eero Saarinen and Lewis Mumford – all praised Nowicki's skill and promise as an architect.

Literature Review: Writings by Lewis Mumford

During his education Nowicki had discovered major source of inspiration in the work of Lewis Mumford (1895-1990). While in Poland, Nowicki read Mumford's seminal works *Culture of Cities* and *Technics and Civilization* (discussed below), and referred to them as his “bible” during his redesign of Warsaw. Once in the United States, the two men became fast friends, and forged a close professional and personal relationship. Mumford had lost his son, Geddes, in World War II, and shortly after, developed a father-son type relationship with

Nowicki. Mumford was a key component of Nowicki's success in the United States, recommending him for the position in North Carolina. Mumford (a non-architect) felt that Nowicki's architecture was the embodiment of his own technological and societal views – a perfect blend of Frank Lloyd Wright and Le Corbusier – a sentiment only reinforced by Nowicki's deep respect for Mumford's writing.¹⁵⁴

As a writer and theorist, Mumford fused a critical reflection of architecture and urban design with an understanding of the technological capabilities and social aspirations of different cultures. Mumford was influenced very early on by the writings of the Scottish biologist and planner Patrick Geddes, and their on-going correspondence established a shared desire for a close relationship between human development and natural systems.¹⁵⁵ Although he studied at the City College of New York, Mumford never completed his degree. In his 1922 *The Story of Utopias*, Mumford provided a survey of the concept of utopia and showed its manifestations in subsequent urban plans.¹⁵⁶ *Sticks and Stones*, published in 1924, was one of the first studies of American architecture and civilization.¹⁵⁷ Highly critical of the Beaux-Arts tradition in architecture, Mumford argued for an indigenous American approach to architecture, divorced from historical styles.

In 1925, he founded the Regional Planners Association of America (RPAA) along with Clarence Stein, Henry Wright, and Albert Mayer, and became its primary critical voice.¹⁵⁸ The RPAA provided an American urban planning counterpoint to the work of the Europe-based CIAM. Rooted in the Garden City ideal of the British theorist Ebenezer Howard, the RPAA promoted a more dispersed city model, arguing for lower density housing and curvilinear road networks (intended to reduce monotonous repetition), all integrated with large tracts of green space. Covering larger areas of land, this approach was part of a larger model for regional

development, a cause Mumford would describe in his later *Culture of Cities*, and champion his whole life.¹⁵⁹

Mumford's *Brown Decades*, published in 1931, established him as a formidable critic of architecture as well.¹⁶⁰ Described as a study of the "building arts" between 1865 and 1895, the book surveyed the work of Louis Sullivan, Frank Lloyd Wright and Henry Hobson Richardson, establishing their connection to technology, material and structure, again claiming their work as distinctly American.

Beginning in 1931, Mumford wrote a regular column in the *The New Yorker* "Skyline," a column that established him as an important critic of architecture and urban planning in the United States.¹⁶¹ His columns were widely read and initiated discussions surrounding many different topics including the United Nations Headquarters, the atomic bomb, and regionalism in architecture (discussed below).

In 1934, Mumford published *Technics and Civilizations*, a work that discussed "the material basis and the cultural forms of Western civilization" and how they have been "profoundly modified by the development of the machine."¹⁶² Mumford was interested in taking a historical view, to "set modern technics in a larger historical framework" and correlate technological changes with "changes taking place in the mind." Mumford divided the development of modern civilization into three different phases – eotechnic, paleotechnic and neotechnic – each with its own level of engagement with technology.

The publication of *The Culture of Cities* in 1938, just a few years before the outbreak of World War II in 1939, served as a culmination of Mumford's ideas on urban development.¹⁶³ This work presented a historical survey of the development of cities, and described his approach to city planning organized around the idea of the region. The regional approach intended to

restore the “organic order” of life by recognizing the interdependencies of different cities and communities. Mumford looked to the natural connections between distinct, functional places (industrial zones, agricultural regions, residential districts) and the natural, existing ecological conditions (mountains, rivers, natural resources) to guide development. Separating functional districts with expansive greenbelts extended the city into the surrounding country.

At this time, Mumford was resisted the idea of permanence in modern design. As described in his “Death of the Monument” (published in *Culture of Cities*, 1939), Mumford felt that more that “energy” a community put into “immobilized” structures, the less able it was to adapt to changing needs.¹⁶⁴ His “distrust of the monumental” came from his belief that societies must continually change, and not remain tied to the static forms of the past. This position conflicts with Nowicki’s later promotion of permanence and stability in architecture – indicating a difference of opinion between the two men.

Mumford continued to publish throughout the rest of Matthew Nowicki’s life. In 1948, he published his Skyline column titled “The Architecture of the Bay Region” which set off a large debate surrounding regionalism in Modern architecture, and generating the MoMA symposium “What is Happening to Modern Architecture?” in February 1949. His 1949 article in *The Town Planning Review*, “Planning for the Phases of Life,” described how planners should consider the changes that take place during the course of human life, from infancy through maturity.¹⁶⁵ In 1949, Mumford also published “Monumentalism, Symbolism and Style” in *Architectural Review*. After Nowicki’s death, Mumford published “The Skyline: In Memoriam”, in November of 1950.

Nowicki had a profound effect on Mumford, who regularly referenced Nowicki in his later writings. In his 1951 article “Function and Expression,” published in *Architectural Record*,

after discussing Frank Lloyd Wright, Mumford claimed “the architect who perhaps came closest to resolving function and expression was the late Matthew Nowicki.”¹⁶⁶ Mumford devoted the final four paragraphs to describing how Nowicki “was equipped to reconcile the abstract-rational and the personal.” In 1952, Mumford edited a volume of essays titled *Roots of Contemporary American Architecture*, and included both Nowicki’s articles “Composition in Modern Architecture” and “Origins and Trends in Modern Architecture.”

Mumford’s major homage to Nowicki came in 1954, in the form of a four-part article on “The Life, the Teaching, and the Architecture of Matthew Nowicki”, published in the June, July, August and September issues of *Architectural Record*. Mumford’s account of Nowicki’s life and career is deeply biased by Mumford’s own views on architecture and his great sadness following Nowicki’s death.

In 1958, Mumford published an article in the Indian magazine *Design*, titled “The Work of Matthew Nowicki in India” – largely a republication of the final part of the *Architectural Record* series. Mumford remained in contact with Nowicki’s widow, Stanislava Nowicki, after his death, helping her settle into a teaching position at University of Pennsylvania.

Chandigarh Literature

Nowicki has been given marginal treatment in the wide range of literature on the city of Chandigarh, most significantly by Norma Evenson (1966) as mentioned above. Ravi Kalia, in his 1999 *Chandigarh: The Making of an Indian City*, criticized Nowicki’s capital complex as overly monumental, but praises his “talent” in the “planning of the residential superblocks.”¹⁶⁷ In 2002, Vikramaditya Prakash only briefly mentioned Nowicki’s contributions, describing his designs as “intimate urban environments” with a vague ‘Indian’ feel to them.¹⁶⁸ Nihal Perera in

his 2004 article “Contesting Visions,” published in *Planning Perspectives*, specifically highlights “the significant role played by Nowicki” in creating the first vision for Chandigarh, “demonstrating great sensitivity” to working in India.¹⁶⁹ Tridib Banerjee in a 2009 article, “US Planning expeditions to postcolonial India,” published in the *Journal of the American Planning Association*, recalled Mayer and Nowicki’s contributions to Chandigarh, claiming, “the sudden death of Nowicki ended the possibilities for further refining the Mayer plan to define a modern urbanism rooted in India’s tradition.”¹⁷⁰

Dissertation Resources and Archives

The foundational research for this dissertation has come from a wide variety of sources including archival documentation, site visits to both Chandigarh and North Carolina State University, interviews with MN Sharma (an Indian architect and former collaborator of Nowicki’s) and Marvin Malecha (dean of the School of Design, North Carolina State University),

Many references to Matthew Nowicki are found in the Clarence Stein Papers, (#3600) at the Division of Rare and Manuscript Collections, Cornell University Library, which I visited in fall 2011. This collection contains correspondence between Stein and Nowicki, as well as correspondence with Lewis Mumford, and Albert Mayer. The letters between Clarence Stein and his wife also offered insight into the working relationship between Nowicki and Stein. The archive contains documentation (sketches, photos, correspondence) of their collaborative projects (Columbus Circle, Southern California markets) and a limited number of references to the Chandigarh project.

The Albert Mayer Papers on India, in the Special Collection Research Center, University of Chicago Library, offered many references to Mayer's work with Nowicki. Correspondence between Mayer and Nowicki describes the origin of their engagement (through the RDCA) and a fragmented account of their working process. Also, the documents and reports produced for the government of Punjab contain Nowicki's "Supplementary Notes on Superblock L-57", and other shorter notes about Nowicki's ideas for the new capital city. These documents were identified through online finding aides and duplicates were received by mail.

Nowicki's guiding relationship with Lewis Mumford is found in their correspondence, kept among the Lewis Mumford Papers, in the Rare Book and Manuscript Library, at the University of Pennsylvania. These letters are well dated and establish a chronology of their time together. The Mumford papers also contain letters between Mumford and Nowicki's wife, Stanislava, after Matthew's death addressing Mumford's efforts to help her. Mumford also had significant correspondence with Dean Henry Kamphoefner at the North Carolina State College, and their efforts to establish a new curriculum at the school. Again, duplicates of this material were received by mail.

The Matthew Nowicki Drawings and Other Material (1944-2002) at the Special Collections Research Center, North Carolina State University Libraries, contain the largest stock of Nowicki's drawings and original work in the United States. While containing very little written material, this collection provided an opportunity to closely study Nowicki's design process for the NC State Fair project, and to a lesser extent, Chandigarh. Only a few original Chandigarh drawings are included. The archives also contain the construction documents for the Dorton Arena (architectural and structural). I visited these archives in fall 2011.

References to Nowicki are also found in the Wallace K. Harrison Architectural Drawings and Papers (1913-1986), in the Avery Architectural & Fine Arts Library, at Columbia University. Related through their work on the United Nations, the Harrison Papers contain three published speeches given by Nowicki: one on “The Creation of Neighborhoods”, one on the planning process for the United Nations, and one on the reconstruction of Warsaw. These documents provide valuable text to the reported delivery of these speeches, but do not illuminate Nowicki’s specific involvement with the UN after the First Design team. There is no correspondence between Harrison and Nowicki, nor meeting minutes, notes or drawings

The Douglass Putnam Haskell Papers (1866-1979) in the Avery Architectural & Fine Arts Library, also at Columbia University, provide a similar level of documentation on Nowicki’s work. As the editor of *Architectural Record*, and *Architectural Forum*, Haskell’s Papers contain an unpublished lecture “Remarks on the Problem of Composition in Modern Architecture,” a manuscript of Nowicki’s future publication. The Papers also contain Nowicki’s sketches and description of his “regional chapel” which he hoped to have published in *Architectural Record*.

During my visit to Chandigarh, I collected documentation from the Chandigarh Architecture Museum, regarding the creation of the city and the contributions of the Mayer-Nowicki team. The majority of documents are in the form of original sketches done by Nowicki during his eight weeks in India. Most of these sketches had already been published in Norma Evenson’s *Chandigarh* (1966), but a limited number of new sketches were found.

The nearby Chandigarh Art Museum and Reference Library contains some documentation of the early design process, with the majority documenting the city after Nowicki’s death. One volume titled “Cabinet Sub-Committee on Capital Agenda & Minutes

Etc., 1949-50” contains references to the Mayer plan. This volume has several mentions of Nowicki (copied on Committee minutes, present in planning meetings) and one document written by Nowicki titled “Report on the designs of the Capital City of East Punjab by Mr. Matthew Nowicki.” This report outlines his design strategy for the city – similar to the report found in the Mayer papers, but with a few more specifics in his approach. The report also indicates his frustrations with the lack of staff and resources that had been requested and were needed to complete the design work.

¹ Matthew Nowicki, "Origins and Trends in Modern Architecture," *Magazine of Art* 44 (1951): 273-279.

² Aline Louchheim, “Nowicki Drawings at the Modern Art.” *New York Times*, September 28, 1950. 35.

³ Ibid.

⁴ Lewis A. Coser, *Refugee Scholars in America: Their Impact and Their Experiences* (New Haven: Yale University Press, 1984).

⁵ Wendell L. Willkie, *One world* (New York, N.Y.: Simon and Schuster, 1943)

⁶ Sigfried Giedion, *Mechanization Takes Command* (Oxford: Oxford University Press, 1948), 714.

⁷ Modern architecture, or simply Modernism, is referenced in this dissertation with a capital "M".

⁸ Sigfried Giedion, *Space, Time and Architecture: The Growth of a New Tradition* (Cambridge: Harvard University, 1941), 184-190. Also see Frank Ching, Mark Jarzombek, and Vikramaditya Prakash, *A Global History of Architecture* (Hoboken, N.J.: J. Wiley & Sons, 2007), 632. Also William J. R. Curtis, *Modern Architecture Since 1900*, 3rd ed. (London: Phaidon, 1996), 38.

⁹ The exhibition marked a “climax” of earlier developments in construction techniques. Giedion, *Space, Time and Architecture*, 202-206.

¹⁰ Meredith L. Clausen, *Frantz Jourdain and the Samaritaine: Art Nouveau Theory and Criticism* (Leiden: E. J. Brill, 1987).

¹¹ Many scholars state 1890 as a pivotal moment in Modern architecture. William Curtis cites the 1890s as a time when “many movements professing value of the ‘new’ came into being,” before discussing the Art Nouveau, Antoni Gaudi and Adolf Loos and the rejection of historical ornament. Frampton cites Louis Sullivan’s “Ornament in Architecture” (1892) as a self-conscious departure from ornamented buildings. Kenneth Frampton, *Modern Architecture: A Critical History*, 3rd ed. (London: Thames and Hudson, 1992), 51. Also see Curtis, *Modern Architecture*, 21-36. Jean Louis Cohen begins his discussion of Modernism in 1889. Jean-Louis Cohen, *The Future of Architecture Since 1889*. (London: Phaidon, 2012).

¹² Jean-Louis Cohen, *The Future of Architecture Since 1889* (London: Phaidon, 2012).

¹³ Curtis credits cubist painters with “allowing space and form to come to new forms”, and effect eventually felt in architecture. Curtis, *Modern Architecture Since 1900*, 151.

¹⁴ Ching, Jarzombek, and Prakash emphasize the work of CIAM, arising from the lost competition for the League of Nations Building in 1927, as a “banding together” of Modernist architects. (*A Global History of Architecture*, 730).

¹⁵ Gropius “advocated a workshop based design education for both designers and craftsman” in 1919, while by 1923 “emphasis was placed on deriving form from productive method, material constraint and programmatic necessity.” Frampton, *Modern Architecture: A Critical History*, 123-128.

¹⁶ Le Corbusier stated “A house is a machine for living” – presenting a new conception of housing design. Le Corbusier, *Towards A New Architecture*, trans. Frederick Etchells (London: John Rodker, Publisher, 1927). Although commonly translated as *Towards a New Architecture*, others also present this publication as simply *Towards an Architecture* – suggesting less emphasis on the novelty of Modern architecture and more emphasis on a reconsideration of Architecture as a discipline.

¹⁷ Frampton described the movement in Russia as a “new collectivity.” Frampton, *Modern Architecture: A Critical History*, 167.

¹⁸ Frank Lloyd Wright has occupied a “curious” position in Modern architecture (see Curtis *Modern Architecture Since 1900*, 113) – both for his break with eclecticism and spatial conception, but also his separation (both geographically and socially) from European modernists in the 1920s.

¹⁹ Ching, Jarzombek, Prakash, *A Global History of Architecture*, 692.

²⁰ Curtis, *Modern Architecture Since 1900*, 198-99.

²¹ Henry Russell Hitchcock, and Philip Johnson, *The International Style: Architecture since 1922* (New York: W.W. Norton & Co., 1932).

²² Reyner Banham considered Frank Lloyd Wright one of the “Masters” of Modern Architecture. Reyner Banham, *Age of the Masters: A Personal View of Modern Architecture*. (New York: Harper & Row, 1962). Giedion described the work of Auguste Perret in detail, praising his “novel use of materials.” Giedion, *Space, Time and Architecture*.

²³ This included work by architects such as Richard Neutra in Los Angeles (Lovell House, 1927)

²⁴ Prakash describes the Brazilian modernism of the 1920s (Ching, Jarzombek, Prakash, *A Global History of Architecture*, 706). In Curtis (*Modern Architecture Since 1900*), Chapters 19 and 21 detail the spread of Modernism in the 1930s, including Mexico, and Brazil.

²⁵ Nikolaus Pevsner, *Pioneers of Modern Design: From William Morris to Walter Gropius*. (London: Faber, 1936). Also Giedion, *Space, Time, and Architecture*.

²⁶ Lewis Mumford, *The Culture of Cities* (New York: Harcourt, Brace and Co., 1938).

²⁷ Hudnut and Gropius at Harvard GSD attempted to unify Modern architecture, in the face of the older Beaux-Arts approach. Anthony Alofsin, *The Struggle for Modernism: Architecture, Landscape Architecture, and City Planning at Harvard* (New York: W.W. Norton, 2002), 154.

²⁸ *Ibid.* 195.

²⁹ Jill E. Pearlman, *Inventing American Modernism: Joseph Hudnut, Walter Gropius, and the Bauhaus Legacy at Harvard* (Charlottesville: University of Virginia Press, 2007), 200.

³⁰ *Ibid.* 201.

³¹ Joan Ockman, and Edward Eigen (eds), *Architecture Culture, 1943-1968: A Documentary Anthology*. (New York: Rizzoli, 1993), 13.

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- ³² Ibid. 13
- ³³ Sarah Williams Goldhagen, and Réjean Legault, *Anxious modernisms: experimentation in postwar architectural culture*. (Montréal: Canadian Centre for Architecture, 2000), 12.
- ³⁴ Ibid. 12.
- ³⁵ Ibid. 14.
- ³⁶ Alan Colquhoun, *Modern Architecture*. (Oxford: Oxford University Press, 2002), 231.
- ³⁷ Ibid. 233.
- ³⁸ This position conflicts with the statements of Sigfried Giedion, which emphasized an increased attention to community. In his essays on monumentality, Giedion called for modern architecture to provide for the communal needs of cities, rather than the purely functional or capitalist.
- ³⁹ Manfredo Tafuri, and Francesco Dal Co, *Modern Architecture*. (New York: H.N. Abrams, 1979), 305.
- ⁴⁰ Ibid. 305.
- ⁴¹ Ibid. 306.
- ⁴² Ibid. 366.
- ⁴³ Marvin Trachtenberg and Isabelle Hyman, *Architecture, from Prehistory to Postmodernity* (New York: Harry N. Abrams, 2002).
- ⁴⁴ Jean-Louis Cohen, *The Future of Architecture Since 1889* (London: Phaidon, 2012).
- ⁴⁵ Ibid.
- ⁴⁶ William J. R. Curtis, “Modern Architecture in the U.S.A.,” In William J. R. Curtis, *Modern Architecture since 1900*, 3rd ed., (London: Phaidon, 1996), 395-417.
- ⁴⁷ Ibid. 395.
- ⁴⁸ Ibid. 395.
- ⁴⁹ Ching, Jarzombek, Prakash *A Global History of Architecture*, 687.
- ⁵⁰ Ibid. 723.
- ⁵¹ Ibid. 723.
- ⁵² Frampton takes a variety of “interpretive stances” throughout his text. Frampton, *Modern Architecture*, 8.
- ⁵³ This article was intended for a publication in 1943, but never appeared. The authors circulated the article, and it was widely read. See J.L. Sert., F. Leger, S. Giedion, “Nine Points on Monumentality” in eds. Joan Ockman, and Edward Eigen *Architecture Culture, 1943-1968: a Documentary Anthology* (New York: Rizzoli, 1993), 27-29.
- ⁵⁴ ibid. 29.
- ⁵⁵ Ibid, 30.
- ⁵⁶ Ibid. 30.
- ⁵⁷ Sigfried Giedion, “The Need for Monumentality” in Paul Zucker, ed., *New Architecture and City Planning, A Symposium* (New York: Philosophical Library, 1944), 549-568.
- ⁵⁸ Ibid. 568.
- ⁵⁹ Louis I. Kahn, “Monumentality” (1944), republished in Louis I. Kahn, and Robert C. Twombly, *Louis Kahn: Essential Texts* (New York: W.W. Norton, 2003).
- ⁶⁰ Meredith L. Clausen, and Pietro Belluschi, *Pietro Belluschi: Modern American Architect* (Cambridge, Mass: MIT Press, 1994), 112-113.
- ⁶¹ Lewis Mumford, “The Sky Line: Status Quo [‘Bay Region Style’],” *New Yorker* (Oct. 11 1947): 104-10.

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- ⁶² Lewis Mumford, ed., *Roots of Contemporary American Architecture: A Series of Thirty-seven Essays dating from the Mid-nineteenth Century to the Present* (New York: Reinhold, 1952).
- ⁶³ Lewis Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” *Architectural Record*, 115 no. 6 – 116, no. 3 (June-September 1954).
- ⁶⁴ Lewis Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” *Architectural Record* 115, no. 6 (June 1954): 140.
- ⁶⁵ James Gowan, “Notes on American Architecture”, *Perspecta* 7(1961): 78-79
- ⁶⁶ Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966).
- ⁶⁷ *Ibid.* 24.
- ⁶⁸ Charles Jencks, *Modern Movements in Architecture* (New York: Anchor Press/ Doubleday, 1973).
- ⁶⁹ *Ibid.* 212.
- ⁷⁰ *Ibid.*
- ⁷¹ Matthew Nowicki and Bruce H. Schafer, *The Writings and Sketches of Matthew Nowicki* (Charlottesville: University Press of Virginia, 1973).
- ⁷² *Ibid.* 55.
- ⁷³ Colin Rowe, “Neo-‘Classicism’ and Modern Architecture I” in Colin Rowe, *The Mathematics of the Ideal Villa, and Other Essays* (Cambridge, Mass: MIT Press, 1976), 130.
- ⁷⁴ Denise Scott Brown, “The Redefinition of Functionalism” In Robert Venturi and Denise Scott Brown, *Architecture as Signs and Systems: For a Mannerist Time* (Cambridge: The Belknap Press of Harvard University Press, 2004), 162.
- ⁷⁵ *Ibid.*
- ⁷⁶ William Snaith, *Irresponsible Artists*, (New York: Atheneum, 1964), 116. Nowicki was also quoted in the poet Seldon Rodman’s 1957 *Conversations with Artists*. While “reflecting on the brilliance and monotony of modern architecture”, Rodman cited a quote from Nowicki (along with Christopher Tunnard, George Nakashima, and Walter Gropius) regarding the relationship of design to intellect, Seldon Rodman, “Poles of Architecture”, In Seldon Rodman, *Conversations with Artists* (New York: The Devin-Adair Co., 1957), 46.
- ⁷⁷ Ockman and Eigen, *Architecture Culture*, 149.
- ⁷⁸ *Ibid.* 149.
- ⁷⁹ *Ibid.* Ockman stated: “To the regular design curriculum he added humanities, stressing architectural history, regional studies, and human sciences at a time when most architecture schools were neglecting these disciplines.” Ockman and Eigen, *Architecture Culture*, 149.
- ⁸⁰ This reference comes from Lewis Mumford’s 1954 series of articles in *Architectural Record* describing the “Life, Teachings and Architecture of Matthew Nowicki.” The full quote reads: “Responding to the generous hospitality of his Southern neighbors, appreciating the genial simple ways he had found among them, he saw a chance to add to the gaiety as well as the dignity of their life by an architecture worthy of democracy: a new architecture such as Whitman had foretold.” Lewis Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” *Architectural Record* 116, no. 2 (1954): 175.
- ⁸¹ *Ibid.*
- ⁸² *ibid.*
- ⁸³ Lewis Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” *Architectural Record* 115, no. 6 – 116, no. 3 (June - September 1954)

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- ⁸⁴ Joan Ockman, "Form without utopia: contextualizing Colin Rowe." *Journal of the Society of Architectural Historians*. 57, no. 4 (1998): 448-456.
- ⁸⁵ Ibid. 451.
- ⁸⁶ Ibid. 451.
- ⁸⁷ Joan Ockman and Avigail Sachs, "1940-1968: Modernism Takes Command", in eds. Joan Ockman and Rebecca Williamson. *Architecture School: Three Centuries of Educating Architects in North America*. (Cambridge, Mass: MIT Press, 2012).
- ⁸⁸ Ibid 137.
- ⁸⁹ Ibid.
- ⁹⁰ See Nowicki's diagram, published in North Carolina State College, and Matthew Nowicki. *School of Design: North Carolina State College, Raleigh, N.C.* (Raleigh: NCSC Press, 1950). 12. Republished in Lewis Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki," *Architectural Record* 116, no 1 (1954): 128.
- ⁹¹ North Carolina State College, and Matthew Nowicki, *School of Design: North Carolina State College, Raleigh, N.C.* (Raleigh: NCSC Press, 1950), 10.
- ⁹² Joan Ockman and Avigail Sachs, "1940-1968: Modernism Takes Command", In. Joan Ockman, and Rebecca Williamson eds., *Architecture School: Three Centuries of Educating Architects in North America* (Cambridge, Mass: MIT Press, 2012), 137.
- ⁹³ "Parabolic Pavilion ... [North Carolina State Fair.: Livestock Judging Pavilion]" *Architectural Forum* 97(1952): 134-139.
- ⁹⁴ "The Great Livestock Pavilion Complete [Raleigh, N. Car.]" *Architectural Forum* 100(1954): 130-134.
- ⁹⁵ Ibid. 131.
- ⁹⁶ Originally published as *Zugbeanspruchte Konstruktionen* in German (volume 1 in 1962, volume 2 in 1966) the book was translated to English in 1973, as Frei Otto, Rudolf Trostel, and Friedrich Karl Schleyer, *Tensile Structures: Design, Structure, and Calculation of Buildings of Cables, Nets, and Membranes* (Cambridge, Mass: MIT Press, 1973). Otto's discussion of Nowicki's livestock pavilion is in volume 2, 56.
- ⁹⁷ Ibid. 56.
- ⁹⁸ Curt Siegel, *Structure and Form in Modern Architecture* (New York: Reinhold. Pub. Corp., 1962).
- ⁹⁹ Philip Drew, *Tensile Architecture* (Boulder, Colo: Westview Press, 1979), 153.
- ¹⁰⁰ Ibid. 166
- ¹⁰¹ Henry Petroski, *Pushing the Limits: New Adventures in Engineering* (New York: Knopf, 2004).
- ¹⁰² Ibid. 140.
- ¹⁰³ Andrew Saint, *Architect and Engineer: A Study in Sibling Rivalry* (New Haven [Conn.]: Yale University Press, 2007).
- ¹⁰⁴ I. Munghan and J. F. Abel, eds., *Fifty Years of Progress for Shell and Spatial Structures: In celebration of the 50th anniversary jubilee of the IASS (1959-2009)*. (Madrid: International Association for Shell and Spatial Structures, 2011).
- ¹⁰⁵ Harry Francis Mallgrave, *Modern Architectural Theory: A Historical Survey, 1673-1968* (Cambridge [UK]: Cambridge University Press, 2005), 339.
- ¹⁰⁶ Ibid. 339.

¹⁰⁷ Marta Urbanska, "Maciej Nowicki – humanista i wizjoner architektury; osobowość twórcza na tle epoki", (Cracow: Cracow University of Technology, Department of Architecture, 1999). Reference: http://www.biblos.pk.edu.pl/bc_zasoby&operation=details&id=2128

Translated Abstract: "The aim of the dissertation research is a critical analysis of the extensive oeuvre architect Maciej Nowicki and documenting his thesis on an anticipatory visionary architecture "which is yet to be born." Nowicki architectural feature is humanism. Projects, essays, projects focused on human needs, "the dynamic aspect of the new requirements," and "statistical, scale and value." The scope of work includes the analysis of the formation of an architect, a chronology of the life and work (with commentary) analysis of selected objects and architectural projects, architectural and urban planning, analysis and theoretical essay work."

¹⁰⁸ A five-page article summarizing the work was found in an online publication. Marta Urbanska "Maciej Nowicki: Humanist – Visionary and Architect" *Arch*, Polish Architects Association, no. 2 (July/August 2010.). Source: <http://www.sarp.org.pl/pliki/arch-02.pdf> Accessed: 21 January 2013.

¹⁰⁹ Tadeusz Barucki, and Maciej Nowicki, *Matthew Nowicki: Poland, USA, India* ([Warsaw]: Salix Alba, 2010).

¹¹⁰ Tadeusz Barucki. *Maciej Nowicki*. (Warszawa: Arkady, 1980).

¹¹¹ Tadeusz Barucki, *Architektura Polski*. (Warszawa: Arkady, 1985).

¹¹² Stefan Holowko, "Inspired Architect" *Polish Perspectives* 4, no. 6 (1961): 55-59.

¹¹³ Laura Pilarski, "Matthew Nowicki: Poet and Philosopher of Form," In Laura Pilarski *They Came from Poland: The Stories of Famous Polish-Americans*. (New York: Dodd, Mead, 1969.): 105-118

¹¹⁴ Jayne Merkel. *Eero Saarinen*. (London: Phaidon, 2005).

¹¹⁵ Ibid. 108.

¹¹⁶ Ibid. 108.

¹¹⁷ Eero Saarinen, Eeva-Liisa Pelkonen, and Donald Albrecht, *Eero Saarinen: Shaping the Future* (New Haven: Yale University Press, 2006), 267-270, 315.

¹¹⁸ Ibid. 332.

¹¹⁹ Timothy M Rohan, "Challenging the Curtain Wall: Paul Rudolph's Blue Cross and Blue Shield Building," *Journal of the Society of Architectural Historians* 66, no. 1 (2007): 84.

¹²⁰ Ibid. 98.

¹²¹ Frampton, *Modern Architecture*. 64

¹²² Le Corbusier, *Towards A New Architecture*, 1.

¹²³ Ibid.

¹²⁴ Giedion *Space Time and Architecture*, 24.

¹²⁵ Ibid. 24.

¹²⁶ Ibid. 24.

¹²⁷ Ibid. 24.

¹²⁸ Peter Blake. *The Master Builders*. (New York: Knopf, 1960), 28.

¹²⁹ Ludwig Mies van der Rohe, and Moisés Puente, *Conversations with Mies van der Rohe* (New York: Princeton Architectural Press, 2008), 31.

¹³⁰ Ibid. 8.

¹³¹ Maciej Nowicki, "W poszukiwaniu nowego funkcjonalizmu," *Skarpa* 3, no. 1 (1945): 2.

Maciej Nowicki, "Uspolecznienie architektury," *Skarpa* 5, no. 1 (1945): 2.

¹³² Maciej Nowicki, "O sztuce umiaru," *Skarpa* 5, no. 1 (1945): 4-5.

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- ¹³³ Matthew Nowicki and Charles Reilly, "Warsaw. Scheme for rebuilding business quarter," *Building* 22, no. 2 (1947): 46-51.
- ¹³⁴ Peter Richmond, *Marketing Modernisms: The Architecture and Influence of Charles Reilly* (Liverpool: Liverpool University Press, 2001).
- ¹³⁵ *ibid.*
- ¹³⁶ Matthew Nowicki, "Composition in Modern Architecture" *Charette: Pittsburgh's Journal of Architecture* 28, no. 4 (1948): 6.
- ¹³⁷ Matthew Nowicki, "Composition in Modern Architecture," *Magazine of Art* 42 (1949): 108-111.
- ¹³⁸ Matthew Nowicki, Szymon Syrkus, and Helene Syrkus, "Reconstruction: Warsaw," *Task* 7 (1948): 47-49.
- ¹³⁹ Maciej Nowicki, "Mass Production to Relieve Housing Shortages," review of *Manual on Wood Construction for Prefabricated Houses*, In United Nations Department of Social Affairs, *Housing and Town and Country Planning*, 1 (November 1948): 38-41.
- ¹⁴⁰ North Carolina State College, and Matthew Nowicki, *School of Design: North Carolina State College, Raleigh, N.C.* (Raleigh: NCSC Press, 1950).
- ¹⁴¹ Curtis How Walker, *Eleanor of Aquitaine* (Raleigh: NC State Press, 1949). Louise L. Jarecka, *Made in Poland: Living Traditions of the Land*. (New York: A.A. Knopf, 1949).
- ¹⁴² Matthew Nowicki, review of *Painting Toward Architecture* by Henry-Russell Hitchcock, *Magazine of Art* 43 (1950): 35-36.
- ¹⁴³ Mathew Nowicki, "[A Letter]," *Perspecta* 5 (1959): 23-25.
- ¹⁴⁴ Both documents are found in the "Albert Mayer Papers on India" in the University of Chicago Library. Box 18, Folder 28-29.
- ¹⁴⁵ Matthew Nowicki, "Origins and Trends in Modern Architecture," *Magazine of Art* 44 (1951): 273-279.
- ¹⁴⁶ James Brandt, Lewis Mumford, and George Qualls, "[Matthew Nowicki]." *North Carolina College of Design Student Publication* 1, no. 1 (1951).
- ¹⁴⁷ Stanislaw Albrecht, *Warsaw Lives Again!* (n.p.: Committee on Exhibition, "Warsaw lives again." 1946).
- ¹⁴⁸ Charles Reilly, "A Polish Church by Matthew Nowicki," *Building*, 22, no. 4 (1947): 110-113.
- ¹⁴⁹ Matthew Nowicki, "Chapelle a Laski, Pologne," *Architecture D'aujourd'hui* 19 (1948): 51-52.
- ¹⁵⁰ "Forum's School for 1950," *Architectural Forum* 91 (1949): 134-137.
- ¹⁵¹ Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University..* (Waltham, Mass: Brandeis University, 1950).
- ¹⁵² "Planning the Campus of Brandeis University." *American School and University*. 23rd Yearbook, (1951-1952) 313-326.
- ¹⁵³ "Obituary: Matthew Nowicki," *Architectural Forum* 93 (1950):200-201.
- ¹⁵⁴ The multiple letters between Nowicki and Mumford testify to this. They are found in the Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania. Donald L. Miller, *Lewis Mumford, A Life*. (New York: Weidenfeld & Nicolson, 1989).
- ¹⁵⁵ Evidence of the connection between Mumford and Geddes is described in Lewis Mumford, Patrick Geddes, and Frank G. Novak, *Lewis Mumford and Patrick Geddes: The Correspondence* (London: Routledge, 1995).
- ¹⁵⁶ Lewis Mumford, *The Story of Utopias*. (New York: Boni and Liveright, 1922).

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- ¹⁵⁷ Lewis Mumford, *Sticks and Stones: A Study of American Architecture and Civilization* (New York: Dover, 1924).
- ¹⁵⁸ Edward K. Spann, *Designing Modern America: The Regional Planning Association of America and its Members* (Columbus: Ohio State University Press, 1996).
- ¹⁵⁹ Mumford described the regional approach in many different places, including two chapters in *Culture of Cities* titled “The Regional Framework of Civilization” and “The politics of Regional Development”. Lewis Mumford, *The Culture of Cities*. (New York: Harcourt, Brace and Co., 1938): 300-401.
- ¹⁶⁰ Lewis Mumford, *The Brown Decades: A Study of the Arts in America, 1865-1895* (New York: Harcourt, Brace and Co, 1932).
- ¹⁶¹ Lewis Mumford, “Monumentalism, Symbolism and Style” *Architectural Review*, 105 (1949): 173-180.
- ¹⁶² Lewis Mumford, *Technics and Civilization* (New York: Harcourt, Brace and Co, 1934).
- ¹⁶³ Mumford, *The Culture of Cities*.
- ¹⁶⁴ Lewis Mumford, "The death of the monument" In J. L. Martin, Ben Nicholson, and N. Gabo, eds.. *Circle*, (London: Faber & Faber, 1937), 263-270.
- ¹⁶⁵ Lewis Mumford, “Planning for the Phases of Life”, In Lewis Mumford, *The Urban Prospect* [essays], (New York: Harcourt, Brace & World, 1968).
- ¹⁶⁶ Lewis Mumford. “Function and Expression,” *Architectural Record*, 109 (1951): 106-112.
- ¹⁶⁷ Ravi Kalia, *Chandigarh: The Making of an Indian City* (New Delhi: Oxford University Press, 1999).
- ¹⁶⁸ Vikramaditya Prakash, *Chandigarh's Le Corbusier: The Struggle for Modernity in Postcolonial India* (Seattle: University of Washington Press, 2002): 43.
- ¹⁶⁹ Nihal Perera, "Contesting Visions: Hybridity, Liminality and Authorship of the Chandigarh plan," *Planning Perspectives*. 19 no. 2 (2004): 175-199.
- ¹⁷⁰ T. Banerjee, "U.S. planning expeditions to postcolonial India: From ideology to innovation in technical assistance," *Journal of the American Planning Association*. 75, no. 2 (2009): 193-208.

Chapter 1:

Nowicki's Structurally Expressive Modern Architecture

Nowicki's mature approach to Modern architecture is most clearly expressed in his essay, "Origins and Trends in Modern Architecture."¹ In this article, Nowicki described his vision of a structurally expressive Modern architecture – an architecture in which the structure of a building (the primary load-carrying system) takes a dominant, expressive role in defining its overall form. While many Modern architects pursued interests in new structural systems, Nowicki's statements describe a renewed emphasis on the expressive role of structures, their value for exhibiting the uniqueness of available materials and structural technologies, and their potential to create new built forms.² In this essay, Nowicki described the ability of structure to shape dynamic architectural space, and create dramatic and diverse Modern buildings. His use of structure was more than a purely material exercise; Nowicki believed in the human-centered benefits of this approach, asserting that it provided solutions to his questions of function and form, as well as the issue of permanence in Modern architecture. Nowicki's structural approach to Modern architecture is in service of a humanistic ideology.

"Origins and Trends in Modern Architecture" appeared in the November 1951 issue of the *Magazine of Art*, 15 months after Nowicki's death. The *Magazine of Art* had published an earlier essay by Nowicki entitled "Composition in Modern Architecture" in March 1949, as well as a book review written by Nowicki in 1950.³ The *Magazine of Art* editorial board included several architects and critics such as Philip Johnson, Talbot Hamlin, Alfred Barr, Jr., and Serge Chermayeff, and it routinely published articles that explored issues in architecture as well as art.⁴

A brief biographical summary of Nowicki in the back of this issue described “Origins and Trends in Modern Architecture,” as a speech to the American Institute of Decorators (AID) in New York, on April 5, 1950.⁵ Though only 39 years old at the time, Nowicki had already become a regular lecturer. In the previous years Nowicki had been asked to speak to the Architectural League of New York (August 1947), and to the Pennsylvania Society of Architects (June 1948).⁶ And despite speaking to an audience of Interior Decorators, Nowicki was explicitly addressing the topic of architecture.⁷

Nowicki's involvement with a diverse group of projects in a short amount of time had given him experience beyond that of almost all other architects his age. Following his education and design experience in Poland (including proposals for the reconstruction of Warsaw), he had nearly five years of professional experience in the United States.⁸ He had made important connections with other architects, writers and theorists, most notably with Lewis Mumford. He had been involved in the design of the United Nations Headquarters in New York (1947), had collaborated with Eero Saarinen on the design of Brandeis University (1948) and worked on several projects with Clarence Stein. At the time of the speech, Nowicki was deeply involved in the design of the Livestock Pavilion in Raleigh, North Carolina (1950), teaching at the North Carolina State College (NCSC) School of Design, and engaged in the design of Chandigarh. Nowicki was also preparing for his early July departure for India. His growing reputation as a promising designer, educator, and writer, made him an attractive speaker.

But Nowicki did not discuss individual projects in his lecture. Instead he spoke on more general questions facing the architectural profession, addressing issues central to the state of Modern architecture in the postwar world. The title of his talk “Origins and Trends in Modern Architecture” indicates his intention to discuss his opinions on both the founding origins of

Modern architecture and the developments that defined its present state. Embedded within his comments lay Nowicki's conviction that structurally expressive buildings could provide a new direction for Modern architecture.

Nowicki began his text with a critique, arguing that Modern design had become a style-driven exercise:

I suspect that I shall no longer provoke you as much as I should by opening with a statement that some time ago, our design became a style... A style with all the restrictions, disciplines, limitations and blessings that we usually associate with the term. A style in the similarities between designs which differ basically in the purpose of their use and destination...⁹

According to Nowicki, no matter what Modern polemicists claimed, form was not simply the result of accommodating function.¹⁰ Nowicki argued that Modern architecture had become a rigid, form-driven approach, where buildings were conceptualized with a given understanding of their appropriate aesthetic. Thus Modernism had become similar to the styles that preceded it. Nowicki argued that a formulaic understanding of the International Style had created an architecture where:

...even when a form resulted from a functional analysis, this analysis follows a pattern that leads to the discovery of the same function, whether in a factory or a museum. Approached in a certain way, the answer to every architectural problem is a flexible space with no reason why one flexible space should be different from another...¹¹

Nowicki argued that Modern architecture had become stagnant; it repeated the same forms (rectangular boxes, flat roofs) over and over again, regardless of the inherent differences among different projects. This formal similarity denied the diversity of function, site conditions, cultural settings and human aspiration that that Nowicki had observed through his varied

experiences in many different conditions. In response to this reduction of Modern architecture to a simple set of formulas, Nowicki called for a new way of thinking.

In saying all this, I am not advocating diversity in design for its own sake. ... The constructive diversity that provides strength to an expanding and virile civilization is the result of creative sensitivity to the eternally changing circumstances where ‘every opportunity stands alone’.¹²

Rather than search for a limited set of architectural forms to suit all conditions, as Mies argued, Nowicki argued that new architectural inspiration could be found in the diversity of different circumstances associated with each individual project. As every architectural project “stands alone”, each one offers unique possibilities and challenges, unique demands to be satisfied. Nowicki suggested that Modern architects should embrace this uniqueness, and not be confined to style-driven beliefs of what Modern architecture should be. Nowicki also suggested architecture could be renewed through a search for “freshness,” rejuvenating Modern architecture through openness to new design directions.

Nowicki turned to the origins of Modern architecture to argue that this ‘freshness’ had been present, before it was lost. Nowicki’s historical summary suggested that earlier experimentations with form, space, and technology in the late 19th century had produced a diverse collection of architectural solutions. He then posited that over time, as a result of changes in architectural thinking, this diversity had been forgotten. Thus, Nowicki proposed a reconsideration of the origins of Modern architecture. He stated:

It is these changes of the architectural concept that I propose to analyze with the intention of establishing our present position in their chain. ... I propose to define our present position because this is our strategic point of departure for the investigation of the full

field of opportunity that lies within our period. In order to define our present stage, I shall try to trace it to its origins.¹³

Nowicki here reveals his aim, which is to open up the “full field of opportunity” in the current era (1950). Eliminating artificial boundaries would reveal new potential directions for a creative Modern architecture. By discussing the history of Modern architecture, Nowicki hoped to reveal the range of architecture possibilities in his own time and to link the current state of architecture back to a much earlier time in which new attitudes in architecture were beginning to emerge. “It seems to me,” he declared, “that the beginning of modern architecture has its roots in the domestic structure of the late renaissance. It was then that the problem of human comfort was rediscovered.”¹⁴ He explained that the essence of Modern architecture was a devotion to human-centered demands. Nowicki claimed:

Renouncing heroism, architecture diminished its scale, becoming cut to the size of the ordinary man. A comparison between the Palace of Versailles and the Petit Trianon would provide a good illustration of this change. In this alteration of the predominant scale and the introduction of problems of comfort, we can find the beginning of our architecture. These changes, as essential as they were could not alone produce the new form.¹⁵

According to Nowicki, this change in mindset was a necessary precondition for Modern architecture, but the real breakthrough occurred only with technological advances and cultural receptiveness to change in the mid nineteenth century.¹⁶ “No new form of architecture could have been created without a new structure,” he said, “and psychological receptiveness had to wait until the structural possibilities ripened.”¹⁷

Here Nowicki argued for the importance of new structural forms for the creation of new architecture. New structural capabilities (for example longer spans using less material), opened up new areas of “psychological receptiveness” – the possibility of new types of built space for human activity.

The seminal work for Nowicki in the development of this new structure was Joseph Paxton’s Crystal Palace. Nowicki argued that its modular construction and “space concept of openness” launched a “new era” in architecture:

The ensuing use of cast iron, then of ferro-concrete and steel, created the spine of the new frame structure, which from then on was dominant in modern building. Independence of the partitioning wall from the frame created the free plan, and thus all elements of the new architecture were present at the beginning of our century.¹⁸

In his earlier article, “Composition in Modern Architecture” (1949), also published by the *Magazine of Modern Art*, Nowicki explicitly discussed the spatial consequences of this new frame structure.

Skeleton construction, with its wide spanned-column layout and the cantilever, permitted a free treatment of plan to express the diversified functions of life. It also allowed for the interpenetration of free space and enclosed form, which became one of the main features of the new style. In short we may say that functionalism could not have developed its present shape if it had not been for the possibilities offered by construction.¹⁹

Here, Nowicki argues for the primacy of structure. Beyond their load carrying-ability, Nowicki recognized how new structural capabilities had allowed new spatial flexibility and experimentation, and a means to express the diversified functions of life. Accommodation of modern functions could only be achieved because of the flexibility of spatial design allowed by skeleton frame construction. Thus, Nowicki, in this earlier essay, argued that structural

innovation was an essential precursor to the emergence of Modernist functionalism. By placing structural innovation ahead of functionalist thinking, Nowicki advanced his argument that a renewed focus on structure could renew Modern architecture.

Although Giedion had argued that the Crystal Palace was a catalyst for Modern architecture, Nowicki believed that the specific architectural direction it indicated (spatial extension based on structural innovation) had *not* been pursued beyond the beginning of the early twentieth century.²⁰ He asked:

What would have been the characteristics of modern architecture had it followed the direction of those early days? Its form, influenced strongly by the expression of the structure, would have been intricate and detailed. The logical development of the skeleton would have accentuated the delicate ribs dividing areas of the building into supporting and supported members. The resulting form would perhaps acquire the lightness and openness of lacework filled with translucent or opaque screen.²¹

In this passage, Nowicki speculated on an alternative history for Modern architecture, one where the load-carrying structural members would not only carry gravity forces to the ground but also create a spatial experience through the division of space. The expression of structure – refined to be detailed and intricate – could create a sense of “lightness” and “openness” while still logically carrying loads.

Nowicki cited Henri Labrouste and Gustave Eiffel as early Modern designers who had followed this structurally expressive direction, but claimed that the majority of Modern architects had not. Nowicki argued that “other media of art,” such as cubist paintings had strongly influenced architecture instead, and led architects to a new “taste for purity and simplicity of form.”²² Nowicki argued:

The development of the structural skeleton mentioned above could not be molded into the new esthetic. Problems of structure and materials became secondary in a period preoccupied with the esthetics of form. Architecture became ‘idealized’ and ‘dematerialized.’ Structural detail was eliminated in conformity with the demands of purity, and the idealized structure reacted badly to time and weather.²³

Here, Nowicki critiques the effect of abstract art on the development of Modernism. By focusing on an idealized aesthetic, derived from movements in the arts (cubism, de Stijl, constructivism), architects paid less attention to the possibilities of structure and, in fact, produced an architecture poorly detailed that responded badly to the real conditions of climate, weather, and use. By ignoring the spatial qualities and detail demands of structure, Modern architecture had become not only excessively formal, but also frail. Concerns of structure had become divorced from concerns of architecture, and ultimately produced the style-driven architecture Nowicki observed in the introduction.

Having described the origins of modern architecture, and the different possibilities they opened up, Nowicki then proceeded to describe new, emerging design trends that picked up on the structural advances of the late nineteenth and early twentieth centuries. These trends described the separation between a new, structurally expressive approach to Modern architecture and the formally pure Modern architecture of “the 1920s”. Using phrases such as “our design,” and “our thoughts”, Nowicki acknowledged his participation in a collective design community with shared values, and he positioned himself to speak on the behalf of the group.²⁴ Indeed, the architectural critic Allan Temko noted that with this article, Nowicki had become “a spokesman for a number of young Modernists, [Eero] Saarinen included...”²⁵ While the extent of agreement among other Modern architects is certainly debatable, it is important to note that Nowicki saw himself as addressing the concerns of the entire profession.²⁶

First, Nowicki stated that Modern architects had changed their understanding of functionalism from the earlier generation. “We still speak of functionalism,” he said, “but while then it meant exactitude, now it means flexibility. Those are two opposite concepts.” Nowicki asserted that functional Modern architecture should be able to accommodate a flexible program that acknowledges inevitable adaptations and changes of use in the future. In staking out this position, Nowicki stands apart from both strict functionalism and also from the design of totally flexible "universal" space. Nowicki had previously described this position in his earlier essay “In Search of a New Functionalism”(1945):

Belief in immortality of their work is needed by architects in their professional activity; it provides the basis for a deep sense of professional responsibility, just as devising ways of making buildings durable is the basis for the development of their craft. While believing in the immortality of a building, we must realize that its current program will often be just a short episode in its entire lifespan. A new functionalism will come which can not be foreseen.²⁷

Nowicki saw that the ability to accommodate functional change was essential to the long life of a building, another central element of Nowicki’s Modern architecture. For Nowicki, the permanence of buildings had become an important consideration, inspiring “responsible”, “durable” designs that contrasted with the poor construction of many earlier Modern buildings, that he argued had come from a Modern architecture focused on abstract aesthetic. While other architects and writers (like Lewis Mumford) had argued that architecture should be easily constructed and deconstructed, Nowicki now argued that buildings should be designed to last, saying, “The concept of a short-lived structure to be removed with the rapid change of technology has been replaced by a notion of architecture that will be our contribution to the life of future generations.”²⁸

This concern for both the present and future generations led Nowicki to emphasize permanence and durability. Nowicki had seen the destruction from war, and he had experienced older buildings put to new uses in postwar Warsaw. Nowicki saw the need for attention to structure, materials and construction to create buildings that would last. Simultaneously he saw that functions might change. Thus, instead of a strictly functional approach to design, Nowicki argued that it was necessary to consider deeper human concerns: “In our thoughts we often give priority to the psychological rather than physical function of humans.”²⁹

While the physical function (program) of a building would inevitably change over time, Nowicki argued that the psychological impacts of a particular space on its users would not. Earlier in his “Composition in Modern Architecture” he stated:

Man presented two aspects. The first was the unchanging quality of the human individual; the size of his body, the length of his step and speed of his walk – the same throughout ages – determine the unchanging factors of scale in architecture; his basic emotions, thought changing in form of expression are as old as the race itself. The second aspect deals with the constant change in human life and the differences that exist not only between generations but between men of different decades.³⁰

Nowicki had described this unchanging quality of man earlier in his “Search for a New Functionalism” (1945). He stated that architects must:

... create architecture for Homo sapiens, who remain unchanged. The dimensions of the human body, the proportions of its construction, the most important human reactions and the deepest desires of today are the same as in the earliest days of history. We and our forebears are – in relation to the universe around us – the same human beings, we experience life with the same number of senses...³¹

Acknowledging these unchanging human “qualities” required a different spatial approach than a focused attention to function.

We are no longer preoccupied with the proximities of related functions but with the nature of space that leads from one function to another. It is no longer ‘how quickly to get there’ but ‘how to get there’ that matters most in our plans. It seems that from a quantitative period we have jumped into a qualitative one.³²

Nowicki argued that the quality of architectural space, its “nature”, had become more important to Nowicki than its functional operation. The space within a building should be designed according to its human reception. In Nowicki’s earlier “Composition in Modern Architecture” he had discussed spatial qualities of order and diversity that had important psychological effects on human inhabitants. ”Architecture,” he stated,

...should provide human comfort in the visual and psychological as well as the strictly physical sense of the word, and understanding is part of psychological comfort. ... Order is the creation of an intellectual approach and unity based on order always has a classical flavor. Diversity is the expression of creative temperament, imagination and emotion. Again the two forces exist side by side, one incomplete without the other and we may conclude that the search for a balance between them is the objective of composition in modern architecture.³³

Nowicki explained that the negotiation of order and diversity within Modern architecture was an essential part of creating architectural space that addressed “human comfort.” This balance of intellect and emotion in the spatial understanding of a building was an essential and enduring quality of human life. In this formulation, the psychological reception of a building and the accompanying desire for permanence began to outweigh purely functional concerns, describing a

shift in architectural priorities. To create a Modern architecture that addressed these priorities, Nowicki returned to investigations of structure, which, he had argued, had opened up functional possibilities at the beginning of the Modern period. Nowicki had argued that structural innovation preceded functional accommodation. Now he returned to structure as the fundamental basis for a Modern approach to architectural design.

As Nowicki described it, structure provides not just physically stable form, but also symbolically links a work of architecture to the unchanging laws of physics:

The discovery of a formal symbol of the unchanging laws of the universe seems to have replaced the invention of form without precedent. The eternal story of gravitation is again consciously contemplated. We are aware that the form of the discovery must change, but its object remains the same, rediscovered over and over in many ways.³⁴

Nowicki saw that functions could change, but structure survived. Structure performed a fundamental role in a building, resisting the unchanging, physical force of gravity. Functions change, but the force of gravity (and by analogy all the other physical forces embodied in climate and weather) is always present. Thus, Nowicki connects architectural design first to the unchanging laws of physics, and on this basis, structure becomes central. And structures can remain constant for future generations even as functions accommodated by architecture change over time. While the objective of structure is always the same (to resist forces, provide shelter for habitation), the range of possible forms varies. Different materials and technologies can be used to create an extraordinary diversity of forms, and structure can be adjusted to accommodate the human-centered needs of order and diversity. Nowicki described a synergy between the opportunities that structural explorations offered and the “psychological” demands that humans

required. Nowicki found alignment between the eternal demands of human comfort and the eternal demands of structural form.

Through structure, Nowicki could also reassert the linkage between architecture and its historical past, as well as to the unchanging characteristics of human existence. In “In Search of a New Functionalism”(1945), Nowicki described how structure (tied to the laws of gravity) provided a link to unchanging human qualities. After describing the constantly changing aspects of life (the “habits, life, interests, work and leisure”) as the "first face of humanism" he had reflected on the constants of human existence:

The second face of humanism refers to the unchanged canons of art, and is a bridge between modernity and tradition, between our knowledge of construction and the accumulated wisdom of the building craft. Here we find man’s eternal desire to subordinate his building to the earth’s force of gravity, to whose laws each form of architecture must yield.³⁵

By addressing the unchanging physical forces of nature, structure provided a link between the past and present. The relationship between the built form of architecture and the physical earth (through gravity and other physical forces) is shaped by the unchanging laws of nature and by unchanging human characteristics (from the physical capacities of humans (as in ergonomics) to their psychological requirements (and responses to architectural space). Despite the constancy of these physical forces, and the connection to past works of architecture, structure offered many possibilities. Nowicki continued:

In principle, however, the form of different ages must be different. The real difficulty only begins with the definitions of those variable values. Here we can rely freely and without fear of going seriously wrong, on construction; for the art of new architecture it will be crucial. In construction we find so many differences in comparison with the

previous periods that we will not run out of inspiration for designing new genuine forms. As builders, we have the laws and aims of construction in our blood.

Nowicki's use of the word 'construction' clearly referred to the structural and material technologies, as well as the new constructional capabilities of the mid twentieth century. It was here that Nowicki looked for inspiration to create new forms. In "Composition in Modern Architecture" (1949), Nowicki described several examples of inspiring structural forms:

The use of new structural materials like aluminum, of new concepts of organization like prefabrication and of metal standardized forms for reinforced concrete will bring rich new shapes. Ceilings by Freyssinet in France and Wright's mushroom columns of the Johnson Wax factory in this country may well be considered the precursors of a future wave that will bring unpredicted solutions in form. How this may affect the esthetics of architecture, hitherto based for the most part on a rectangular discipline, remains to be seen.³⁶

These new structural materials and systems, designed to both resist loads and shape space in new, diverse ways, played a dominant role in the formal expression of the buildings. Expressive structure offered a way to reach beyond the "rectangular discipline" of Modern architecture. Nowicki argued that a mature Modern architecture no longer be shaped by the ideas of abstract art. Rather, contemporary materials and structures would be a source for innovation in the future (as they were in the nineteenth century). Nowicki saw this as a maturation of Modern architecture. In "Origins and Trends," he stated:

Maturity brings a 'sense of the medium,' and mature architecture [has]... discovered the difference between painting and the art of organizing accessible space. As a result, we now rely in our expression on the potentialities of materials and structures, almost picking up the trend of the nineteenth century. This interest in structure and material may

find within the building medium decorative qualities of ornament that are much too involved for the purist of yesterday.³⁷

Nowicki sought to develop a new aesthetic direction for Modern architecture through expressive use of material and structural systems. His approach was as intellectually rigorous as that of the Modern architects of the previous generation, but would result in a far more complex, perceptually richer architecture. He concluded his text with the direct question:

Where lies the future of modern design? It seems to me that it depends on the constant effort to approach every problem with the consciousness that there is no single way of solving it. *Ars una – species mille*: Art may be one, but it has a thousand aspects. We must face the dangers of the crystalizing style, not denying its existence but trying to enrich its scope by opening up new roads for investigation and future refinement.

Structure provided permanent, yet open-ended opportunities for the regeneration of Modern architecture that Nowicki saw was needed. Through a structurally expressive modern architecture, Nowicki described a means to “open up” what had become a stylistically rigid approach to Modern design to a wider array of design solutions. Structure would become a dynamic medium of design that established the permanent, physical presence of architecture, while also providing a diversity of possibilities for each design problem. Nowicki finished “Origins and Trends in Modern Architecture” stating: “Sensitivity to the minute exigencies of life remains the source of creative invention, leading through the elimination of ‘exactitudes’ to the more important and more general truth which equals beauty.” The “minute exigencies of life,” -- the unique conditions of each project -- inspired Nowicki. Throughout his career Nowicki would experiment with many different structural forms to address a variety of design challenges and would achieve a variety of expressive solutions. Expressive structure could be

both ordered and diverse, communicate permanence yet accommodate future change. Guided by innovative materials and structures used in an expressive way, Nowicki envisioned a revitalized, mature Modern architecture.

This approach began to take shape in his earliest projects as a young architect in Poland, and was beginning to reach full maturity as he developed buildings in America and India in the months before his untimely death. The following chapters will show the development of Nowicki's idea that expressive structure can open up a new, "mature" way of thinking about modern architecture. The variety and range of Nowicki's structural explorations demonstrate his interest in expanding the palate of Modern architecture in new expressive ways.

¹ Matthew Nowicki, "Origins and Trends in Modern Architecture" *Magazine of Art* 44 (1951): 273-279.

² Individuals like Buckminster Fuller, Pier Luigi Nervi, Myron Goldsmith and Louis I. Kahn explored a variety of new structural systems, from geodesic domes to precast, prestressed concrete.

³ Matthew Nowicki, "Composition in Modern Architecture" *Magazine of Art* 42 (1949): 108-111. Also Matthew Nowicki, review of *Painting Toward Architecture* by Henry-Russell Hitchcock, *Magazine of Art* 43 (1950): 35-36.

⁴ Editorial board members are found on the inside cover of each issue.

⁵ Nowicki and his wife had designed tapestries for a project in North Carolina, and both had done some earlier interior design work in Poland.

⁶ In the lecture to the Pennsylvania Society of Architects, Nowicki's delivered his "Composition in Modern Architecture" (later published by the *Magazine of Art*) while the lecture to the Architectural League of New York addressed the re-construction of Warsaw.

⁷ Acknowledging that the AID audience likely included many more interior design professionals than architects, Nowicki explained that the encompassing nature of architecture made it an appropriate subject for his speech: "I speak of architecture because it incorporates the full field of design. In its changes we can discover those that affected interior design, industrial design, problems of organized landscape and others, with or without a separate name." Nowicki, "Origins and Trends in Modern Architecture," 273.

⁸ Nowicki arrived in the United States in December of 1945.

⁹ Nowicki, "Origins and Trends in Modern Architecture," 273.

¹⁰ Nowicki's statement contrasts with the position offered by most Modern polemicists. They had argued that Modernism was beyond style--that it was derived from the conditions of a project without recourse to stylistic considerations. Robert Venturi would later claim (with

regard to Gropius), that Modern polemics reduced the Vitruvian triad from three elements to two; while Vitruvius said architecture was the result of the intersection of commodity, firmness and delight (function, structure and aesthetics), Modernists so claimed that Modern architecture need only address commodity and firmness, and delight would take care of itself. Nowicki thus offers a fundamental challenge to Modernist polemics.

¹¹ Nowicki, "Origins and Trends in Modern Architecture," 273.

¹² Ibid.

¹³ Ibid.

¹⁴ Nowicki, "Origins and Trends in Modern Architecture," 274.

¹⁵ Ibid.

¹⁶ In the article, Nowicki described other specific events that contributed to the growth of Modern architecture. Such as the "building boom" of residences after the death of Louis XIV, in which different areas of use were designed into homes, bringing architecture down to the size of an "ordinary man." He also cited Karl-Friedrich Schinkel, and explained how his quote "Why not a new style?" expressed a desire for change. He also discussed John Ruskin's *Modern Painters*, as a text that recognized the emergence of "technology of a craft."

¹⁷ Nowicki, "Origins and Trends in Modern Architecture," 275.

¹⁸ Ibid.

¹⁹ Nowicki, "Composition in Modern Architecture," 109.

²⁰ Sigfried Giedion, *Space, Time and Architecture: The Growth of a New Tradition* (Cambridge: Harvard University, 1941). Delivered as lecture at Harvard University in 1938-39. Lewis Mumford, *The Culture of Cities*. (New York: Harcourt, Brace and Co., 1938): 206, 209. Nikolaus Pevsner. *Pioneers of Modern Design: From William Morris to Walter Gropius*. (London: Faber, 1936), 52-53.

²¹ Nowicki, "Origins and Trends in Modern Architecture," 275.

²² Ibid.

²³ Nowicki, "Origins and Trends in Modern Architecture," 276.

²⁴ Nowicki's earlier articles, including "Composition in Modern Architecture" were written in a similar voice.

²⁵ Allan Temko, *Eero Saarinen* (New York: G. Braziller, 1962), 43.

²⁶ It is interesting to speculate whom Nowicki saw himself speaking for. He had engaged a community of Modern architects through the "What's Happening to Modern Architecture?" symposium in 1948 (as a panelist) and was a member of the Regional Development Council of America. He also had worked collectively on the United Nations Headquarters and the Chandigarh project with a group of architects. Yet as he was articulating a new direction for Modern architecture, it seems likely that he was speaking for primarily a younger generation of architects (born after 1900), a group less entrenched in early Modern design. This group could have included Eero Saarinen, Philip Johnson, Peter Blake, Oscar Neimeyer. It is possible that he saw himself speaking for older architects like Le Corbusier (referencing his *Modulor* in "Origins and Trends"), Wallace K. Harrison and Albert Mayer, but less likely.

²⁷ Maciej Nowicki, "W poszukiwaniu nowego funkcjonalizmu," *Skarpa* 3, no. 1 (1945): 2.

²⁸ Nowicki, "Origins and Trends in Modern Architecture," 277.

²⁹ Ibid.

³⁰ Nowicki, "Composition in Modern Architecture," 108.

³¹ Maciej Nowicki, "W poszukiwaniu nowego funkcjonalizmu," *Skarpa* 3, no. 1 (1945): 2.

³² *ibid.*

³³ Nowicki, "Composition in Modern Architecture," 109.

³⁴ Nowicki, "Origins and Trends in Modern Architecture," 277.

³⁵ The use of the word "desire" is interesting, as obedience to gravity would seem to be an undeniable demand of the physical world, not just a "desirable" quality. As this article was translated from Polish (by the Polish architectural historian Tadeuz Barucki) it is possible that other terms could have been intended. Maciej Nowicki, "W poszukiwaniu nowego funkcjonalizmu," *Skarpa* 3, no. 1 (1945): 2.

³⁶ Nowicki, "Composition in Modern Architecture," 109.

³⁷ Nowicki, "Origins and Trends in Modern Architecture," 277.

Chapter 2: Background and Early Work

Nowicki's approach to architecture was deeply rooted in the conditions and experiences of his upbringing. He was born Maciej Nowicki – a Polish name that translated as Matthew - on June 26, 1910, in the small town of Chita, in eastern Siberia. Born in to an upper-class family of Polish nationals, his father, Zygmunt Nowicki, was a lawyer and a prominent member of the Polish Agrarian party – an active political party despite the absence of an independent Polish state.¹ His mother was named Filipina (nee Filipowicz) and he had a younger sister, Ewa. Mumford described his family as: “a family with sufficient means to disregard extraneous economic pressures and sufficient social status to disdain any serious effort to seek wealth and power for their own sake.”² Zygmunt was working as an attorney in Chita, but wishing for a more stable home, the family moved to a small “manor house” outside of Krakow shortly after Matthew's birth.³

The Nowickis were politically active. Matthew's father continually lobbied for Polish independence, while his mother supported Polish traditions and values in their community – organizing educational and cultural groups and distributing pro-Polish literature.⁴ Although their country had been partitioned by Prussia, Austria and Russia in the eighteenth century, and remained occupied by Austrians, Germans, and Russians, Polish nationalism was emerging as a significant force in the years before World War I. The Nowickis played a part in fostering a distinct sense of Polish nationality.

Poland regained its independence in 1918, and was formally recognized as a sovereign nation by the Treaty of Versailles in June 1919. Under the leadership of Chief of State Jozef Pilsudski, Poland undertook the creation of the apparatus necessary to govern a modern state.

The government created an army that began securing the country's borders (through multiple armed conflicts) and, at the same time, engaged in diplomacy forming international relationships.⁵ In 1920, the Polish government appointed Matthew's father as the first Consul-General to the United States, charged with opening a new Polish consulate in Chicago.⁶ The entire Nowicki family relocated to Chicago where young Matthew learned fluent English, enrolled in grammar school, and began taking drawing classes at the Chicago Art Institute.⁷

Upon returning to Poland in 1925, Matthew continued to pursue drawing and fine art, enrolling at the Wojciech Gerson School of Fine Arts in Warsaw, and later, the August Witkowski High School in Krakow.⁸ After graduation in 1928, Matthew Nowicki shifted his focus to architecture, enrolling in the School of Architecture at the Warsaw University of Technology (also called the Warsaw Polytechnic).⁹ The University had been founded just thirteen years earlier, in 1915, and despite the German occupation during WWI, Polish had remained the official language of instruction. Through the architecture curriculum at the Warsaw Polytechnic, Nowicki received his first training in physics, mathematics and structures, and his early education in drawing and graphics would also continue to influence his design thinking.

The Warsaw Polytechnic

At the Warsaw Polytechnic, Nowicki received a formal education in the emerging principles of modern architecture. The School of Architecture had been started in 1915 by a group known as the "Warsaw Circle of Architects," a collection of Polish architects who had trained elsewhere, but had returned to Poland to establish architectural practices."¹⁰ These architects, led by Tadeusz Tolwinski (1887-1951), were heavily involved in the planning and re-

planning of Warsaw, a city that had suffered from wartime destruction, political power shifts and border adjustments. At the same time, these architects were deeply committed to establishing an architecture school in their native land.¹¹ The architectural historian Tadeuz Barucki stated “The faculty were a curious mix of individuals who had arrived ... from France, Russia, Germany, Austria, representing different trends and diverse views on architecture.”¹² The faculty brought educational backgrounds from artistic institutions (the Academy of Fine Arts in St. Petersburg, Artistic School in Moscow) and technical ones (the Institute of Engineers in St. Petersburg, the Polytechnics in Riga, Vienna, and Karlsruhe).¹³ Despite their varied educations, the faculty members were strongly committed to the creation of a Polish school of architecture. According to curator Dorota Parszewska, “They represented different trends and approaches to architecture, from the most traditional (Jozef Dziekonski) to advocates of Secession (Mikolaj Tolwinski) and Modernism (Jan Heurich, Karol Jankowski), but in the face of potential independence, they all strove to create a Polish national style.”¹⁴ Other early faculty members included the graphic designer and painter Zygmunt Kaminski, and architects Oskar Sosnowski and Rudolf Swierczynski (1887-1943). Swierczynski worked closely with Nowicki during his education, so is discussed in greater detail below.¹⁵

The establishment of this school in the midst of World War I, and three years before Polish independence, indicates the importance of architecture and town planning to the Polish people. Architecture and urban design served as significant acts of both resistance and optimism in the midst of social unrest, uncertain politics and shifting boundaries in the region.¹⁶ The opportunity to design the physical conditions of their own potentially independent nation served as a one rallying point for Polish nationals, and prepared a new generation of architects to respond to the problems of the new Polish state.

The curriculum at the Warsaw Polytechnic emphasized balance between aesthetics and technology. The faculty sought to teach a broad view of architecture that encompassed a wide range of subjects. The first official curriculum, published in 1915, stated that the school “had the objective of educating architects of the highest grade – extensive artistic culture and serious professional knowledge are the guiding principle.”¹⁷ The head of the Faculty of Architecture, Stanislaw Noakowski wrote “This faculty is characterized foremost by balance between two elements of academic architectural education: artistic and technical, emerging from the very essence of architecture as an art and technology at the same time.”¹⁸ The curriculum included artistic drawing, history of architecture and sculpture as well as structural engineering, construction education, and urban design. The school claimed to be “the first in Europe to introduce and teach urbanism on such a broad scale, having a chair called City Construction.”¹⁹ The nature of the architectural design instruction varied depending on the faculty member in charge.²⁰

Nowicki later recalled that much of the discussion at the Warsaw Polytechnic addressed the character of the “ideal graduate.”²¹ In talks among the faculty, the discussion of whether the graduate was to be a “rank and file” architect or “industry leader,” was secondary to instilling good “qualities as a public servant.”²² As contributors to the new Polish society, architects had much to offer – capable of considering a wide range of issues at once. Nowicki stated: “In our days of overspecialization of a mechanical type, most acutely attacking millions who work without thinking, we must dream of the full and complete man. And we must try to realize that dream in our schools.”²³ The general training of an architect created individuals who could negotiate different professional fields, and understand them all as part of a greater goal. These

sentiments became evident as Nowicki sought to cross the boundary between structural engineering and architecture.

Nowicki stated what he thought this meant for graduating architects: “The graduate of this full training will perceive the world not as a field of noble enjoyment, but a field for creation and that will lead to the greatest and only true joy of his life.”²⁴ Through their education, architects could learn to resist the “oversimplification” of complex issues, and gain a “social usefulness” through their ability to address the “full and complete man.” The broad-based curriculum allowed Nowicki to explore his interests in history and structure, and laid the foundation for his later approach to modern architecture through expressive structure.

When Nowicki enrolled in the School of Architecture in 1928, he found a school that was not rooted in the classic tradition of the Ecole des Beaux-Arts (like most others in Europe in 1928), but one that was an emerging modernist school. In his biography of Nowicki, Lewis Mumford described the school as “uniting traditional (Polish) architecture with its humanistic background, and engineering with its scientific and technical methodology.”²⁵

The school emphasized an understanding of history as a central component of architectural education. In “Remarks on Architectural Education in Europe,” Nowicki stated “the best way to provide a student with an amount of professional culture indispensable to an architect is through a profound study of the history of his art.”²⁶ History provided an appreciation of architecture, and exposed students both to unchanging issues of construction faced by architects in every age, and to the links between architectural form and structural technology.

Choisy’s *History of Architecture* (1899) was the primary history textbook; this book used axonometric and section diagrams to communicate the structure, material and construction of

historic works of architecture. Nowicki's wife, Stanislava Nowicki (nee Sandeka) (also trained as an architect at the Warsaw Polytechnic, one year behind) commented on the importance of structure in the understanding of history: "This understanding of structure, and the knowledge of the architecture form from the past and its structure, really make it very easy to work with both. For us there was never any difference, and you could use example from any age with the greatest of ease because it was the same principle involved."²⁷

Though presented as history, Choisy's book emphasized an understanding of the unchanging structural principles (gravity, equilibrium, stability) as a means to understand the history of architecture; this approach greatly influenced Nowicki's thinking.

The Warsaw Polytechnic curriculum also emphasized technical studies.. Nowicki later described that "a strong course in calculus was the rule" and "the technical angle was very much stressed, ... the structural emphasis was ever present."²⁸ Early in their education, students went through intense structures courses, emphasizing equilibrium and the static resolution of forces through materials. As a result, Nowicki stated "structure was very comfortable to be with," and students were able to "express themselves" through structural form.²⁹

This emphasis on structure extended into the acts of drawing and painting, for architects. Nowicki later stated:

... the study of drawing and painting had a two-fold purpose... First was meant to open his eyes to the nature of his surroundings, to teach him to see things as structures. Whether in an unobjective study or in drawing a nude or a portrait, what mattered most was the structural relationship of form, flesh or bone. A drawing was *built*, with the skeleton of structural lines exposed. ...A simple line was the ideal medium of beginning studies, where everything had to be clear, defined, and decided. The first purpose of drawing was to analyze. The second was to create a synthesis, to tell a story of what is in your mind. A medium of expression was not an end in itself. The subject matter in this

case might have been an unobjective form in space, but even so, drawing was only a description of it.³⁰

Through this description, structure became both a means of understanding (“analyzing”) the physical world and the means to communicate new ideas (“create synthesis”). The “structural relationship of form” that was emphasized in drawing revealed a structural order within all objects. At the Warsaw Polytechnic, structure was both an area of study and a central concept both in describing and in understanding the “nature of surroundings.” Through this understanding, structure became much more than a means of holding up the roof, but a space-shaping medium that could define architectural form.

As Lewis Mumford later stated, drawing at the Warsaw Polytechnic became “a means of exact analysis, intellectual as well as visual, and in the end an organ of structural synthesis.”³¹ Nowicki’s own drawings, produced throughout his life, reflected his training as they were typically clearly delineated, meticulously proportioned and most often composed as two-point perspectives. Nowicki used graphical techniques like shading to communicate depth and texture, and his drawings almost always express the physical conditions of three-dimensional objects and space. His drawings reflect the reality of architecture; they are rarely abstract, or symbolic. Nowicki’s architectural sketches depict physical buildings as objects and assemblies with material, dimensional, and structural properties.

Figure 2.1 (although drawn in 1945), shows Nowicki’s characteristic drawing technique that he was developing at the time. This representation of the proposed new business district for a redesigned Warsaw, is carefully drawn in two-point perspective, with shading and texture. Buildings are shown in precise locations, with an intelligible order to their construction. Materials are differentiated through changes in pen-stroke, and the structural frame and

foundation of each building read very clearly. The drawing depicts the physical environment in a way that is intelligible, and seen from a human perspective. Nowicki presents the point-of-view of a pedestrian in the plaza, so the heights of the buildings, the size of the walkways and stairs, and the elevation changes are all comprehensible to the viewer. The curved tree branch in the upper left hand corner was a "signature" element found in almost all of Nowicki's drawings. This branch provided a natural and organic softening in the otherwise rigid drawings.

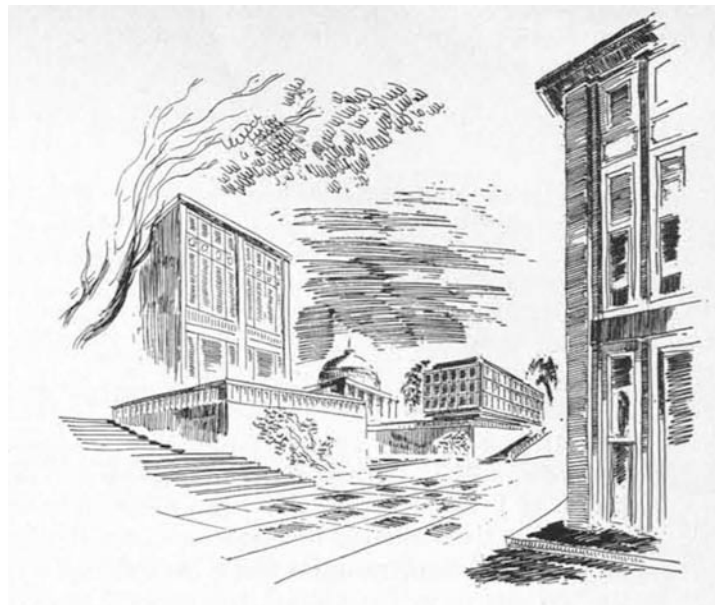


Figure 2.1 - Nowicki's Sketch of Future Business District for Warsaw, exemplifying his characteristic use of perspective and shading, ca. 1945. (Matthew Nowicki and Charles Reilly, "Warsaw. Scheme for rebuilding business quarter" *Building 22*, no. 2 (1947): 49.)

Drawing was a central mode of exploration and experimentation for Nowicki throughout his life – a method of investigating architectural possibilities through graphical study. Many architects drew during this period, and Nowicki's drawings have many similarities to others at the time. His rigorous use of perspective makes his drawings similar to the drawings of Ralph Rapson, though the sketch-like character of Nowicki's drawings communicates a somewhat

more ethereal quality of a space. Even when produced as a finished, publication-quality image, Nowicki's drawings were often sketch-like. Quickly drawn, his drawings communicate a human-perspective of the built environment, providing detail, yet also a sense of being in the space represented. Some other architects, for example Louis Kahn, employed a more distorted perspectival view to communicate a quality or experience of a space.³² In his later architectural drawing, Nowicki put his early graphics education to good use, with shadow and shading to indicate depth and to create different effects, all the while communicating a clear delineation of structure through adherence to the laws of perspective. The combination of these elements distinguished Nowicki's drawing style from his peers.

While the curriculum emphasized history, drawing and structures in separate classes, students at the Warsaw Polytechnic brought these together in their design courses, courses at the core of their professional training. The design faculty members were all locally practicing architects, who stressed independent problem solving, and expected a high degree of maturity and self-discipline from the students. With instruction as a part-time occupation for these practicing architects, the role of the instructor was to "organize a question, and point out flaws in the answer, leaving the student to provide and refine the answer alone."³³ Students were expected to be self-sufficient in approaching their design problems.³⁴ While structure and history courses were lecture classes (requiring regular attendance), design courses were more flexible, often taking place in design offices, with more loosely defined intermediate deadlines. The academic curriculum blended into professional practice, as the School encouraged outside work in the form of internships, even though professional work often conflicted with traditional academic schedules and delayed graduation. As a result of his professional involvement,

Nowicki did not officially graduate until 1936, eight years after beginning his studies. Nowicki once quoted: “A common joke among students was that the study of architecture in their school is difficult only for the first ten years.”³⁵

At the Polytechnic, Nowicki came under the tutelage of architect Rudolf Swierczynski (1887-1943). Swierczynski had studied at the Academy of Fine Arts in Warsaw, before focusing on architecture at the Technische Universitat, Dresden, and the Technische Hochschule, Darmstadt. A founding member of the faculty of the School of Architecture, he designed many government administration and housing buildings in Poland after Polish independence in 1918, including the Officers Housing Development (1922-25), and the Ministry of Transport Building (1928-31) all in Warsaw.³⁶ (Figure 2.2) His designs were often conservative, with symmetrical compositions, simple rectilinear massing, and precise detailing, and often referenced to as the style of Polish “country houses”.³⁷ Barucki stated:

Professor Swierczynski stood out among architects of his generation with his very practical approach to architectural design. Logical composition and transparent spatial arrangements went, in his case, hand-in-hand with a certain boldness of ideas and reaching far into the future. ... The principle of “design by subtraction” applied by the professor, ie. of getting rid of the non-essential, is discernable in Maciej Nowicki’s further work.³⁸



Figure 2.2 - Swierczynski's Ministry of Transport Building, ca. 1928-31. (Image source: Mike Roman, <http://wandersthroughwarsaw.blogspot.com/2008/07/fifteen-per-cent-following-photographs.html>)

As a part of his training, Nowicki directly collaborated with Swierczynski on the design of National Economic Bank (1929) and the competition entry for the Ministry of Foreign Affairs.³⁹

While not known for innovation in his designs, Swierczynski was active in the experimentation and discussions surrounding modern architecture and many of his students would go on to be active members in the Polish avant-garde.⁴⁰ He also experimented with new building materials, including reinforced concrete, took part in C.I.A.M. conferences and belonged to the forward-looking Association of Polish Architects.⁴¹

Swierczynski was also associated with the avant-garde art group "Praesens," founded in 1926 by Szymon Syrkus.⁴² This group of Polish architects, many of whom taught at the Warsaw

Polytechnic (though Syrkus did not at that time), believed the “foremost role of the modern architect was to serve society, and then the individual,” and “solutions for artistic, architectural and social problems should be found as a result of common efforts.”⁴³ In the first issue of their magazine, *Praesens*, Syrkus defined broad tenets of modern architecture that subsequently influenced Polish designers.⁴⁴ Syrkus argued that modern architecture must be unified with industry, and be designed to accommodate mass production. He also believed that architecture should be flexible and adjustable to quickly changing conditions of life, adapting to the changing needs of users and technological advances in the construction industry. The first issue included illustrations of the work of Le Corbusier, Walter Gropius, Gerrit Rietveld, Auguste Perret, Mart Stam, J. J. P. Oud, Alvar Aalto, and Moisei Ginzburg. (Figure 2.3)

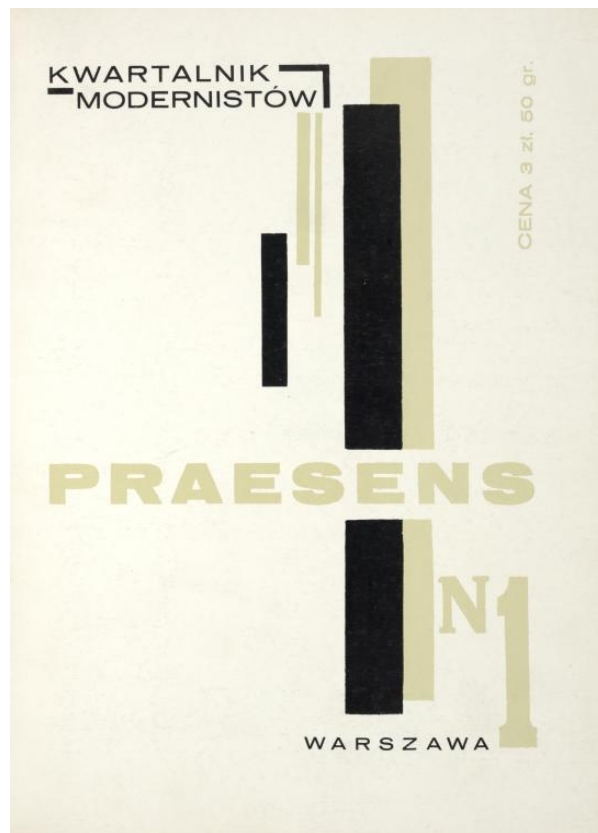


Figure 2.3 – *Praesens* first issue, 1926. (Szymon Syrkus, *Praesens*. (Łódź: Muzeum Sztuki w Łodzi, 1926) Cover.)

This wide range of individuals encompassed the multiple strands of modernism, from the work at the Bauhaus (Gropius), Russian Constructivism (Ginzburg), de Stijl (Oud, Rietveld), CIAM (Le Corbusier) as well as the advancing capabilities of concrete, in the work of the older Perret. This issue significantly influenced the development of modern architecture in Poland.⁴⁵ Although it had been published two years before Nowicki entered the School of Architecture, Nowicki's connection to Swierczynski suggests he would have seen this publication. The publication also indicates the emphasis on the Modern Movement in much of Nowicki's education.

The *Praesens* group was an active part of instructional faculty at the Warsaw Polytechnic, instilling their modernist values, and connecting the school to the work of international Modern designers. In 1925, architect Roman Piotrowski (1895-1988) was the first to include Le Corbusier's *Vers un Architecture* in the curriculum.⁴⁶ Through this publication, Piotrowski "introduced to students and Polish architects the work of Le Corbusier and his program in modern architecture."⁴⁷ The Warsaw Polytechnic's focus on structure, as a guiding influence, was likely influenced by Le Corbusier's description of the "engineer's aesthetic."⁴⁸ While calling for material and technological innovation, Le Corbusier used historical examples to illustrate his "Reminders to Architects" regarding mass, surface, and plan – this method would have been familiar to students at the Warsaw Polytechnic. In addition to photographs, Le Corbusier used graphical techniques similar to Choisy's *History of Architecture* in his presentation of buildings, including axonometric cutaways. In the context of historical and structural coursework at the Warsaw Polytechnic, LeCorbusier's designs and texts became highly influential, and were cited by students and faculty much more often than the Bauhaus or other

work.⁴⁹ In his later, four-part biography for Nowicki, Lewis Mumford stated: “Le Corbusier, in a series of eloquent books and a few buildings ... had opened up for (the students) a new world of form.”⁵⁰

The influence of French architects (rather than German) on Polish education was likely due to the strong historical connection between Poland and France.⁵¹ The two countries were allies throughout their history. Artists (like Frederic Chopin) and scientists (such as Marie Sklodowska-Curie) frequently traveled between the two countries in the 19th and 20th centuries. In 1921, the nations signed an agreement (as part of a League of Nations treaty) that formalized the two as political, economic and military allies.⁵² France would remain a strong ally to Poland throughout World War II. Nowicki was fluent in French and English (but not German), making publications in French readily accessible.

Le Corbusier’s ideas resonated with a young Nowicki, and at this early stage in his career, he became “Nowicki’s god.”⁵³ Nowicki later indicated Le Corbusier’s influence when describing the “new attitude of architecture” that was developing at the school, quoting an architecture professor who stated:

“Le Corbusier did not say anything we didn’t know before, but we were all as if sitting in a stuffy room and he broke the window pane with his stick, letting the fresh air in.”⁵⁴

Some sources claim that Nowicki spent a brief time in Le Corbusier’s *atelier* in Paris, but Nowicki does not mention this, nor was it mentioned when the two worked closely together on the United Nations Project in 1947, so it seems highly unlikely.⁵⁵ In his biography, Mumford noted how, even later in life, “Nowicki never wavered in his personal loyalty to Le Corbusier, and the aesthetic appeal of Le Corbusier’s formalism ... never ceased to appeal to him.”⁵⁶

Early Projects

As one of his first projects, Nowicki's parents allowed him, in the early 1930s, to design their own house. (Figure 2.4) Encouraged by his father, Nowicki explored a combination of modern architectural ideas, some of which may derive from Le Corbusier. The house is a rectangular mass, with the rear entrance to an elevated first story. With planar white walls and a flat rooftop terrace, the architectural historian Tadeuz Barucki compared the house to Le Corbusier's Villa Savoye (completed in 1928).⁵⁷ But the absence of *pilotis*, and lack of strip windows suggest that Nowicki drew on other influences, such as works by *de Stijl* architects. For example, the rungs of a ladder directly above the doorway, were given minimal treatment, similar to the balcony rail at Rietveld's Schroder House, Utrecht (1924). (Figure 2.5) The lack of ornamental detail may refer to Adolf Loos's call for the rejection of architectural ornament in his 1908 "Ornament and Crime."⁵⁸ However, the absence of windows, the clumsy combination of materials, and the lack of any clear compositional strategy, mark this building as a student exercise rather than as a developed architectural achievement.

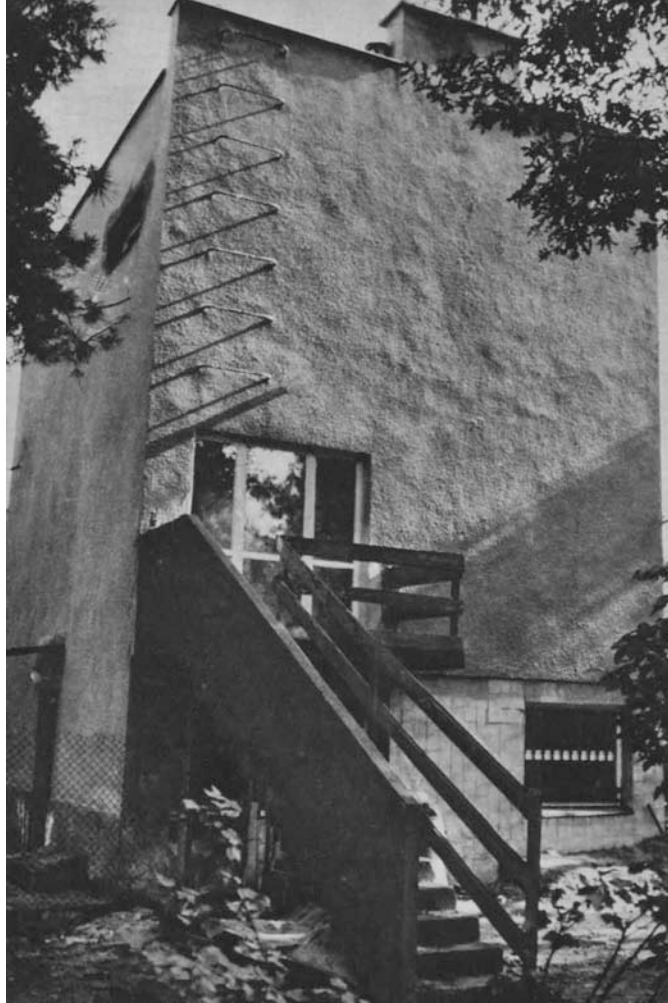


Figure 2.4 – Rear entry to Nowicki’s parents’ house, ca. 1930. (Tadeusz Barucki and Maciej Nowicki, *Matthew Nowicki: Poland, USA, India*. ([Warsaw]: Salix Alba, 2010), 13)



Figure 2.5 – Gerrit Rietveld, Schröder House, Utrecht, Netherlands, 1924. (ARTstor, copyright: Wayner Andrews, c. 1945, Image ID WA3156)



14. *The house belonging to M. Nowicki's parents in Warsaw, inner staircase.*

Figure 2.6 – Interior Stair of Nowicki’s parents’ house, ca. 1930. (Tadeusz Barucki and Maciej Nowicki, *Matthew Nowicki: Poland, USA, India*. ([Warsaw]: Salix Alba, 2010), 13)

While Nowicki worked closely with Swierczynski, he also worked with the structural engineer Stanislaw Hempel (1892-1954), who was also a professor at the Warsaw Polytechnic and a member of *Praesens*. Hempel had studied in at the Technical University in Graz, Austria, before returning to Poland in 1918 to complete his technical training in “industrial construction” at the Warsaw Polytechnic, graduating in 1926. Beginning in 1926, Hempel served as a lecturer of structures in the School of Architecture, and operated his own professional practice as an engineer. Hempel collaborated with Syrkus on the steel-framed Fertilizer Pavilion at the Polish National Exhibition in Poznan (1929), and on a tall radio tower for the 1937 Paris Exhibition, also of steel construction. Barucki states that Nowicki’s contacts with Hempel “inspired bold design concepts.”⁵⁹ In 1938, after Nowicki had graduated, but while he was teaching in the School of Architecture, Hempel created a “building laboratory” at the Warsaw Polytechnic, where he taught “sophisticated courses in descriptive geometry and engineering.”⁶⁰ Hempel

would continue to work with Nowicki during and after World War II, and played a major role in the development of Nowicki's design proposals for a reconstructed Warsaw and Nowicki's budding interest in expressive structure.

Nowicki's thesis project, completed in 1936, shows a combination of his interests and influences during his education, and makes his admiration for Le Corbusier particularly clear. For his thesis Nowicki proposed a design for a building for the Association of Polish Architects. (Figure 2.7) The building is roughly cruciform in plan, with regularly spaced, circular columns along three wings; the fourth wing of the building is as a large auditorium. The entire building mass is elevated above the ground plane, allowing free circulation at ground level. The columns are set back from the floor slab edge, exposing a glazed "free-façade." The building mass is largely rectilinear, with flat roofs, except above the auditorium. (Figure 2.8, 2.9) The fan-shaped auditorium features exposed steel beams suspending the roof below. These bents rest on a series of columns along the perimeter, that then transfers their load through a deep beam to just two large columns that reach the ground.

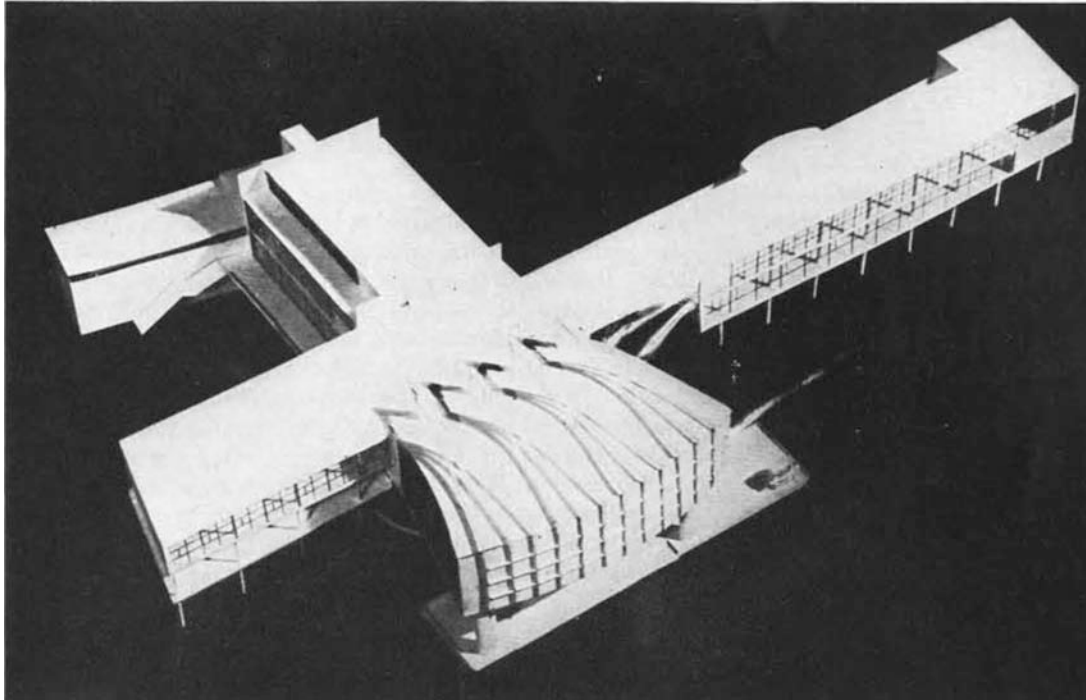


Figure 2.7 – Model View of Matthew Nowicki’s Architecture Thesis Project, 1936. (Mumford, Lewis, “The Life, Teaching and Architecture of Matthew Nowicki,” *Architectural Record* 115, no. 6 (1954): 141.)

Nowicki’s thesis project shows many architectural ideas described in Le Corbusier’s “5 Points Towards a New Architecture,” published in 1926 with Pierre Jeanneret. LeCorbusier’s five points -- 1) individual columns (not bearing walls), 2) flat roofs for garden space, 3) a liberated ground plane, 4) horizontal windows, and 5) a free façade -- were proposed as the fundamental compositional elements for a new architecture.⁶¹ Aside from horizontal windows (which may be obscured in the images available), Nowicki’s thesis addresses all of LeCorbusier’s five points. In addition, the structure over the auditorium is very similar to Le Corbusier and Pierre Jeanneret’s Palace of the Soviets, designed in 1932.⁶² (Figure 2.10) In both buildings, the upturned structural beams support a lower roof and indicate a clear-span interior space below. This expressive gesture adds legibility to the programmatic requirements of the

building, while communicating the technological potential of new materials. The bi-axial arrangement of each building and the ramps for circulation further indicate that Nowicki borrowed from Le Corbusier.

As student work, Nowicki's thesis does more to indicate the influence of Le Corbusier than indicate his own developing architectural approach. Nowicki's experimentation with compositional elements (column, roof, façade, ramp) derive from LeCorbusier does not appear to advance a strong, unique position on modern architecture. The thesis shows only a limited use of structure as an expressive element (only the beams over the Auditorium), and does not indicate the experimentation with structure that would become a key component of his later projects. The in-depth study of material and structural solutions that Nowicki would later adopt had not yet emerged in his design work.

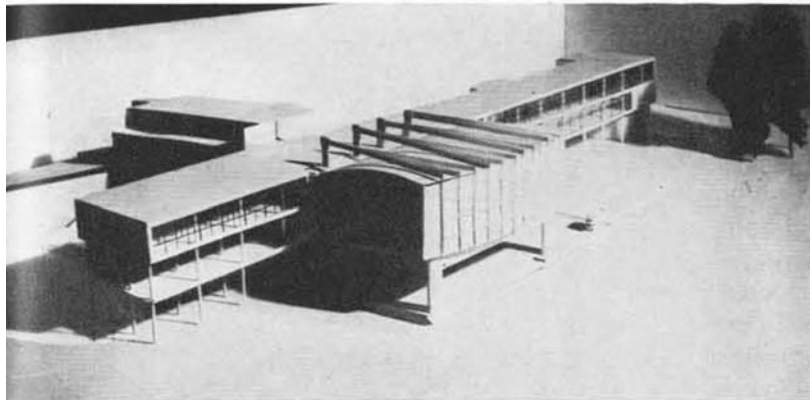
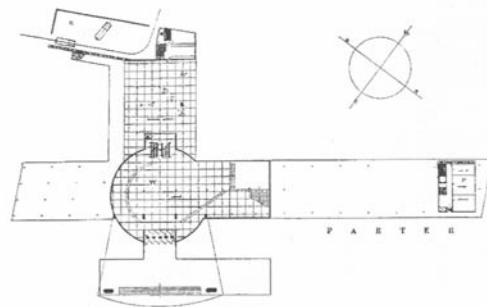


Figure 2.8 – Additional Model view of Nowicki's Architecture Thesis Project, 1936. (Mumford, Lewis, "The Life, Teaching and Architecture of Matthew Nowicki," *Architectural Record* 115, no. 6 (1954): 141.)



18. *The Seat for the Association of Polish Architects (SARP), design. M. Nowicki's diploma Project.*

Figure 2.9 – Plan of Nowicki's Architecture Thesis Project, 1936. (Tadeusz Barucki and Maciej Nowicki, *Matthew Nowicki: Poland, USA, India*. ([Warsaw]: Salix Alba, 2010), 15.)

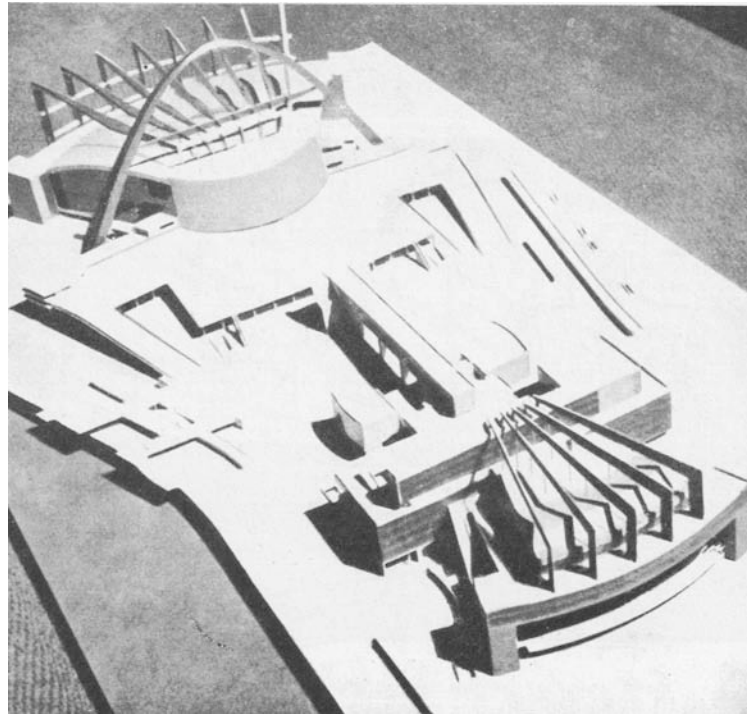


Figure 2.10 –Le Corbusier & Pierre Jeanneret, Proposal for Palace of the Soviets, Moscow, 1932. (Le Corbusier, Pierre Jeanneret, Willy Boesiger, Oscar Stonorov, and Max Bill. 1935. *Oeuvre complete: Volume 1*. Zürich: H. Girsberger, 130)

Nowicki opened his own architectural practice in Warsaw in 1936, and also began teaching at the Warsaw Polytechnic, alongside his mentor Swierczynski. In 1938, two years after graduation, Nowicki married fellow graduate Stanislava Sandeka. The two had collaborated on several projects during their time in school, many of them in the field of graphic design.⁶³ Already recognized as a talented architect and designer in her own right, Stanislava (later, in the United States, more often "Sasha") Sandeka (Nowicki) carried off numerous awards at the Warsaw Polytechnic, and in "many cases outshone her future husband."⁶⁴ (See Appendix B) Two years younger than Matthew, Stanislava had worked in Le Corbusier's atelier in Paris in 1937, and had overseen the construction of the Polish Pavilion for the 1937 International Exhibition in Paris, before returning to Warsaw in 1938.⁶⁵ As life-long partners and collaborators, they jointly designed posters, competition entries, book illustrations, and fabrics, and often used a common signature for their joint designs ("M. S. Nowicki").⁶⁶

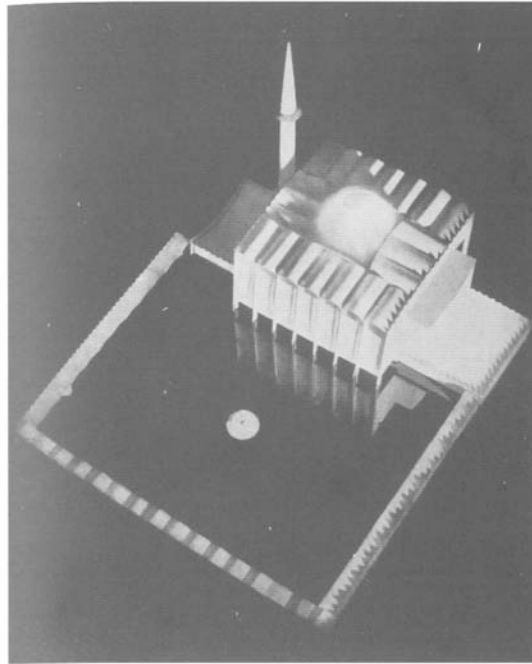
Stanislava joined Matthew back in Warsaw in 1938, and the two began working side-by-side, collaborating on some projects and not on others. They entered architectural competitions, often under the guidance of their former professor, Swierczynski, or collaborated together and with other Polish architects practicing in Warsaw.⁶⁷ Matthew also began teaching at the Warsaw Polytechnic, appointed as an "associate professor," and assisting in Swierczynski's studio.⁶⁸ Stanislava excelled in design of graphical works including commercial art, book illustrations and textile design.

One of their first projects designed together, a mosque design to be located in Warsaw (1936), was awarded third prize.⁶⁹ Their mosque was square in plan, with multiple barrel vaults surrounding a central dome. (Figure 2.11) These vaults and dome rested on individual columns, both around the perimeter and on the interior. The mosque is enclosed with independent screen

walls between the columns. The building has bi-axial symmetry and a centralized plan, realized through the composition of simple geometric shapes (square, circular dome). The Nowickis' rendering of the interior showed the top vaults dissolving into the sky above, with slender columns dividing interior space. (Figure 2.13) These structural elements divided the space, providing order, but also creating a varied spatial experience. Shaped by only structural elements, the geometry and form of the interior space play an essential role in the architecture of the mosque.

This mosque design has some similarities to Auguste Perret's Notre-Dame de Raincy (1924-1925). (Figure 2.14) Perret's reinforced concrete church uses slender columns to support barrel-vaulted spaces of alternating orientation (at right angles to one another). Now graduated, Nowicki appears to have begun drawing on other sources for inspiration, beyond Le Corbusier, and perhaps moving towards a more structurally driven approach to expression. Lewis Mumford, in his biography of Nowicki, wrote that "[Nowicki] sought the work of Auguste Perret, to pick up all the threads that Le Corbusier had dropped. ... Nowicki admired in particular Perret's use of ferro-concrete, and saw in his work the true continuation of the great Gothic builders..."

As a collaborative project, it is difficult to assign authorship to either Matthew or Stanislava separately. As the work of female architects has been repeatedly overlooked during this time period, this dissertation has been careful to credit Stanislava separately where due, and specifically note collaborative projects where documentation exists.⁷⁰ It is worth noting that Stanislava went on to an illustrious career of her own in the United States, and is a rich topic for future research.



27. *Mosque in Warsaw, model, competition entry.*

Figure 2.11 – Matthew and Stanislava Nowicki, Mosque project, 1936. (Barucki, Tadeusz, and Maciej Nowicki. 2010. *Matthew Nowicki: Poland, USA, India*. [Warsaw]: Salix Alba. 21)

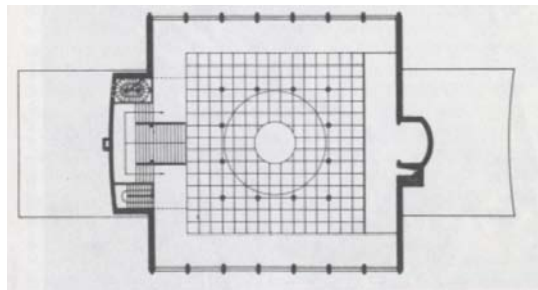


Figure 2.12 – Plan of the Nowickis' Mosque, 1936. (Tadeusz Barucki, *Maciej Nowicki*. ([Warszawa]: "Arkady," 1980),14.)

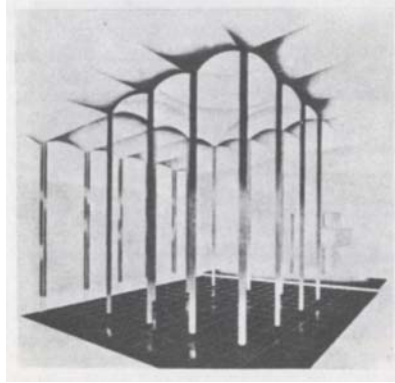


Figure 2.13 – Nowicki's Mosque Interior perspective, 1936. (Tadeusz Barucki, *Maciej Nowicki*. ([Warszawa]: "Arkady," 1980),14.)



Figure 2.14 – Interior view of Notre Dame du Raincy, Auguste Perret, Church of Notre Dame, Raincy, France, 1924-1925. (Cities and Buildings Database, copyright Meredith Clausen, Image ID MLC87, University of Washington)

Matthew Nowicki worked with another Polish architect, Jan Boguslawski (separately from Stanislava), on an entry for the Polish Pavilion at the 1939 World Exposition in New York. Their design received second prize (Figure 2.15) The proposal (available only as a perspective sketch) shows a small cylindrical entry space attached to a rectangular structure formed by two barrel-vaults, supported on slender columns.⁷¹ The masonry end walls were recessed, indicating

their independence from the overhead vaults, while the longitudinal wall was integrated with the overhead vault (possibly as a bearing wall) and was detailed with individual panels or tiles. Here, Nowicki articulated the separation of the gravity-resisting system from the building enclosure; these two elements working in parallel, structure and enclosure, gave the building its overall form. The texture and detail on the enclosing walls tended to break down the scale of the large wall, catching the eye of the visitor, providing artwork at the scale of the pedestrian.

The project demonstrated further experimentation by Nowicki with structural elements (column, bearing wall, vault, screen wall), and exploration of the different spatial conditions that can be produced with these elements. The elevated building mass (on slender columns) would have allowed pedestrian access below. At the intersection of the two barrel-vaults, a single column supported the vertical load, suggesting not a bearing wall in-between (as on the perimeter) but a clear-span interior. Expressed on the exterior, this arrangement gave the façade depth and variation, while providing legibility to the internal spaces.⁷² Nowicki was beginning to align the space-shaping characteristic of structural form with programmatic demands, and make this alliance apparent in the building's outward expression. The sketch (Figure 2.15) also began to show a sense of monumentality that might come with a structurally expressive form.

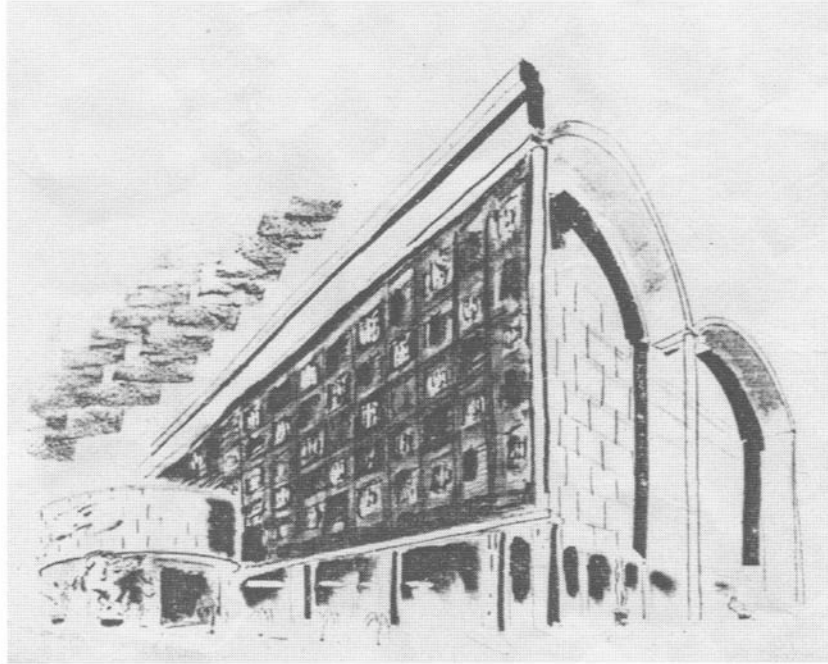
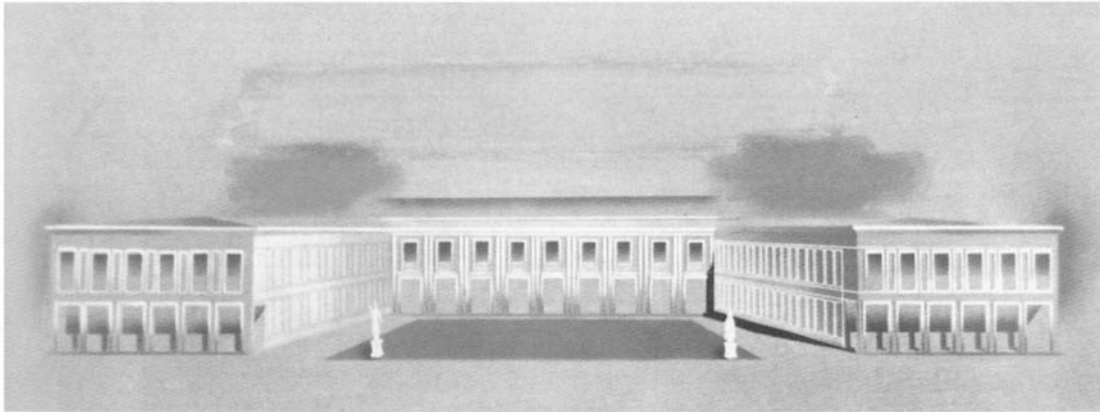


Figure 2.15 - Nowicki's drawing of his design for the Polish Pavilion at the 1939 World's Fair, New York City, 2nd Prize. (Barucki, Tadeusz, and Maciej Nowicki. 2010. *Matthew Nowicki: Poland, USA, India*. [Warsaw]: Salix Alba. 21)

The World's Fair project indicated that Matthew Nowicki had achieved national recognition in Poland. Prizes from other competitions included second prize for an administrative building in Lodz (1938, with the Polish architects Roman Soltynski), and first prize for a Spa building in Druskienniki (1938, with Stanislava). The Spa was Nowicki's first significant building to be constructed.⁷³ (Figure 2.16) While no detailed drawings are available, the sketches show a rather conservative approach with symmetrical rectilinear massing, regularly spaced bays, and only subtle variations on the facades (no texture or detail is evident). This building does not appear to have advanced Nowicki's interest in experimenting with Modern structural forms. The building suggests a stripped classicism that is similar to the work of his mentor, Swierczynski, who possibly had influence over its design. As a built project, it was

perhaps selected for its familiar, conventional design, as Nowicki's interest in structural expression is not apparent.



30. *The Spa Building in Druskininkai, facade. Competition entry.*

Figure 2.16 – Nowicki's Spa building in Druskienniki, 1938. (Barucki, Tadeusz, and Maciej Nowicki. 2010. *Matthew Nowicki: Poland, USA, India*. [Warsaw]: Salix Alba. 21)

In 1938, with an expanded portfolio of projects as a result of competitions, Matthew Nowicki began to win direct commissions from clients. His next major projects were a Sports Center in Warsaw (with Zbigniew Karpinski, Figure 2.17) and a Resort Hotel Augustow (with Stanislava and W. Stokowski, Figure 2.18).⁷⁴ These designs have somewhat similar compositions to the Spa Building but are more overtly Modern in their vocabulary. In both buildings concrete columns contrast with rectilinear forms. The Sports Center (a plan or whole building drawing is not available) shows a variation of depth along one façade, with a recessed wall behind round concrete columns at ground level, and an upper story split between a half-height spandrel that conceals the column and a recessed horizontal window revealing the columns at this floor). The most notable structural feature of the Resort Hotel is the tall entry porch with circular concrete columns supporting a concrete canopy. These features provide a

focus on the otherwise flat façade of brick with regularly spaced rectangular window openings, and the recessed entryway with surfaces of stone. Although both buildings featured relatively slender concrete columns, Nowicki had not yet moved toward the structurally expressive forms found in his later work.



Figure 2.17 – Exterior view of Nowicki’s Sports Center in Warsaw, 1938. (Barucki, Tadeusz, and Maciej Nowicki. 2010. *Matthew Nowicki: Poland, USA, India*. [Warsaw]: Salix Alba. 22)



Figure 2.18 – Approach to Nowicki’s Resort Hotel, Augustow, 1938. ((Barucki, Tadeusz, and Maciej Nowicki. 2010. *Matthew Nowicki: Poland, USA, India*. [Warsaw]: Salix Alba. 22).

With these successes, commissions continued to flow their way, and in the years before World War II, the Nowickis had “plenty of work.”⁷⁵ Matthew Nowicki’s ability to generate architectural sketches quickly and his personal charm attracted an increasing number of collaborators and clients. Fellow Polish architect, Jerzy Hryniewiecki stated:

In all his pre-war designs, Maciej’s rich individual creativity can be seen – and although it was so great, it went in him together with great personal modesty. This modesty, so rarely met in high-talented people, made it easy for him to work together with colleagues, and added a great and captivative charm. He had the gift of influencing people with richness of his intellect and his personal charm made a great teacher of him, the best possible colleague, and a warm friend.⁷⁶

World War II

Just three years into their professional careers, the Nowickis’ lives were disrupted by war. On September 1, 1939, the German army crossed Poland’s western border, initiating World War

II. At the time of the invasion, anticipating the coming conflict, Matthew Nowicki was serving his mandatory obligation as a lieutenant in the Polish Army, in charge of an anti-aircraft division.⁷⁷ While performing training maneuvers on the outskirts of Warsaw, Nowicki watched in horror as hundreds of German bombers flew overhead towards the city. The Polish capitol endured round after round of heavy bombing from the German *blitzkrieg*. The Polish army offered significant resistance despite being technologically and numerically outmatched.⁷⁸

On September 17, 1939, in violation of Soviet-Polish Non-Aggression Pact, the Red Army invaded Poland from the east, and rendered Polish defense plans obsolete. Polish government leaders fled into exile in France, and Polish troops were either captured, fled to neutral Romania, or remained. Many joined underground resistance organizations. Poland was partitioned into German and Soviet territories, ending the independence of the Polish Republic.⁷⁹ Returning to Warsaw in winter 1939, Nowicki discovered a transformed city, devastated by the bombing, and a people under the oppression of an occupying army.

The instruction of architecture, and all higher education, in Poland soon came under attack.⁸⁰ The Germans outlawed the teaching of architecture and urban planning in Warsaw. Yet, the Nazis did allow instruction to continue in the basic skills of the “building trades.” The Warsaw Polytechnic, School of Architecture was officially reduced to a “School of Building Trades.” Nowicki remained on as an instructor of bricklaying, a skill he had to learn, and then teach.⁸¹

However, architectural instruction at the Warsaw Polytechnic, School of Building Trades did survive, in an “underground” format, and Nowicki continued to teach studio courses alongside Swierczynski. This activity was connected to a larger underground cultural resistance movement, actively seeking to subvert the Nazi attempts to destroy Polish art, literature and

culture. Under the guise of “draftsman classes,” over 150 students continued their architectural education; students completed 23 graduate theses, as well as nine doctoral, and eight post-doctoral works during the war years.⁸² As protection, in the event of discovery by the Nazis, all projects, thesis and research reports were pre-dated to before the war, allowing a persistent denial of architectural teaching.⁸³ All architectural models were made to fit in the palm of the hand, so they could easily be crushed if they were discovered.⁸⁴

The conditions of instruction were uncertain and intense. The noted English modernist Sir Charles Reilly (1874-1948) recalled meeting Nowicki after the war, and commented on the influence of the wartime surroundings on the architectural ideas that emerged.⁸⁵

To judge from the broken vaults where he and his students worked it must have been the most exciting experiences a School of Architecture has ever had. Perhaps such experience stimulated the imagination of both master and pupils. ... If the Polish planners worked as I believe they did, under these great difficulties, far removed from the peace we consider necessary for this philosophic thought we associate with town planning, it will be seen that their work was to them nevertheless three dimensional exercises. ... It would seem therefore we have a lot to learn from M. Nowicki.⁸⁶

As part of the underground activity in architecture during the War, design competitions continued.⁸⁷ Nowicki actively participated in these competitions in collaboration with other architects. For one competition, Nowicki (with the architect Stefan Putowski, a fellow graduate from the Warsaw Polytechnic) undertook a church design, intended for a well-known pilgrimage center in Poland, Prandocin.⁸⁸ In this project, Nowicki took his experimentation with structural form in a new direction by studying “a reinforced concrete structural unit appropriate to the spanning of large interiors.”⁸⁹ While Nowicki had used only basic structural elements in his earlier designs (columns, walls, barrel vaults), in this project he began to create new structural

elements, shaped building materials intended to both carry physical loads in specific ways and create new spatial experiences.

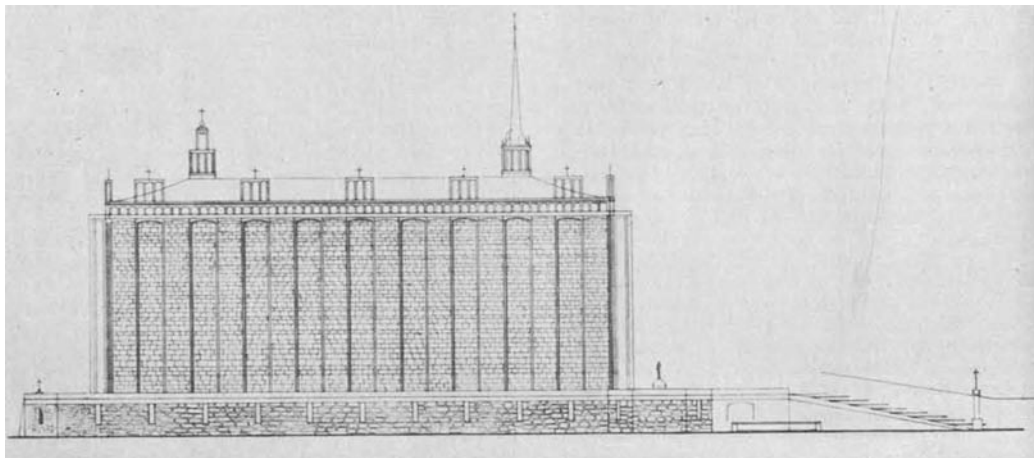


Figure 2.17 – Nowicki's Polish Church Design, Exterior, ca. 1943. (Charles Reilly, "A Polish Church by Matthew Nowicki," *Building 22*, no. 4 (1947): 110)

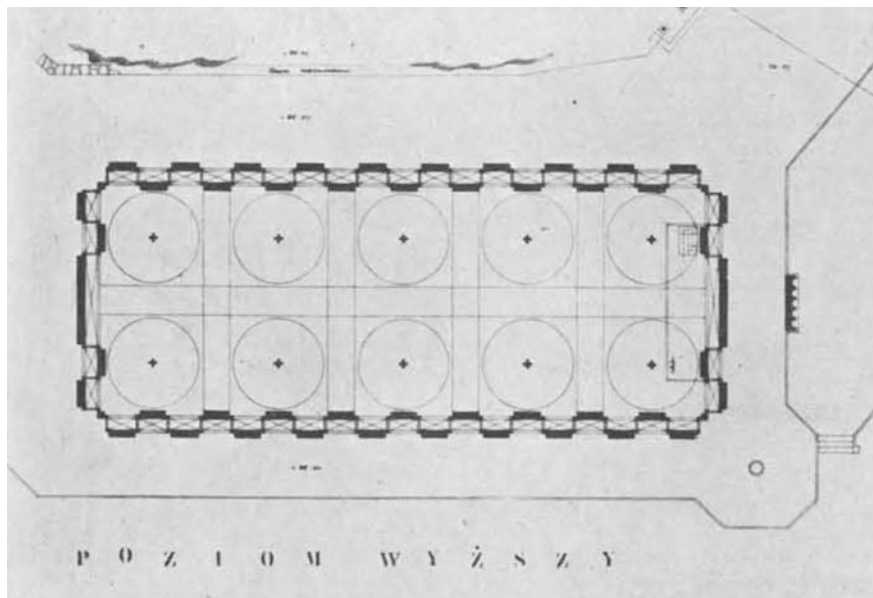


Figure 2.18 – Plan of Nowicki's Polish Church Design, ca. 1943. (Charles Reilly, "A Polish Church by Matthew Nowicki," *Building 22*, no. 4 (1947): 111.)

The proposed church was rectangular in plan, with an articulated exterior masonry wall (bearing on the ground), completely separated from the interior columns that supported the roof. These interior columns, roughly 40 feet from floor to ceiling, were regularly arranged in a square grid with roughly 20 feet between columns. Constructed of cast-in-place reinforced concrete, these columns were narrow at their base but fanned out at the top into a mushroom-like shape. Cruciform in cross section at the bottom, each column expanded as it rose, transforming in cross section into a series of tightly spaced ribs that splayed outward from the center support at the ceiling. These ribs, recalled the opening of an umbrella (from underneath), and were placed “according to the pattern of reinforcement used.”⁹⁰ A flat, 1.5-inch thick shell of concrete rested on top of each umbrella, joining the ribs together and providing the roof enclosure.

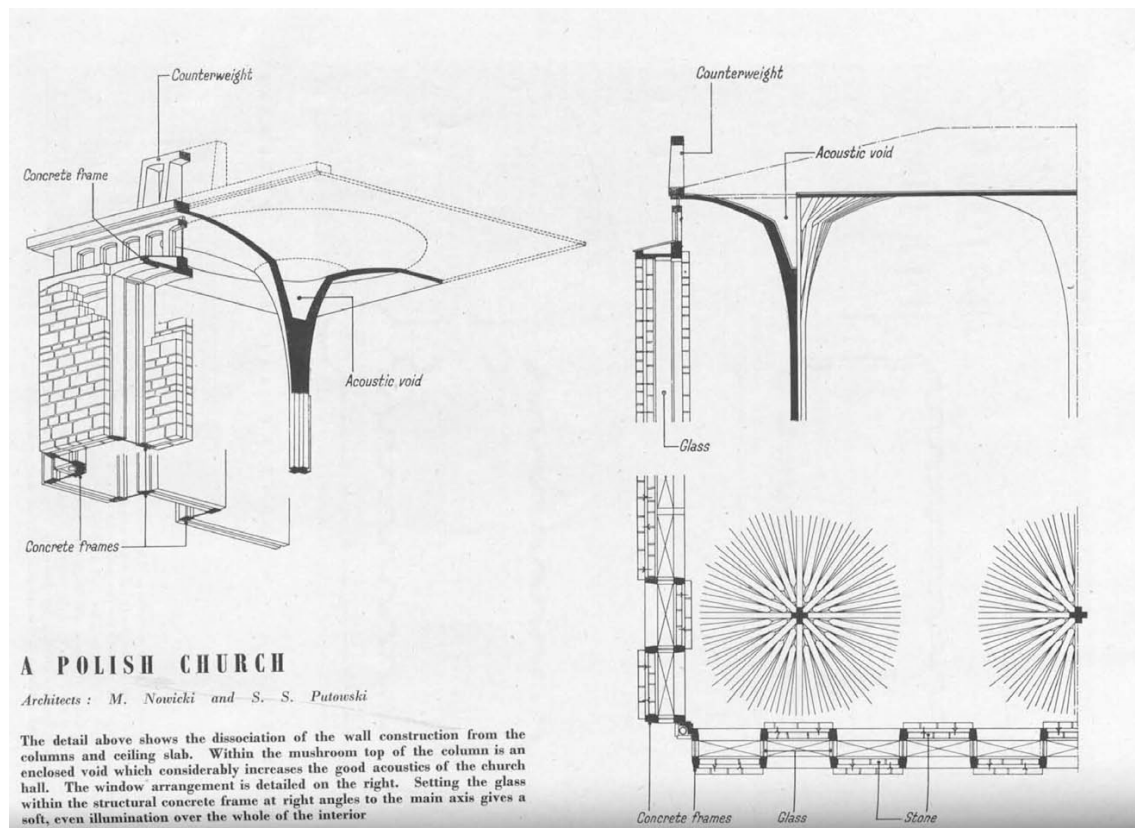


Figure 2.19 – A detail of the structural columns in Nowicki’s Polish Church Design, ca. 1943. (Charles Reilly, “A Polish Church by Matthew Nowicki,” *Building 22*, no. 4 (1947): 112.)

Nowicki's columns fall in an interesting position in the chronological development of reinforced concrete structure. Reinforced concrete, through the work of Monier and Hennebique, had been long developed as a reliable and available building material.⁹¹ When Nowicki's building was published in the British magazine *Building* in 1947, the author Sir Charles Reilly, noted the development of reinforced concrete ceilings: "The smooth surface of the first board-like ceilings of Monier change with time into more complex structural units as the construction becomes more economical and daring. In fact, a system of structural beams... takes the place of the once genuinely primitive form of a flat slab."⁹²

Nowicki's column design also recalls the "beamless-floor" design by the structural engineer Robert Maillart (1872-1940), patented in 1909.⁹³ This system consisted of octagonal columns that flared out at the top to form capitals to support a flat, concrete slab above.⁹⁴ Maillart's system was designed to reduce the formwork necessary for concrete floor systems, and utilize the two-way spanning capability of a reinforced concrete slab.⁹⁵ Nowicki's columns are also similar to the mushroom columns of Frank Lloyd Wright's Johnson Wax Company Building (1937-1939), designed just a few years earlier. While these columns were published in the *Architectural Forum* in an August 1937 supplement, it is unknown if Nowicki had access to this article.⁹⁶ Nowicki cited these columns much later in his publication "Composition in Modern Architecture" (1949) as being "precursors of a future wave that will bring unpredicted solutions in form."⁹⁷



Figure 2.20 – Robert Maillart’s first “beamless slab”, Zurich Warehouse, 1910. (ARTstor Slide Gallery, Source: University of California, San Diego)



Figure 2.21 – Interior view of Frank Lloyd Wright’s Johnson Wax Administration Building, 1937-1939. (Cities and Buildings Database, copyright Meredith Clausen, ID USA411, University of Washington)

Like Wright’s columns at Johnston Wax, Nowicki’s columns contain a void at the top to reduce the weight of the capital.”⁹⁸ Like Maillart’s design, Nowicki’s columns appear to be supporting a separate concrete shell, but this shell was drawn very thin. Wright’s columns behave more like three-hinged arches, individual “mushrooms” connected by narrow beams.⁹⁹ Nowicki’s columns again appear to be more like Wright’s in this regard given the presence of a “counter weight” around the perimeter of the building. When this design was published in 1947, the description by Nowicki indicated the aim was to “balance the tendency to overweight the columns to the center.”¹⁰⁰ This extra weight around the edges causes the edges of the columns to bend down, causing the column capitals to lean slightly outward and developing a negative

moment across the roof, a moment opposite to the load of the roof. These perimeter counterweights effectively “pre-stress” the column capitals to resist gravity loads with minimal deflections. These perimeter weights, detailed as a type of parapet in specific locations, “giving thereby a structural skyline,”¹⁰¹ are similar structurally to the spires and grotesques placed on the buttresses of Gothic Cathedrals – their weight had been used to balance the outward thrusts of the gothic vaults. The fact that these counterweights are explicitly delineated and described in the drawings, shows that a sophisticated understanding of structure was essential to the design concept.

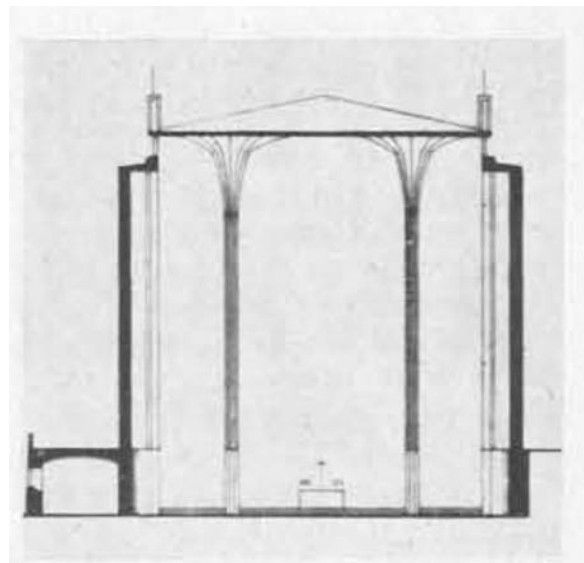


Figure 2.22 - Nowicki’s Polish Church Design, section, ca. 1943. (Charles Reilly, “A Polish Church by Matthew Nowicki,” *Building 22*, no. 4 (1947): 113.)

While related to his previous works, Nowicki’s attention to the structural details in both the columns and walls of this wartime church project are distinct and show his pursuit of a more experimental application of structure. With the articulated ribs of the columns, Nowicki dissolved the solid mass of Wright’s and Maillart’s column capitals into many thinner elements. Rather than express the weight and mass of poured concrete, Nowicki shaped the top of the

column according to the reinforcing bars embedded within the concrete, expressing the true character of reinforced concrete as a composite material.

The division of the column capital into many smaller elements also recalled the tracery of the fan vaulting of late Gothic cathedrals and churches, where the columns dissolve into a ceiling web of stone ribs. Another comparison can be made to the greenhouses of Joseph Paxton.¹⁰²

An analogy to Paxton is present in Nowicki's later writings, and applies to this church design. In "Origins and Trends" he stated:

The logical development of the skeleton would have accentuated the delicate ribs dividing areas of the building into supporting and supported members. The resulting form would perhaps acquire the lightness and openness of lacework filled with translucent or opaque screen... This was the way that the gothic skeleton developed, with its stained glass windows, and this was the road explored by Paxton, Labrouste, Eiffel and their contemporaries.¹⁰³

The phrase regarding "supporting and supported members" was recited in the *Building* article. It stated: "One begins to notice that the changes taking place up to the present time show its strongly marked trend to dividing its function into two parts: those carrying others and those being carried."¹⁰⁴



Figure 2.23 - An example of Gothic structure, Basilique Sainte Madeline. (Cities and Buildings Database, copyright Eugene Webb, ID ew329, University of Washington)

Together, these statements indicate the deep consideration of structure in this church design, as well as the exploration into what a structural idea could mean for architectural expression. The spaces between the ribs become the “supported areas” while the ribs carry load to the foundation, and the flow of forces through the material is put on display. In these columns, Nowicki gave the structure an expressive quality. By drawing from both Gothic and 19th century sources,

Nowicki sought to further the development of structural form. The form was not simply rational, nor rooted strictly in simplification; rather Nowicki was interested in the variations that can arise from material-structural explorations. He was interested in the *possibilities* that construction and materials offer, not just the discovery of an optimal form.

As it was an unrealized experiment, Nowicki's columns present many questions as to how they would have been built. Although the *Building* article claimed that "metal forms – in prefabrication or on the site" could be used to cast these columns and "encourage more elaborate shapes," they would still have required intricate detailing and tight tolerances to make such forms.¹⁰⁵ The narrow ribs would have required quite small aggregate sizes in the concrete mix as well as small diameter reinforcing bars. With the ribs articulated as shown, the bars would have had to be bent precisely to fit the form – an uncertain process in itself. In addition to these concerns, the entire formwork system would have had to be supported up on scaffolding, 40 feet above the floor below, or precast on the ground and somehow lifted into place.

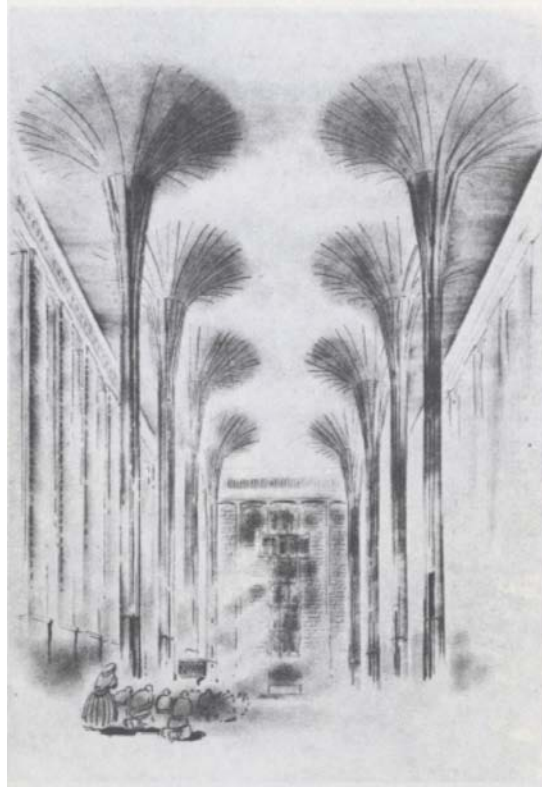


Figure 2.24 – Sketched interior perspective of Nowicki’s Polish Church Design, ca. 1943. (Tadeusz Barucki and Maciej Nowicki, *Matthew Nowicki: Poland, USA, India* ([Warsaw], Salix Alba, 2010), 19.)

In a rendering of the interior of the church, Nowicki evoked the Gothic nave, as his concrete columns dissolved (even disappear) into the roof above. Worshipers were illuminated through the vertical slots in the perimeter walls, but the interior maintained a mysterious quality.

With Nowicki’s experimental column and roof structure, the surrounding walls could be designed to be independent, freestanding elements. In this project, a double-row of thin concrete frames contained panels of stone that alternate in placement on the inside and outside of the frame. The concrete frame would add rigidity to the outside wall, and this alternation of panels created an undulating sense of the perimeter wall with regularly spaced niches for chapels on the

inside. Narrow panels of glass were placed in the spaces between the frame (perpendicular to this stone), allowing light in only through tall vertical slits, stressing the “vertical spirit of the building.”¹⁰⁶ The detailed arrangement of concrete, stone and glass recalls the intricacies of Perret’s Notre-Dame du Raincy. As in Perret’s building, here Nowicki finds expression through a structural exploration of a free-standing perimeter wall.

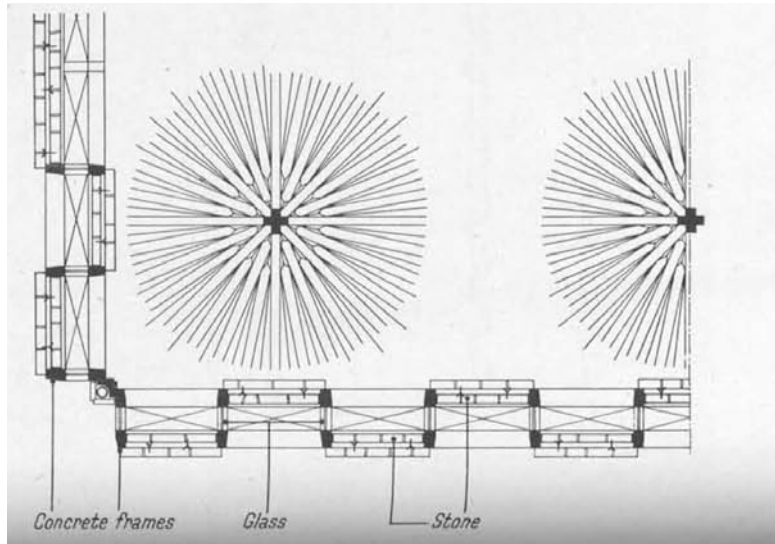


Figure 2.25 – Detail of exterior wall and column in Nowicki’s Polish Church Design, ca. 1943. (Charles Reilly, “A Polish Church by Matthew Nowicki,” *Building* 22, no. 4 (1947): 112.)

The *Building* article celebrated the “remarkable features, both of construction and of design, arising out of the construction, are displayed in its architecture.”¹⁰⁷ Encouraging the expression of structural forms, beyond flat roofs, Reilly stated: “the principle of the structure itself favour(s) other more elaborate shapes.”¹⁰⁸ The alternating segments of concrete and glass on the articulated exterior work together to support the wall, and shape interior space and exterior expression.

But despite the experimentation with the column and roof, and structural separation of the wall, the external form of the building remained relatively traditional in appearance. Although

still conservative in his external presentation of the building (as with his earlier commissions), Nowicki's ideas of a structurally expressive modern architecture were beginning to develop and were becoming bolder in interior expression (as with his competition entries). Nowicki's church design provides a detailed look into his emerging architectural ideas, displaying a clear interest and facility in exploring the material and technical presence of architecture. Nowicki was seeking mastery of his building medium by exploring the architectural implications of new structural forms.

¹ Jerzy Lukowski, and W H. Zawadzki, *A Concise History of Poland* (Cambridge [England]: Cambridge University Press, 2001), 186-189.

² Lewis Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki," *Architectural Record* 115, no. 6 (1954): 140.

³ Barucki described this "manor house" as Nowicki's childhood home, located in the small village of Slomniki. A large house surrounded by extensive woods, Barucki states this "place was to live long in the architect's memories." Tadeusz Barucki and Maciej Nowicki, *Matthew Nowicki: Poland, Usa, India* (Warsaw: Salix Alba, 2010), 8.

⁴ Bogdan Grzeloński *To New York, Chicago, and San Francisco: Polish American Biographies* (Warsaw: Interpress, 1986), 190.

⁵ On November 11, 1918, Warsaw was freed of German troops, and, with the Treaty of Versailles on June 28, 1919, Poland was internationally recognized as a sovereign and independent state.

⁶ Grzeloński, *To New York, Chicago, and San Francisco: Polish American Biographies*, 190. Also, the Polish Consulate in Chicago's website states that it was established in 1920, the "first consular office representing a Central European country."

⁷ Laura Pilarski, "Matthew Nowicki: Poet and Philosopher of Form" *They Came from Poland: The Stories of Famous Polish-Americans* (New York: Dodd, Mead, 1969), 105-118.

⁸ Barucki and Nowicki, *Matthew Nowicki: Poland, USA, India*, 9.

⁹ Pilarski, *They Came from Poland*, 106. Nowicki's reference is contained in "Remarks on Architectural Education in Europe" (delivered c. 1949) republished in Matthew Nowicki and Bruce H. Schafer, *The Writings and Sketches of Matthew Nowicki* (Charlottesville: University Press of Virginia, 1973), 11. Though undated, Nowicki most likely gave this paper as a lecture while teaching at North Carolina State University, in either fall 1948 or in 1949.

¹⁰ The Warsaw Circle of Architects (also referred to as the Architect's Circle) was led by the architect / planner Tadeusz Tolwinski. See entry in Gordon Campbell. *The Grove Encyclopedia of Classical Art and Architecture*. (Oxford: Oxford University Press, 2007).

¹¹ B. Poplawski, “The Beginnings of the Department of Architecture at the Warsaw Polytechnic in the Light of Heretofore Unknown Documents,” *Ochrona Zabytkow (Historical Monument’s Preservation)* (2006): 111-116..

¹² Barucki and Nowicki, *Matthew Nowicki: Poland, USA, India*, 10.

¹³ Dorota Parszewska, “Architects-graphic designers from the Faculty of Architecture of the Warsaw Polytechnic in 1915-1939”, *Wilano Poster Museum* (n.d.) Archive, <http://www.postermuseum.pl/english/museum/acrobat/architekcieng.pdf>, Accessed online 7 February 2012.

¹⁴ Cited in Parszewska, “Architects-graphic designers ...” Jozef Dziekonski (1844-1927) was an architect and a conservator, trained at the Imperial Academy of Fine Arts in St. Petersburg, specializing in church architecture. Mikolaj Tolwinski (1857-1924) was also trained at the Imperial Academy of Fine Arts in St. Petersburg, but lobbied for the secession of Poland from Russia. Jan Heurich (1873-1925) was a primary leader of the Warsaw Circle of Architects, also a graduate of Imperial Academy of Fine Arts in St. Petersburg. Karol Jankowski (1868-1928) was educated at the Technical University in Riga, before returning to Poland, co-teaching in the Department of Urban Design and realizing several early-modern buildings in Warsaw.

¹⁵ Zygmunt Kaminski (1888-1969) was a graphic artist influenced by Polish folk art, and exhibited his work in both Warsaw and in Paris. Oskar Sosnowski (1880-1939) was an architect and art conservator, receiving his education in Engineering and Construction at a Russian Polytechnic in Warsaw. His Church of Christ the King in Bialystok (1927-1939), is celebrated as one of the first modernist churches in the world. Rudolf Swierczynski will be discussed in depth later in the chapter.

¹⁶ Wojciech G. Lesnikowski, and Vladimír Šlapeta. *East European Modernism: Architecture in Czechoslovakia, Hungary, and Poland between the wars 1919-1939* (New York: Rizzoli, 1996).

¹⁷ Parszewska, “Architects-graphic designers ...” 2.

¹⁸ Stanislaw Noakowski (1867-1928) was a painter and art historian, Imperial Academy of Fine Arts in St. Petersburg. He taught history of modern architecture at the Warsaw Polytechnic. Parszewska, “Architects-graphic designers ...” 2.

¹⁹ Parszewska, “Architects-graphic designers ...” 2.

²⁰ *ibid.*

²¹ Nowicki’s reference is contained in “Remarks on Architectural Education in Europe” (delivered c. 1949) republished in Nowicki, Matthew, and Bruce H. Schafer. 1973. *The Writings and Sketches of Matthew Nowicki*. Charlottesville: University Press of Virginia. 14.

²² Nowicki and Schafer, *The Writings and Sketches of Matthew Nowicki*, 14.

²³ *Ibid.*

²⁴ *Ibid.*

²⁵ Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” 142.

²⁶ Nowicki and Schafer, *The Writings and Sketches of Matthew Nowicki*, 14.

²⁷ Henry Kamphoefner, interviewed by Charles Kahn, September 11, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>,

²⁸ Nowicki and Schafer, *The Writings and Sketches of Matthew Nowicki*, 14.

²⁹ Stanislava Nowicki, interviewed by Charles Kahn, September 21, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>, 3:00

³⁰ Nowicki and Schafer, *The Writings and Sketches of Matthew Nowicki*, 14.

³¹ Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” 142.

³² See Jane King Hession, Rip Rapson, and Bruce N. Wright, *Ralph Rapson: Sixty Years of Modern Design* (Afton, Minn: Afton Historical Society Press, 1999), 50. And Eugene J. Johnson, Michael J. Lewis, and Ralph Lieberman *Drawn from the Source: The Travel Sketches of Louis I. Kahn* (Williamstown, Mass: Williams College Museum of Art, 1996), 69.

³³ Matthew Nowicki, “Architectural Education in Europe,” delivered circa 1949, republished in Nowicki and Schafer, *The Writings and Sketches of Matthew Nowicki*, 12.

³⁴ This independence of students, and the expectation to perform a significant amount of work on their own was much different from other, collaborative teaching methods which stressed group work – like that of Gropius at the Harvard GSD after World War II.

³⁵ Nowicki and Schafer, *The Writings and Sketches of Matthew Nowicki*, 13. Nowicki further described the system of “long studies” in his article “Architectural Education in Europe,” addressing the issue of cost of education, which was commonly absorbed by the state.

³⁶ Warsaw University of Technology Digital Library, “Sylwetki Profesorow, Politechniki Warszawskiej, “Rudolf Swiercznski (1883-1943)” Source:

<http://bcpw.bg.pw.edu.pl/dlibra/docmetadata?id=895&from=publication&tab=1>

Accessed: 12 July 2012

³⁷ Ibid.

³⁸ Barucki and Nowicki, *Matthew Nowicki: Poland, USA, India*, 10.

³⁹ Ibid.

⁴⁰ Olgierd Czerner, Hieronim Listowski, and François Wehrin, *Avant-garde Polonaise: Urbanisme-architecture : 1918-1939* (Paris: Éditions du Moniteur, 1981).

⁴¹ Eric Paul Mumford, *The CIAM Discourse on Urbanism, 1928-1960* (Cambridge, Mass: MIT Press, 2000), 294.

⁴² Szymon Syrkus (1883-1964) studied with Walter Gropius at the Weimar Bauhaus (1922-24) before starting a practice in Poland. Syrkus was an active member of CIAM through the 1940s. During World War II, Syrkus was held in the Auschwitz concentration camp, but after the war he began teaching at the Warsaw Polytechnic.

⁴³ Agata Malczyk, *Tracing Praesens: Roots and Context of Modern Movement in Poland*, Thesis, Master of Advanced Studies in Architecture, University of British Columbia, 2002, 20.

⁴⁴ Only two issues of the magazine were published, but the group remained active. In 1928, *Praesens* became the Polish Chapter of CIAM.

⁴⁵ Wojciech G. Lesnikowski, and Vladimír Šlapeta, *East European Modernism: Architecture in Czechoslovakia, Hungary, and Poland between the Wars 1919-1939* (New York: Rizzoli, 1996). 210.

⁴⁶ Ibid. 211.

⁴⁷ Malczyk, *Tracing Praesens*, 20.

⁴⁸ Le Corbusier’s *Vers un Architecture* published in 1923 (articles from his magazine *Esprit Nouveau* 1921) was widely circulated and read.

⁴⁹ Stanislava Nowicki, interviewed by Charles Kahn, September 21, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>, S. Nowicki stated that Le Corbusier was much more “influential” than the Bauhaus. Matthew Nowicki was fluent in French (but not German) making Le Corbusier’s work more accessible.

⁵⁰ Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” 140.

⁵¹ French Ministry of International Affairs, “France and Poland,” Source: <http://www.diplomatie.gouv.fr/en/country-files/poland/france-and-poland/>. Accessed: 1 February 2013.

⁵² League of Nations Treaty Series, Political Agreement signed February 19, 1921. Source: <http://www.worldlii.org/int/other/LNTSer/1923/87.html>

⁵³ Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” 140.

⁵⁴ Quote from a transcript of Nowicki’s speech to the Pratt Institute of Design, May 26, 1948, titled “Remarks on the Problem of Composition in Modern Architecture,” found in the Douglas Haskell Papers, Columbia University.

⁵⁵ It is doubtful that Nowicki actually studied with Le Corbusier. Barucki (Barucki and Nowicki, *Matthew Nowicki: Poland, USA, India*, 15) briefly cites “his brief internship at the Great Corbu’s bureau,” but offers no evidence. Lewis Mumford makes no mention of any such internship in his 1954 biography. Stanislava had briefly worked in Le Corbusier’s atelier in 1936.

⁵⁶ Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” 145.

⁵⁷ Mumford felt that Nowicki’s design for his parents’ house was “pure Le Corbusier,” deriving from Le Corbusier’s “formula for achieving modern form.” (Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” 145). Barucki claims this was a “period of fascination with the architectural ideas of Le Corbusier, and indeed his parents’ house is an architecture student’s implementation of those ideas.” (Barucki and Nowicki, *Matthew Nowicki: Poland, USA, India*, 15)

⁵⁸ Essay republished in Adolf Loos and Adolf Opel, *Ornament and Crime: Selected Essays* (Riverside, Calif: Ariadne Press, 1998).

⁵⁹ Barucki and Nowicki, *Matthew Nowicki: Poland, USA, India*, 15.

⁶⁰ Lesnikowski, and Šlapeta. *East European Modernism*, 212.

⁶¹ Le Corbusier and Pierre Jeanneret originally published “Five Points towards a new architecture” in 1926, in the French magazine *Almanach de l’Architecture modern, Paris*. The short essay has been reproduced in many different publications, including Krista Sykes, ed. *The Architecture Reader: Essential Writings from Vitruvius to the Present* (New York, George Braziller Publishers, 2007).

⁶² This competition was published in 1931 in the French journal *Architecture d’aujourd’hui*, and later in 1932 in *Architectural Review* and *Architectural Record*. With Nowicki’s ties to Swiercznski and *Praesens*, it is reasonable to assume he had some exposure to Le Corbusier’s project proposal (and the controversy that ensued after it was not selected).

⁶³ In addition to his architectural studies, Nowicki continued to pursue drawing through courses in graphic art, and the creation of poster designs – another area of focus in the School of Architecture. The scarcity of building projects led many architecture students to pursue graphic design in parallel to their architecture careers. With a strong eye for graphics, Nowicki teamed up with Stanisława Sandecka and established a graphic workshop. Together they produced a large number of posters for such causes as the “Fight Against Tuberculosis”(1934), the “2nd Meeting of Polish Youth from Abroad” (1935), and the “Architects Ball” (nd). Their poster designs use symbolism and narrative representation, and emphasized a play of light and dark in an abstract manner. Simple lettering and the use of shadow to create a sense of depth. After the invention of color lithography and popularization of the poster by Henri Toulouse-Lautrec, poster designs became an acceptable form of artistic expression across Europe. Polish posters, pioneered by the experimental artist Tadeusz Gronowski, showed a wide range of influences

from *Jugendstil*, Secession, Japonism, and Cubism, mixed with traditional elements of symbolism and national folklore. Andrea Austoni, “The Legacy of Polish Poster Design”, *Smashing Magazine*. January 17, 2010. Online publication <http://www.smashingmagazine.com/2010/01/17/the-legacy-of-polish-poster-design/>, Accessed 26 March 2011) No longer contained to promotion of performances, poster design was made part of the architecture curriculum at the Warsaw University of Technology under Edmund Bartłomiejczyk and Zygmunt Kaminski.

⁶⁴ Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” 142.

⁶⁵ A short biography of his wife, Stanisława, appeared in the North Carolina State College, and Matthew Nowicki, *School of Design: North Carolina State College, Raleigh, N.C.* (Raleigh: NCSC Press, 1950). See Appendix B for more discussion of Stanisława.

⁶⁶ Their poster designs during their time in the School of Architecture gained wide acclaim. They won the “Grand Prix and Gold Medal” for graphic works at the 1937 Paris Exhibition. Once in the United States, Matthew and Sasha collaborated on the publication “Made in Poland,” written by Jarecka, Louise Llewellyn, and illustrated by M. S. Nowicki. (*Made in Poland; Living Traditions of the Land* (New York: A.A. Knopf, 1949). They also provided illustrations for *Eleanor of Aquitaine*, written by Curtis Howe Walker. (*Eleanor of Aquitaine* [Chapel Hill: University of North Carolina, 1950].)

⁶⁷ Grzeloński, *To New York, Chicago, and San Francisco: Polish American Biographies*, 191.

⁶⁸ Nowicki described his position in the School of Architecture as an “Associate Professor,” though the specific rank of different professors in the School at that time is not clear, and likely not equivalent to the meaning of the term Associate Professor in an American university in 2012.

⁶⁹ An unusual program for pre-war Poland, not much information is available on the competition for a Mosque. However, there was a Muslim presence in Poland, dating back to the 16th century, organized as a group known as the Lipka Tatars.

⁷⁰ For a discussion on the history of women architects, see Meredith L. Clausen, “The Ecole des Beaux-Arts: Toward a Gendered History,” *Journal of the Society of Architectural Historians* 69, no. 2 (2010): 153-161.

⁷¹ Barucki and Nowicki, *Matthew Nowicki: Poland, USA, India*, 21.

⁷² Several elements appear to draw on the influence of Le Corbusier, including the *piloti* columns, elevated building mass, and the rounded vaults (seen in Le Corbusier’s Paris weekend house and Maisons Jaoul)

⁷³ Nowicki and Schafer, *The Writings and Sketches of Matthew Nowicki*, xi.

⁷⁴ Grzeloński, *To New York, Chicago, and San Francisco: Polish American Biographies*, 191..

⁷⁵ Grzeloński, *To New York, Chicago, and San Francisco: Polish American Biographies*, 192

⁷⁶ Ibid.

⁷⁷ Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” 147.

⁷⁸ Stanisław Jankowski, “Warsaw: Destruction, Secret Town Planning, 1939-44, and Postwar Reconstruction” in Jeffrey M. Diefendorf, ed. *Rebuilding Europe's Bombed Cities* (New York: St. Martin's, 1990).

⁷⁹ Gerhard Weinberg, *A World at Arm: A Global History of World War II* (Cambridge [England]; New York: Cambridge, 1994), 48. See Chapter 2: From the German and Soviet invasions of Poland to the German attack in the West, September 1, 1939 to May 10, 1940.

⁸⁰ Many different types of education were outlawed by the occupying Nazi forces. See Josef Krasuski “Education as Resistance: the Polish Experience of Schooling During the War” in Roy

Lowe, ed. *Education and the Second World War: Studies in Schooling and Social Change* (London: Falmer Press, 1992). Though mainly focusing on primary school education, this article gives a good overview of the sentiment surrounding education as an act of Polish nationalism.

⁸¹ Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki," 147. , Barucki and Nowicki, *Matthew Nowicki: Poland, USA, India*, 21.

⁸² Jankowski, "Warsaw," 82.

⁸³ *ibid.*

⁸⁴ Stanislava Nowicki, interviewed by Charles Kahn, September 21, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>, 01:00

⁸⁵ Charles Reilly (1874-1948) was an English architect, trained at Queens College, Cambridge University, before practicing and teaching at the Liverpool School of Architecture from 1904-1933. See Peter Richmond. *Marketing Modernisms: The Architecture and Influence of Charles Reilly*. (Liverpool: Liverpool University Press, 2001). After World War II, Nowicki visited Reilly in Liverpool before sailing to the United States.

⁸⁶ Matthew Nowicki and Charles Reilly "Warsaw. Scheme for rebuilding business quarter," *Building* 22, no. 2 (1947): 47.

⁸⁷ The architectural competitions during the war are sited by several sources, though it is not clear who sponsored these competitions, and if they had any association with projects that might be built.

⁸⁸ The specific date of this project is uncertain though Barucki (*Matthew Nowicki: Poland, USA, India*, 19) claims it was drawn during World War II. It was subsequently published in the British journal *Building* in April of 1947, after Nowicki's visit to Liverpool and his meeting Sir Charles Reilly. Stefan Putowski (1903-1985) graduated from the Warsaw Polytechnic (n.d.), and designed in Poland his whole life. His design of the Free Polish University in Lodz, won 3rd prize in 1937.

⁸⁹ Charles Reilly, "A Polish Church by Matthew Nowicki," *Building* 22, no. 4 (1947): 110-113.

⁹⁰ *ibid* 113.

⁹¹ For a good review to the history of reinforced concrete, particularly in early 20th century Europe see Frank Newby, *Early Reinforced Concrete*. (Burlington: Ashgate, 2001).

⁹² Reilly, "A Polish Church by Matthew Nowicki", 110.

⁹³ David P. Billington, *Robert Maillart and the Art of Reinforced Concrete* (New York, N.Y: Architectural History Foundation, 1990), 14.

⁹⁴ As an engineer, Maillart recognized the concentration of shear stresses around each column and the increased thickness of concrete it required.

⁹⁵ Nowicki does not make mention of Maillart's work, and, as it was largely contained to Switzerland, was not likely seen by Nowicki (although he did travel quite a bit both with his family and as part of his architectural education). Maillart's work was published, most notably by Siegfried Giedion in 1930 (Siegfried Giedion, "[Maillart, Builder of Bridges]." *Cahiers D'art*. 5, no. 3 (1930): 146-153) – a French language article - in *Architectural Review* (Shand, P. Morton. "The New Sihl General Post Office in Zurich." *Architectural Review*. 70 (1931): 108-109.) and in RIBA (Shand, P. Morton, "Robert Maillart: The Architecture of a Great Swiss Engineer," *Royal Institute of British Architects Journal* 45 (1938): 957-969)

⁹⁶ "Frank Lloyd Wright Tests a Column (for Johnson Wax Company) Attends a Convention, Visits the Paris Fair," *Architectural Forum* 67 (1937): suppl. 10

⁹⁷ Matthew Nowicki, "Composition in Modern Architecture," *Magazine of Art* 42 (1949): 109. Nowicki also mentions the "ceilings of Freyssinet" referring to the railway stations and warehouses of Eugene Freyssinet. Freyssinet does not appear to have made use of any mushroom-shaped columns.

⁹⁸ This aspect of Nowicki's column is discussed by Reilly, as they are meant to "increase the good acoustics of the building." (Reilly, "A Polish Church by Matthew Nowicki", 112).

⁹⁹ Leonard Eaton, "Frank Lloyd Wright and the Concrete Slab and Column," *The Journal of Architecture* 3, no. 4 (1998.): 315-46.

¹⁰⁰ Reilly, "A Polish Church by Matthew Nowicki", 113.

¹⁰¹ Ibid.

¹⁰² For example the Cloisters of Canterbury Cathedral have a similar arrangement to Nowicki's column.

¹⁰³ Matthew Nowicki, "Origins and Trends in Modern Architecture," *Magazine of Art*. 44 (1951): 275.

¹⁰⁴ Reilly, "A Polish Church by Matthew Nowicki", 110.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

¹⁰⁸ Ibid.

Chapter 3: Rebuilding Warsaw

After the death of his mentor Rudolph Swierczynski in 1943, Nowicki took over the Chair of Design in the underground Warsaw Polytechnic School of Architecture, leading his own design studios and guiding individual students.¹ As an instructor, Nowicki impacted the lives of many younger architects, focusing on the methodology and intellectual processes of architectural design. One of his former students later recalled:

Maciej's correction sessions were wonderful. He taught us to think synthetically, to capture the essence of the project and find logical solutions. In fact it was only then that I grasped the 'methodology' of design, and understood the need to adopt one idea, a concept to which everything else had to be subordinated. I can certainly say that all I know about architecture and have achieved in the profession, I owe to Maciej.²

Students recalled how Nowicki continually told his students that he did not believe in a single answer to given design challenges, stating: "To each problem he found numerous solutions, and never insisted on using any of them. If a solution proved wrong, he immediately came up with a few other proposals."³

Through this experience as an educator in wartime conditions, Nowicki began to define his own approach to modern design. After the war, Nowicki recounted his wartime experience in Warsaw:

As on the other aspects of life, the war and the occupation period must have had a tremendous influence on education. In many European cities during the occupation university schools functioned as underground agencies, persecuted by the military and Gestapo authorities. The schools of architecture were no exception, and in this part of their life forms a separate interesting but very bitter chapter.⁴

Under Nowicki's tutelage (and other faculty) the Warsaw Polytechnic used architectural design as an act of resistance, and as a way of maintaining Polish identity by seeking to determine their own possible future. One scholar noted, that in the face of Nazi oppression, "Poles asserted ever more vigorously their national identity, which was perceived to be bound up in the country's architecture."⁵ Mumford later stated "Cut loose from international life, oppressed by their enemies, deserted by their friends, the Poles turned to their own national traditions and sought in their own past to find a precedent for the new buildings the nation would one day erect again."⁶ Part of the student activities included the documentation of historic monuments in the city of Warsaw. This act of Polish national pride that created a valuable record of important monuments and sites, many of which did not survive to the end of the war.⁷ Nowcki later described the need for reconstruction, and what that might mean for architecture moving forward: "The destruction of treasured monuments of the past, the professed need for replacing them with others that could stand as well the criticisms of coming and changing ages, might justify a trend of a search for stability of architectural form."⁸

The underground School of Architecture operated with a view to the future rebuilding of Warsaw. A planning effort, led by "Town Planning" professor Tadeusz Tolwinski (1887-1951), conducted planning exercises in a "semi-legal, semi-conspiratorial" manner.⁹ The scholar Jankowski stated:

This conspiratorial town-planning activity, carried out in conditions of terror unleashed by the Gestapo, implied awareness that planning itself constituted a form of struggle against the invader, and it also expressed the need for continuing professional work, and for making preparations for new tasks that were to come.¹⁰

Two other centers conducted independent town-planning activity during the German occupation, in addition to several autonomous groups of architects and town planners working independently and secretly. The first was the Planning Department of the Warsaw Municipal Council, headed by Stanislaw Rozanski, and unofficially associated with a Studio for Regional Planning (led by Jan Chmielewski (1895-1974)).¹¹ The second was the Studio for Architecture and Town Planning, led initially by Szymon Syrkus and later, following his deportation to Auschwitz, by Roman Piotrowski and his wife, Helena Syrkus.¹² The multitude of different planning efforts speaks to the widespread Polish faith in architecture and urban planning to guide the reconstruction of their country. Due to difficult communication in the underground networks, these efforts were largely separate and produced many different proposals.¹³

Although distinct, these efforts were largely organized around similar modern planning principles. Chmielewski and Syrkus had had direct involvement with CIAM (Congres Internationale Architecture Moderne) before the war.¹⁴ At the 4th CIAM Congress in 1933, Syrkus and Chmielewski presented a plan for the future development of Warsaw, and the following year presented “Functional Warsaw” at a London conference of C.I.R.P.A.C. delegates.¹⁵ This plan situated Warsaw in its international and regional contexts, between Paris and Moscow, as the crossroads of industry, trade, and water resources for all of Northern Europe.

This plan proposed urban expansion through new transportation infrastructure linking different areas of agriculture with areas of manufacturing and trade.¹⁶ The plan, in essence, was not about developing Warsaw alone, but instead addressed efficiently linking the city and countryside in a productive, functional network.¹⁷ The separation of city functions, focus on high-speed transportation networks, and strategically indicating a variation in density, provided a

methodological basis for a re-designed Warsaw. These ideas of a “functional city” were part of the agenda of CIAM leading up to World War II.¹⁸

Through his education, however, Nowicki had discovered another source of inspiration for his design approach in the writings of Lewis Mumford.¹⁹ As a writer and theorist, Mumford fused a critical reflection of architecture and urban design with an understanding of the technological capabilities and social aspirations of different cultures.²⁰

In 1925, Mumford had founded the Regional Planners Association of America (RPAA) along with Clarence Stein, Henry Wright, and Albert Mayer.²¹ The RPAA provided an American urban planning counterpoint to the work of CIAM, which was primarily based in Europe. Rooted in the “Garden City” ideal of the British theorist Ebenezer Howard, the RPAA promoted a more dispersed city model, with lower density housing and curvilinear road networks (intended to reduce monotonous repetition), all integrated with large tracts of green space.²² Covering larger areas of land, this approach was part of a larger model for regional development.

Publication of *Culture of Cities* in 1938, just before the outbreak of the war, served as a culmination of Mumford’s thinking on urban development.²³ This work presented a historical survey of the development of cities, and described an approach to city planning organized around the idea of the region. Mumford stated “At a period when the uniformities of the machine civilization were being overstressed, regionalism served to emphasize compensatory organic elements: above all, those differences arise out of geographic, historic and cultural peculiarities. ... So far from being archaic and reactionary, regionalism belongs to the future.”²⁴

Like Syrkus and the members of CIAM, Mumford was also interested in “functional” cities, but his approach displayed certain differences.²⁵ Mumford looked to the natural connections between distinct, functional places (industrial zones, agricultural regions, residential

districts) and the natural, existing ecological conditions (mountains, rivers, natural resources) to guide development, and opposed what he saw as the heavy-handed imposition of an ordered transportation network in the landscape. Indeed, Mumford maintained a strained relationship with many of the European modernists, whom he saw as overly rigid and too focused on an inhuman machine-aesthetic, in danger of suffocating the vibrant cultural life of cities.²⁶

Fully embracing modern thinking and recognizing the commonalities between the Mumford-led RPAA and the Le Corbusier-driven CIAM, the work of Nowicki and his students during the war was both “functional” and “organic.” In a later speech on the Warsaw reconstruction, Nowicki stated how the collective effort “shows a strong influence of many well-known sources and among them the principles so masterly presented by Mr. Mumford in many of his works. In fact, ‘The Culture of Cities’ has been a most treasured inspiration to a number of Warsaw planners and the one copy which I had personal contact during the occupation period circulated among a very large group of readers.”²⁷ The influence of Mumford’s *Culture of Cities* became clearly visible in Nowicki’s later plans for a reconstructed Warsaw.

On August 1, 1944, the Polish Home Army staged a massive revolt against the German occupation. Anticipating assistance from an advancing Soviet Army, the Polish soldiers waged war on the Germans for 63 days, but were ultimately defeated; subsequently a large number of Polish citizens were executed.²⁸ Known as the Warsaw Uprising, this event altered the Polish opposition strategies because it revealed both the brutality of the occupying Germans and the unreliability of the Soviets. Nowicki’s father, Zygmunt, the first Polish Consul to the United States, was killed in this uprising. After the Warsaw Uprising, Nowicki’s continued ties to the

Home Army, serving as a liaison officer, took him outside of Warsaw to the town of Laski, where he stayed with his family until the end of the war.²⁹

End of the War

On January 17, 1945, Polish and Soviet troops forced the German army to retreat, liberating Warsaw from Nazi rule. This event replaced one occupier with another as Poland came under Soviet Communist control. The retreating German army had systematically destroyed much of the remaining building stock of Warsaw, specifically targeting buildings of historic character and symbols of Polish identity, consistent with Hitler's intention to wipe Warsaw off the map, and reduce the city to a "small garrison town."³⁰ Out of 957 buildings classified as historical monuments, 782 were totally destroyed, and 141 partially destroyed.³¹ Over 85 percent of Warsaw's buildings were destroyed, and the rest left in ruins.

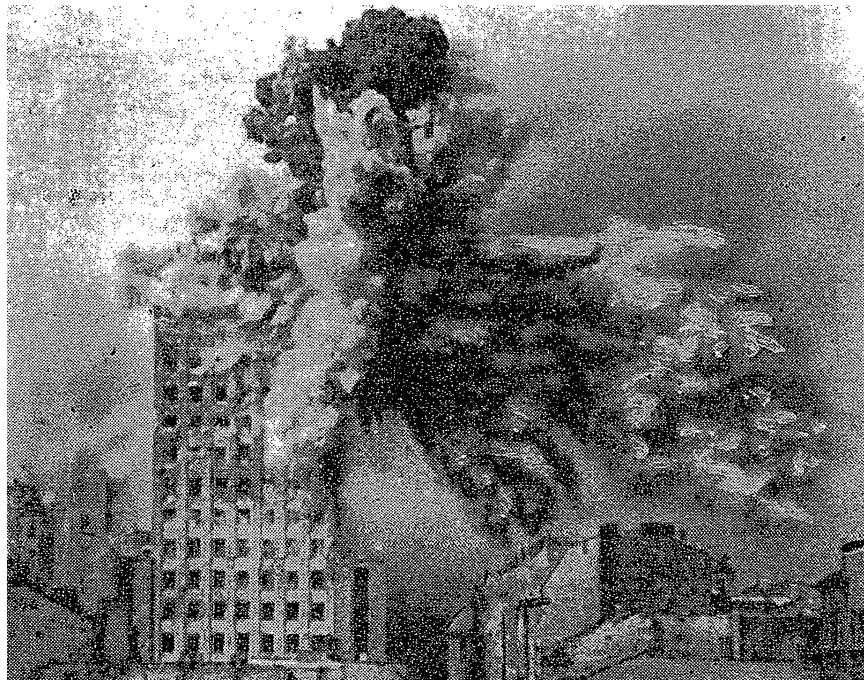


Figure 3.1 - Destruction of the Prudential Building, Warsaw, ca. 1945. (*New York Times*, October 14, 1947, 24)

Immediately after the liberation, displaced Poles had begun flocking back to Warsaw. The prewar population of Warsaw of 1.2 million had decreased drastically to roughly 164,000 at the time of liberation. Just four months after, the population had increased to 366,000.

Jankowski states “They were driven to Warsaw by a powerful inner urge to raise their city from ruins. They came in masses, ... in spite of the fact that easier conditions of life and work were to be found outside Warsaw.”³² The reconstruction of Warsaw and other Polish cities became a rallying point for Poles. The Polish people sought to remake their capital city and re-establish their own national identity – even with the uncertainty of the leadership of the post-war government.

The reality of the new Polish government and the controversial manner in which it was installed were not immediately apparent. It took almost six months to become clear that while the Soviets had driven out the Nazis, they never intended to grant Poland independence. With Franklin Roosevelt and Winston Churchill unwilling to confront Stalin over the Polish occupation at the Yalta Conference in February 1945, a new Soviet-controlled government took to power in Poland.³³ Communists held key posts in the provisional government, and Polish nationals were powerless to resist the occupying Soviet Army, feeling abandoned by their Western allies. After June 6, 1945, the United States and Britain no longer recognized the Polish government in exile.³⁴

Reconstruction Efforts

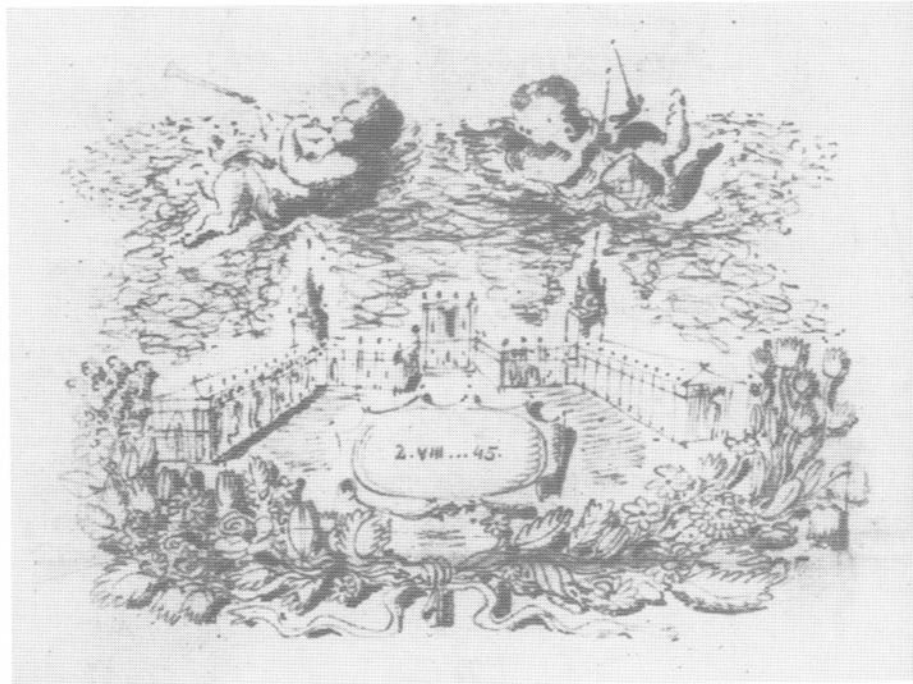
Even with political uncertainty, organized Warsaw reconstruction efforts had begun. On February 14, 1945 the “Biuro Odbudowy Stolicy” (BOS), translated as the Capital

Reconstruction Bureau, was formed by the interim President of Warsaw to control the formal re-planning and rebuilding of the city.³⁵ The disparate design groups that had operated in the underground during the war were brought together by the city government, and organized into a single effort. With the Warsaw “Decree of 1945,” all private land in the city center was claimed by the government in a large nationalization effort. Nowicki described this effort as an attempt to reign in land speculation and prevent the dramatic increases in land value that may have accompanied the formal reconstruction plans. In an effort to remove the barriers to the construction of housing, “The city took over the land, giving each owner a free lease for ninety-nine years which would allow him to build or sell his right to build.”³⁶ In actuality, this nationalization proved to be one of the first steps of the socialist government that gave the BOS nearly complete control over the reconstruction of the city.³⁷

Led by the architect Roman Piotrowski, the BOS brought together over 1400 town planners, architects and engineers, becoming a large center for the research, design and implementation of Warsaw’s reconstruction.³⁸ This organization also initiated and edited the weekly journal *Skarpa Warszawska* (The Warsaw Escarpment), devoted to the “reconstruction of the capital, the town, and its people.”³⁹ Nowicki published three articles in this journal on the re-design of Warsaw before his departure to the United States in December 1945.⁴⁰

As a result of his teaching record and design accomplishments, Nowicki was appointed “chief of planning of the central sections of Warsaw.”⁴¹ As an architect, with an interest but little experience in urban design, he was charged with working closely with the city planners, and supplying them “with a visual example of some parts of the future city.”⁴² He organized a “discussion studio” of other architects, some of them his former students, and ran a design studio in the abandoned Wilanow Palace, a 17th century palace on the outskirts of Warsaw that had

been spared by the Germans.⁴³ From this studio the architects generated potential designs for Warsaw's city center and the business district.



47. *A birthday card with the Palace of Wilanów made by M. Nowicki for his colleague A. Rosier-Siedlecka.*

Figure 3.2 - Nowicki's sketch of the Wilanow Palace, 1947. (Tadeusz Barucki, and Maciej Nowicki, *Matthew Nowicki: Poland, Usa, India* (Warsaw: Salix Alba, 2010), 30)

The Wilanow Palace became the backdrop for Nowicki's reconstruction efforts. This ornate, Baroque palace and surrounding gardens, captured in a Nowicki sketch (Figure 3.2), had served as a royal residence for Polish kings from the late 17th century to 1733 before falling into disrepair. It was converted into one of Poland's first museums in 1805. The Palace had been damaged by the Germans, but escaped total destruction.

In the spring 1945, Nowicki began directing the city center design work. Nowicki's designs for Warsaw have been documented through multiple sources, including the series of

articles in *Skarpa* and an article in the British journal *Building*.⁴⁴ From these sources it is possible to identify his specific contributions to the architectural design of the city center, as well as his perspectives on the planning the central city.⁴⁵ As none of his designs were actually realized, given the political changes in Poland after liberation, this documentation stands alone without the evidence of built work.

Nowicki described his designs as providing “a visual example of some parts of the future city.”⁴⁶ The *Skarpa* article described the work as “not an architectural solution of these areas, ... only a preparatory stage prior to this solution.”⁴⁷ Nowicki designed two primary districts of the city, a civic center consisting of a Parliament Building and civic plaza (centrally located on the western bank of the Vistula River) and a business district (located in the “most devastated part of the city,” the former Warsaw Ghetto), that were intended to fit within the larger urban plans being produced by others.⁴⁸ Nowicki's two districts were connected by an urban axis that aligned with the upstream direction of the Vistula River. Other elements of the master plan were shown in some of Nowicki's sketches (including other river crossings, and alternate axes), but Nowicki did not discuss them in detail.

published this latter in its December issue I naturally handed
ings and the accompanying short article to the Editor of that
aper.

pass on to M. Nowicki's own words I should like to
that is, as I saw illustrated by photographs which
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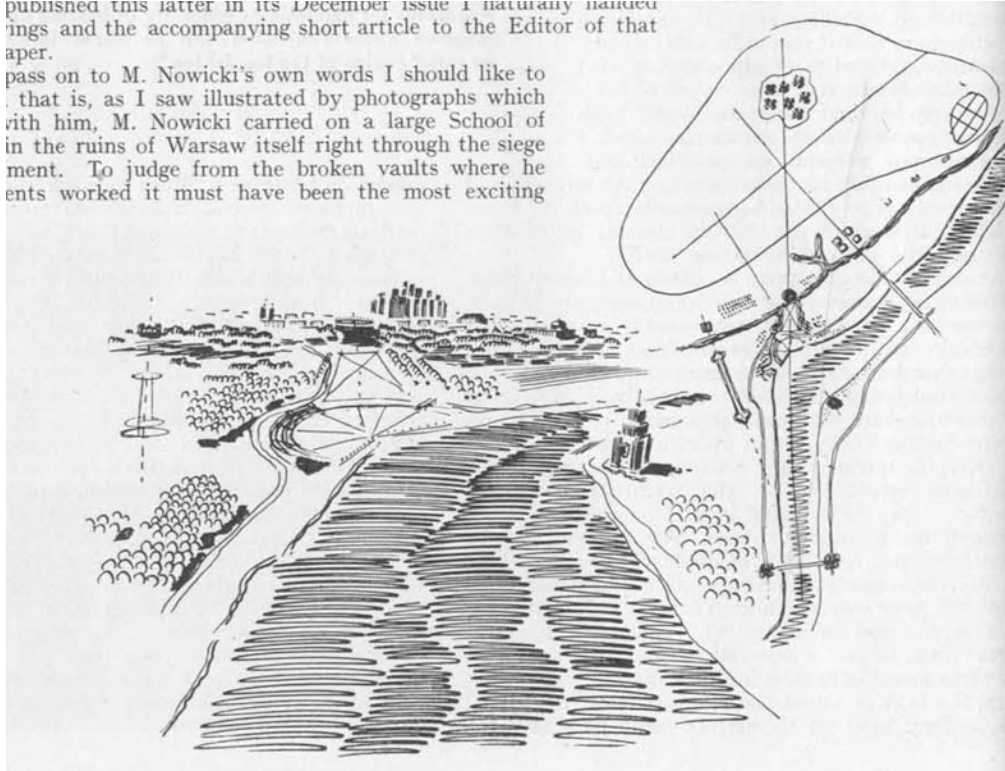


Figure 3.3 – Nowicki's Plan for Warsaw, view from the Vistula River, 1945. (Matthew Nowicki and Charles Reilly, "Warsaw. Scheme for rebuilding business quarter," *Building* 22, no. 2 (1947): 46.)

For the civic center, Nowicki started his design at a bend in the river - a central location in the former city.⁴⁹ Nowicki placed a large, semi-circular plaza at the river's west edge, directly across the river from an un-named cathedral.⁵⁰ In line with the axis centered on the river, he designed a pedestrian approach up the slope (referred to as "the valley") to the national Parliament Building at the top. Nowicki's drawing shows this axis extending beyond the Parliament, aligned with the new business district (shown as a cluster of tall buildings in the distance). (See Figure 3.3) Nowicki used its axis, aligned with the river, to unify his urban composition. Nowicki described this location:

The valley's significance in the city's landscape justifies its choice for the site of the future civic center, as suggested in this study. A bend of the river, directed for over three

miles against a high embankment, proves an exceptional spot in which the wide water bed as seen from the city had the quiet beauty of a lake and the skyline becomes a highly dramatic background for the views obtained from the river axis.⁵¹

Mumford had noted the significance of a river, as a central element of the urban composition, in his *Culture of Cities*. In a section titled "The City as a Geographic Fact," Mumford stated:

In the river, the region provides the first natural routes of transportation, which man later modifies into irrigation systems for his crops and transportation canals for his commerce.... The river is a unifying agent, drawing together in its stream of transportation materials gathered from each side of its course, depositing its burden of goods and culture at the terminal cities, as the river itself deposits its silt at the delta.⁵²

Nowicki would have seen the images published in the *Culture of Cities* as well, and his composition directly recalls a published photograph of St. Peter's Square in Rome. Taken from the Basilica dome, the image shows Bernini's 17th century plaza, with surrounding colonnade, and the urban axis that, if extended (as it was by Mussolini) would align a bend in the Tiber River. Smaller, infill buildings interrupted this grand axis in this image. Mumford's caption reads, "Rome: approach to St. Peter's seen from the Cathedral itself: pointing toward Tiber, but suddenly cut short in its attempt to impose order by the historic tangle of buildings that block the connection."⁵³



Figure 3.4 - St. Peter's Square looking towards the Tiber River, ca. 1935. (Lewis Mumford, *The Culture of Cities* (New York: Harcourt, Brace and Co., 1938), 260.)

The debt to Mumford is evident. Nowicki's composition makes a clear connection to the river, providing that urban order that Mumford suggested was missing in Rome. With his knowledge of history, and with the suggestion of Mumford, Nowicki here looked to the Baroque planning of Rome, and the views and connections created by the grand axes, to give order to the reconstruction of Warsaw.

Though placed at the water's edge, Nowicki's plaza may have been inspired by Bernini's plaza as well. Nowicki's sketch shows radial lines and concentric ellipses, and his riverside open space was partially surrounded by seating backed by a colonnade, suggesting similarities to the photograph shown in *Culture of Cities*. The central obelisk of Bernini's plaza has been removed, and the centerpoint of Nowicki's plaza coincides with the bend in the river. Like St. Peter's, Nowicki's plaza is intended to provide space for public gatherings:

In our study this axis becomes the backbone of a vast composition, grouping on its course the Parliament unit with a meeting hall for mass gatherings, a field reserved for

mass spectacles in the open, and a public forum, the approach to which descends to the river, becoming occasionally a starting point for religious processions, ferry boats being used to reach the cathedral located on the other side of the wide lake-like bend.⁵⁴

Nowicki envisioned the public use of his urban proposal. His description of the civic center as a site for “spectacles” is similar to Giedion’s comments in his 1944 essay, “The Need for Monumentality.”⁵⁵ Giedion claimed that the “third step” of modern architecture (after the first step of the individual house, and the second step of urbanism) is the re-conquest of “monumental expression.” But in the face of the “pseudo-monumentality”(those buildings and spaces that attempted to mimic past symbols), Giedion looked to “civic centers and spectacles.” Concluding his article, Giedion stated:

...(T)hose who govern must know that spectacles, which will lead the people back to a neglected community life, must be re-incorporated into civic centers, those very centers which our mechanized civilization has always regarded as unessential. Not haphazard world fairs, which in their present form have lost their old significance, but newly created civic centers should be the site for collective emotional events, where the people play as important a role as the spectacle itself, and where a unity of the architectural background, the people and the symbols conveyed by the spectacles will arise.⁵⁶

Monumentality in Giedion's statement, in relation to modern architecture, had shifted from the static forms of buildings and monuments, to the space created for public gatherings.

The wider debate on monumentality in architecture had actually started with Mumford’s declaration of “The Death of the Monument,” published originally in 1937, then reprinted as a chapter in *Culture of Cities* (1939). Mumford described the static obsolescence of the symbolic forms of the past in the face of the rapidly changing needs of modern life. Mumford believed that modern forms must be flexible, and allow for future changes of use, the opposite of past

monuments: “The notion of a modern monument is veritably a contradiction of terms: if it is a monument it is not modern, and if it is modern, it cannot be a monument.”⁵⁷

Nowicki had certainly embraced modern forms in his designs, but, with the design of the Warsaw civic center, he appears to have embraced Giedion’s understanding of monumental expression. It is not known if Nowicki had read Giedion’s comments (as they were published during the war, and he began designing soon after), but there is a clear similarity of intent. Is it also notable that this kind of axial planning and monumentality seems quite distinct from the approach most favored by CIAM and for the Syrkus-designed “Functional Warsaw.” Nowicki is clearly looking to historical sources for his city plan, an approach that could seem distinctly non-Modern. Yet this plan is consistent with Nowicki’s belief that history holds valuable lessons, even for the modern architect and planner.

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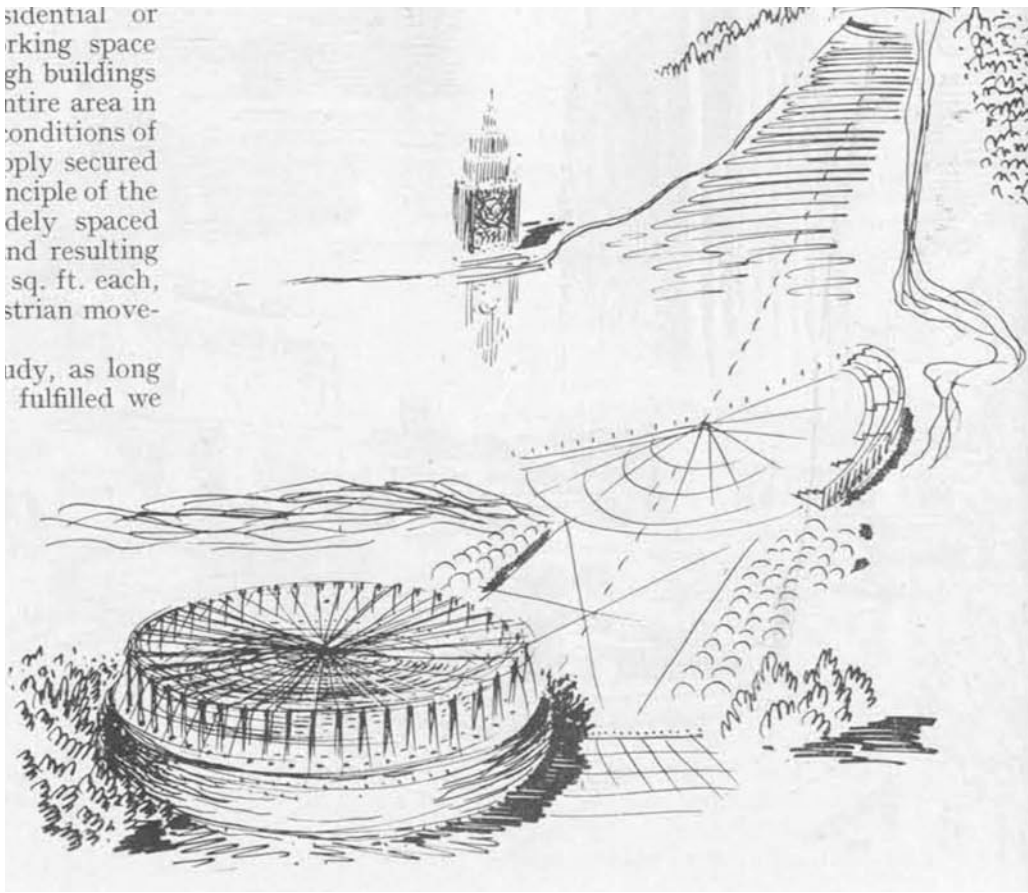


Figure 3.5 - Nowicki's Plan for Warsaw, view from the Parliament Building, 1945. (Matthew Nowicki and Charles Reilly, "Warsaw. Scheme for rebuilding business quarter," *Building* 22, no. 2 (1947): 47.)

Parliament Building

Nowicki embraced the monumentality of modern architecture, as the plaza and axis aligned with the river extended up the riverbank to a large Parliament Building at the top of the bank. A monumental, circular structure, with a tension-hung roof, the building towered over the river and plaza below. While Nowicki's interest in structural expression had, up until this time, been contained within competition entries and building interiors, Nowicki now used an outwardly expressive structural form for the most important building in his proposal. With this project, Nowicki's publicly presented his experimentation with structural form.

The building was intended to house the Sejm assembly chamber (the lower house of Parliament) and accommodate the seating of roughly 460 representatives, or “deputies.” The Sejm (and the upper house, Senat), in place since independence in 1918, had been dissolved in 1939 (with the exile of the Polish government). After the war, Polish citizens expected to reestablish the democratic system that had existed previously, and Nowicki’s design demonstrates that expectation. A temporary representative council did exist between 1944 and 1945 and proposed reinstating the Sejm chamber, but the eventual Communist-backed government did not reestablish the Sejm or Senat.⁵⁸

The Parliament Building, with its structure clearly expressed, occupies a commanding position above the river and contrasts with the traditional Cathedral across the river. The Parliament has a circular plan.⁵⁹ The base of the Parliament is roughly 40 feet high and on top of this base are a series of steel masts extending up another 40-feet. Roughly 35 of these masts are arranged around the perimeter of the building “like candles in a birthday cake.”⁶⁰ Steel cables, anchored to the outer perimeter of the lower base, run over top of these masts and to the middle of the 240-foot diameter building. At this central point, the cables converge to a central tension ring (though not shown) and connect to the roof surface suspended below. Fellow professor and structural engineer Stanislaw Hempel assisted Nowicki in determining this building form. One of Nowicki’s students noted that the building was “put to a test by Professor Hempel.”⁶¹

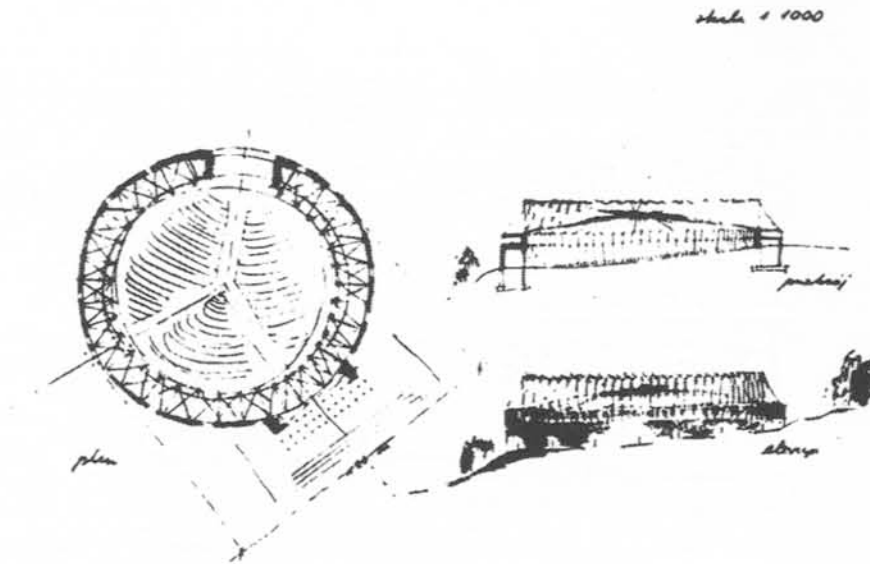


Figure 3.6 – Plan and elevations of Nowicki’s Parliament Building, 1945. (Tadeusz Barucki, and Maciej Nowicki, *Matthew Nowicki: Poland, Usa, India* (Warsaw: Salix Alba, 2010), 27.)

The thin, long-span cables arranged in this manner created a lightweight structure that can extend long distances with a small amount of material. Yet this structure generated large forces around the perimeter, and required a significant supporting system. The suspended roof pulls the tension cables toward the center, causing the steel masts to bend inward, if not for the diagonal cable tying each mast to the lower base. These braces have a opposite function to the flying buttresses of Gothic Cathedrals which resisting the outward force required to span a centralized space; here the cables resist forces in the opposite direction, using tension instead of compression.

A fundamental part of the structure, this "buttressing" surrounded the central Assembly space on all sides – creating, for visitors, a zone of dense structural elements before passing into

the clear, open space of the assembly chamber. This sequence of movement from outside to inside, shaped by the structural demands of the building, prepared the visitor for the assembly chamber and created smaller meeting spaces, circulation spaces and entrances that supported the actual governing activities of the assembly. This building clearly delineates the supporting structure (the perimeter) from the supported structure (the roof). In this design, Nowicki discovered an agreement between the structural form of the building, and the appropriate programmatic spaces.

As a tension structure, the direction of each cable in the roof is identical to the direction of force, and the building's form becomes a diagram of its own structural forces. It can also be seen as a metaphor for the democratic governance of a potentially liberated Poland. Radially arranged, the cables traced a spoke-like pattern, each taking an equal amount of load, converging on a common point – just as the delegates and representatives must come from all over the country, and converge on a central location for a collective good.

From the published drawings, the circular plan appears to be divided into thirds, with aisles that separate different sections of seating; two of the aisles lead to the main exits. Nowicki gave one of these exits was given significant treatment with what appears to be a grand staircase and an exterior portal, likely intended as the main entrance. The building's relationship to the topography is shown in section, but the location of the main entrance is not clear. In the perspective from the river, the main path appears to lead to the right, and not directly into the Parliament Building.

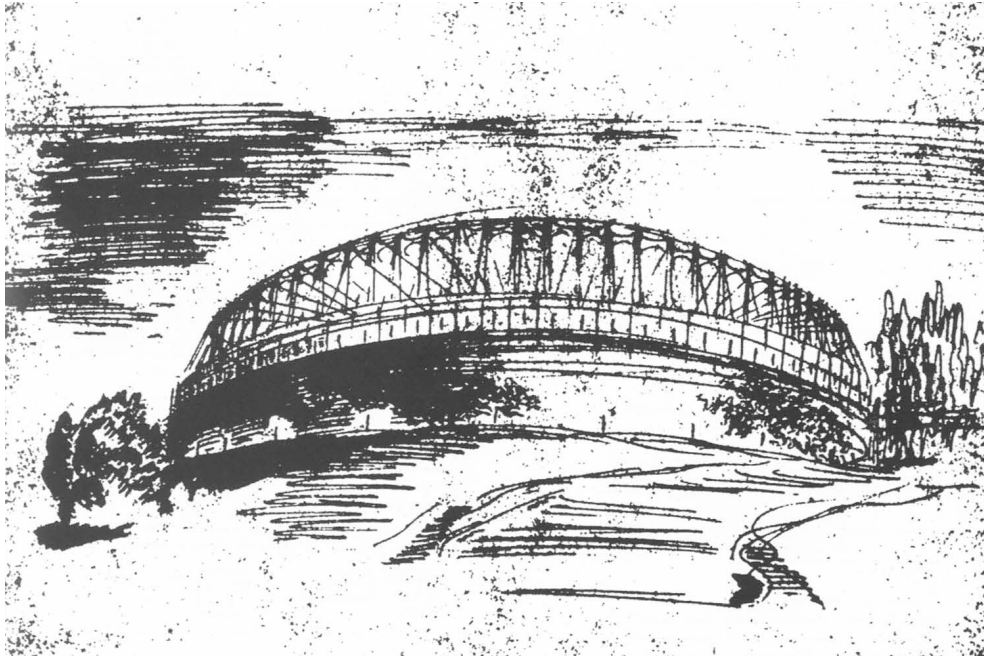


Figure 3.7 - Nowicki's Parliament Building, perspective, 1945 (Tadeusz Barucki, and Maciej Nowicki, *Matthew Nowicki: Poland, Usa, India* (Warsaw: Salix Alba, 2010), 27.)

Nowicki's proposed structural system for the Parliament Building was remarkably innovative for its time. The use of tension-only structures had come to prominence in the mid 19th century with the design of suspension bridges.⁶² Corresponding applications in architecture were relatively few. The Russian constructivist engineer Vladimir G. Shuchov (1853-1939) had designed the first tension membrane roof for an exhibition hall in Niznij Novgorod (1896), 260 miles east of Moscow. A membrane of thin steel strips replaced the traditional canvas membrane of a circus tent, which then hung from two trussed towers placed in the center of the exhibition hall. Several tension-supported radio towers followed.

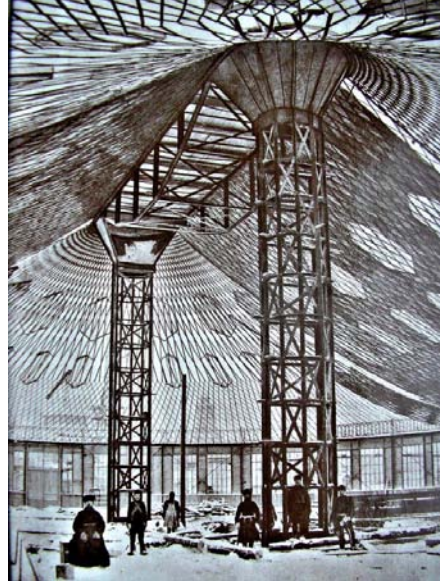


Figure 3.8 – Vladimir Shuchov’s Exhibition Hall, 1896. (Wikipedia Image Commons, http://en.wikipedia.org/wiki/File:Tensile_Steel_Lattice_Shell_of_Oval_Pavilion_by_Vladimir_Shuchov_1895.jpg)

In the early 20th century, experimentation with tension architecture became more common, although primarily in un-built projects. In 1927, Buckminster Fuller proposed tension cables spanning outward from a central mast to support the levels of his Dymaxion House. In 1932, Le Corbusier and Pierre Jeanneret’s *Palace of the Soviets* competition entry (the one referenced by Nowicki’s thesis project) used tension cables attached to an upper arch, to support an auditorium roof.



Figure 3.9 – Roof suspended by tension cables, hung from parabolic arch in Le Corbusier & Jeanneret, Palace of Soviets Project, 1934. (Le Corbusier, Pierre Jeanneret, Willy Boesiger, Oscar Stonorov, and Max Bill, *Oeuvre complete: Volume 1*. (Zürich: H. Girsberger, 1935), 130.)

The clearest precedent for Nowicki's Parliament Building is a 1934 competition entry for an Exhibition Hall designed by Eugene Beaudouin and Marcel Lods.⁶³ This proposed building was circular, like Nowicki's, with two layers of linear cables spanning from the building's perimeter to a center tension ring. Drawn on a massive scale, the project had a diameter of 1410 feet (430 m) – five times larger than the distances indicated in Nowicki's Parliament Building. This building was published in the French journal *Construction Moderne*, and it is possible that Nowicki (fluent in French) was aware of their design.⁶⁴ In the Beaudouin and Lods design, large trusses supported the perimeter compression ring, standing on only four supports, with a form that recalled trussed bridges that were becoming more common as well. Shown only as a model, details of the project are unknown. While the feasibility of the Exhibition Hall may be in doubt, the project indicates previous interest in Europe in exploring the use of tension cables in architecture, before Nowicki's Parliament Building.

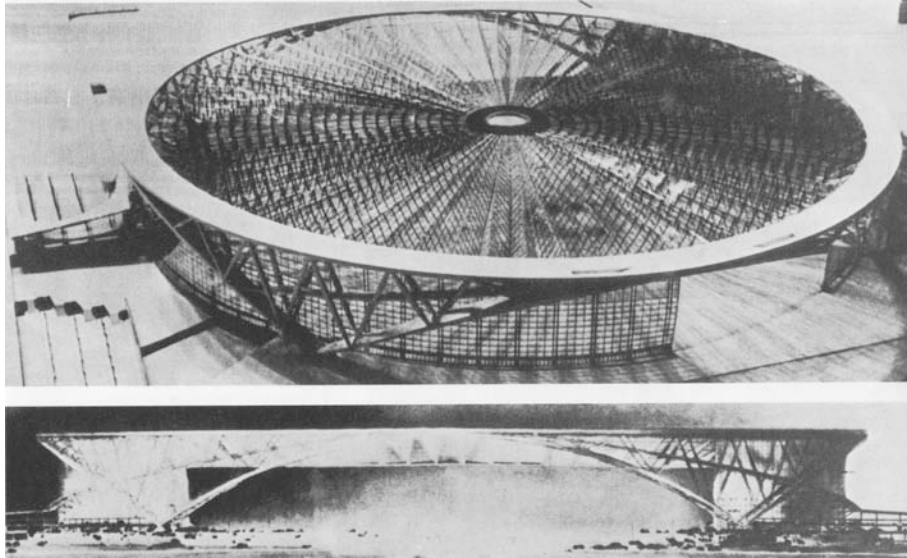


Figure 3.10 – Circular Exhibition Hall, Beaudouin and Lods, 1934. (Philip Drew, *Tensile Architecture* (Boulder, Colo: Westview Press, 1979), 146.)

Another French designer provided a different, notable precedent. In 1935, French architect Robert Camelot and engineer Bernard Laffaille used a thin steel plate roof for the French Pavilion at Zagreb, Yugoslavia, that took a similar form to Nowicki's Parliament Building. Their circular building, with a diameter of 98 feet, required thin panels of steel welded into an inverted cone shape sloping inward to a central skylight ensuring that only tensile stresses were developed in the steel.⁶⁵ Similar to Nowicki's proposed Parliament Building a decade later, Camelot & Lafaille used a series of columns along the perimeter to support the vertical loads, although the structural innovation was not revealed by the exterior expression of the building. It is likely that Nowicki knew of the international exhibition, as he had been well-connected to the French architectural scene. In later writings, Nowicki would reference the work of Bernard Lafaille (though not this work in particular) as structural inspiration for his architectural forms. Other precedents include S. Nikolsky's un-built entry for the Palace of Soviets (1931) and the

Travel and Transportation Pavilion for the 1933 Chicago World's Fair by E. Bennett and Associates.⁶⁶

All these precedents share a circular form. The circular plan, with radial arrangement of tension cables, is appropriate for tension-architecture, allowing each cable to take an equal amount of load, and distribute the tension forces uniformly around the perimeter.

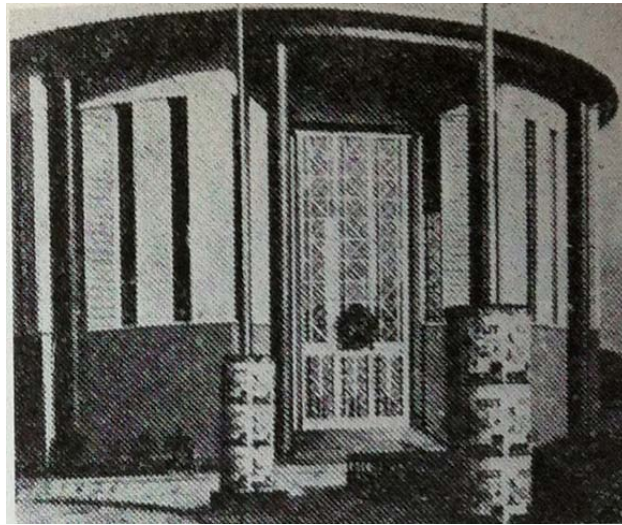


Figure 3.11 - Camelot & Lafaille, French Pavilion, Zagreb, Yugoslavia, 1935. (Alan Braun, Zoran Versic, Tomislav Vidovic, "The Reconstruction of the French Pavilion at the Student Center Zagreb." *L'Association Nationale des Villes et Pays d'art et d'histoire et des Villes à secteurs sauvegardés et protégés*, nd.)

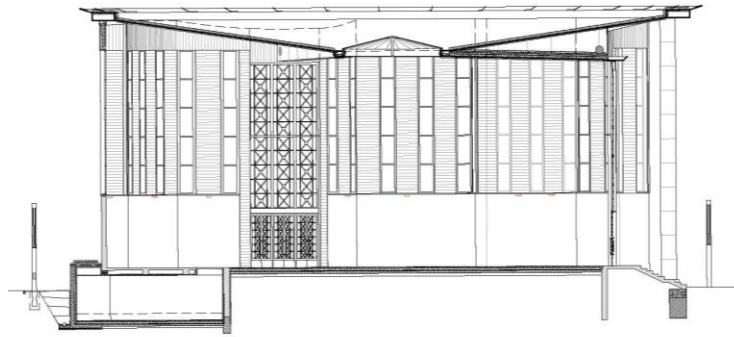


Figure 3.12 - Camelot & Lafaille, French Pavilion, Zagreb, Yugoslavia, 1935. (Alan Braun, Zoran Versic, Tomislav Vidovic, “The Reconstruction of the French Pavilion at the Student Center Zagreb.” *L’Association Nationale des Villes et Pays d’art et d’histoire et des Villes à secteurs sauvegardés et protégés*, nd.)

Nowicki's Parliament Building is significant for many different reasons. First, if built, it would have been an extraordinary structural tour-de-force. In such a prominent position in the landscape, this large building with a tensile roof would have showcased the spatial and formal possibilities of modern technology for Modern architecture. It would have demonstrated that modern structure could create spectacular architecture, beyond engineering-based applications (like bridges). Monumental in its expression, this building was located on the primary urban axis, rising above the surrounding landscape, and was capable of being seen from a distance. Whether Nowicki was aware of the publications on the question of monumentality or not, he clearly sought monumental form within Modernism to respond to the problem of a new Parliament building. And, finally, in at least some of the sketches, Nowicki's circular Parliament contrasts with a more traditionally- constructed cathedral on the opposite side of the Vistula River. In contrast to the cathedral, Nowicki used Modern technology to create a Modern architectural form, aligned it with the democratic ambitions of a postwar Poland. Here, the possibility of Modern architecture achieved through modern technological means expressed a

potentially new cultural condition: an independent modern Poland where the representative assembly (the Parliament) determined the future.

Business District

Continuing the urban axis through the Parliament building, Nowicki placed the new business district, at the former site of the Warsaw Ghetto -- the location where the Nazi destruction had been the heaviest. While the Parliament building clearly expressed Nowicki's continuing interest in structural form, the buildings and layout of the business district had to respond to different conditions and, as a result, show a different application of his architectural vision.

The new business district was to be constructed on the rubble of the Warsaw Ghetto, the former home of Warsaw's largest concentration of Jews. The Jewish population had been decimated by the War and the Holocaust, leaving the area in complete ruin. There seems to have been no consideration given to rebuilding the area for Jewish settlement, and rebuilding the area as an office center would wipe away anything that might be left of the district's former occupants.⁶⁷ It is not clear whether this was a conscious attempt to reclaim the site for modern Polish needs, or motivated by some other postwar sentiment.

Nowicki proposed that the district be designed as a "desired working place" for "office work and commerce."⁶⁸ The nearly total redesign of the area was allowed by the "nearly complete elimination of residential" elements.⁶⁹ Though all the former buildings had been destroyed, a thick layer of rubble remained, mainly brick and stone masonry. Nowicki stated "The thick layers of debris left by the war made for differences of 2.5-3 meters above the former

street levels.”⁷⁰ Instead of calling for the removal of the debris, Nowicki proposed to incorporate it to enhance his design idea for this district.

Nowicki designed the layout of the business district on the principle of “large city blocks.”⁷¹ These rectangular blocks were to be separated by high speed, vehicular traffic corridors, allowing only “pedestrian movement” within each block. This separation of modes of transportation (pedestrian and auto) was a hallmark of modernist planning, supported in both European-CIAM and American-RPAA circles. A founding principle of the regional movement, promoted by Mumford, and Clarence Stein, traffic separation is also a key component of Le Corbusier’s urban design proposals, most explicitly seen in his later design for Chandigarh.⁷²

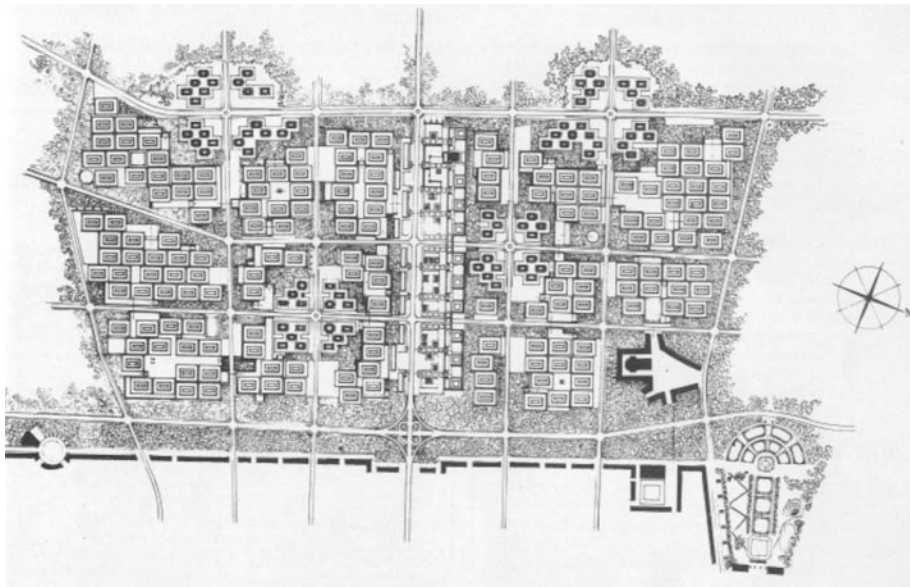


Figure 3.13 – Nowicki’s gridded plan for Warsaw’s Business District, 1945. (Matthew Nowicki and Charles Reilly, “Warsaw. Scheme for rebuilding business quarter,” *Building 22*, no. 2 (1947): 47.)

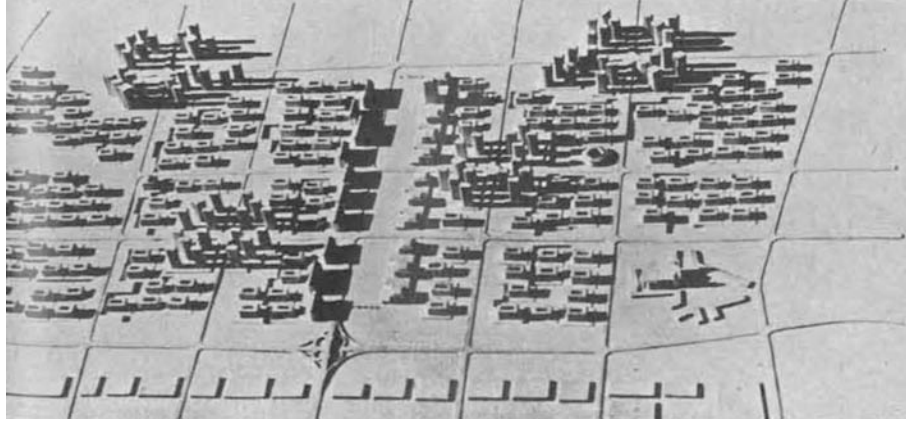


Figure 3.14 – Model view of Nowicki’s Business District, 1945. (Matthew Nowicki and Charles Reilly, “Warsaw. Scheme for rebuilding business quarter,” *Building* 22, no. 2 (1947): 47.)

In order to achieve this separation, however, Nowicki used a novel technique: “He had conceived of using the dismaying heaps of rubble of ruined Warsaw, by placing these buildings on a mound formed of this very rubble, with avenues running in channels below the levels of the blocks.”⁷³

Nowicki himself described his design:

The problem of ruins and the volume of rubble are studied to provide a higher level in some parts of the city, elevating the area of some super-blocks ten feet higher than the old street net, and providing a possibility of easy two-level crossing for pedestrian and traffic movement. A solution possible only in a ruined city where other disposal of this volume of rubble proves to be less reasonable and economical....⁷⁴

By using the rubble to separate levels of traffic, Nowicki created an easy way for pedestrians to cross of high-speed traffic, addressing a major source of concern. “With little additional earthwork it was possible to obtain a possibility of collision-free traffic, separating pedestrians from motor traffic.”⁷⁵ Nowicki hoped to use this discarded rubble as a structural material, a decision that idealistically solved two problems at once (removal of material and new construction), but raised significant questions of feasibility. From large voids in the rubble to

variations material and differential settlement, it is doubtful that permanent structures could actually be built on top of this material. Also, despite his transportation-based rationale for creation, Nowicki did not indicate where the cars would enter or exit these roadways, where they would park, or how these buildings would be serviced. As a result, the layout of the business district reads as a diagram, rather than as a fully developed proposal.

With this separation of modes of transport, Nowicki designed the interior of each block as a strictly pedestrian environment. He sought an appropriate scale “measured by human steps” addressing “not only the necessities of pedestrian movement, ... but also psychological reactions to the architectural surroundings.”⁷⁶

The Warsaw Master Plan within which Nowicki worked required an equivalent floor space of nine-story buildings evenly spaced over the entire block, to accommodate the anticipated commercial activity. Rather than accepting the uniform, monotonous height, Nowicki took a different approach. He determined that commercial activity (shops, small businesses, and so forth) required an environment hospitable to pedestrians, while office spaces could easily be more removed from the ground plane experience in taller buildings.

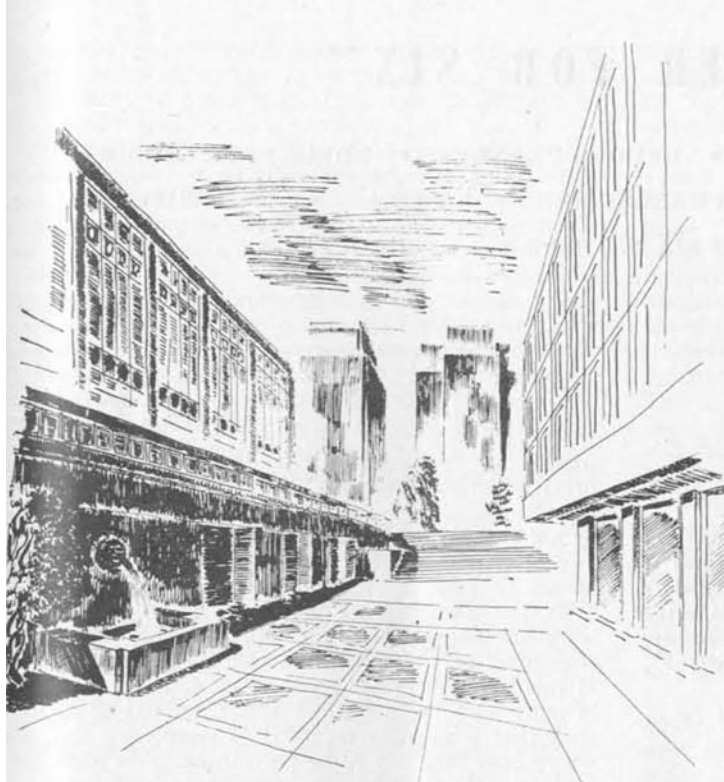


Figure 3.15 – Sketched street view from within Nowicki’s Business District, 1945. (Matthew Nowicki and Charles Reilly, “Warsaw. Scheme for rebuilding business quarter,” *Building* 22, no. 2 (1947): 51.)

For the commercial buildings, scale was determined by the “small distances measured by human steps” – spacing medium-sized buildings with open areas and allowing a maximum of four stories, to avoid long, dark corridors.⁷⁷ Here Nowicki aimed to create an exterior understood as an “urban interior” that was both hospitable to the pedestrian and beneficial to commercial activity. His pedestrian-scale related to the scale of a pre-war Warsaw by emulating, as he explained it, “the aesthetic value of the old town.”⁷⁸

Nowicki proposed that these buildings could be prefabricated buildings that allowed for rapid construction and flexibility with growth. Nowicki envisioned frame-construction buildings with infill panels that could be varied in color and texture. He explained: “A common feature of

the emerging architecture should be lightweight, small scale of distribution and distinct modular composition. Designer recommends the possible implementation of the project design principle of the skeleton secondary (ie, fill the frame construction of large-scale backbone of the finer elements).”⁷⁹ The frame, filled in with smaller elements, anticipated Nowicki’s later comments in “Origins and Trends,” where he discussed division of structure into finer, and finer elements. In these buildings, structure became an ordering mechanism, providing the rational division of space and enabling rapid construction and flexibility of use. The creative, outward expression (as seen in the Parliament building) was here subdued in service of more practical concerns.

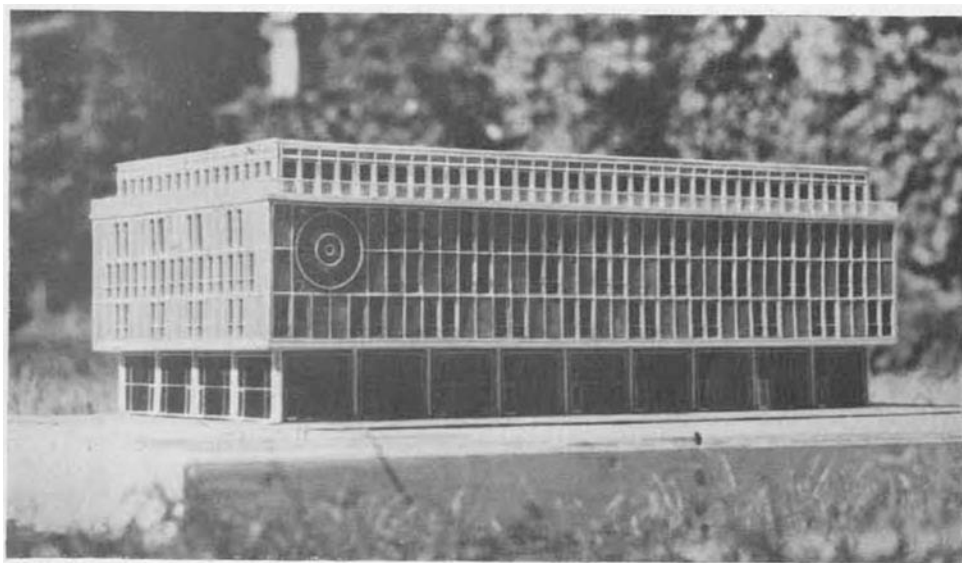


Figure 3.16 - Nowicki’s Business District, prefabricated building, 1945. (Matthew Nowicki and Charles Reilly, “Warsaw. Scheme for rebuilding business quarter,” *Building* 22, no. 2 (1947): 51.)

Still, Nowicki believed that standardization of structure, and the benefits it offered to the district, did not release the architect from thoughtful design.

Here occurs the question of standardization of building elements, even entire buildings. Normalization should not, however, make the monotony of the urban landscape.

Variability of rhythmic systems (should be seen) in the elevation of a particular building – with different colors, locations of materials may provide a variety of art.⁸⁰

The potential of prefabrication to open up new architectural possibilities continued to be an interest of Nowicki. Later, during his time in the United States, Nowicki would write explicitly about the different approach to design thinking that prefabrication encouraged.

The taller office buildings required a completely different treatment, and thus a completely different structural system and expression. To compensate for the limited floor space created by only four-story commercial buildings, Nowicki designed for 14-story buildings to be grouped around the intersections of the high-speed vehicular roads. This placement allowed the towers to be quickly accessible to those entering the district by car, and these tall buildings could also serve as visual markers on the skyline, designating the business district within the overall profile of the city.

Nowicki argued that the scale of the tall building, while often hostile to the pedestrian, had an important role in the overall urban composition. For those from a distance (for example, from the east side of the Vistula River) or arriving by high-speed car, the tall buildings provide the first impression of the city. The tall buildings with low-rise structures all around, provide “a visual moment” and add a legibility to the city.⁸¹ Nowicki stated: “The city’s skyline seen at its best from the east side as a dark silhouette against pale skies, contributes to the park area one its greatest beauties and as obviously important becomes a part of our study.”⁸²

Nowicki paid careful attention to the placement of these towers within the business district. He stated that he aimed to avoid both a “mechanical silhouette” of the city that comes with regularly spaced buildings and a skyline that is too “romantic” coming from an “unordered

dispersion of the vertical accent.”⁸³ Nowicki stated that he was creating order and “harmony” within the city, but also was consistent with the prewar character of Warsaw. He explained: “In all cases, relative smallness of scale was being aimed at as an essential factor of the city’s history and tradition.”⁸⁴ Manipulation of scale was a means to promote a continuity of tradition, and link the experience of the new district to the remembered experience of the destroyed city. Structure, although simply composed as a tall building (and Nowicki never articulated it further than that), enabled this understanding of the city. The expression of the tall building was not seen in isolation, but was part of a large urban composition.

Nowicki’s understanding of the appearance of the skyline recalls Le Corbusier’s idea of the “Urban Scene.” In his *City of To-morrow and its Planning* (dating from 1929) Le Corbusier stated:

We rarely care to look at the silhouette of houses against the sky; the sight would be too painful. Throughout the town, in every street, the silhouette seems like a gash, a ragged, tumultuous line with jutting broken forms. Our emotion would be of a very different kind if the profile of the town seen against the sky were pure and made us feel it was the result of some potent ordering mind.

The profile of the town seen against the sky becomes a pure line, and as a result we are able to lay out our urban scene on a grand scale. ... I repeat that the silhouette against the sky is a determining factor in our feelings; it is exactly the same as profile and contour in sculpture. We must create the *broad vista* in the urban scene.⁸⁵

In his design, Nowicki’s seemed to seek to mirror Le Corbusier’s aspirations to design an “ordered” skyline, but he was cautious of its “mechanical” appearance. Nowicki was beginning to define his own variation on the Modernist urban design principles that influenced his education. His redesigned city was scaled to the human experience, engaged with its natural

setting, and yet designed as a dramatic aesthetic gesture. This was not a city as a machine, contrasting with Le Corbusier's "Plan Voisin" for Paris, a layout devoted to the idea of Paris as a "residential and commercial city," and bound to the emergence of the automobile.⁸⁶ With his clearing of the existing buildings on the Right Bank, imposition of a rigid grid and regularly spaced, cruciform high-rise buildings, Le Corbusier proposed a new urban order, intentionally separate from the pre-existing conditions of Paris. Nowicki's plans focused less on rigid separation and difference from an earlier city, and more on how constructive changes to Warsaw can come from its regrettable destruction.

The distinction between Nowicki and Le Corbusier (as well as the planners of CIAM) was also evident in his axially planned civic center, which clearly looked to other precedents. Indeed, one could argue that the two parts of Nowicki's Warsaw (the axial composition with the river and the gridded business district) reflected two different sources for Modern city planning, not yet completely integrated. Lewis Mumford praised Nowicki's designs as an alternative to Le Corbusier:

These Warsaw designs are notable, not only because their human scale contrasts with that of Le Corbusier's City of the Future, extravagantly emphasizing its man-dwarfing heights, but because they are conceived in four dimensions, with a constant change in relationships due not merely to pedestrian movement itself but in levels and angles of approach.⁸⁷

Nowicki's designs for the Warsaw reconstruction demonstrated the diversity of his evolving perspective on Modern architecture, and the different kinds of expression of structure. He used a variety of structural technologies (tension-hung roofs, prefabricated buildings, tall buildings of frame construction) in his design, yet discussed how proportion, scale, and attention to the natural features of the site could link the new city to the pre-war condition of the old one.

New technology was a vehicle for a continuation of urban characteristics that defined Warsaw throughout time. Nowicki seems to have seen the new buildings as rooted in the present, yet related to the memory and experiences of the past. Thus, his structurally expressive modern architecture was never simply an emphasis on the physical structures of his buildings, but was about creating an architecture that addressed the new cultural condition and historical memory, as well as functional demands and new technology.

Given the political divisions and the large number of people involved, multiple versions of the Warsaw reconstruction plan emerged over the next few years. The BOS produced official versions of the reconstruction plans in March 1945, May 1945, and February 1946, before issuing the final plan in September 1946.⁸⁸

Nowicki remained active in the design process only through early November 1945, when he left Poland as a “technical advisor to the Polish Embassy” in the United States, charged with “enlisting American interest in the rebuilding of Warsaw and establishing contacts with the advances in building, engineering and urbanism that had been made since war blocked communication.”⁸⁹ This position was most likely facilitated by his father’s previous position as Consul General in Chicago and his own fluency in English. Acceptance of this position and Nowicki’s decision leave were tied to the larger political changes taking place in Poland. The dream of a democratic, independent Poland was rapidly fading in the face of a Soviet-controlled, single-party government. Beginning in summer 1945, through gradual shifts in parliamentary power, socialist-controlled elections, and a rejection of the conditions of the Marshall Plan, the Polish government emerged as a socialist organization, with close ties to Stalin’s Russia.

Nowicki’s design involvement was limited to the very early reconstruction efforts, and he left before the full weight of the Soviet take-over was realized. In November 1945, Nowicki, his

wife and young son met with Sir Charles Reilly in Liverpool.⁹⁰ On November 21, 1945, Matthew Nowicki and his family sailed to the United States on the “Empress of Scotland” from Liverpool, arriving in Newfoundland, ready for a new chapter in his career.

Nowicki would remain formally affiliated with the Polish government until the fall 1947, and often spoke publically of the reconstruction efforts once in the United States.⁹¹ Nowicki and the Syrkuses collaborated on a 1948 article for *Task*, a student-run magazine published by the students and faculty at Harvard University. The authors were listed as “Helene and Szymon Syrkus with Matthew Nowicki.”⁹² The article, “Reconstruction: Warsaw,” primarily presented Syrkus’s “Functional Warsaw” themes, promoting a “City-Region” with clearly defined neighborhood units, business and industrial districts, and cultural centers. The article contained discrepancies from Nowicki’s outlined plans (on the location of the business district and civic center), and his architectural intentions received no mention at all. The Syrkuses most likely wrote the article and Nowicki likely facilitated its publication in the United States. The article contained only one of Nowicki’s sketches--showing the business district--for which he was credited.. The article finished with a quote from the Polish president Boleslaw Bierut, stating “Even if the realization of Warsaw’s plan will require a longer period, this plan must be the plan of a democratic Poland, where each citizen is an active one.”⁹³

Ultimately, it was the Soviet-controlled government which undertook the final redesign of Warsaw, with the different ideological position than Nowicki anticipated. In July 1949, just a year later, President Boleslaw Bierut had completely reversed course on the politics that would guide Warsaw’s reconstruction, delivering a speech to Congress: “New Warsaw is to be the capital of the socialist state. We must fight consciously and with deliberate diligence to give our town a definitely ideological stamp.”⁹⁴

The vision of a democratic Poland had been replaced by a socialist dictatorship. The rebuilding of Warsaw proceeded in a manner seen to promote the Socialist values of the new government. As a result, the historic core of the city was re-built as “not a literal restoration of what had existed before, but rather a carefully edited reconstruction according to Socialist Realism doctrine.”⁹⁵ All building efforts were embedded with the Soviet ideology, emphasizing a glorification of the past and obedience to centralized control. In a 1949 lecture in the United States, Nowicki anticipated these shifts, and their manifestations in the urban landscape:

Nationalism on the defensive becomes aggressive in its love for the past, the glamour of the gone days, the traditions of history. Whether the planned growth of new communities will be inspired by the freshness and youth that the old continent experienced time and again in the life span of its culture, or whether the drama of old memories and new tensions will have an upper hand, the future only can tell.⁹⁶

Nowicki’s aspirations for a fresh, modern architecture embodied the legacy of European architectural heritage. His mention of the simple repetition of “old memories” was a veiled reference to the values of the incoming socialist government.

In his biography of Nowicki, Lewis Mumford commented on the connection between architecture and politics that Nowicki clearly had learned in Poland:

The final lesson of Nowicki’s ordeal was that which his father had taught by his own life: the lesson of citizenship. Nowicki had grown up under a semi-fascist regime, which had felt too much kinship with the phobias and hatreds and repressions of Nazi Germany to alter itself against its intentions and defend itself successfully. In that state, as in America today, the student generation had become non-political, lest too great a concern for freedom and democracy should interfere with their careers. To the end of his days, Nowicki’s father reproached himself for not having dedicated himself more completely to warning his fellow citizens of the dangers he himself had clearly seen. By the end of the war, Matthew Nowicki himself realized that there was no escape from politics: the

architect, first of all, had a responsibility to his community, to understand its needs and to create forms for their highest fulfillment.⁹⁷

Nowicki's memories of the German occupation and the Soviet take-over stayed with him his entire life, and he continued to explore the connection between more democratic politics and modern architecture as his career shifted to the United States.

¹ Jolanta B. Kucharska, *Rudolf Świerczyński (1883-1943)*, (Warszawa: Biblioteka Główna Politechniki Warszawskiej, 2008).

² Aniela Rosier-Siedlecka, quoted in Tadeusz Barucki, and Maciej Nowicki, *Matthew Nowicki: Poland, Usa, India* (Warsaw: Salix Alba, 2010), 24.

³ Ibid.

⁴ Matthew Nowicki and Bruce H. Schafer, *The Writings and Sketches of Matthew Nowicki* (Charlottesville: University Press of Virginia, 1973), xx.

⁵ Jasper Goldman, "Warsaw Reconstruction as Propaganda" In Lawrence J. Vale, , and Thomas J. Campanella., eds. *The Resilient City: How Modern Cities Recover from Disaster* (New York: Oxford University Press, 2005), 138.

⁶ Lewis Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki," *Architectural Record* 115, no. 6 (1954): 147.

⁷ Stanislaw Jankowski, "Warsaw: Destruction, Secret Town Planning, 1939-44, and Postwar Reconstruction" in Jeffrey M. Diefendorf, ed. *Rebuilding Europe's Bombed Cities* (New York: St. Martin's, 1990). 82.

⁸ Matthew Nowicki, "Remarks on Architectural Education in Europe" (c. 1949) In Nowicki and Schafer, *The Writings and Sketches of Matthew Nowicki*, 17-18.

⁹ Quote from Jankowski "Warsaw," 81. Tadeusz Tolowinski, a prominent Polish planner, studied urban planning in Karlsruhe, and joined the faculty of the Warsaw Polytechnic in 1935, establishing the Chair of City Planning. Tolowinski is credited with bringing modern planning principles to Poland, writing a book on the subject titled *Urbanistyka* (1948), and referred to as the father of modern city planning in Poland. See Wojciech Lesnikowski and Vladimír Šlapeta, *East European Modernism: Architecture in Czechoslovakia, Hungary, and Poland between the Wars 1919-1939* (New York: Rizzoli, 1996), 211.

¹⁰ Ibid.

¹¹ Chmielewski was an urban planner and architect.

¹² Jankowski "Warsaw," 82. Piotrowski was also faculty member at the Warsaw Polytechnic (credited with introducing *Vers un Architecture*). As a member of *Praesens*, he was associated with Syrkus, but it is not clear why he was not a part of planning efforts at the Warsaw Polytechnic.

¹³ Many different publications in the late 1940s and 1950s showed a variety of different proposals.

¹⁴ Nowicki, some 17 years younger than Syrkus, never attended a CIAM conference. Complete roster of Polish involvement in CIAM is found in Olgierd Czerner, Hieronim Listowski, and François Wehrin, *Avant-garde Polonaise: Urbanisme- architecture : 1918-1939* (Paris: Éditions du Moniteur, 1981).

¹⁵ Ibid. 251.

¹⁶ Eric P. Mumford, *The CIAM Discourse on Urbanism, 1928-1960* (Cambridge, Mass: MIT Press, 2001), 14. Also Czerner, *Avant-garde Polonaise*, 58.

¹⁷ D. Crowley, "Paris or Moscow? Warsaw Architects and the Image of the Modern City in the 1950s," *Kritika* 9, no. 4 (2008): 769-798.

¹⁸ See Mumford, *The CIAM Discourse on Urbanism*. The second section is titled "The Functional City, 1931-1939" and discusses the contribution of Polish representatives in depth.

¹⁹ See Introduction chapter for review of work by Lewis Mumford.

²⁰ The British planner, Patrick Geddes, also profoundly influenced Mumford. See Lewis Mumford, Patrick Geddes, and Frank G. Novak, *Lewis Mumford and Patrick Geddes: The Correspondence* (London: Routledge, 1995). Mumford named his son Geddes.

²¹ Edward K. Spann, *Designing Modern America: The Regional Planning Association of America and Its Members* (Columbus: Ohio State University Press, 1996).

²² Howard originally published his ideas for the "Garden City" in 1898 under the title *Tomorrow: A Peaceful Path to Real Reform*. This was republished in 1965 as *Garden Cities of To-morrow* (Ebenezer Howard, and Frederic J. Osborn, *Garden Cities of To-Morrow* (Cambridge, Mass: M.I.T. Press, 1965) with a forward by Lewis Mumford. The influence of Howard can be further seen in Peter Hall, and Colin Ward, *Sociable Cities: The Legacy of Ebenezer Howard* (Chichester, West Sussex, England: J. Wiley, 1998).

²³ Lewis Mumford, *The Culture of Cities* (New York: Harcourt, Brace and Co., 1938).

²⁴ Mumford, *The Culture of Cities*, 306.

²⁵ Correspondence between Mumford and Syrkus before the war indicates some dialogue between the two men on the issues of city planning. See Mumford Papers, Rare Book and Manuscript Libraries, Penn Libraries, University of Pennsylvania.

²⁶ Eric Mumford in *The CIAM Discourse on Urbanism, 1928-1960* describes Lewis Mumford's uneasy relationship with the planning principles of CIAM. In 1939, Jose Luis Sert asked Mumford to write an introduction to his "Can Our Cities Survive?" – a publication based on CIAM principles. Mumford did not, later writing that the book made "no reference to the functions of government, group association or culture", and how it contained a "serious flaw in the general outline which CIAM prepared." (Mumford, *The CIAM Discourse on Urbanism*, 132-33).

²⁷ Matthew Nowicki, ["Speech on Warsaw Reconstruction"](c.1947), *Wallace K. Harrison Architectural Drawings and Papers*, Avery Architectural and Fine Arts Library, Columbia University, Box 3, Folder 1. 9.

²⁸ The Warsaw Uprising is documented through many sources including: Włodzimierz Borodziej, *The Warsaw Uprising of 1944* (Madison, Wis.: University of Wisconsin Press, 2006).

²⁹ No documentation can be found about the continuation of the architecture school after these traumatic events and Nowicki's departure from Warsaw. Nowicki would be reunited with his students at the end of the war, upon his return.

³⁰ Stanislaw Albrecht. "Warsaw's Long, Heroic History." *Architectural Forum*. 84 (1946): 106-112.

³¹ Jankowski, "Warsaw," 79.

³² *ibid.* 80

³³ See Lukowski, and Zawadzki, *A Concise History of Poland*. 244-245.

³⁴ *Ibid.*

³⁵ Jankowski, "Warsaw," 81.

³⁶ Matthew Nowicki, ("Speech on Warsaw Reconstruction") (c.1947), *Wallace K. Harrison Architectural Drawings and Papers*, Avery Architectural and Fine Arts Library, Columbia University, Box 3, Folder 1. 10

³⁷ Jankowski, "Warsaw," 83.

³⁸ Jankowski, "Warsaw," 81.

³⁹ Jankowski, "Warsaw," 81.

⁴⁰ These articles are summarized in the Introduction chapter. Maciej Nowicki, "W poszukiwaniu nowego funkcjonalizmu," *Skarpa* 3, no. 1 (1945): 2. Maciej Nowicki, "Uspolecznienie architektury," *Skarpa* 5, no. 1 (1945): 2. Maciej Nowicki, "O sztuce umiaru," *Skarpa* 5, no. 1 (1945): 4-5.

⁴¹ The official title that Nowicki held is difficult to determine exactly. Nowicki later described his role as "chief of planning of the central sections of Warsaw," In North Carolina State College, and Matthew Nowicki, *School of Design: North Carolina State College, Raleigh, N.C.* (Raleigh: NCSC Press, 1950).

⁴² Nowicki and his team worked closely with a team of city planners (including J. Cybulski, K. Lichtenstein and R. Soltynski) who laid out a master plan of Warsaw. Quotation from Matthew Nowicki and Charles Reilly, "Warsaw. Scheme for rebuilding business quarter," *Building* 22, no. 2 (1947): 49.

⁴³ Nowicki's initial planning efforts, organized immediately after the German retreat, were undertaken in Zakopane (250 miles outside of Warsaw), and then moved to Warsaw

⁴⁴ Polish articles are listed in Note 40 and the other in Note 42.

⁴⁵ An additional article, titled "A Plan for Warsaw." *Building* 21, no. 12 (1946): 376- 378, a version of a Warsaw plan was published, and attributed to the planners Nowicki had worked with: J. Cybulski, K. Lichtenstein and R. Soltynski. This article contains a drawing done by Nowicki (clearly in Nowicki's graphic style, and including his signature 'tree branch' that adorned many of his drawings.)

⁴⁶ Nowicki and Reilly, "Warsaw. Scheme for rebuilding business quarter," 49.

⁴⁷ "Praca architektoniczna – srodmiescie Warszawy," *Skarpa* 2, no. 1 (1945): 3.

⁴⁸ Later, as a Polish representative in the United States, Nowicki would describe the larger urban planning principles that were being used in the redesign of Warsaw – but Nowicki was not employed as a planner. Briefly, Warsaw was re-organized "on a principle of largely decentralized districts, each with a definite function of its own." ("A Plan for Warsaw," 376). These districts were separated from each other by "broad green belt of parks and gardens," creating a city unit that was in accordance with Mumford's 'regional' theories, yet similar to the ideas of Syrkus, and his presentation of a 'Functional Warsaw' to CIAM. Working with a low population density of 24 persons per acre (on average), the boundaries of the city were defined by transportation time - taking half-an-hour of travel by bus as an acceptable limit. Centered on a bend in the Vistula River, this created a core city of roughly 50,000 acres and a population of roughly 1.2 million. Beyond this limit, a series of satellite towns, roughly 12.5 miles from the center, were planned that would connect to Warsaw via an electric train system. The new plans

called for a dispersal of the population into the surrounding region, while maintaining a central area of town. These designs are similar to both Syrkus' "Functional Warsaw" presented to CIAM, as well as Le Corbuiser's "City for 3,000,000." Also see Matthew Nowicki, Szymon Syrkus, and Helene Syrkus, "Reconstruction: Warsaw," *Task 7* (1948): 47-49.

⁴⁹ Nowicki's designs cover an area of Warsaw that was heavily damaged. The Business district is placed near Grzybowski Square, close to Marszalkowska Street (Marshal St.). The waterfront area, on the western bank, was a dense residential neighborhood while the eastern side was largely agricultural.

⁵⁰ The Cathedral remains a bit of a mystery. Nowicki discusses it hardly at all and its design seems to be more of a traditional form. This led me to believe the church had survived the war – but studies of wartime maps have been inconclusive. The eastern bank of the river was largely agricultural before the war, and the few structures that were there appear to have been destroyed.

⁵¹ Nowicki and Reilly, "Warsaw. Scheme for rebuilding business quarter," 50.

⁵² Mumford, *The Culture of Cities*, 318.

⁵³ Mumford, *The Culture of Cities*, 260.

⁵⁴ Nowicki and Reilly, "Warsaw. Scheme for rebuilding business quarter," 50.

⁵⁵ Sigfried Giedion. "The Need for Monumentality" In Paul Zucker, ed., *New Architecture and City Planning, a Symposium*. (New York: Philosophical Library, 1944): 549-568.

⁵⁶ Giedion, "The Need for Monumentality," 568.

⁵⁷ Mumford, *The Culture of Cities*, 438.

⁵⁸ The Sejm chamber of the Polish government remains a vital part of its democracy. Its history, as described by the Polish state can be found online. Source:

<http://opis.sejm.gov.pl/en/historiasejmu.php>. Accessed: 26 September 2012.

⁵⁹ The plan of the Assembly chamber contrasted to the hierarchical Latin cross plans of catholic churches in the period, and the largely rectilinear forms of other buildings. The flat roof contrasted to the sloped roof and tower or steeple of the churches of that era. These differences gave the building a strikingly different form.

⁶⁰ Lewis Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki," *Architectural Record* 115, no. 6 (1954): 143.

⁶¹ Quote from Malgorzata Handzelewicz-Waclawkowa, printed in Barucki, and Nowicki. *Matthew Nowicki: Poland, USA, India*, 32.

⁶² Philip Drew, *Tensile Architecture* (Boulder, Colo: Westview Press, 1979), 142-187. Thomas Telford's bridge over the Menai Straights in England (completed in 1826) used a series of iron chains to suspend a roadway over a span of 482 feet. Later, in the United States, John A. Roebling developed a method of "spinning iron wire" in the 1850s.

⁶³ Eugene Beaudouin (1889-1983) and Marcel Lods (1891-1978) were French architects, who both studied at the Ecole des Beaux Arts, and became partners in 1930. Both were interested in prefabrication and industrialization, working with the engineers Vladimir Bodianski and Jean Prove in their careers. Their competition entry was published in Drew (1979, 146).

⁶⁴ E. Brunon Guardia, "Nouveau palais des expositions: concours de l'O.T.U.A. : projet de MM. Beaudouin et Lods, architectes S.A.D.G." *Construction Moderne* 50 (1934): 62-70.

⁶⁵ Alan Braun, Zoran Versic, and Tomislav Vidovic, "The Reconstruction of the French Pavilion at the Student Center in Zagreb from the Aspect of Energy Efficiency", Source: [http://www.an-patrimoine-echanges.org/IMG/pdf/session_s2c - alan braun - architecte - universite de zagreb croatie.pdf](http://www.an-patrimoine-echanges.org/IMG/pdf/session_s2c_-_alan_braun_-_architecte_-_universite_de_zagreb_croatie.pdf). Accessed 6 July 2012.

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- ⁶⁶ Both projects are shown in: James B. Harris, and Kevin P.-K. Li, *Masted Structures in Architecture* (Oxford: Butterworth Architecture, 1996), 29.
- ⁶⁷ For more information on the Warsaw Ghetto, see Barbara Engelking, and Jacek Leociak. *The Warsaw Ghetto: A Guide to the Perished City* (New Haven: Yale University Press, 2009).
- ⁶⁸ Nowicki and Reilly, "Warsaw. Scheme for rebuilding business quarter," 51.
- ⁶⁹ As the former Nazi-designated site of containment of the Polish Jews and location of the Warsaw Uprising, it is odd that no mention is given to the shift in use from housing to business district, from supporting the residential life of Warsaw citizens to functional, office work.
- ⁷⁰ Maciej Nowicki, "Uspolecznienie architektury," *Skarpa* 5, no. 1 (1945): 3.
- ⁷¹ A publication described "blocks of 1,000 sq. ft." but possibly meant 1,000 feet per side. The idea of a self-contained "super-block", originated with Ebenezer Howard and Clarence Perry and the Garden City Movement.
- ⁷² The model and diagram seem to imply a newly-imposed gridded street network, but earlier photos of the Jewish Ghetto show a largely rectilinear network. It is believed that to create such large blocks, some existing streets were used, while others were built over.
- ⁷³ Lewis Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki," *Architectural Record* 115, no. 6 (June 1954), 142.
- ⁷⁴ Matthew Nowicki, ("Speech on Warsaw Reconstruction") (c.1947), *Wallace K. Harrison Architectural Drawings and Papers*, Avery Architectural and Fine Arts Library, Columbia University, Box 3, Folder 1. 10
- ⁷⁵ Barucki and Nowicki, *Matthew Nowicki: Poland, USA, India.*, 34.
- ⁷⁶ Nowicki and Reilly, "Warsaw. Scheme for rebuilding business quarter," 51.
- ⁷⁷ *Ibid.*
- ⁷⁸ Wanda Telokowska, "Na Marginesie Projektu," *Skarpa* 2 (1945): 4.
- ⁷⁹ Maciej Nowicki, "O sztuce umiaru," *Skarpa* 5, no. 1 (1945): 3.
- ⁸⁰ *ibid.*
- ⁸¹ Matthew Nowicki, ("Speech on Warsaw Reconstruction") (c.1947), *Wallace K. Harrison Architectural Drawings and Papers*, Avery Architectural and Fine Arts Library, Columbia University, Box 3, Folder 1, 9.
- ⁸² Nowicki and Reilly, "Warsaw. Scheme for rebuilding business quarter," 49.
- ⁸³ *ibid.*, 51
- ⁸⁴ Matthew Nowicki, ("Speech on Warsaw Reconstruction") (c.1947), *Wallace K. Harrison Architectural Drawings and Papers*, Avery Architectural and Fine Arts Library, Columbia University, Box 3, Folder 1, 9.
- ⁸⁵ Le Corbusier, *The City of To-Morrow and Its Planning* (Cambridge, Mass: M.I.T. Press, 1971), 236.
- ⁸⁶ *ibid.* 275
- ⁸⁷ Lewis Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki," *Architectural Record* 115, no. 6 (June 1954), 143.
- ⁸⁸ Jankowski, 1990, 81.
- ⁸⁹ Lewis Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki," *Architectural Record* 115, no. 6 (June 1954), 148
- ⁹⁰ Nowicki and Reilly, "Warsaw. Scheme for rebuilding business quarter," 46. The introduction to this article, written by Charles Reilly, claims Nowicki was going to "meet his father" in the US, though other accounts claim that Nowicki's father was killed in the

Warsaw Uprising. It is likely Reilly misunderstood Nowicki's earlier connection to the United States – as Nowicki never mentioned his father in the United States.

⁹¹ Nowicki spoke many times on the Warsaw reconstruction in the United States, as will be shown in the next chapter.

⁹² Nowicki, S. Syrkus, and H. Syrkus, "Warsaw Reconstruction," 47-49.

⁹³ Ibid. 48.

⁹⁴ Quoted in Jasper Goldman, "Warsaw: Reconstruction as Propaganda," In Lawrence J Vale and Thomas J. Campanella, *The Resilient City: How Modern Cities Recover from Disaster* (New York: Oxford University Press, 2005).

⁹⁵ Ibid. 140. This reconstruction is best seen in the communist propaganda publication Bolesław Bierut, *The Six-Year Plan for the Reconstruction of Warsaw: Graphical Presentation, Diagrams, Plans, and Perspectives Worked Out on the Basis of Materials and Projects of the Town Planning*, Office of Warsaw. (Warszawa: Książka i wiedza, 1951).

⁹⁶ Nowicki and Schafer, *The Writings and Sketches of Matthew Nowicki*, 18.

⁹⁷ Lewis Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki," *Architectural Record* 115, no. 6 (June 1954), 147-148.

Chapter 4: The United Nations

Matthew Nowicki arrived in the United States in November 1945, and his wife, Stanislava, and young son Paul arrived the following January. The family settled in Chicago, and Nowicki became involved with the Polish Consulate there. Nowicki had, of course, lived in Chicago as a child, from June 1920 to December 1922, when his father served as Consul General of Poland. Thanks to his experience with the BOS rebuilding team in Warsaw, Nowicki became a “technical advisor to the Polish Embassy” looking to enlist American interest in the rebuilding of Warsaw.¹ Polish citizens had maintained a strong presence in Chicago since the mid nineteenth century, and the Chicago consulate was the first Polish consulate in the US, opened in 1920. Fluent in Polish, English and French, with significant international experience, Nowicki quickly transitioned to a more diplomatic role. Stepping away from architectural work for the time being, Nowicki was able to work as an "ambassador" for Poland, while learning about American politics and business. With an established Polish community, Chicago was comfortable location that enabled Nowicki to settle into life in the United States, and re-start his architectural career. However, Nowicki’s active exploration of structurally expressive Modern architecture would have to wait.

contains images of Nowicki’s business district model as well, although its layout and proposal for prefabricated office buildings was not mentioned. Nowicki’s proposal for different modes of transportation was noted: “The architectural composition of different parts of the city will be so arranged as to fit the scale of a man walking on foot, or of one driving a car.”⁵

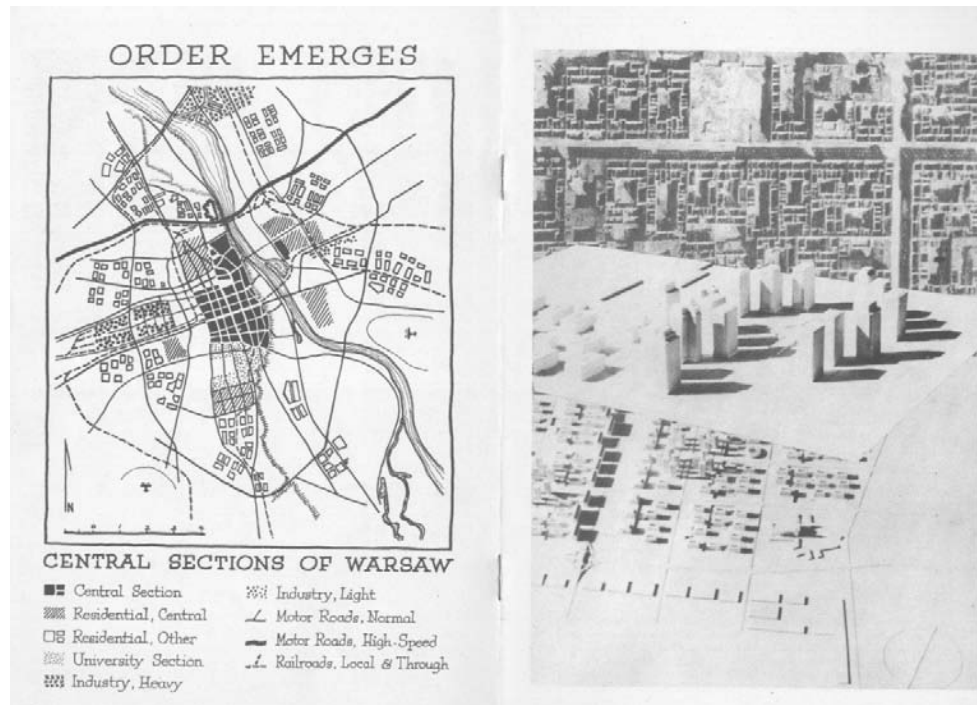


Figure 4.2 - Graphics from Albrecht’s “Warsaw Rises” with Nowicki’s model on right, 1946. (Stanislaw Albrecht, *Warsaw Lives Again!* (nd.: Committee on Exhibition ‘Warsaw Lives Again’, 1946), 4-5).

The booklet is notable for its two-page introduction by Lewis Mumford. Mumford had corresponded with Szymon Syrkus beginning in 1939 and continuing into the 1940s.⁶ In his introduction, Mumford stated: “In these new plans for Warsaw, the social facts of modern living are the very backbone of the whole structure: in a democratic community man’s social needs are as fundamental as his physical requirements.”⁷ The plan’s attention to the social lives of the inhabitants attracted Mumford; likely he saw this as a contrast to the “romanticism of the

machine” and the “American mechanical ingenuity” he had observed in other planning of the time:

In the plans of the Warsaw Reconstruction Office, starting up again from rock-bottom, Warsaw, working close to nature and close to man’s essential needs, will find the form for a new age. Warsaw will live again, more splendidly than ever before, because she now faces poverty and ruin as gallantly as she once faced danger and death. That spirit makes Warsaw as indestructible as Athens or Jerusalem.⁸

Mumford's *Culture of Cities* was one of the influences reflected in these plans; Mumford's recognition of his own influence on this large-scale proposal likely was one reason for his effusive praise.⁹ However, at this point, Mumford had not had any direct personal interaction with Matthew Nowicki.

While Nowicki was involved in publicizing Polish reconstruction efforts (giving lectures, writing articles, and so forth), his name remained absent from publications; none of these publications mentioned his specific contributions to this plan.¹² *Warsaw Lives Again* did not name any individual designers or contributors, presenting the plan as a collective effort.

Nowicki's time in Chicago (1945-46) is poorly documented in surviving sources. Although he clearly spent time publicizing the reconstruction effort, his other activities seem to have drawn little attention. Nowicki had taken classes at the Art Institute of Chicago as a child, but there is no evidence of him re-engaging the school at this time as an architectural educator. The Art Institute had become the home of the "New Bauhaus" founded by Lazlo Moholy-Nagy in 1937 (the "New Bauhaus" had changed its name to the Institute of Design in 1944).¹³ Later, when developing the curriculum for North Carolina State College, Nowicki would refer to this school in passing, but his involvement with the school between 1945-46 is not documented.¹⁴ Ludwig Mies van der Rohe had also moved to Chicago in 1939 to take over the architecture program at the Armour Institute which was renamed Illinois Institute of Technology, but no evidence indicates any interaction between Nowicki and Mies.

His time in Chicago clearly provided Nowicki with a foothold in the United States. He held a diplomatic position in a stable environment and could build on the knowledge of English and of American culture that he had gained as a child. It was from this city that Nowicki launched the second phase of his career.

In this period, Nowicki maintained his political connections to Poland, even as he was aware of the increasing Soviet domination and emerging communist government. By keeping a favorable relationship to the government back home, Nowicki positioned himself to take part in

the large, international architectural venture for the design of the Headquarters for the newly formed United Nations.

Choosing a Site

The United Nations (UN) had been formed in the wake of World War II.¹⁵ First initiated by Franklin D. Roosevelt in 1939, the term “United Nations” was used to describe the Allied countries during war, however, the charter for the UN as a post-war organization was not officially signed until October 24, 1945, in San Francisco. The UN aimed to bring together all nations of the world to work for peace and development and to avoid future wars. The first UN Secretary General, Trygve Lie, made the establishment of a permanent home and headquarters for the UN a priority. The UN established a “Committee of Permanent Headquarters”, consisting of delegates from several different countries.¹⁶ Weighing political pressures, and not wanting to return to Geneva, Switzerland (the site of the failed League of Nations), the UN General Assembly voted on February 14, 1946 to locate its headquarters in the United States.¹⁷

Anxious to find a suitable site, the General Assembly established a United Nations Headquarters Site Commission in spring 1946 to investigate possible sites near New York City.¹⁸ This group included the architect Le Corbusier, and was charged with investigating potential sites for the United Nations Headquarters in the New York area.¹⁹ This Site Commission was responsible to the larger UN Committee of Permanent Headquarters.

The Site Commission did not have firm criteria guiding their search. The Committee of Permanent Headquarters initially asked the Site Commission to consider sites ranging from 2-½ square miles to 40 square miles in size.²⁰ The discrepancy indicates that the programmatic needs

of the United Nations were still being determined, and whether the Headquarters would be an urban complex or a rural compound was uncertain.

This Site Commission visited sites in the northeastern United States, and filed a report to the first session of the UN General Assembly in October 1946 without a firm recommendation of a specific site.²¹ Along with detailed descriptions of a range of sites, the report contained a significant text by Le Corbusier offering ideas for the design of the United Nations Headquarters.²² In an independently published and highly illustrated manifesto, Le Corbusier described his vision for the United Nations as a landmark of modern architectural thinking. He wrote:

[With the United Nations Project] the very hour of modern architecture had come. I had demonstrated that it was possible to house all of the equipment of the United Nations within one square mile, including a population of 20,000 inhabitants! ... Modern techniques furnish the solution for the urbanization of contemporary cities by establishing and maintaining values through the use of height.²³

Although his ideas were not fully realized, Le Corbusier significantly shaped the course of the UN Headquarters project.

Following this report, the UN General Assembly decided to broaden the search for a suitable site. Citizen protests had already arisen in Westchester County, New York, just north of Manhattan, to site selection in that vicinity.²⁴ In fall 1946, a second group of representatives (the second Site Commission) explored sites across the United States, including locations in Philadelphia, San Francisco, Boston and Flushing Meadows, New York (the site of the 1939 World's Fair). This (second) Site Commission included Matthew Nowicki.²⁵ The specifics of how Nowicki became affiliated with the UN site selection process are not documented, but his political connections and architectural experience (and the publicity of the Warsaw

reconstruction), and his availability, most likely all facilitated his involvement. While Nowicki's specific role within the group is unknown, Mumford later described his trip as giving "him a certain opportunity to show his capacity for leadership" as well as "a first-hand view of the country."²⁶

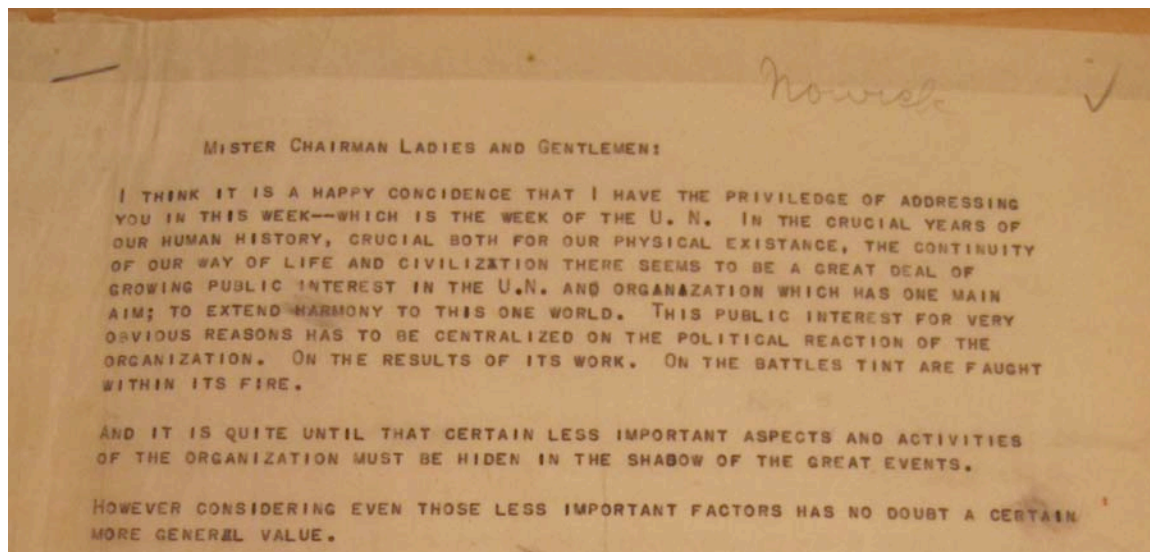


Figure 4.4 - Nowicki's undated speech on the UN Headquarters design process, ca. 1947 (Matthew Nowicki, ("Speech on Warsaw Reconstruction") (c.1947), *Wallace K. Harrison Architectural Drawings and Papers*, Avery Architectural and Fine Arts Library, Columbia University, Box 3, Folder 1)

In an unpublished speech found in the Wallace K. Harrison Archives at Columbia University, Nowicki described the work of both the first and second Site Commissions in detail. This undated speech, addressing "Mister Chairman, Ladies and Gentlemen" (possibly given to the United Nations Assembly) was written after the design had been largely completed (ca. 1947) and provides insight into Nowicki's direct involvement with the process.²⁷ This speech also elucidates Nowicki's vision for the United Nations, and what he imagined the Headquarters could achieve in the post-war world. He stated: "In the crucial years of our human history, crucial both for our physical existence, the continuity of our way of life and civilization, there seems to

be a great deal of growing public interest in the U.N., an organization which has one main aim, to extend harmony to this one world.”²⁸

The phrase "crucial for our existence" suggests an awareness of the atomic bomb and the level of destruction of which it was capable. In acknowledging the “crucial” character of these years, Nowicki reflected the developing anxiety of postwar life and the impending Cold War. While peace in Europe had been secured, the Soviet Union was exerting its power (over Poland for example). While the Soviet Union did not detonate their atomic bomb until August 1949, by 1948 it was likely known that the Soviet Union was seeking to develop atomic weapons. Still, design team for the Headquarters project included the Soviet engineer, Nikolai Bassov. Through the tone and word choice of the speech, the uncertainty of the time became evident in Nowicki’s writing.

Nowicki’s use of the phrase “one world” is also notable. The phrase clearly refers to the 1943 bestselling book by Wendell Willkie (1892-1944) of the same name. Willkie had been the Republican candidate for President in 1940, who, a year after his defeat by Franklin D. Roosevelt, embarked on a trip around the world. The book described Willkie’s travels in the plane *The Gulliver*, during the middle of World War II. Willkie traveled to Puerto Rico, Brazil, the Congo, Cairo, Bagdad and Tehran, Moscow, through China to Siberia, then to Fairbanks, Alaska, and back to Washington D.C.

After his travels, Willkie described his vision of a “One World” – a world free from imperialism and colonial control of the earlier generation. Willkie promoted peace with Russia, suggesting, “The best answer to Communism is a living, vibrant, fearless Democracy – economic, social and political.”²⁹ Willkie insisted that the United States not impose its rule on

others, nor demand special privileges. Central to Willkie's "One World" concept was a form of world government, and he urged the American people to accept it.

Willkie's book sold millions, and helped shift the attitude in the United States towards international cooperation. Nowicki's mention of the phrase indicates his awareness of this book, and Nowicki clearly shared Willkie's belief in international cooperation. Acknowledging the uncertain political conditions, Nowicki felt that the United Nations could be an instrument of peace, a way of extending "harmony" across the globe. His first hand experience of the destruction of Warsaw, and the tumultuous history of democratic governance in Poland, made these international politics intensely personal for Nowicki.³⁰

Yet within this uncertainty, Nowicki clearly believed that Modern architecture (and his structurally-expressive forms) could be an instrument of good politics. As an "international citizen," of Polish nationality living in America, Nowicki identified with the concept of a global community, guided by the policies of the international UN.

Nowicki also focused on the "our physical existence, our continuity of life" as an essential aim of the post-war condition. Having experienced so much disruption and loss, Nowicki wished to ensure that the living traditions of the diverse world continue, through the uncertain political conditions of the post-war period. The intense destruction demonstrated by the atomic bomb, the German *blitzkrieg* and the genocide of the Holocaust raised legitimate concerns about the potential elimination of large segments of the population. Nowicki clearly believed that the human ability to create such destruction must be countered with organizations (like the UN) that promoted peace and harmony. These priorities directly inform Nowicki's architectural ideas, and he continued to frame them through the lens of architecture. He stated:

Being an architect, I hope you will excuse me for looking at all things from an architectural – planning or building angle. There might be something very profound in

the phrase: tell me how you dwell and I will tell you who you are. In our difficult times, it should be very modified to: tell me how would you wish to dwell and I will tell you who you are.³¹

This passage demonstrates Nowicki's concern for the manner in which people live, how this is connected to an individual's identity, and ultimately the built implications of this reality.³² In these "difficult times," with so much uncertainty, Nowicki asked "how would you wish to dwell" – a central question for the postwar period. How should the postwar world respond to the political challenges? How should differing nations cooperate? How should we "dwell"? Nowicki states that these complex questions, the "anxiety" of the postwar era, have direct implications on architecture – the "planning or building angle."

For the specific case of the United Nations, an institution that was still determining its role in the post-war world, Nowicki argued that the act of designing a headquarters was a way to determine "who they are." Nowicki engaged this search for an architectural identity: "If Paris was the capitol of France, Washington the capitol of the USA, London the capitol of England, Moscow the capitol of USSR, what size and importance this new capitol of the world should have, to fulfill its hopes and destination."³³

Nowicki's enchantment with the idea of a central capitol for all the world's citizens reflects his continued hope for international cooperation in the postwar era, despite the emerging Cold War condition. He maintained wishful visions of a unified world unfolding, with the United Nations as the primary governing body of the coming age, even though that reality was beginning to slip away.³⁴ Nowicki saw the complex as not just a collection of office buildings and assembly chambers, but also as a monumental, physical manifestation of a unified post-war world. Even as the reality of the Cold War was becoming increasingly apparent, Nowicki seems

to hope that a physical symbol (the constructed headquarters of a world organization) might express what the world might become. With a strong, structural form, tied to the universal forces of gravity and the laws of physics, Nowicki felt that Modern architecture could become a symbol of hope.

The speech might even be considered an elegy to his a vision of a unified world, a vision that was fading by 1948. Nowicki maintained hope that the physical reality of the UN would be a symbol of resistance to the geopolitical realities of the postwar world. Nowicki continued in his speech to describe the process of design for the United Nations Headquarters.

In the fall 1946, Nowicki joined the second Site Commission and visited the offered sites in Boston, Philadelphia, San Francisco and New York City. In his speech, Nowicki described the benefits of each site (climate, proximity to transportation hubs, regional characteristics), but Nowicki lent particular description to San Francisco, describing it in detail:

Now the second stop a flight Philadelphia-San Francisco. The city of the Golden Gate offers Presidio, a beautiful site with a view on the famous bridge. The location has everything that could be desired. ... An international character of the community and its metropolitan way of life are the desired background for the activities of the U.N.³⁵

Nowicki voiced a particular fondness for the Golden Gate Bridge (completed in 1939) appreciating its expressive use of structural form as both an object of engineering, and its important urban function.³⁶ He stated: “The city of the Golden Gate offer[s] Presidio, a beautiful site with a view on the famous bridge.”³⁷

The form of the suspension bridge, with its form defined by draped cables, combined with his earlier interest in tension-structures, would figure prominently in Nowicki’s later designs.

Ultimately San Francisco was deemed too far from Europe to be considered as a site for the Headquarters, but Nowicki's trip across the United States left a lasting impression on him. In his speech, Nowicki seems to have catalogued the different conditions he experienced, noting the corresponding architectural and social differences in each place. In comparing host cities, Nowicki discussed climate and regional characteristics extensively. When discussing a specific site near Philadelphia, Nowicki wrote, "From the direction of the prevailing winds in this region, from the fact of the formation of the soil, the river, and valley, from the experience of the people of Philadelphia, we know that this site itself in this respect presents the best choice in the Philadelphia region." This comment exemplifies, Nowicki's sensitivity to the regional characteristics of particular locations..

After their fall 1946 site visits, the second Site Commission evaluated the different sites and presented findings to the larger UN Committee of Permanent Headquarters in December 1946. A lengthy discussion comparing the benefits of sites in Philadelphia, San Francisco, Boston and New York (Flushing Meadows) was interrupted by the gift of \$8.5 million from John D. Rockefeller, earmarked to buy a 17-½ acre parcel of land for the United Nations headquarters in New York City "bounded by First Avenue, East 48th Street, the East River and East 42nd Street."³⁸ On December 10, 1946, the United Nations General Assembly approved the site. This sudden, opportunistic site decision changed Nowicki's vision for the UN Headquarters. He declared rather wistfully:

The UN has found a place to settle. The ambitions of 40 square miles (Flushing Meadows Site) are replaced by the prosaics of 17 ½ acres. The World capitol is replaced by a fighting post in the struggle for peace. When this peace will finally be assured the concept of the world capitol might be revised. But until then the workshop for peace must take its place. The UN settles to build a home and a workshop.³⁹

Nowicki was clearly disappointed that the UN had not chosen an expansive landscape for its Headquarters. Nowicki had to relinquish his ideas of a “world capitol,” given the reduced size and density of urban location. His personal vision for the Headquarters seemed to require the tranquility of a larger site, not the space restrictions of a few blocks in a crowded city.⁴⁰

Following Willkie’s “One World” thesis, Nowicki seems to have envisioned the UN as a real world government, capable of fully promoting peace and harmony. But the very real complexities of creating the capitol for such an institution (such as real estate conflicts with local communities, issues of cost, and so forth) were overwhelming. A variety of geopolitical and economic issues restrained the scope of the UN Headquarters project, and forced Nowicki and the rest of the team to re-conceptualize its role. As a “fighting post” and “workshop,” the Headquarters was reduced, but still vital place to work for peace; a peace that may have seemingly assured at the end of World War II, but had now become a less certain reality. The metaphor of a “workshop for peace,” was widely used to describe the UN Headquarters project, suggesting the Headquarters was not simply a symbol of peace and governance, but a place of work and action, a place designed to facilitate the process of through which peace must be attained.⁴¹

Headquarters Design Team

With a site for the Headquarters in hand, the United Nations moved towards initiating design. While Nowicki was a part of this design process, the building complex’s form and shape would be far beyond his creative control. At first a design competition was considered, but rejected for a variety of reasons. Nowicki stated in his undated speech:

...a competition takes many months of precious time, and needs a very definite program that has to be worked out for months ahead. The U.N. becoming a client knows in

general what it wants to have in its home. But it doesn't know enough to define all its requirements. It needs an architect to talk things over, to get advice, to decide with him the final program.⁴²

Not wanting to put a single architect in charge (much to Le Corbusier's dismay), the UN Committee on Permanent Headquarters quickly decided to create an international "Board of Design Consultants."⁴³ This board would include architects from around the world, nominated by their home countries (only countries that were members of the UN could nominate, and only one architect was allowed for each country). The process was an attempt to model the design of the Headquarters on the cooperation among nations to which the UN aspired. It was hoped that, with international cooperation, the Headquarters design would reflect the cooperative ideals of the United Nations.⁴⁴ A Director of Planning was to choose the final team from these nominees. In January 1947 the UN Committee on Permanent Headquarters appointed Wallace K. Harrison the Director of Planning (again much to the disappointment of Le Corbusier). Harrison's selection was largely due to his close relationship with the Rockefeller family, his experience designing Rockefeller Center a few years earlier, and his knowledge of the complexities of building in Manhattan.⁴⁵ In his dealings with the Board of Design, Harrison operated as a project manager, never authoring any design proposals himself, and yet retaining the final authority over the decisions.

Just after the January 1, 1947, Harrison drew up a list of 29 potential architects, with their names preceded by the country they would represent. Along with other names like Le Corbusier (France), Oscar Niemeyer (Brazil), and Nikolai Bassov (USSR), Matthew (Maciej) Nowicki's name was listed as a representative of Poland.⁴⁶ Underneath his name, Harrison noted Nowicki's prominence in the Warsaw underground and his current location in Chicago.⁴⁷ Nowicki's name

was further denoted as one of Harrison’s preferred choices, with a diamond placed next to his name on the list.

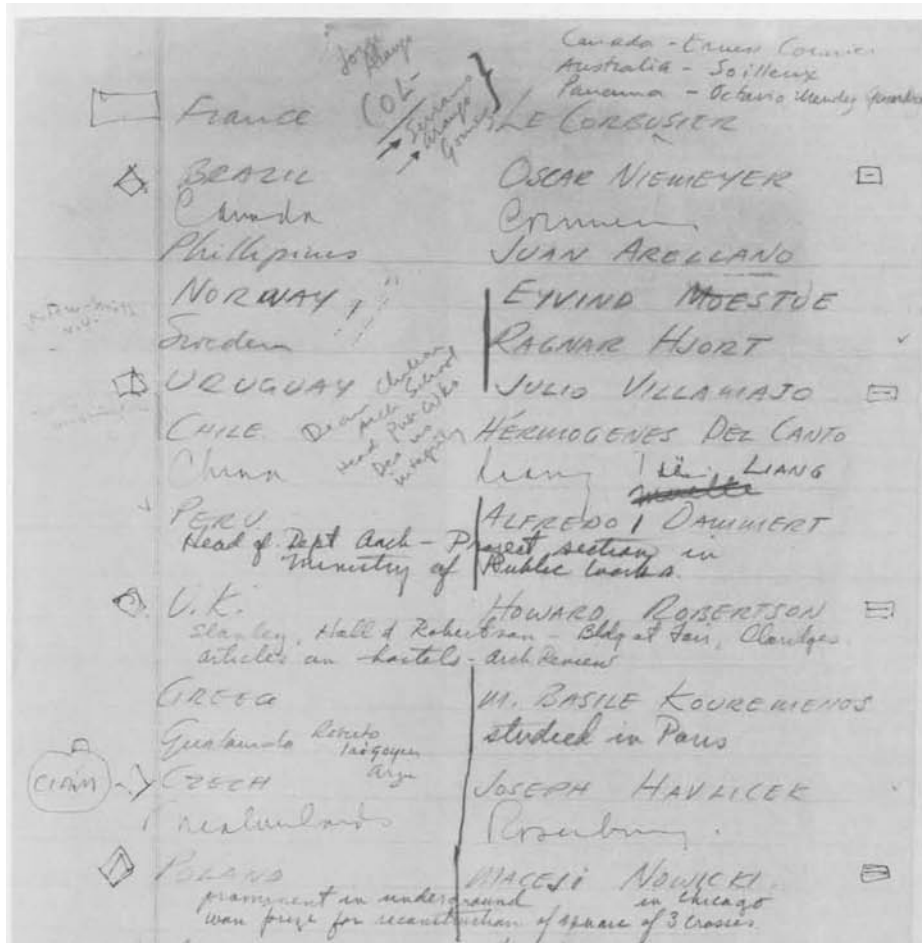


Figure 4.5 – Wallace K. Harrison’s List of Architects, January 1947. (George A. Dudley, *A Workshop for Peace: Designing the United Nations Headquarters* (New York, N.Y.: Architectural History Foundation, 1994), 33)

This group of architects, from the very beginning, was significantly influenced by the presence of Le Corbusier. Harrison believed that the team must include Le Corbusier given his prominent work and his earlier rejection from the competition for the League of Nations.⁴⁸ Fully aware of his dominant personality, Harrison from the beginning had concerns about Le

Corbusier's ability to work as a member of a team, expressing doubts about his treatment of other team members.⁴⁹

In early January 1947, the United Nations sent out requests to the 54 member nations, calling on them to nominate their best architects. On January 23, the *New York Times* reported that Nowicki had been formally nominated to represent Poland--one of the first two nominations received.⁵⁰ By February 6, 26 nominations had been received and within a week, the first five architects were approved: Le Corbusier, Niemeyer, Bassov, Howard Robertson (UK) and Liang Ssu-cheng (China). With five architects left to be chosen, Le Corbusier immediately began participating in selecting the remaining architects. Le Corbusier sent his preferences for the remaining members (with a secondary level of activity) in a telegram to Harrison:

Le Corbusier approves a committee limited to 5 persons: HARRISON, CORBUSIER, BASSOV, ROBERTSON, NIEMEYER who have the same spirit. His situation in the CIAM permits him to propose with confidence Yugoslav Weissman, Britisher Entwistle, Argentine Amancio Williams, Greek Papadaki, Polander Nowicki, Mexican Lazo to respond to the first stage of the mandate.⁵¹

Le Corbusier's reference to Nowicki, via CIAM, is intriguing in that there is no evidence that Nowicki had attended any of the CIAM conferences. Still, Le Corbusier was clearly aware of Nowicki and his skills as an architect.⁵² After discussions with Harrison, Le Corbusier changed his written proposal, requesting himself, Alvar Aalto, Walter Gropius and Ludwig Mies van der Rohe as Chief Architects, who would be supported by a younger group of designers such as Oscar Niemeyer, Jose Luis Sert, Vladimir Bodiansky, Eero Saarinen, Edward D. Stone and Matthew Nowicki.⁵³ Nowicki's inclusion in this list of prominent architects shows the recognition he had already achieved, with these other men as his peers.⁵⁴

Despite Nowicki's active engagement with the second Site Selection Committee, and early nomination, he was not selected to be a formal member of the Board of Design, instead he was assigned as a Special Consultant to the team. The official members of the Board of Design were: G.A. Soilleux (Australia), Gaston Brunfaut (Belgium), Oscar Niemeyer (Brazil), Ernest Cormier (Canada), Ssu-chen Liang (China), Le Corbusier (France), Sven Markelius (Sweden), Nikolai Bassov (USSR), Howard Robertson (United Kingdom) and Julio Vilamajo (Uruguay). The Special Consultants were Josef Havlicek (Czechoslovakia), Vladimir Bodiensky (France), John Antoniadis (Greece), Peter Noskov (USSR), Hugh Ferriss (USA), Ernest Weissmann (Yugoslavia) and Matthew Nowicki (Poland). These two groups of architects would work together throughout the process, with little differentiation among them during design work. Indeed, in the later stages of design, Nowicki would assume a more prominent role in the process than many on the formal Board of Design. Given the reality of this team as an interacting group of design professionals (Board of Design plus Special Consultants), I will refer to the entire group as the original Design Team.



Figure 4.6 – United Nations Design Team with Nowicki on the far right, 1947.

From left to right: Markelius, Le Corbusier, Bodiansky, Liang, Harrison, Niemeyer, Soilleux, Bassov, Abromovitz(behind), Weissmann, Cormier, Antoniades, Nowicki. (George A. Dudley, *A Workshop for Peace: Designing the United Nations Headquarters* (New York, N.Y.: Architectural History Foundation, 1994), 33)

Nowick's assignment to the team of Special Consultants may have been due to his youth and relative inexperience, or restrictive duties with the Polish consulate in Chicago; the reason is not clear from available evidence.⁵⁵ Still, Nowicki was present at the very first design meeting on February 17, 1947, with just Le Corbusier, Bassov, Liang, and Wallace Harrison, and he appeared on camera before the first meeting in the documentary film "A Workshop for Peace."⁵⁶ However, according to meeting records, Nowicki left the Design Team meeting and did not return until the meeting on April 7, after 27 meetings had already taken place.⁵⁷ Once he

returned, George A. Dudley (a young architect, and note taker throughout the Design Team meetings) noted how the “talented young Matthew Nowicki from Poland ... added greatly to the board’s design depth and planning breadth,” and that Nowicki began playing a more important role on the Design Team.⁵⁸

The Design Process

The UN General Assembly gave the Design Team only rough guidelines for design. They simply asked for an assembly hall (with two major chambers) a secretariat (that is, an office building), and conference hall. The program was based on a potential 70 member states, with the Assembly required to accommodate over 700 delegates, 200 advisors, 900 members of the general public and 240 press members. The anticipated staff of the Secretariat grew from 2,300 to over 5,265, and requested areas fluctuated wildly during the design process.⁵⁹

The design process, as organized by Harrison, basically involved individual designers developing site and massing schemes for the Headquarters on their own, then presenting their proposals to the larger Design Team for critiques. A group known as the “backroom boys,” who drew plans and sculpted wax models of different proposals, assisted the architects in displaying their ideas. With varying schedules and temperaments, Design Team members came and went during the four-month process (from February 17, 1947, to June 20, 1947), and only rarely did the whole team meet. Conflicts were common, as architects took differing views during the discussions of proposals. Harrison attempted to manage the process; authoring no proposals himself, he sought to guide the group of architects toward a design.⁶⁰

Once he joined the design team, Nowicki produced several independent design schemes (as did other designers), and contributed to the group discussions. Yet the sheer number of older

architects (Nowicki was the youngest of the group, closest in age to Niemeyer) and the intricacies of a group-design method appear to have limited his influence on the overall process, as well as his creative contributions. Nowicki was also restrained by his reverence for Le Corbusier, as were other young architects like Niemeyer. While Niemeyer has worked directly with Le Corbusier on the Ministry of Education Building in Rio de Janeiro, Brazil in 1942, Nowicki had not had any personal contact with Le Corbusier before this time. During the meeting on April 18, 1947, Nowicki had an exchange with Le Corbusier while discussing the concentration of services on the site, in which they debated about a single-level assembly hall or a multi-level assembly hall. Responding to the multi-level density of Nowicki's Scheme 30, Le Corbusier exclaimed, "There is no place to breathe! ... Daily work of the Secretariat is different from meetings of people from all over the world. Confusion will develop."⁶¹ Nowicki, respectful of one of his "heroes," conceded, "It could spread out... My aim is to study concentration."⁶² His suggestion of design alternatives, as well as his willingness to compromise for the good of the group, recalls Nowicki's prior experience in Poland working in collaborative design groups.⁶³



Figure 4.7 - Nowicki presenting schemes to the Design Team, 1947. (*Life Magazine*, Photo Archive, April 1947, photo by Al Fenn).

During the design phase, Nowicki, often worked with Oscar Nitzchke and Oscar Niemeyer – architects who “would rather draw than talk” according to Dudley, and the three collectively engaged in “extensive charetting” together.⁶⁴ Nowicki is identified as the author of five different schemes (27, 30, 30A, 35, 45), but images of only two (30A, 35) are available.⁶⁵

Nowicki’s Scheme 30A (Figure 4.8) shows the Assembly with one round end and a shallowly sloped roof, the Secretariat treated as a slab oriented east-west, and elevated walkways and ramps connecting the two. He stated “I’ve made more careful study of parking and pedestrian entrance via the terraces, which now create a large plateau, with sunken interiors; it

subordinates other halls to the Assembly.”⁶⁶ Nowicki used a simple massing strategy, clearly separating the different buildings. The horizontal form of the Assembly contrasted to the vertical slab of the Secretariat, with a one-level elevated platform wrapping around and in between. Nowicki signified the importance of the Assembly with its form. In contrast to the Warsaw Parliament proposal, in which the single round pavilion had an expressed structural system, here the architectural interest resulted from contrasting volumes, not from structural expression – possibly indicating the influence of Le Corbusier and other Design Team members. The separation of circulation to different levels recalled his Warsaw business district proposals, but this Scheme was not developed in any detail nor did it generate significant discussion.

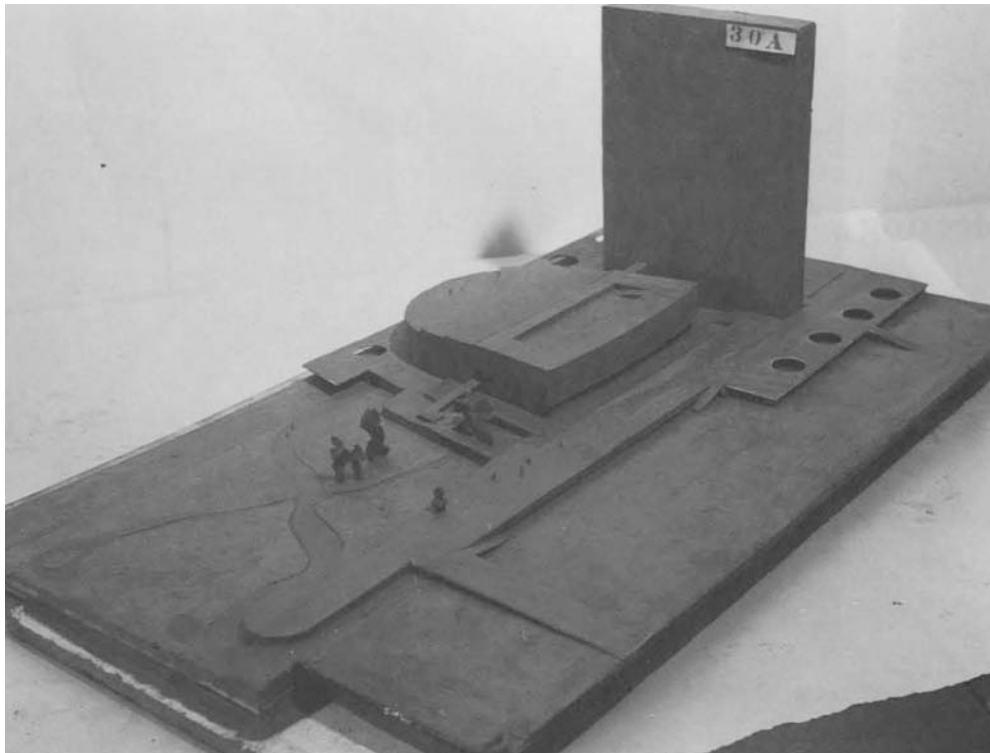


Figure 4.8 – Nowicki’s Scheme 30A, for the UN headquarters, 1947. (George A. Dudley, *A Workshop for Peace: Designing the United Nations Headquarters* (New York, N.Y.: Architectural History Foundation, 1994), 249)

Nowicki's Scheme 35 invited the most interest from the Design Team, drawing direct comparison to Niemeyer's 32 and Le Corbusier's 23. Here he presented a narrow Secretariat, with two separated lower-levels of circulation – one for "work" and one for "leisure." When questioned on the division of services, Nowicki replied "The answer is in the structure! (The proposal) saves one level with Public and Press surrounding the halls, which are on one level. The obvious advantage of two levels is to save space."⁶⁷ Through an elevated level (with its own "work" function), made possible through the structure of the Secretariat, this proposal created additional open space on the ground level. Nowicki's design sought to maximize the usefulness of structure, given the tight space limitations on site. This scheme also included a rooftop, open-air auditorium, and passageways that cut into the mass of the building.

Nowicki also provided alternatives that did not receive formal numbers. And, of course, he participated in many, many design team discussions. Signature elements of Nowicki's schemes included exterior curving walls for the assembly, long elevated walkways and ramps that covered separate areas below, integration with landscape design, and a resistance to purely rectilinear forms.

In all of his proposals, Nowicki sought to address the program while also responding to the personalities on the Design Team. His proposals appear restrained in their outward appearance in comparison to his structurally expressive proposals of just a year or two before. His UN proposals varied in their compositional strategies, achieving different relationships between elements, through contrasting masses - an approach that many of the architects preferred, and that derived from the elementarist principles and functional specificity that had dominated European Modernism since the 1930s.⁶⁸ Nowicki appeared most creative in his proposals for the Assembly building, but even here he essentially was shaping a mass, not

revealing or expressing a structural form. The fact that the models of each scheme were shaped from clay (not built from wood or other material) only highlights this fact. His proposals for a rooftop amphitheater and courtyards were one approach to modify the rectilinear form, but none did so through expressive structure.⁶⁹

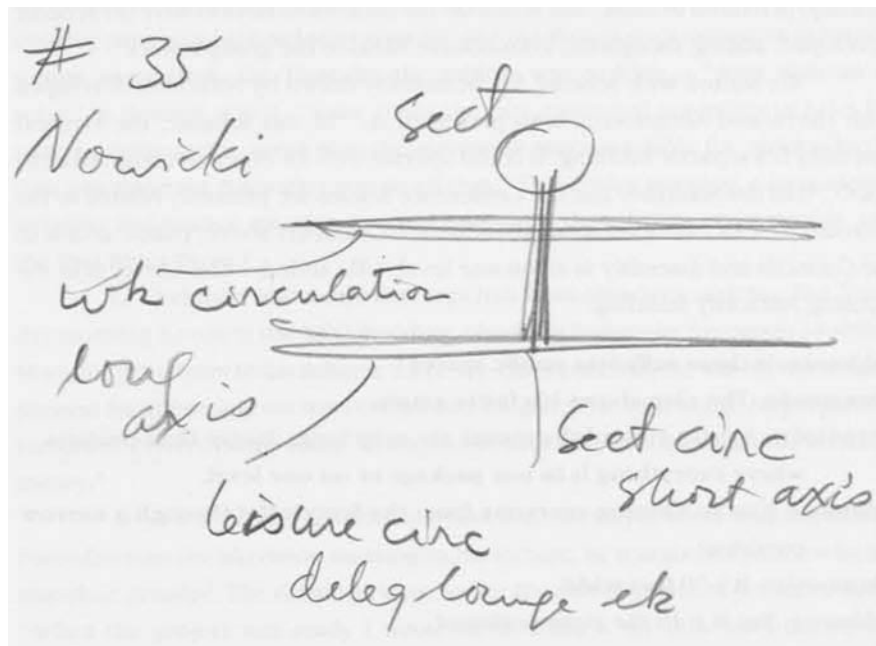


Figure 4.9 – Nowicki’s circulation diagram for his UN headquarters scheme 35, 1947. (George A. Dudley, *A Workshop for Peace: Designing the United Nations Headquarters* (New York, N.Y.: Architectural History Foundation, 1994), 232)

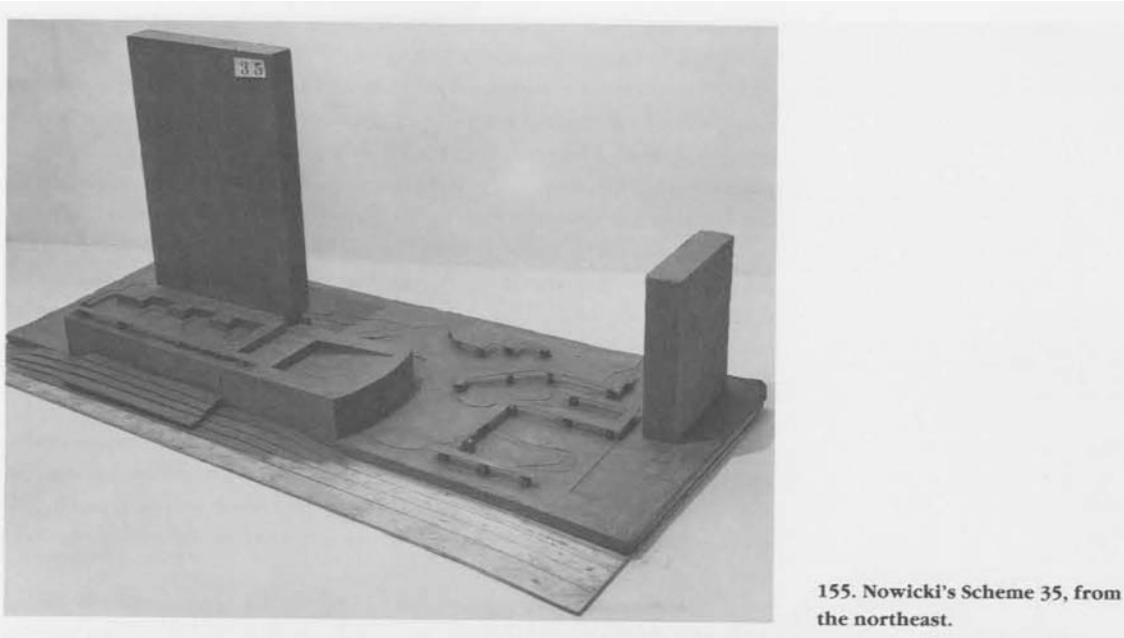
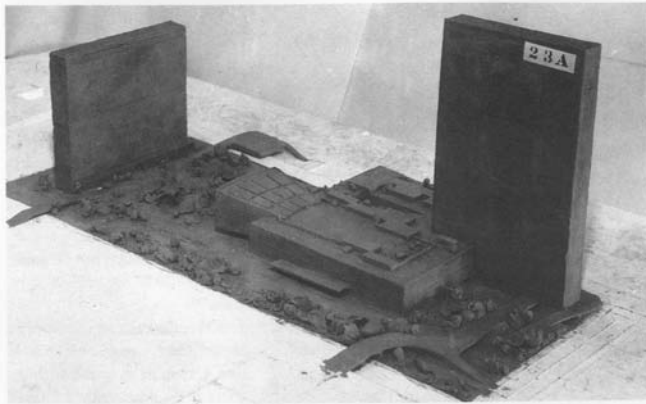
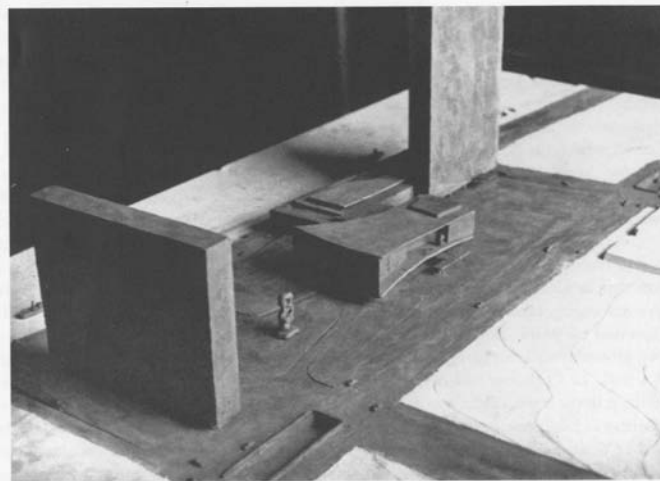


Figure 4.10 – A model view of Nowicki Scheme 35, as seen from the East River, 1947. (George A. Dudley, *A Workshop for Peace: Designing the United Nations Headquarters* (New York, N.Y.: Architectural History Foundation, 1994), 233)

The design team met over 40 times between February and May 1947. Through contentious discussions, a general consensus was reached that two proposals provided the best design for moving forward. Elements from Scheme 23 (authored by Le Corbusier) and Scheme 32 (authored by Oscar Niemeyer) were combined into Scheme 42, of which several variations were discussed.



110. Le Corbusier, Scheme 23A.



111. Oscar Niemeyer, Scheme 32.

Figure 4.11 - Proposals by Le Corbusier (23A, above) and Oscar Niemeyer (42, below), 1947. (Victoria Newhouse, *Wallace K. Harrison, Architect* (New York: Rizzoli, 1989), 126)

For Scheme 42B (with authorship listed simply as “joint”), two levels of Assembly Chambers (stacked) were proposed, but Nowicki apparently opposed this idea. He stated: “About one or two levels, I prefer one, to meet demands for change in the future. The double-level structure already fixes too much.”⁷⁰ Nowicki's emerging ideas of designing to allow future change, rather than according to a strict functional program are evident in his objections. The uncertainty of future functions, even for the projected operation of the United Nations, was emerging as a concern in Nowicki's design thinking. Even within the UN group design process,

he resisted a fixed functional approach, where form would be driven by a singular prescribed functional action.

In May 1947, the Design Team, urged by Harrison, settled on Scheme 42G. This scheme included a "bow tie" central General Assembly (back-to-back Assembly Chambers), that was attached by a thin passageway to separate conference halls and a tall Secretariat tower. Rejecting a concluding vote, where there are winners and losers, the decision to select Scheme 42G and stop the design process was ultimately Harrison's.⁷¹ All the architects agreed to the final overall scheme, at least initially. Nowicki was an eager collaborator until the end, and he saw this consensus as an indication of the state of architecture in the post-war world. In his unpublished speech, he reflected:

A group of professionals from different parts of the world representing different art, temperaments, different types of education and different schools of thought could be well expected to disagree and have a general hard time in establishing cooperation, and yet this work (is) remarkable in one respect and that is that in spite of the differences of opinions and different solutions submitted, there was a general agreement on the principles of the work. This agreement had an exceptional significance indicating that inside the professional problems, our own period has reached its full maturity.⁷²

This conclusion solidified, for Nowicki, the "maturity" of modern design – a term he would use prominently in his "Origins and Trends" essay two years later. Nowicki believed that the fact that a diverse collection of architects could agree (at least in public) on the overall approach to the design demonstrated that a shared approach to design had emerged. Modernism, which had been contested before World War II, was now the approach to design shared by architects all around the world. However, as Nowicki was soon to learn, the verbal consensus had significant shortcomings and he would be forced to confront them as design continued.

Nowicki's celebration of the emergence of a shared Modernism is even more evident in his succeeding statement, which also underscores the significance of the group process.⁷³ He continued:

The contemporary form of expression different from that of the (previous) periods and typical for the changed concept of human life, comfort, and convenience proved to be accepted the world over. Whoever might have doubts about the future and permanence of the new way of thinking in architecture, reaction might have been reassured by the agreement of this group of people on the final principle of their studies.⁷⁴

Nowicki considered himself part of the “new way of thinking in architecture” – again foreshadowing the inclusive tone of his essay, “Origins and Trends.”⁷⁵ However, one cannot be certain if this statement fully reflected his personal beliefs. Although this speech may never have been given, it was meant to be a public statement of support for the United Nations. As a participant in the process, he was expected to endorse its result. Given his relatively young age, and the consensus of architects with much wider reputations (and professional "power"), he could not have expressed dissent even if he disagreed. In the months to come, much of his continued design work would be retrained by his respect for the original Design Team consensus. At the time of the speech, there is no evidence to suggest he had any misgivings, but in the two years after, Nowicki would formulate his own definition of a very different “mature,” permanent and expressive Modern architecture.

The Second Effort

The Design Team was formally dissolved by the United Nations on June 2, 1947, with each architect paid \$5,000 for his efforts. Surprisingly, most of the scholarly analyses of the United Nations Headquarters design stop at this point as well. For example, the 1990 book by

Dudley, *A Workshop for Peace*, ends with the final design team meeting (June 20, 1947). The corresponding documentary film of the same title ends there as well. But for Harrison, the hard work had just begun, as the UN retained him and charged him with the “refinement of plans and preparation of detailed drawings for construction.”⁷⁶ Free to call in design “specialists” as required, Harrison retained Nowicki along with Soilleux, Havlicek, Noskov, and Vilamajo to help him develop the detailed design of the Headquarters.⁷⁷ These young designers, sidelined during the initial design efforts, took prominent roles as the project moved forward after June 1947.

In July 1947, the UN published the report “The Permanent Headquarters of the United Nations.”⁷⁸ The detailed report included an Analysis of the Site, a discussion of Building Elements (programmatic demands) and a section on the Architectural Organism, describing “The Structure,” “Light, Air and View,” “Relaxation and Recreation,” and “Flexibility and Expansion.” These sections were followed by plans, described as “not perfect, not final ...” with the explanation that the plans “will receive constant improvement ... (and) will be constantly refined from these very preliminary statements of work in progress.”⁷⁹

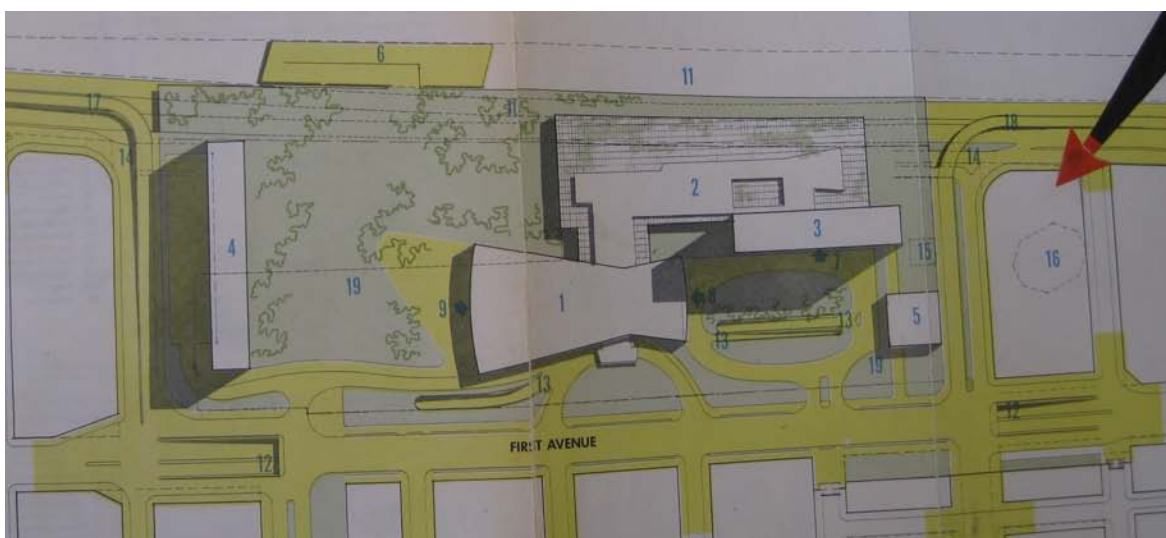


Figure 4.12 – The Final design for the UN Headquarters complex by the first Design Team, 1947. (United Nations, *Report to the General Assembly of the United Nations by the Secretary-General on the Permanent Headquarters of the United Nations* (Lake Success, N.Y.: United Nations, 1947), 43)

Construction estimates for the UN Headquarters came in at \$85 million, roughly \$20 million more than anticipated. Harrison and his team of young architects were required to reduce the overall cost of the Headquarters, without significantly altering the basic design of the Headquarters complex.

Cost-cutting measures, in roughly three months during fall 1947, resulted in numerous program changes and design alterations. The architects reduced the Secretariat by six stories, and cut the two main chambers in the General Assembly Building to one. While changes to the Secretariat design were essentially limited to the simple elimination of floors and a reassessment of scale, the General Assembly required significant design reconsideration. Harrison and his design team faced with the problem of how to revise the General Assembly building without significantly altering the original design, nor making changes to its relationship with the other buildings. According to functionalist modernist thinking, a significant program change should generate a different formal solution, yet Harrison anticipated significant political backlash if drastic changes were made to the agreed upon Design Team scheme.

Architectural historian Victoria Newhouse described Harrison's "reluctance to re-open the rigorous exchange of ideas" by the Design Team relative to the "relationship of the General Assembly's exterior to its new interior."⁸⁰ An *Architectural Forum* article stated that Harrison simply "did not want to alter the basic scheme" of the complex.⁸¹ After all, the United Nations' Headquarters was supposedly the result of "unanimity" among the leading architects of the

world, indicating, in Nowicki's own words, "the maturity" of architecture. Drastic changes to the final composition would simply raise too many questions.

Confined to the basic profile of the previous General Assembly design, the team sought to resolve the programmatic demands and find a subtle new expression for the single auditorium building. Harrison recognized the importance of the General Assembly, and some have claimed he tackled the Assembly personally, covering the drafting room walls with "as many plans for parliamentary assemblies as his researchers could find."⁸² Others have noted that Hugh Ferriss worked with Harrison, visualizing the possibilities that he sketched.⁸³

In this re-design effort Matthew Nowicki played an active role. In correspondence with Lewis Mumford and Henry Kamphoefner (discussed below), Nowicki mentioned his direct involvement in the General Assembly design. Kamphoefner, upon visiting Nowicki in New York, recalled being "blown away" by his General Assembly Building designs and saw "clear structural content" to his work.⁸⁴ In continuing correspondence with Lewis Mumford from fall 1947 until his death in 1950, Nowicki described some of the design of the General Assembly. In fall 1948, Nowicki wrote that he had to "finish the sketches of the General Assembly" before his departure to Raleigh, where he had already begun teaching.⁸⁵ While his particular contributions cannot be clearly identified, Nowicki was an active participant in the design modifications.

By September, Harrison, Ferriss, Nowicki and the others produced initial revisions to the plans, and published a report, titled "The Permanent Headquarters of the United Nations: Plans of Revised Scheme."⁸⁶ Harrison inferred that these revisions were also approved in principle by the original design team, though actual verification of this claim is lacking.

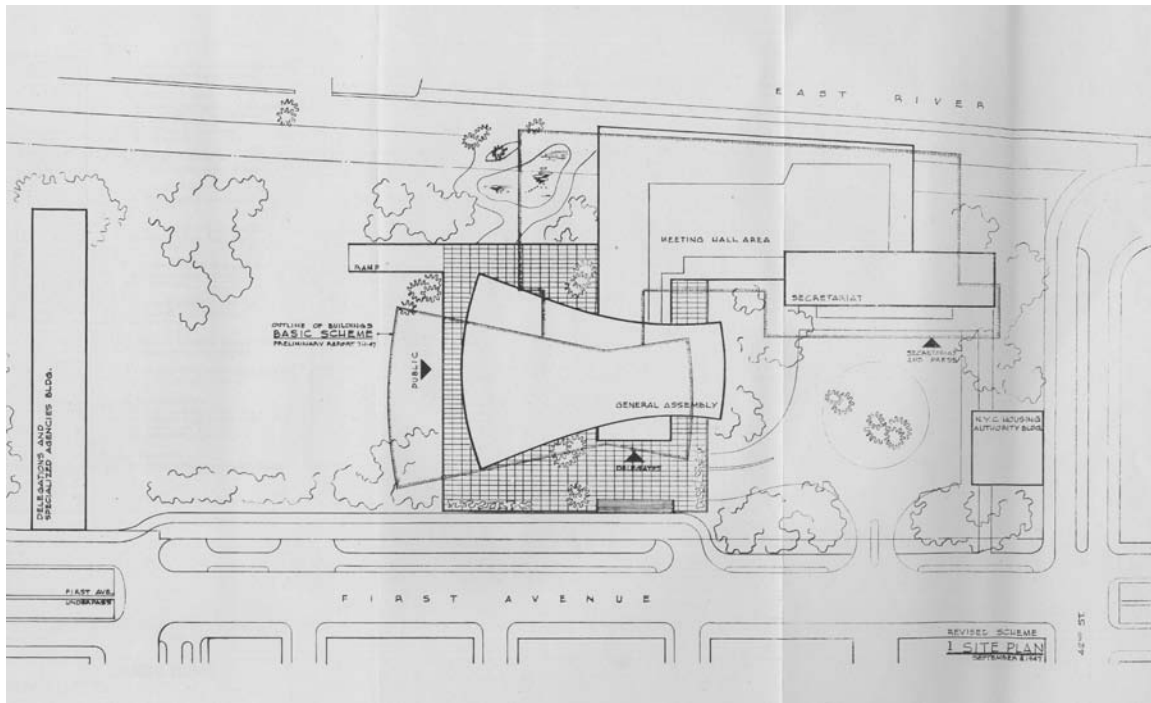


Figure 4.13 - Revised Plans for UN Headquarters, 1947. (United Nations, *The Permanent Headquarters of the United Nations; Plans of Revised Scheme*, September 8, 1947 (Lake Success, N.Y.: United Nations, 1947). 4)

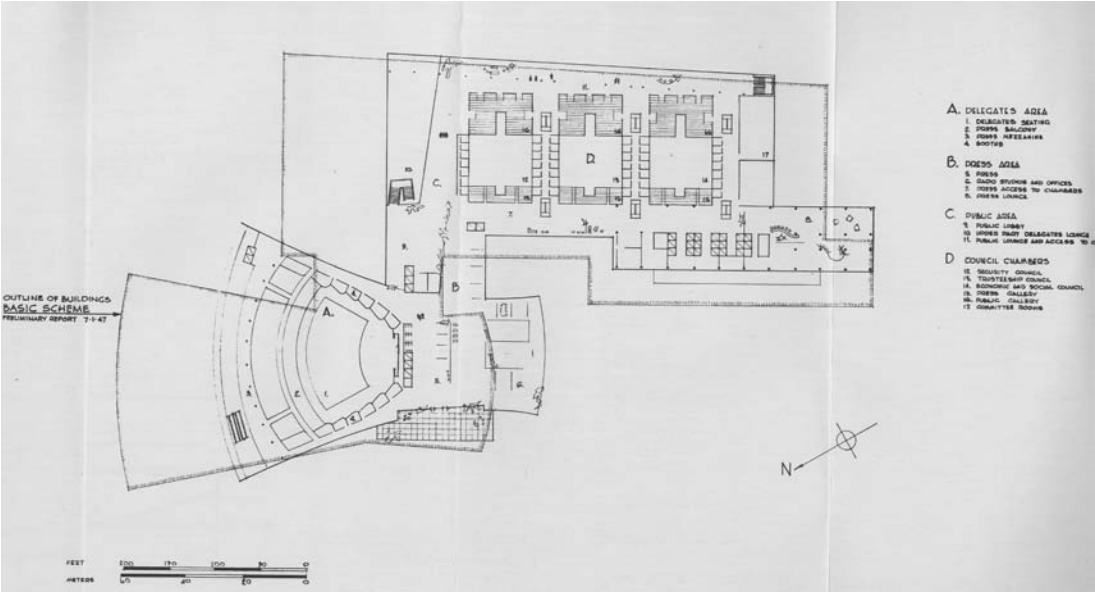


Figure 4.14 - Revised layout for the UN Assembly Hall and Conference Rooms, 1947. (United Nations, *The Permanent Headquarters of the United Nations; Plans of Revised Scheme*, September 8, 1947, (Lake Success, N.Y.: United Nations, 1947), 5)

While most changes to the plan were subtle, and no elevation or perspective drawings were provided, the most notable change was to the external form of the Assembly Hall. The revision documents provide the original footprint in dashed line, and show the General Assembly originally proposed as a bow-tie-shaped building, with straight sides. (Figure 4.14) The original proposal included an auditorium on each side of the central lobby space, and the roofs of each sloped towards the center. The revised General Assembly proposal presented an exaggerated fan shape with a single, central auditorium. The exterior walls no longer matched the seating of the auditorium space, but curved on each side. The roof was a curved form that resembled a catenary shape, and lobbies were located at either end of the building.⁸⁷

These design changes were a marked departure from the formal language of the previous scheme as the curved elements would significantly distinguish the General Assembly from the Secretariat tower. The downward-curving roof provided a contrast to the rectilinear Secretariat, and one publication noted metaphorically that this design was like an “hour-glass dress” in a “hoop-skirt society.”⁸⁸

Although these changes might be seen simply as smoothing-out the previous form, and were often described in this way, they required an openness to alternate geometry and a new formal architectural language.⁸⁹ Some have stated that Harrison was making the fewest changes he could, but this explanation does not account for the introduction of curved elements into the linear design of the original Design Team.⁹⁰

The origins for such a shift in compositional approach, from rectilinear to curving forms, are not immediately apparent. Harrison's earlier sketches for an New York City urban complex, called "X City" (1946), showed two skyscrapers curving away from each other, creating a negative space in between, a space similar in shape to the new General Assembly. Harrison's later work would explore many curved forms, including a chapel for Oberlin College (1952) of a similar design.⁹¹ Oscar Niemeyer's Scheme 32, one of the original Design Team proposals, also showed curved walls.

Nowicki had used curvilinear forms in his earlier Design Team schemes as well. His Scheme 35 showed a concave end wall for the Assembly, and proposed carving into the roof for an outdoor amphitheater. Another UN sketch, not included with the published schemes, published later by Lewis Mumford in his biography of Nowicki, showed an acutely convex end wall pierced by a circular entrance stair. The roof showed an outdoor amphitheater similar to his Scheme 35, with curved stadium seating. Nowicki had clearly been interested in varying the straight-lines of the external form of the assembly and had proposed the curving facades to create different type of external space.

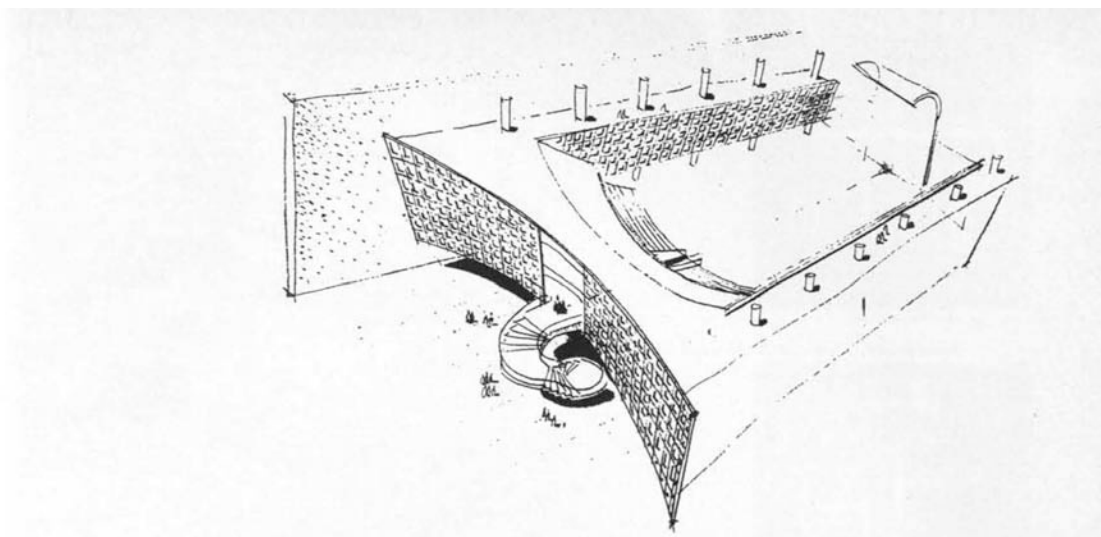


Figure 4.15 – Matthew Nowicki’s concept sketch for an alternate UN Assembly, 1947. (Mumford, Lewis, “The Life, Teaching and Architecture of Matthew Nowicki,” *Architectural Record* 114, no. 6 (1954): 148)

The roof of the revised General Assembly Building was curved in a form similar to a catenary shape. The roof had a high point at the wide end (to the north), a low point in the middle, and another high point at the south end. An article in *Architectural Forum* drew associations to the shape of a “canvas tarpaulin” as it is drawn tight from four corners.⁹² Despite its shape, the UN Assembly roof form did not match its structure and its construction was intended to consist of gradually sloping post-and-beam framing. The roof’s shape was purely a formal device that did not take advantage of an actual tension-based structural system.

With Nowicki’s interest in structural technologies as an expressive element of architecture, it is likely he was involved in the determination of this roof form. Nowicki’s emerging interest in expanding the formal language of modernism had already been shown through the proposal for the tension-roof Parliament building in Warsaw and by his interest in the sloping cables of the Golden Gate Bridge. At the same time the UN General Assembly building was coming together, Nowicki was designing the North Carolina State Fairgrounds and his tension-roofed Livestock Arena. While the Livestock arena would be celebrated as the first tension-roof structure in the US, the General Assembly building seems to hint at the latent potential tension structures offered. Though ultimately realized through post-and-beam construction, the roof form indicated the coming exploration into the formal potential of expressive structural systems.

The UN accepted these September 1947 revisions, and Harrison and his team proceeded with a detailed design of the Headquarters into 1948. The Secretariat’s design was solidified

early in the process, and was constructed first.⁹³ The General Assembly Building required much more design attention, including many design details that had not been addressed by the original Design Team.

The most controversial addition to the General Assembly building was the outward expression of a dome over the main auditorium. Absent from the September 1947 “Revisions,” the dome was first published by *Architectural Forum* in January 1950, so it was likely developed during the detailed design process.

The idea of a dome, and its presence at the UN Headquarters, had been a controversial point with the original Design Team. When proposed initially, the architects generally rejected it, with the Soviet Nikolai Bassov expressing his extreme distaste for domes, stating they “should be avoided in favor of something more dignified.”⁹⁴ The form was seen as a “historic” or non-modern, in addition to having been exploited in the architecture of the Nazi regime.⁹⁵

However, for some of the architects, the dome helped provide a sense of “monumentality,” something they felt was missing in the original Headquarters design. The discussion of monumentality had come up in one Design Team meeting, and Le Corbusier had stated, “Monumentality is not an architectural problem. Good architecture is monumental.”⁹⁶ During the same discussion, Nowicki had claimed, “Monumentality will come from the size itself.”⁹⁷ Nowicki related monumentality to the scale of architecture, and to its relationship to the human body, and stated that he did not believe that a dome was required as a symbolic element in the composition. Nowicki mentioned monumentality in his essay “Composition in Modern Architecture” (written at about the same time and published in 1948) with a similar statement:

Monumentality does not in fact depend on any form, but is a problem of scale. The humanistic ideal of individual freedom and comfort adopted by our architecture and expressed in its sympathy to the small-scale treatment should influence also the

resolution of the monumental problem, just as the large scale of the baroque influenced every small program of the period. This would seem to eliminate monumentality from modern architecture; but monumentality, in the sense of a contrast between architecture of exceptional importance and the size of an individual has its true and eternal qualities of which man should not be deprived. Within the realm of its favorite scale, modern architecture should no doubt distinguish a variety of treatments that will be appropriate to the expression of its diversified contents.⁹⁸

With this statement Nowicki provided his own interpretation of monumentality, related to the earlier discussions by Giedion, Sert and Mumford. In short, Nowicki argued that monumentality derives from the relationship between the “exceptional importance” of a work of architecture and the “size of the individual.” Through a diversity of treatments that reflect “diversified contents,” the United Nations could attain a monumental presence. Monumentality would not require the arbitrary application of specific “forms.”⁹⁹

Yet the presence of a dome resonated with some American politicians, who were being asked to approve funding for the Headquarters construction. Specifically Senator Warren Austin from Vermont clearly identified domes as the “symbol of the center of government,” telling Harrison, “The only way you’ll get this loan through Congress is to have a dome on top.”¹⁰⁰

Scholarly analyses by Newhouse and Dudley suggest that the inclusion of the dome was a direct result of these political motivations, much to the irritation of the progressive architects.¹⁰¹ Yet official funding from Congress was granted on August 11, 1947, and “Revised Plans” (without a dome) were approved by the Headquarters Advisory Committee of the General Assembly on September 9, 1947.¹⁰² This sequence of events suggests that the dome was not simply a concession made to please outside sources, nor a late attempt to gain monumentality but a more central element of the General Assembly re-design.¹⁰³



Figure 4.16 – Model photo of UN Assembly, 1950. (“UN General Assembly,” *Architectural Forum* 92 (1950): 99.)

From the exterior, the low-rise dome simply protrudes from the roof, near the low-point of the curve; *Architectural Forum* called it a “blister dome.”¹⁰⁴ In section, however, the dome is revealed as an integral part of the auditorium below. As part of the cost cutting, mandated by the UN, the roof of the Assembly was lowered, reducing the internal volume of the main chamber.¹⁰⁵ However, the dome allowed the overhead space to pierce through the roof, simultaneously improving the central meeting hall and marking its presence on the exterior. The section shows the dome as a portion of a sphere resting on a short, truncated cone that tapers slightly in the

upward direction. The dome is actually tilted at an angle that indicates the opening of the auditorium below. Light is brought down through a slot on the south side of the dome. Structurally, the dome is framed by a series of curved steel beams. These beams rise from surrounding steel columns, and connect radially to a compression ring at the top. (See Figure 4.18)

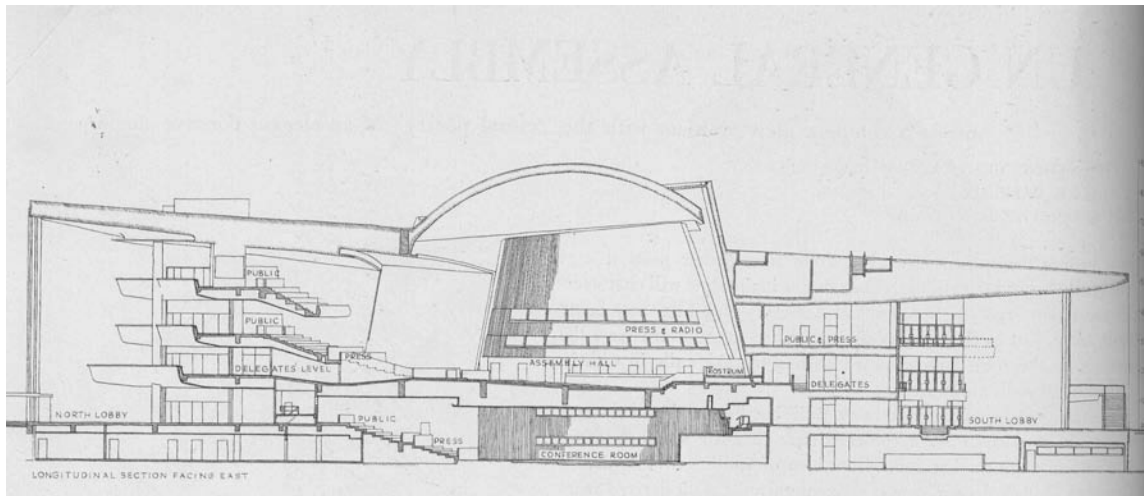


Figure 4.17 - Section of UN General Assembly, 1950. ("UN General Assembly," *Architectural Forum* 92 (1950): 98.)



Figure 4.18 - UN General Assembly Dome under construction, 1951. (UN Multimedia, photo taken August 1, 1951, Source: <http://www.unmultimedia.org/s/photo/detail/187/0187229.html>)

Nowicki's sketches and previous designs suggested openness to curved forms, as well as a willingness to shape space through structural forms. In one UN sketch, later published by Lewis Mumford, Nowicki showed an auditorium, framed by rectangular elements, with walls extending up in a connecting parabolic arc breaking through the plane of the surrounding roof. (Figure 4.19) This gesture changes the profile of the roof, indicating the assembly chamber centered below through the upward expansion of the interior volume.¹⁰⁶ In Nowicki's sketches for Brandeis University (dating from summer 1949 while he was designing with Eero Saarinen) Nowicki offered a similar low-rise dome capping a centralized auditorium.¹⁰⁷ (Figure 4.20)

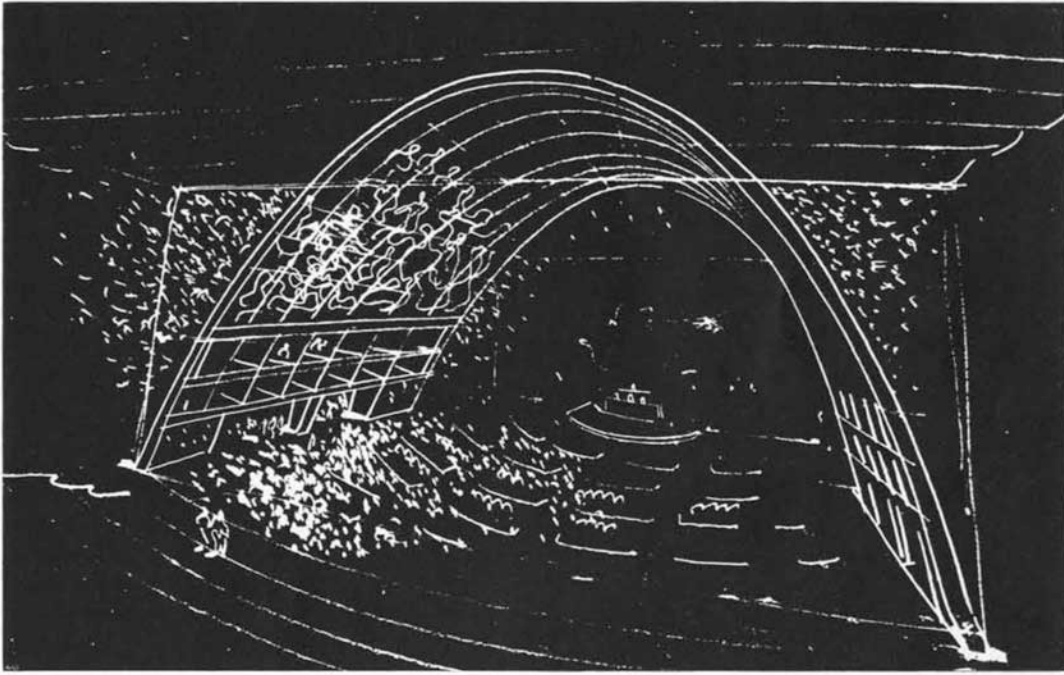


Figure 4.19 - Nowicki's conceptual UN Assembly sketch, 1947. (Lewis Mumford, "The Life, Teaching and Architecture of Matthew Nowicki" *Architectural Record* 114, no. 6 (1954): 148).

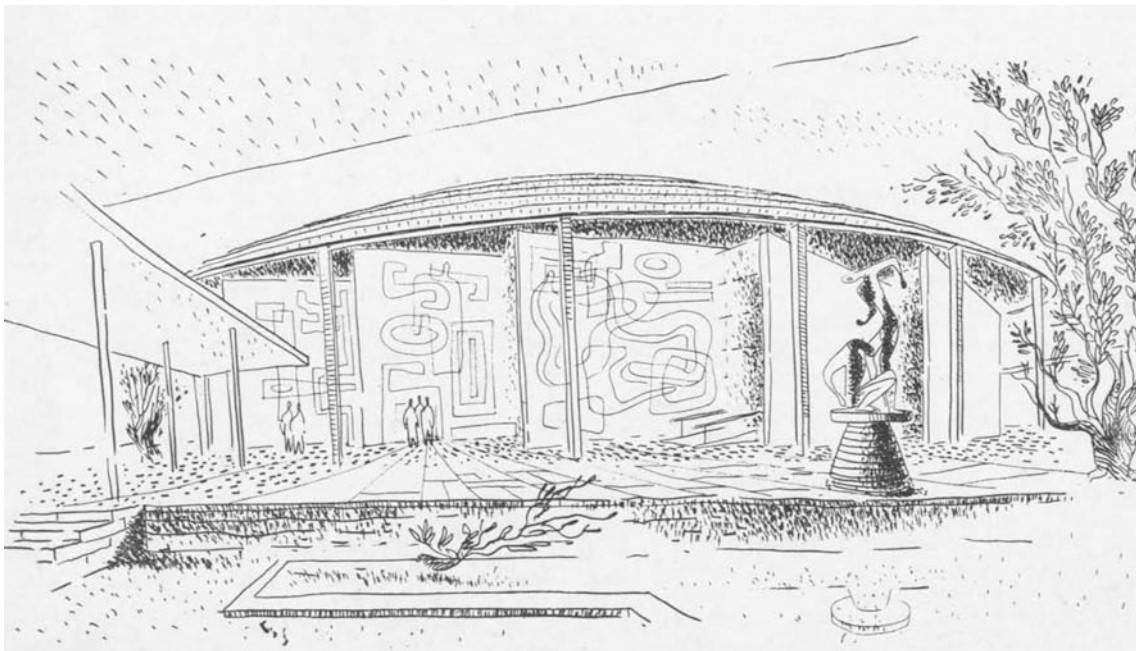


Figure 4.20 - Nowicki's sketch for an Auditorium for Brandeis University, done in association with Eero Saarinen, 1948. (Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University* (Waltham, Mass: Brandeis University, 1950), 18)

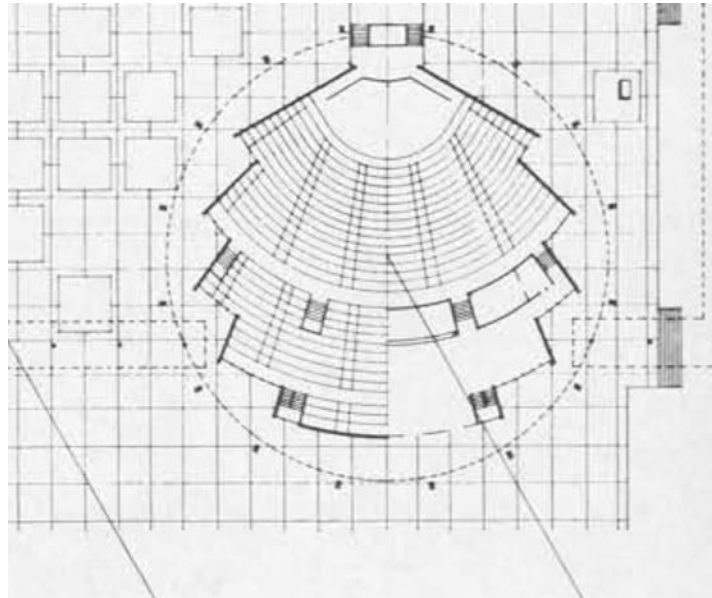


Figure 4.21 - Plan of Auditorium for Brandeis University done in association with Eero Saarinen, 1948. (Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University* (Waltham, Mass: Brandeis University, 1950), 16)

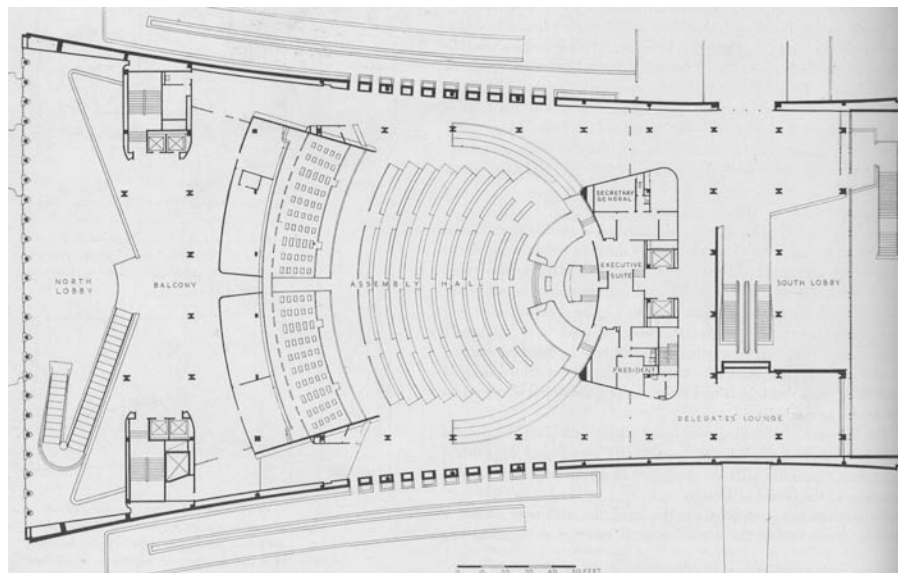


Figure 4.22 – Final Plan of UN General Assembly Building, 1950. . (“UN General Assembly,”
Architectural Forum 92 (1950): 98)

Nowicki’s own theoretical positions on architecture supported this openness to non-rectilinear forms. In his article "Composition in Modern Architecture," Nowicki stated “In terms of functionalism, a large interior must be expressed ... and a unit planned for crowds should have a different scale from one planned for an individual, so that the scale of modern architecture must allow for a certain flexibility.”¹⁰⁸ In the same essay, he argued, “Modern architecture should no doubt distinguish a variety of treatments that will be appropriate to the expression of its diversified contents.”¹⁰⁹

The design revisions to the General Assembly can be considered as expressive of its “contents.” The curved roof (similar to a catenary form) swoops up at each end, marking the lobby entrances. The low-rise dome indicates the single, central chamber. This expression assists in the understanding of the building, and the function it contains. In Nowicki's words, the "large interior" is "expressed." The form is functional, and it is also an "expression" of the "diversified contents." While this expression is not directly tied to a visible structural form, the building shows a design direction consistent with Nowicki’s view of modern architecture.

The final design of the Assembly Hall space was significantly different from the proposal by Le Corbusier and the earlier Design Team. In an early manifesto on the United Nations Design, prior to the Design Team contributions, Le Corbusier had proposed an Assembly Building with a large open floor plate created by suspending ceilings from “bridge-girders” at the roof – allowing for a complete flexibility of interior spatial arrangement.¹¹⁰ (Figure 4.23) He never considered the need for symbolic exterior expression for the Assembly Hall; in fact, he stated “This important building – housing the Assembly, Councils and Commissions – will be a

vast and regular quadrilateral mass.”¹¹¹ The final United Nations Assembly Building, in contrast to this statement, is curved in plan and in section, shaped according to its function and expressive of its purpose, suggesting a considerable reduction in Le Corbusier’s influence in the building as actually constructed.

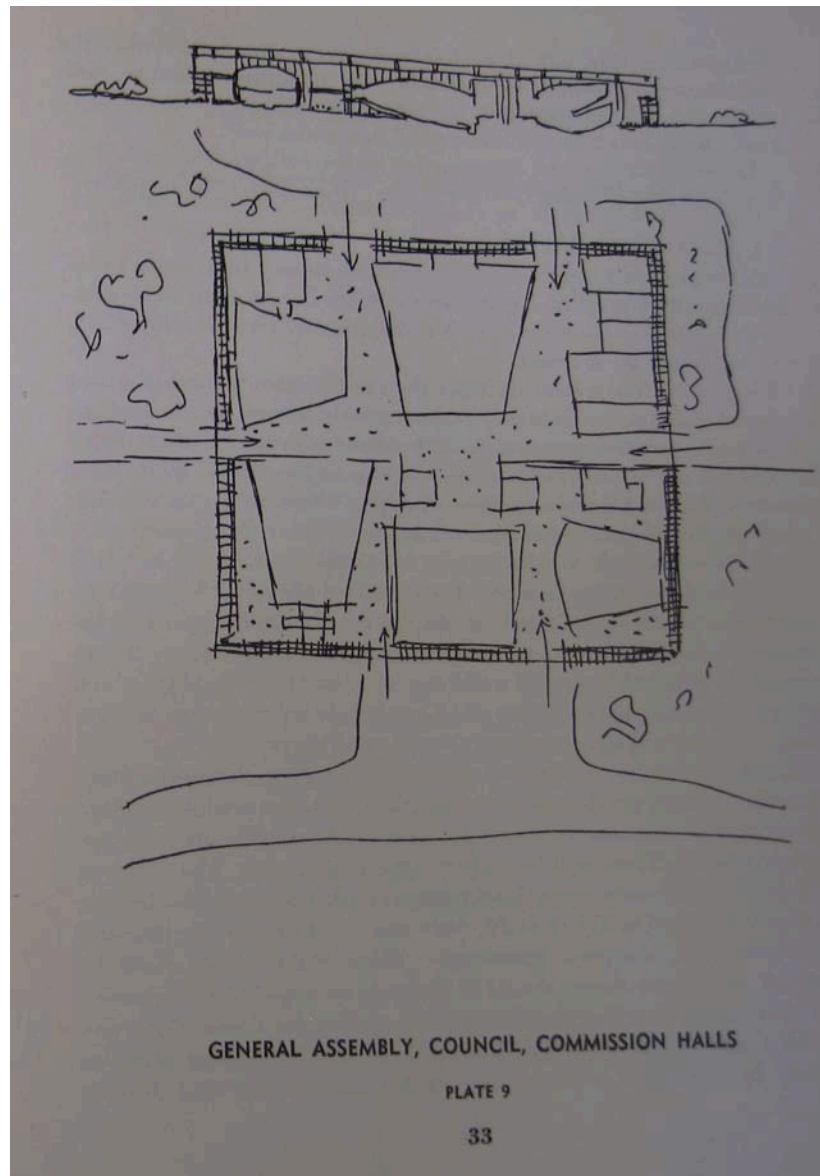


Figure 4.23 - Le Corbusier’s initial design concept for General Assembly Building, 1946. (Le Corbusier, *UN headquarters* (New York: Reinhold Pub. Corp, 1947), 33)

Nowicki would later use a design approach similar to Le Corbuiser's initial UN concept in his early sketches for the Capitol Complex in Chandigarh. He would propose a single building block to serve as the entire government complex, including the Secretariat and the Assembly and conference chambers. (Figure 4.14) These meeting spaces, set within the block would be marked by individual parabolic domes.¹¹² These domes pierced the upper plane of the lower block, providing visual markers of the significant gathering places by use of the structural form of the parabolic arch. Mumford argued these sketches indicated “the quality of imagination that was lacking in the design for the entire U.N.”¹¹³

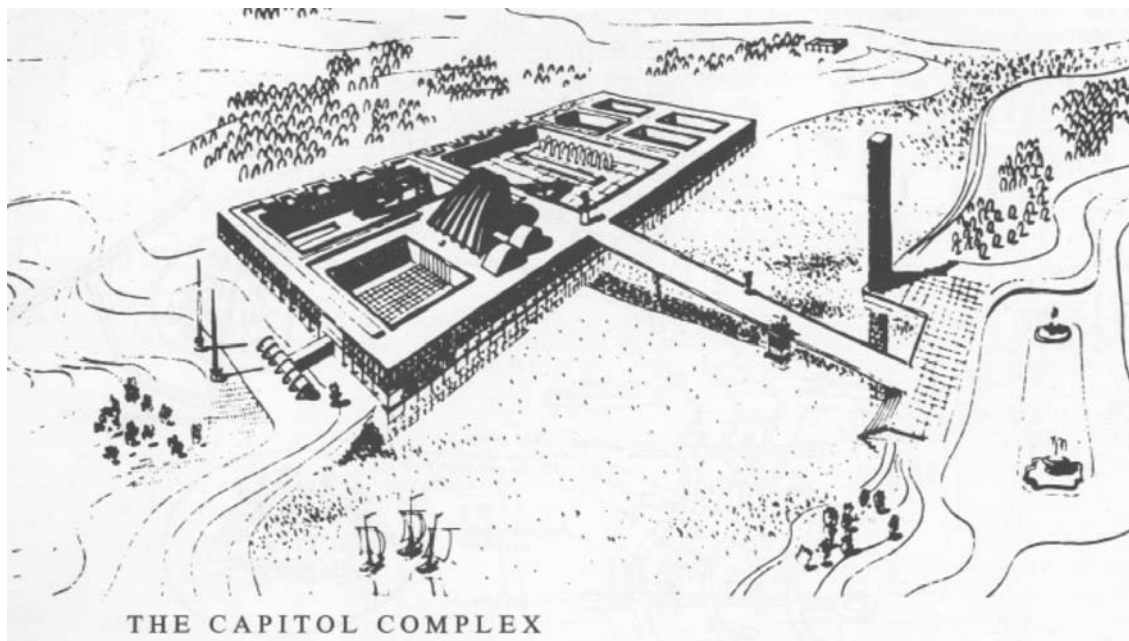


Figure 4.24 - Nowicki’s Capitol Complex for Chandigarh, India, 1950. (Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966))

In a notable reversal, both Le Corbusier’s later Assembly Hall in Chandigarh and Niemeyer’s National Congress building in Brasilia may have drawn from the final design of the UN Assembly building. (Figure 4.25) Both projects (initiated in the early 1950s) used expressive, geometrical forms to mark major gathering places within lower rectilinear

buildings. Though unacknowledged, it is quite possible that these forms found their origins in the design efforts of the second United Nations design team. Both Le Corbusier and Niemeyer were aware of the changes to the UN project after their departure, though neither was actively involved in the revised design.¹¹⁴



Figure 4.25 - Le Corbusier's Chandigarh Assembly Hall (1952, top) and Oscar Niemeyer's Brasilia Assembly Hall (1956, bottom). (Top Image: Cities and Buildings Database, Copyright

Millard Rogers, c.1960, image ID mr23. Bottom Image: ARTstor, copyright Rene Burri, 1997.
Image ID PAR160456.jpg)

The architectural press cited the design changes to the UN General Assembly as significant in the development of modern architecture. In 1950, *Architectural Forum* discussed the “elegant, visual poetry” of the General Assembly building form.¹¹⁵ The building marked an “architectural shift” from a “functional focus” to an “emphasis on form and the logic of art.”¹¹⁶ By 1952, with the finished construction of the building, *Forum* questioned whether the building signaled a “turning point in modern architecture” or simply “the bankruptcy of the international style?”¹¹⁷ The “daring” building was treated as a “free-sculptural shape” and was compared to the roof and ground level of Le Corbusier’s Unité apartments. The article noted that this sculptural General Assembly had been “carried further among Corbu’s brilliant successors such as Nowicki.”¹¹⁸ This article also referenced Nowicki, and the Livestock Arena then under construction in North Carolina, yet failed to mention his direct involvement with the UN design process. The responsibility (credit and criticism) of the General Assembly was directed at Wallace K. Harrison.

Some were highly critical of the General Assembly Building, and saw it as an “intuitive series of treatments rather than a closely reasoned scheme,” held together only by “taste, judgment and personality.”¹¹⁹ For others, the building’s massing and arrangement of elements were an indication of the failure of the principles of modernism to meet the demands of significant capitol complexes. Mumford’s own criticism stemmed from the relationship between the imposing Secretariat and the diminutive General Assembly, which he felt lacked the appropriate symbolic significance:

The only outside indication that an auditorium exists is a blister-like dome of lead-covered copper, too small to be of visual consequence, though it manages to spoil, from certain angles, the one merit the roof could have had, as a sweeping, unbroken curve. Neither functional use nor aesthetic purity can account for this design.¹²⁰

At the time, this building was seen as a marked departure from the expectations of large-scale modern architecture. Within a decade, however, such formal explorations would be fairly common.

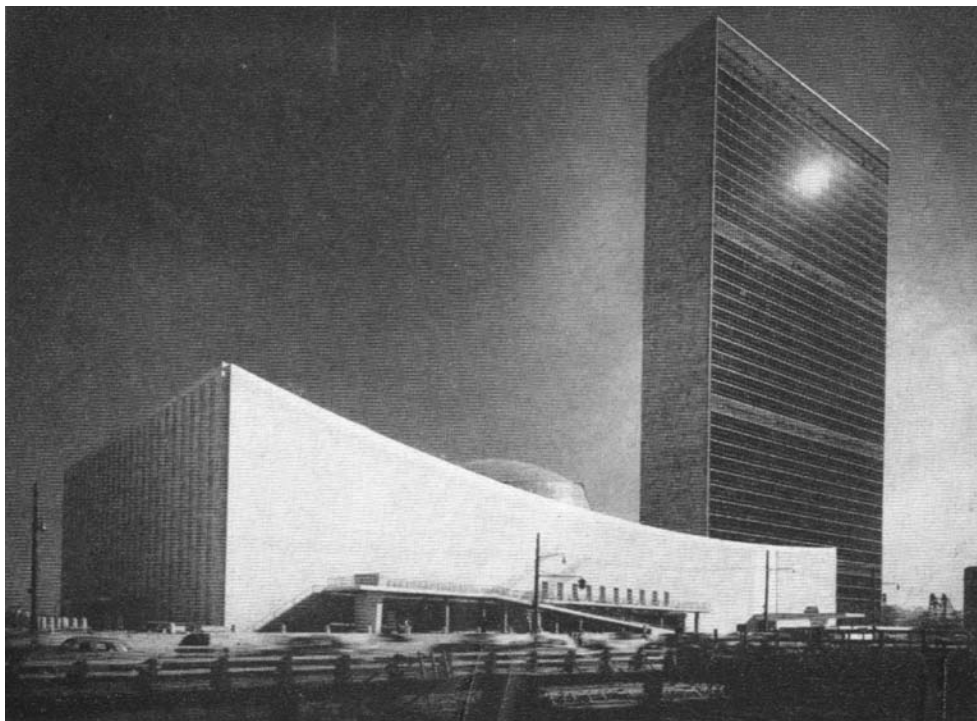


Figure 4.26 – United Nations Complex, 1952. (“UN General Assembly”. *Architectural Forum*. 97 (1952):141)

Nowicki remained involved in the design and construction of the General Assembly building, even after his departure to North Carolina (in summer 1948), until his death in 1950. Ultimately, the General Assembly building was the product of a multitude of forces; only some

were architectural. The complex process of its design, from the original Design Team discussions, through budget reductions, and a restrained re-design, challenged the modernist idea that function must be the primary driver of architectural form. Politics, economics, symbolism and expression – rather than function - came to the forefront rather than function. The revisions to the plan forced a confrontation between the abstract principles of modernism and the realities of accomplishing the General Assembly Building.

Nowicki's past experiences, both as an architect and a survivor of World War II, made him well-suited to participate in a project as complex as the United Nations Headquarters. In addition, his good-natured personality made him a good "team player." Upon his death, Wallace Harrison stated: "Matthew Nowicki was a great architect and a most gifted designer. He was cut down before he could produce more than a small part of all that his talent promised; our architectural world will be empty without him. His associates on the United Nations miss him bitterly."¹²¹



Figure 4.27 - View of the United Nations Headquarters from East River, 1952. (“UN General Assembly.” *Architectural Forum*. 97 (1952):146)

Elements of Nowicki’s architectural ideas can be seen in the design of the UN General Assembly building, although his preference for structurally expressive forms is subdued. Evidence reveals Nowicki’s influence on the second phase of the building’s design and suggests he was a key participant in creating a significant departure from the rigid framework of functionalist modernism. With Harrison, Nowicki and others working collaboratively on the revision of the General Assembly, a single-authorship of the building can never be asserted. Yet the contributions of Matthew Nowicki are evident, especially in the context of his other designs in these years. Having formally rejected the rigid rectilinearity of the International Style, on a large internationally-significant project, Nowicki was prepared to pursue his own structurally expressive forms with confidence.

¹ Lewis Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” *Architectural Record* 115, no. 6 (June 1954): 148.

² Stanislaw Albrecht, *Warsaw Lives Again!* (nd.: Committee on Exhibition ‘Warsaw Lives Again’, 1946), 13.

³ Ibid.

⁴ The publication took a “country-first” approach to publicizing the work. The lack of credit was likely intended to simply showcase the broader reconstruction effort of a united Poland, not the contributing authors.

⁵ Albrecht, *Warsaw Lives Again!*, 15.

⁶ This early correspondence (one letter found in the University of Pennsylvania archives) consists of a letter from Syrkus to Mumford, comparing his ‘regional’ plan for Warsaw to the ideas in “Culture of Cities.” Syrkus naively asks if Mumford had heard of CIAM, but opened a dialogue between the two men that picked up again in 1946.

⁷ Albrecht, *Warsaw Lives Again!*, 3.

⁸ Ibid.

⁹ This introduction comes at the same time (1944) that Mumford was writing the introduction to a re-printing of Ebenezer Howard’s “Garden Cities of Tomorrow” – the origin of the neighborhood district and ‘greenbelt’ concepts put to use in the Warsaw Plan. Ebenezer Howard, Lewis Mumford, and F. J. Osborn. *Garden Cities of To-morrow*. (London: Faber & Faber, 1944).

¹⁰ Stanislaw Albrecht and Czerwinski, Aleksy, 'The Plan of New Warsaw,' *Journal of the American Planning Association* 12, no. 2 (1946): 5-9.

¹¹ Stanislaw Albrecht. "Warsaw's Long, Heroic History...," *Architectural Forum* 84 (1946): 106-12.

¹² Multiple sources (Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki”, Tadeusz Barucki, and Maciej Nowicki, *Matthew Nowicki: Poland, USA, India* ([Warsaw]: Salix Alba, 2010)) describe Nowicki’s position as a technical advisor to the Polish consulate. Later, in 1947, Nowicki would speak to several professional organizations on the reconstruction effort (including the Architectural League of New York) but his specific activities in 1946 are not evident.

¹³ Lynne Warren, Jeff Abell, and Museum of Contemporary Art (Chicago, Ill.), *Art in Chicago, 1945-1995* (New York, N.Y.; Chicago: Thames and Hudson; Museum of Contemporary Art, 1996).

¹⁴ Nowicki had planned an architectural assignment at North Carolina State College of designing a “primitive shelter.” Nowicki stated that his “problem” followed “an interesting experiment developed in the Institute of Design in Chicago.” North Carolina State College, and Matthew Nowicki, *School of Design: North Carolina State College, Raleigh, N.C.* (Raleigh: NCSC Press, 1950), 9.

¹⁵ The founding of the United Nations was a significant event in the post-war era. For a broader discussion of its founding, see: Stephen C. Schlesinger, *Act of Creation: The Founding of the United Nations : A Story of Superpowers, Secret Agents, Wartime Allies and Enemies, and Their Quest for a Peaceful World* (Boulder, Colo.: Westview, 2003).

¹⁶ Peter Rosen, and Horn B. Van. *A Workshop for Peace* (Documentary Film). (New York: Distributed by Tele Images International, 2005), Source:

http://www.snagfilms.com/films/title/a_workshop_for_peace. Accessed: 16 July 2012.

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- ¹⁷ More information on these early stages of the UN Headquarters can be found in George A. Dudley, *A Workshop for Peace: Designing the United Nations Headquarters* (New York, N.Y.: Architectural History Foundation, 1994).
- ¹⁸ The Committee was under the chairmanship of Sir Angus Fletcher (an architect from Britain).
- ¹⁹ Dudley, *A Workshop for Peace*, 2-17.
- ²⁰ Nowicki's speech (untitled, undated) was found in the Wallace K. Harrison Archives, Box 3, Folder 1: Miscellaneous Archival Material, Avery Architectural Library, Columbia University. Matthew Nowicki. ["UN Site Selection"] (c.1947), *Wallace K. Harrison Architectural Drawings and Papers*, Avery Architectural and Fine Arts Library, Columbia University, Box 3, Folder 1
- ²¹ Le, Corbusier, United Nations. Headquarters Commission and United Nations. General Assembly, *Report of the Headquarters Commission to the Second Part of the First Session of the General Assembly of the United Nations* (Lake Success, N.Y.: United Nations, 1946).
- ²² Le Corbusier would republish these ideas separately in his own "UN Headquarters," published in 1947. Le, Corbusier, *UN Headquarters* (New York: Reinhold Pub. 1947).
- ²³ Le Corbusier, *UN Headquarters*, 72.
- ²⁴ Nowicki mentioned these protests in his speech: "The citizens of the Westchester County horrified by the idea of this immense metropolis overcrowding their countryside formed a committee protesting against the U.N. as their future neighbor." (Nowicki, "UN Site Selection", 2)
- ²⁵ Precisely how Nowicki got involved in the second Site Commission is not clear, nor is his specific capacity in that role.
- ²⁶ Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki", 148.
- ²⁷ I was unable to determine specifically where and when Nowicki delivered this speech. I reviewed the UN General Assembly meeting minutes between the years 1946 to 1948, but found no mention of Matthew Nowicki. (Nowicki, "UN Site Selection", 2).
- ²⁸ Nowicki, "UN Site Selection", 1.
- ²⁹ Wendell L. Willkie, *One World* (New York, N.Y.: Simon and Schuster, 1943).
- ³⁰ The dating of Nowicki's speech remains somewhat of a mystery. Winston Churchill had used the term "Iron Curtain" as early as March 1945, and was made famous by his use of the term in a March 5, 1946 speech in Fulton, Missouri. By 1948, the intentions of the Soviet Union were becoming clearer, as Nowicki's homeland is no longer accessible. Further, the blockade of Berlin by the Soviets took place from June 1948 to May 1949. Thus by 1948, the concept of a true "one world" governance/cooperation was increasingly challenged by real events.
- ³¹ Nowicki, "UN Site Selection", 1.
- ³² Nowicki's use of the term "dwelling" evokes Martin Heidegger's *Building Dwelling Thinking (Bauen Wohnen Denken)* but that text was not published until 1951 (after Nowicki's death) – nor did Nowicki speak fluent German, the language of Heidegger's earlier publications. The specific use of "dwelling," not used in any other Nowicki text is curious.
- ³³ Nowicki, "UN Site Selection", 2.
- ³⁴ This speech was likely given within the context of the rising tensions between USA and USSR. Also, the Nazi War Crimes Trials took place in 1945-46, with the verdicts delivered in October 1946. These verdicts publicized the extent of the Holocaust.
- ³⁵ Nowicki, "UN Site Selection", 3.
- ³⁶ These themes mirror Nowicki's own intentions with his Warsaw plan – the integration of a strong, structural form in the landscape. The catenary cable, defined by its structural shape, must

have suggested to Nowicki the further potential for tension-roof architecture – a potential he would directly explore in the coming years in North Carolina.

³⁷ Nowicki, “UN Site Selection”, 5.

³⁸ United Nations, *Report of the Headquarters Commission*, 1. This gift was preceded by a large amount of political and financial maneuvering between the UN, Rockefeller and William Zeckendorf, the original owner of the site. See Dudley, *A Workshop for Peace*, 18-19.

³⁹ Nowicki, “UN Site Selection”, 4.

⁴⁰ Nowicki’s aversion to density may be tied to Mumford’s “regional” approach to planning – where dispersal was preferred over density. Nowicki did not write much more on density or urban issues, but he appears not to prefer these design conditions.

⁴¹ The term “Workshop for Peace” was used by Wallace K. Harrison to describe the approach of the design team, at the first meeting in February 1947.

⁴² Nowicki, “UN Site Selection”, 5.

⁴³ Dudley, *A Workshop for Peace*, 36.

⁴⁴ Harrison believed that at least ten architects were needed to “take care of areas we thought ought to be represented – somebody from Western Europe, from Eastern Europe, from Scandinavia, at least one from the Commonwealth, one from South America, one from the Far East, and so on” -- well known or young from any country. Dudley, *A Workshop for Peace*, 32.

⁴⁵ In comparing these projects, Nowicki found great similarities in their ambitions: “Functional problems will never have this intensity of motion (like Rockefeller Center), but they are complex and difficult to organize. “ (Nowicki, “UN Site Selection”, 5.)

⁴⁶ Though born in Switzerland, Le Corbusier gained French citizenship in 1930.

⁴⁷ Harrison also noted a prize-winning design for the reconstruction of a Warsaw church (undocumented). These notations indicate Nowicki’s growing reputation in the United States, though no mention is made of his involvement with the second Site Selection Committee.

⁴⁸ This is cited in Dudley, *A Workshop for Peace*, 32. The League of Nations design competition in 1927 was a highly publicized event, with over 337 entries. Le Corbusier’s proposal – a grand modernist composition – was disqualified on a technicality and P.H. Nenot’s Beaux Arts proposal was declared the winner. This watershed moment has been linked to the founding of CIAM in 1928.

⁴⁹ For difficulty working with Le Corbusier, see: Dudley, *A Workshop for Peace*, 36-39.

⁵⁰ “UN Architects Chosen: Poland, Greece Nominate Two for Advisory Board,” *New York Times*, January 23, 1947, 12. Nowicki’s nomination was received along with Basil Kouremenos, from Greece. India reported that it would make no nomination.

⁵¹ Dudley, *A Workshop for Peace*, 34.

⁵² The source of Le Corbusier’s knowledge of Nowicki is not immediately clear, though his wife, Stanislava had worked briefly in his atelier (See Appendix B). There is some evidence that Le Corbusier knew of the Warsaw reconstruction effort early on – in a February 1947 article in *Progressive Architecture*, Le Corbusier mentioned the reconstruction of Warsaw, as, in fact, based on his own principles of urban design, similar to the plan for Cidade dos Motores by Jose Luis Sert and Paul Lester Wiener. He stated: “On the same principles, Warsaw is preparing reconstruction plans on an astonishing scale. If the planning of the headquarters of the United Nations, situated in nearby New York, does not fall into the hands of spectators or incompetents, this pattern of a model city and a modern way of life will serve as an example to the entire world.” Le Corbusier. “Architecture and Urbanism”, *Progressive Architecture*, 29 (1947): 67-68.

⁵³ Dudley, *A Workshop for Peace*, 36.

⁵⁴ Saarinen was also a surprising choice. Saarinen and Nowicki (as well as Neimeyer) were members of a younger generation of architects included in this group. This shows that Harrison and Le Corbusier were interested in engaging a wide range of ages in the design process, and were open to the changing currents of modern design.

⁵⁵ No evidence has been found that indicates why Nowicki was not made a member of the Board of Design, nor why he was not present until later meetings.

⁵⁶ During the documentary, *A Workshop for Peace* (2006), Nowicki appears to the left of Wallace Harrison at approximately 20:28 into the film.

⁵⁷ Dudley, *A Workshop for Peace*, 182.

⁵⁸ Dudley, *A Workshop for Peace*, 182. Also see Eric Paul Mumford. *The CIAM Discourse on Urbanism, 1928-1960*. (Cambridge, Mass: MIT Press, 2000), 161.

⁵⁹ Victoria Newhouse, *Wallace K. Harrison, Architect* (New York: Rizzoli, 1989), 117.

⁶⁰ Both Dudley and Newhouse describe Harrison's cool demeanor and administrative approach to the project as a primary reason why the whole "Team" endeavor was able to produce what it did.

⁶¹ Dudley, *A Workshop for Peace*, 220.

⁶² Ibid.

⁶³ This exchange may also reflect the fact that, as a younger architect, Nowicki could look forward to a long career with future large commissions. Le Corbusier, on the other hand, was 60 years of age and actively pursuing large projects that could serve as culminations of his career. He had already experienced disappointment with the failure of the League of Nations in Geneva, and there was no guarantee he would ever get another project as large as the UN.

⁶⁴ Dudley, *A Workshop for Peace*, 229 & 231.

⁶⁵ These two proposals were published in the Dudley, *A Workshop for Peace*, while the others are not.

⁶⁶ Dudley, *A Workshop for Peace*, 248.

⁶⁷ Dudley, *A Workshop for Peace*, 232.

⁶⁸ Nowicki was clearly responding to the surrounding discussions of the Design Team in his proposals. The Team was very concerned with ground level circulation, and devoted a lot of time to discussing it, and much less time on issues like massing and site layout. The arrangement of three, free-standing buildings was selected early on, and not much deviation occurred in any proposal.

⁶⁹ This manipulation of the roof plane recalls Le Corbusier's roofs of the Unité de Habitation, with sculptural elements and a variation of levels and ramps for gardens, enclosures. Nowicki would renew this idea in his design for the Chandigarh capitol complex.

⁷⁰ Dudley, *A Workshop for Peace*, 494.

⁷¹ Newhouse, *Wallace K. Harrison, Architect*, 129.

⁷² Nowicki, "UN Site Selection", 6.

⁷³ Nowicki stated that the "full maturity" of architecture had been attained through the consensus reached, although Nowicki would later re-define this maturity in his "Origins and Trends" essay to be tied to the "expression of materials and structures," qualities not immediately apparent in the United Nations buildings.

⁷⁴ Nowicki, "UN Site Selection", 6.

⁷⁵ The similarity of language to his later articles (“maturity,” “permanence”) demonstrates the consistency of his own architectural values, the ideas he wishes to express through post-war architecture. There is certainly room to debate whether or not these values are actually present in the United Nations design.

⁷⁶ Dudley, *A Workshop for Peace*, 329.

⁷⁷ Ibid.

⁷⁸ United Nations, *Report to the General Assembly of the United Nations by the Secretary-General on the Permanent Headquarters of the United Nations*. (Lake Success, N.Y: United Nations, 1947).

⁷⁹ United Nations, *Report to the General Assembly*, 41.

⁸⁰ Newhouse, *Wallace K. Harrison, Architect*, 129.

⁸¹ “UN General Assembly.” 1950. *Architectural Forum*, 92: 97.

⁸² Newhouse, *Wallace K. Harrison, Architect*, 113.

⁸³ Dudley, *A Workshop for Peace*, 337.

⁸⁴ Henry Kamphoefner, interviewed by Charles Kahn, September 11, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>.

⁸⁵ Matthew Nowicki to Lewis Mumford, letter, September 29, 1948, Lewis Mumford Collection, Correspondence, Rare Book and Manuscript Library, University of Pennsylvania.

⁸⁶ United Nations, *The Permanent Headquarters of the United Nations; Plans of Revised Scheme* (New York: United Nations, 1947).

⁸⁷ The September publication of “Revised Scheme” did not contain a detailed section or elevation of the Assembly Building. Therefore a conclusive determination of the catenary shape is not possible. The curved roof is indicated, in alternative drawings, but not specifically defined.

⁸⁸ “UN General Assembly” *Architectural Forum* 92 (1950):97.

⁸⁹ Newhouse and Dudley state that Harrison was simply making the fewest changes he could, but this still doesn’t explain the introduction of curved elements into the design.

⁹⁰ Newhouse, *Wallace K. Harrison, Architect*, 129.

⁹¹ Newhouse, *Wallace K. Harrison, Architect* 130.

⁹² The author went to great lengths to describe the problem of such tension-architecture, given the wind-induced “flutter and fatigue of materials.” “UN General Assembly.” *Architectural Forum*, 92 (1950):97.

⁹³ The construction contract for the Secretariat was awarded in January 1949, and 19 months later, workers moved into their new building.

⁹⁴ Dudley, *A Workshop for Peace*, 222.

⁹⁵ The iconic dome plays a major role in Western architectural history. For many modern architects, the dome represented the past. In addition Albert Speer used the dome in several of his proposed Nazi projects including the unbuilt Grobe Hall.

⁹⁶ Dudley, *A Workshop for Peace*, 222.

⁹⁷ ibid.

⁹⁸ Matthew Nowicki, “Composition in Modern Architecture,” *Magazine of Art* 42 (1949): 111.

⁹⁹ It is not clear how Nowicki’s understanding of monumentality is directly relayed in the UN design, nor the direct application of his thoughts in a design environment.

¹⁰⁰ Dudley, *A Workshop for Peace*, 223.

¹⁰¹ Ibid.

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- ¹⁰² Newhouse, *Wallace K. Harrison, Architect*, 138.
- ¹⁰³ Note: It is also possible that a behind-the-scenes "handshake deal" existed to add a dome subsequent to the funding approval.
- ¹⁰⁴ "UN General Assembly" *Architectural Forum* 97 (1952): 141.
- ¹⁰⁵ Dudley, *A Workshop for Peace*, 335.
- ¹⁰⁶ Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki", 148.
- ¹⁰⁷ Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University* (Waltham, Mass: Brandeis University, 1950), 18.
- ¹⁰⁸ Nowicki, "Composition in Modern Architecture," 110.
- ¹⁰⁹ Nowicki, "Composition in Modern Architecture," 111.
- ¹¹⁰ Le Corbusier, *UN Headquarters*, 32.
- ¹¹¹ *Ibid.*
- ¹¹² Norma Evenson, *Chandigarh*. (Berkeley: University of California Press, 1966), 20.
- ¹¹³ Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki", 148.
- ¹¹⁴ Neither architect acknowledged Nowicki's influence, but the developments and changes to the UN design were highly publicized, and both were asked about their comments on the revisions. Both generally derided the modifications to the plan – Le Corbusier became quite angry while Niemeyer said less. (Newhouse, *Wallace K. Harrison, Architect*, 125.)
- ¹¹⁵ "UN General Assembly," *Architectural Forum*, 92 (1950): 97.
- ¹¹⁶ *Ibid.*, 99.
- ¹¹⁷ "UN General Assembly," *Architectural Forum*, 97 (1952): 141.
- ¹¹⁸ *Ibid.* 142.
- ¹¹⁹ *Ibid.* 147.
- ¹²⁰ Lewis Mumford, "United Nations Assembly" In *From the Ground Up; Observations on Contemporary Architecture, Housing, Highway Building, and Civic Design* (New York: Harcourt, Brace, 1956), 56. This comment is interesting because it shows a potential difference between the viewpoints of Mumford and that of Nowicki.
- ¹²¹ "From the Legacy of Matthew Nowicki," *Architectural Forum* 93 (1950): 206.

Chapter 5: American Design Work

In fall 1947, as the first phase of designing the UN transitioned into the second phase, Nowicki began to develop his career as an independent architect, gaining more opportunities to explore his own design perspective. His role with the Polish government in Chicago had come to an end.¹ Nowicki had already impressed many people (clients and other architects) with his architectural talent and he began to secure a series of small design projects. He typically worked in association with more established architects who were registered to practice in the US. Working with others not only overcame Nowicki's lack of professional registration in an American state (he was not yet an American citizen), it also allowed him to take the role of lead designer, while others, more familiar with American building practices, assisted with construction documents and project administration. Working with others also allowed Nowicki to take on multiple projects in a relatively short time. These projects show Nowicki's return to structurally expressive forms as a distinct, innovative direction for modern architectural design.

Nowicki's work during this time was significantly impacted by his developing friendship with Lewis Mumford, which began in August 1947. While he was deeply immersed in the redesign of the UN General Assembly, Nowicki received an invitation to meet Mumford at his home in Almenia, New York.² Mumford was already familiar with Nowicki's work in Warsaw (through his preparation of the introduction to *Warsaw Lives!*) and he knew of Nowicki's involvement with the United Nations Design Team.³ Nowicki's interest in Mumford has been noted in previous chapters, especially Nowicki's use of ideas from Mumford's *Culture of Cities* in the redesign of Warsaw.⁴

Correspondence between Mumford and Nowicki after their August 1947 meeting (just before the Revised United Nations Plans were released) shows a budding relationship that would grow exceptionally strong over the next three years. After their first visit, Nowicki wrote to Mumford on August 17, 1947:

I take this opportunity to thank you most sincerely for the charming afternoon at your home a week ago. As you know one of my great wishes came true that day and as this letter is a typical 'fan mail', I must confess that the thrill of meeting my favorite author is still with me. I hope you will forgive the frankness of my saying it but this Sunday afternoon will become for me, I am sure, a very treasured memory.⁵

After August 1947, Mumford and Nowicki frequently crossed paths. On October 16, 1947, Nowicki was invited to speak at the Architectural League in New York about the rebuilding of Warsaw. Mumford presided over the meeting, which was intended to discuss the large-scale planning efforts for heavily damaged urban areas (including Manila, London and Warsaw).⁶ Nowicki presented along with C. McKim Norton, Vice President of the RPAA, and H.J. Osbourne, a British planner.

With the publicity of his wartime experience and his notable involvement with the United Nations, Nowicki began participating in a variety of New York City architectural and social events. On October 23, Nowicki attended the inaugural dinner for the International Competition for Low-cost Furniture Design, hosted by Nelson Rockefeller, son of the United Nations benefactor. Nelson Rockefeller was then serving as president of the Museum of Modern Art.⁷ A picture taken of the two shaking hands (Figure 5.1) shows Nowicki as a well-dressed, confident architect, eager to engage the financial and social establishment of New York City. Socializing with business and civic leaders, as well as participating in the changing architectural scene in the

United States, Nowicki began to make the connections he would need to rise to a position of prominence in his adopted country.⁸



Figure 5.1 – Matthew Nowicki and Nelson Rockefeller, October 23, 1947. (Museum of Modern Art, New York, Photographic Archives, ID Number 446.58)

Teaching

In spring 1948, Nowicki began teaching at the Pratt Institute of Design in Brooklyn as a “visiting critic.”⁹ The Pratt Institute, led, at the time, by president Charles Pratt, had established an architectural program and attracted other notable instructors such as Philip Johnson and Peter Blake.¹⁰ With his teaching at the Warsaw Polytechnic, and experience in the re-planning of Warsaw, Nowicki taught design studio courses that explored the connection between urban design and architecture.¹¹ On March 25, 1948, Nowicki wrote to Mumford, regarding the work he was doing at Pratt.

Looking for a historical background for the work at the Pratt Institute (comparison of the contemporary city planning ideas) I found a sentence of Leonardo da Vinci addressed to Lodovico Sforza during the 1485 plague in Milan: ‘You should divide among ten cities 5000 houses corresponding to 30,000 and thus, you can distribute this population...’

I was struck by the unusual coincidence of the advised number of people for one unit - 15,000 – being the contemporary neighborhood unit.

The study of a theoretical office district worked on at the Pratt is going to be preceded by a reconstruction of a large city as Leonardo would have built it based on two level street system with the streets some 660 feet apart (almost a superblock).¹²

The “neighborhood unit,” was a key part of urban design strategies for both CIAM and the RPAA, and Nowicki found significance in its correspondence to Leonardo's comments. Since Nowicki knew of Mumford's deep involvement in the RPAA, sending Mumford the historical citation was likely a way to ingratiate himself with the older man.

In June 1948, Nowicki wrote a speech titled “The Creation of Desirable Neighborhoods,” leading off with a reference to Leonardo’s urban plans.¹³ In his speech, Nowicki focused on the patterns of human life and elements of social well being as drivers of town planning efforts, arguing for “maximum freedom of a man within restrictions which result from the fact of living together in groups that constitute cities.”¹⁴ Citing “universal acceptance” of the superblock as a walkable, neighborhood unit and the separation of transportation modes, Nowicki sought to merge the town planning efforts of Le Corbusier and Frank Lloyd Wright: “The opposing patterns of yesterday tend to blend into one diversified human concept of a fully modern city.”¹⁵ Nowicki’s ideas on urban planning were generally consistent with other architects and planners at the time. Just thirteen years later Jane Jacobs would publish *Death and Life of Great American Cities* and soon after that the failures of Modernist urban planning would become

readily apparent. Nowicki may have been an original thinker about architecture, but as an urbanist, he was less creative.

Teaching at the Pratt institute offered Nowicki the opportunity to renew his academic career. Working with the director of the school of architecture, Olindo Grossi, Nowicki organized exhibitions of student work on urban planning, frequently inviting Mumford to visit for critiques.¹⁶ Nowicki was also in communication with Robert Mitchell, the first city planning director for Philadelphia, appointed in 1943 (before Ed Bacon), who was “organizing a planning research department at the University of Columbia [University].”¹⁷ Nowicki claimed that Mitchell was “very interested in the works at the Pratt.”¹⁸ During his time at Pratt, Nowicki also made the acquaintance of Philip Johnson, who was also teaching at the school. Nowicki developed a professional, but friendly relationship with Johnson, and was later able to spend time at Johnson’s Glass House in New Canaan, Connecticut (completed in 1949). Peter Blake was a student at Pratt in 1947, a friend to both men, and he described the competitive spirit between the architects at the time.

I think Philip Johnson worried only about two potential competitors in the years when he and I saw a great deal of each other: one was Matthew Nowicki, the charming and brilliant young Polish architect who had come to New York after the end of World War II... and the other was Eero [Saarinen].¹⁹

Nowicki subsequently attracted an increasing number of job offers. In February 1948, Mumford was approached by Henry Kamphoefner (1907-1990), regarding a “newly formed school of architecture and landscape design” he was setting up in Raleigh, North Carolina. Kamphoefner, an architect himself, had been teaching at the University of Oklahoma, but was appointed as Dean at North Carolina State College and charged with organizing its architecture

program. Kamphoefner's vision was to "organize this new school for the development of an organic and indigenous architecture."²⁰ Borrowing phrases from Mumford's writing, Kamphoefner saw NCSC as the place to initiate an American school of architecture, as a counter to the largely European Modernist curricula at IIT and Harvard.²¹ Mumford's writings, and overall perspective on architecture, were guiding texts for Kamphoefner's vision of the school and its approach to architecture.

Kamphoefner offered Mumford the opportunity to work at the new school in some capacity, as a "professor, visiting professor, visiting lecturer or in some (other) arrangement."²² Without a formal background in architecture and with many other demands on his time, Mumford declined a full-time academic role, but agreed to serve as a consultant to the emerging school. Mumford suggested Nowicki as the first head of the Department.

By July, Mumford had arranged a meeting between Kamphoefner and Nowicki. They met at New York's Grand Central Station, and proceeded to the office where Nowicki was working on the UN Headquarters. Kamphoefner recalled seeing a "clear structural content" to Nowicki's work on the General Assembly Building.²³ A primary reason for Kamphoefner's interest in Nowicki was his ability to integrate architecture and engineering, a key component of his vision of an organic architecture.²⁴ Kamphoefner believed a more meaningful architecture was one connected to structure, as opposed to the "façade-ism" that he believed was common at other schools in the United States.²⁵

Nowicki was excited by the proposition. On July 25, 1948, Nowicki wrote to Mumford:

Thank you so much for your call last Thursday and Mr. Kamphoefner's visit that followed. Both were as much exciting as unexpected. When Mr. Kamphoefner explained to me the nature of his proposition it was as if a much denied dream came suddenly true. The possibility of taking part not only in organizing of an architectural

school with great ambitions, but also in forming a cultural center with its possible influence of the entire region and all this in contact with you – can not be described with less enthusiasm.²⁶

Kamphoefner offered Nowicki a position on the faculty as Professor of Architecture and the administrative position as head of the Department of Architecture. Nowicki would be responsible for teaching fifth year design students (the program offered a five-year, Bachelor of Architecture degree) and he would lead the development of the new curriculum. Nowicki's wife, Stanislava, an architect in her own right, was offered a teaching position as well.²⁷

By August 1948, Nowicki had formally accepted the position in Raleigh, and began transitioning to North Carolina. Heavily involved with the design of the United Nations project, Nowicki had a difficult time “settling his affairs in New York.”²⁸ In a letter to Mumford he wrote “I had to finish the sketches of the General Assembly building, organize the legal side of my decision, and last not least to arrange for moving our family to Raleigh.”²⁹ Nowicki reached an agreement with Harrison to return to New York City for one week every month to continue his work on the United Nations project.

Despite the intense demands on his time, Nowicki was excited to envision a new school of architecture alongside Lewis Mumford. His vision for the school was a combination of his own technical/formal/structural approach to architecture and the social responsibility he admired so much in Mumford's writing:

The school might become an attempt at an architectural education in which the humanistic problem of scale and the abstract measure of proportion might subordinate to themselves the technicalities of (the) profession. In fact the ‘Technics and Civilization’ and the ‘Culture of Cities’ seem to be the ideal textbooks for almost every problem that

we have and my greatest ambition is to achieve a standard so high that we might think of it as a school of Lewis Mumford.³⁰

Nowicki established a curriculum modeled on Mumford's writings, but also influenced by his own education at the Warsaw Polytechnic. At the newly formed "School of Design" at the North Carolina State College the curriculum was divided into four major groups of subjects: 1) design, 2) structures and technical subjects, 3) descriptive drawing, and 4) humanities, history and regional studies. A "chair" of each subject, a senior faculty member, was assigned to insure continuity across all levels of instruction.

Issues of structure were central to the design education Nowicki envisioned at NCSC. His core curriculum defined courses for first and second year students, then branched out to areas of city planning and landscape design for the third, fourth and fifth years. Illustrated as a tree, with a root system, and branches in different directions, Nowicki communicated his ideas that structure and drawing form the "trunk" of the tree of architecture (Figure 5.2).³¹

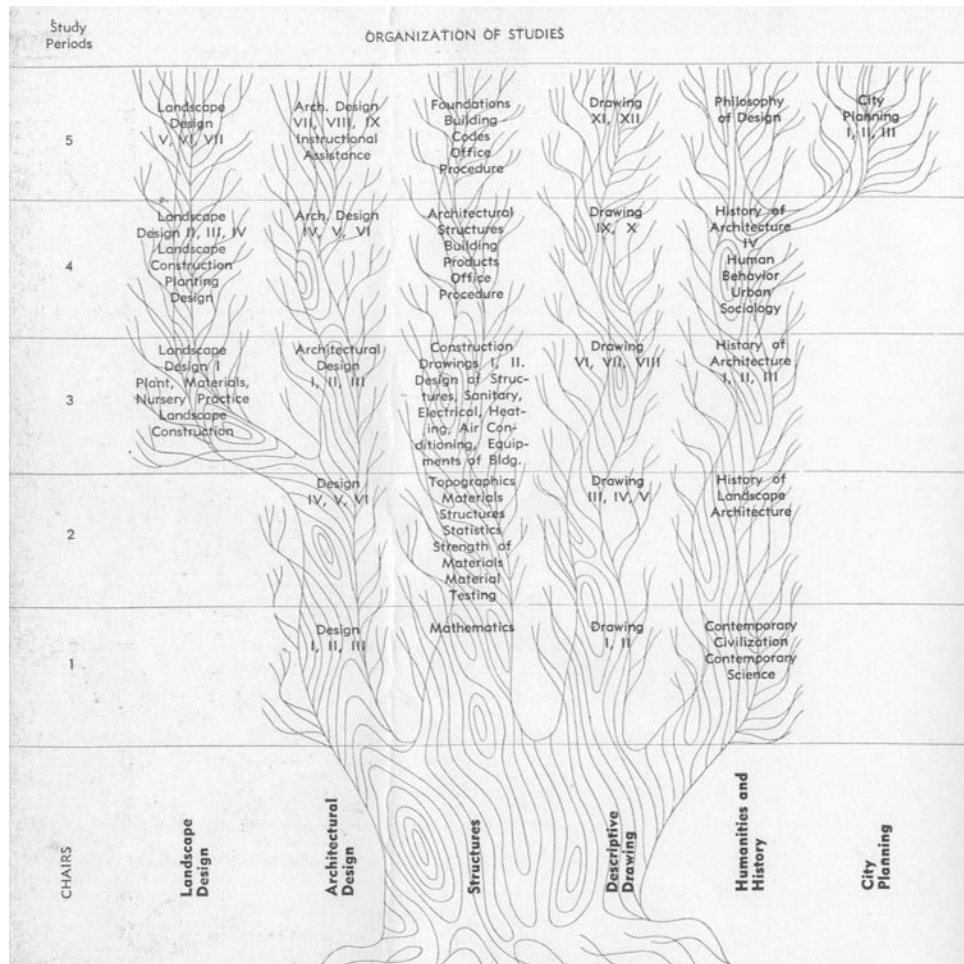


Figure 5.2 – Diagram of Nowicki’s Curriculum for North Carolina State College, School of Design. (North Carolina State College, and Matthew Nowicki. *School of Design: North Carolina State College, Raleigh, N.C.* (Raleigh: NCSC Press, 1950), 12.)

In a 1950 description of the School, Nowicki described the role of the structural course as providing an “engineering discipline” that encouraged “the development of a habit in treating all problems of design as problems of structure.”³² This comment clearly describes the essence of Nowicki’s ideas of structural expression, where *all* problems of design are essentially problems of structure. Here, in the education of students, structure was emphasized as the organizing element shaping architectural design. Even the descriptive drawing courses were designed to encourage a structural thinking:

Here nature is analyzed and both structural and compositional message of nature is depicted... An emphasis is placed on structure of every form which becomes unveiled in a drawing that tends to describe all essential parts of the studied object similarly to a working drawing in an architectural problem.³³

Throughout Nowicki's academic experience in North Carolina, structure was continually at the forefront of his instruction of architecture. The study and understanding of both drawing and structures served the greater field of design, as an "analysis of human needs, in both physical and psychological sense."³⁴ Nowicki's structurally expressive modern architecture was an approach to architecture (not engineering), and his views directly shaped this innovative curriculum. It is no surprise, therefore, that after Nowicki's death, the school sought another professor (Catalano) who would foster the school's structural emphasis.³⁵

Columbus Circle

Nowicki's new teaching responsibilities did not prevent his involvement with professional design projects. Along with his continued design work with Harrison on the United Nations in New York, Nowicki began working with the architect Clarence Stein (1882-1975) in fall 1948.³⁶ A colleague of Mumford's through the Regional Planners Association of America (RPAA), Stein was well known for his urban plans (such as that for Radburn, New Jersey) and his widespread use of the superblock and neighborhood unit concept.³⁷ Nowicki and Stein developed a close relationship, and collaborated on several small-scale projects prior to Nowicki's death in 1950.

The first of these projects, in 1948, was a proposal for a circular, elevated pedestrian platform for Columbus Circle, at the southwest corner of Central Park in New York City.

Clarence Stein later described it as “an addition to Central Park.”³⁸ Rising above the intersection of five different streets and an underground subway station, this structure proposed to separate the movement of cars and people in this congested area of Manhattan, while also providing an upper level of restaurants and cafes 21 feet above the traffic.³⁹

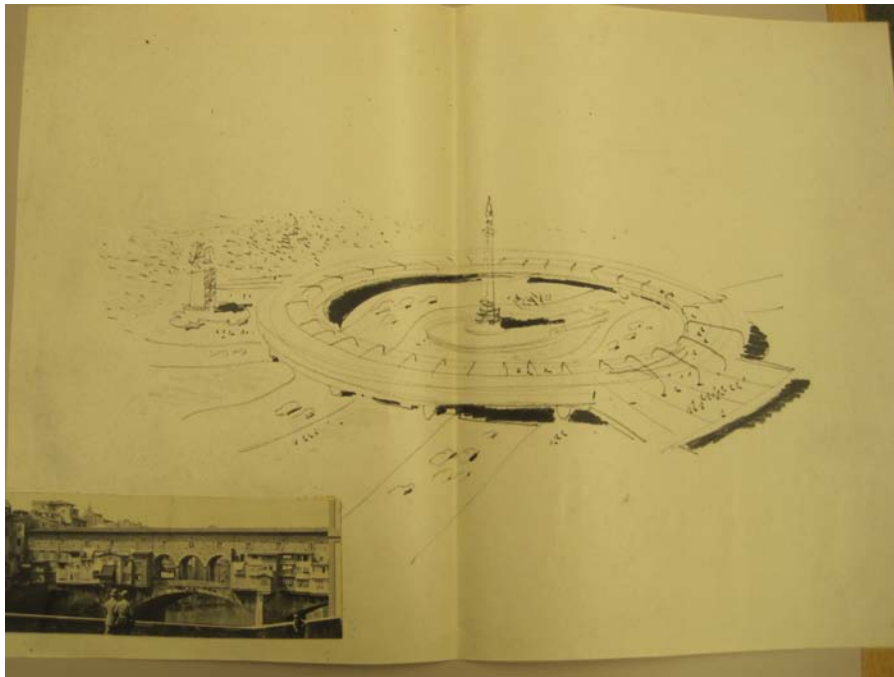


Figure 5.3 – Nowicki and Stein’s Columbus Circle Proposal with lower photograph of Ponte Vecchio, 1948. (Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library, Box 4, Folder 22)

This project was based on the separation of transportation modes (cars and pedestrians), a guiding principle of Modernist urbanism that Nowicki had followed in his designs for Warsaw.⁴⁰ In an early sketch of this project, Nowicki attached a photo of Ponte Vecchio in Florence, Italy, the famous medieval bridge over the River Arno, which includes many shops. Attempting a similar effect, Nowicki designed the Columbus Circle project to provide new retail space on a bridge-like structure, activating it with pedestrian activity. As the Ponte Vecchio supported

pedestrian space above the flowing river, so Nowicki's design proposed pedestrian space above the un-crossable flow of vehicular traffic at Columbus Circle.

Like his Ponte Vecchio example, Nowicki saw this project was more than just infrastructure. Instead, he considered it an opportunity to celebrate the movement and vibrancy of city life. He stated: "Our solution of the upper level in its present stage could be considered as a 'theater of the traffic' where the pedestrian could observe the movement in the 'round stage' inside the circle from the elevated level."⁴¹ Nowicki's renderings, aerial and eye-level perspectives, highlight the movement of both people and cars. The cars are not sleek, technological, high-speed machines, but accepted elements of the city movement. Nowicki's sketches show people on the ground level next to the car traffic, but they are shown crossing easily via the elevated structure. The sketch also shows the program elements, with an open-air walkway at the interior of the loop, and enclosed retail and restaurant spaces along the outer edge. The circular structure surrounds the monument to Christopher Columbus located in the center of the intersection.



Figure 5.4 – Perspective view of Nowicki and Stein’s Columbus Circle Proposal, 1948.
(Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library,
Box 4, Folder 22)

Had the project been built, the movement of the traffic would have become part of the scene for pedestrians to enjoy. Nowicki's scheme can be seen as a celebration of the complexity of a five-way intersection as a part of New York City life. The structure created upper level space for pedestrians within the activity of the city, yet allowed for visibility between pedestrians and vehicles. Periodic stairs, and a large ramp on the Central Park side, provided multiple points of access and easier flow for pedestrians to and from Central Park.

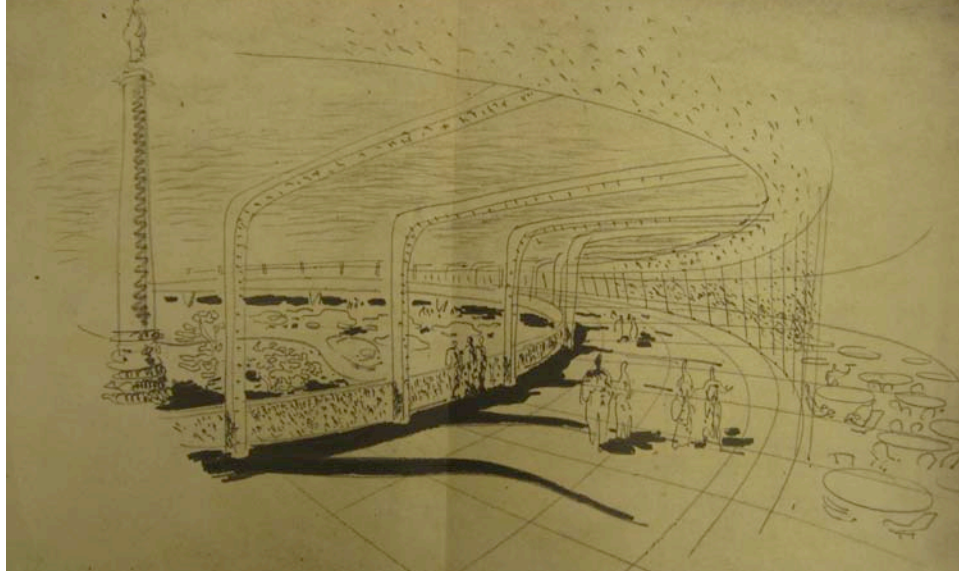


Figure 5.5 – Interior view of Nowicki and Stein’s Columbus Circle Proposal, 1948. (Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library, Box 4, Folder 22)

Nowicki's innovative design made structural form the dominant architectural expression. The structure has an inside diameter of roughly 260 feet, with an outside diameter of roughly 360 feet, creating a width of approximately 50 feet. The elevated structure, 21 feet above the streets, was circular in plan, supported by (probably hollow) concrete columns located 80 feet on center around the circumference, 12 columns in all. The columns were extremely large – measuring 10 by 4 feet at the base, and increasing in size as they rise – but may have been hollow. The form of the columns appear to be similar to the massive *piloti* of Le Corbusier’s Unité d’Habitation at Marseille. The Unité was widely published in French, beginning in 1947 (despite not being completed until 1952), and, given Nowicki’s reverence for Le Corbusier, it is likely Nowicki knew of its design. A continuous triangular beam, curved along the perimeter, rested on the columns below and supported the pedestrian level with internal voids for mechanical services.⁴² The platform was covered by “upper level ribs 15 feet apart connected in stressed skin principle

below and above the pedestrian concourse,” with a maximum height of 30 feet above the platform. These individual ribs (presumably of steel) traced the profile of the upper structure, and were connected together by a “skin” system (possibly of aluminum). The term “stressed skin” refers to the emerging construction technique where the thin enclosure of the building can help resist load (similar to airplane wing construction). Further illustrating his concept, Nowicki described the structure as employing “the principle of a basket of aluminum and steel” – with the steel ribs and aluminum “skin” in between.⁴³



Figure 5.6 - Le Corbusier’s Unite’ d’Habitation, piloti, 1947. (Cities and Buildings Database, copyright Meredith Clausen, slide no. 2209, University of Washington)

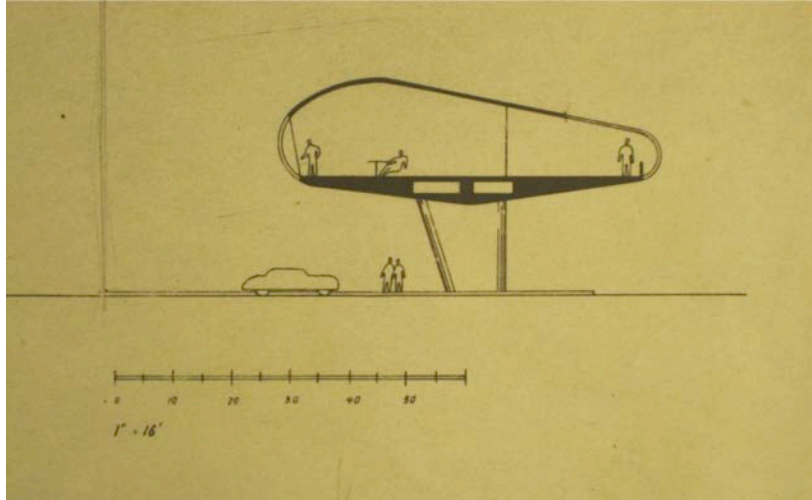


Figure 5.7 – Section of Nowicki and Stein’s Columbus Circle Proposal, 1948. (Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library, Box 4, Folder 22)

The regularly spaced steel ribs and aluminum skin, used in a sloping and rounded form, recall an automobile profile or an airplane wing. The comparison to an airplane wing seems particularly apt, as Nowicki's scheme seems to mimic a wing in both construction and form. (Figure 5.7) The perspectives show the rounded forms of 1940s era autos possibly suggesting an intentional visual relationship to the elevated structure. Although providing functional space, the form is sculpted, almost stylized, indicating that Nowicki was not seeking a purely functional/structural scheme but one attuned to aesthetic concerns as well.

Nowicki recognized the structural advantages of using a complete circle to surround the intersection. He stated: “The plan of a circle adds to the rigidity of the structure.”⁴⁴ The complete circle would act as a single structural element, almost like a continuous beam, redistributing stresses throughout the structure.⁴⁵ Nowicki’s model of the structure (Figure 5.8) displays the simplicity of form and clarity of the structure of his proposal. The significant cantilevers on both the inside and outside are greatly assisted by the fact that they taper towards

the edge, and that they form a complete circle around Columbus Circle. Recognizing these cantilevers, Nowicki still provided a significant structural depth in the beam over top of the column location (where shear stresses would be most severe). The circular form of the proposal both relates to the circulation of traffic and people, and assists in achieving a structural equilibrium.

Inspired by a historical form (Ponte Vecchio), yet realized through contemporary materials and advanced structure, the Columbus Circle project is a clear example of Nowicki's modern design approach. Nowicki's project made thoughtful use of the space created by structural form, utilizing a very specific collection of modern materials and structural systems. The structure attended to both the automobile and pedestrian experiences, was scaled to have a favorable, human-centered reception, and like the Warsaw Parliament building, the Columbus Circle utilized the structural and programmatic benefits of the circular form. More than a decade later, urban observers would argue that the separation of pedestrian and vehicle traffic has many detrimental effects, but at the time Nowicki produced this design, such effects were not yet understood or discussed and separation of modes was a basic principle of Modernist urbanism.⁴⁶ Overall, the Columbus Circle proposes an innovative structure to enable a new use of space, all the while addressing the significant urban issue of congestion.⁴⁷

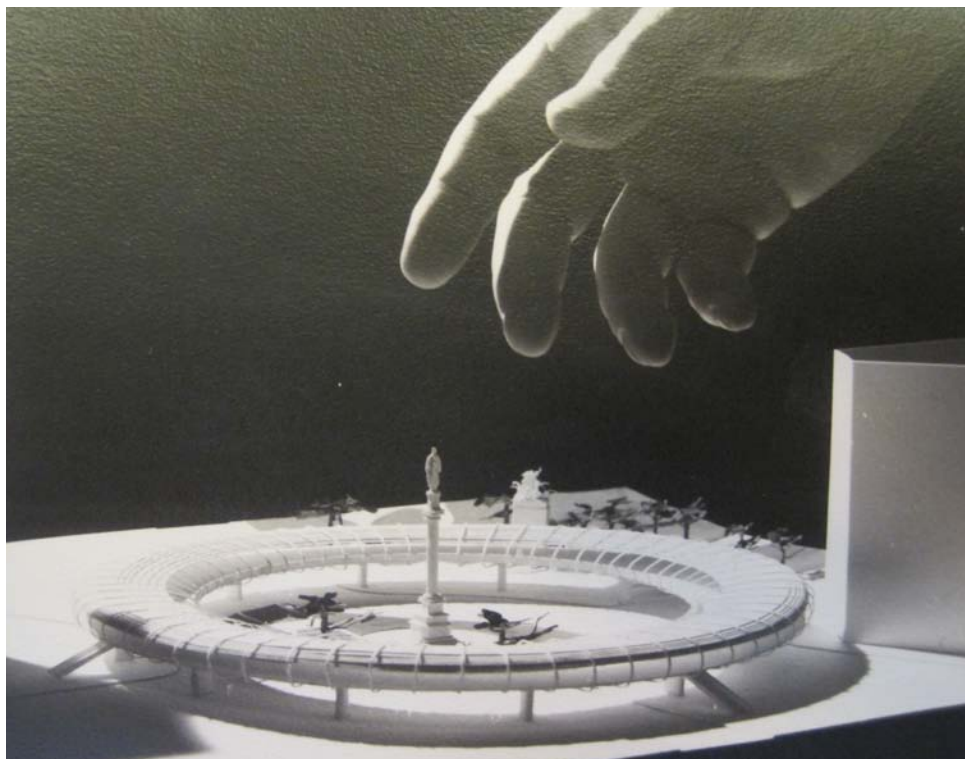


Figure 5.8 – Model view of Nowicki and Stein’s Columbus Circle, 1948. (Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library, Box 4, Folder 22)

The design for Columbus Circle was not realized. In 1948, New York City was a major center of debate regarding urban planning. Robert Moses was attempting to push through the West Side Highway project, and was proposing the relocation of Madison Square Garden to the Columbus Circle vicinity. Jane Jacobs was also beginning her work as a community activist on the West Side.⁴⁸ Stein and Nowicki encountered some of these issues tangentially through correspondence and community meetings, but ultimately this Columbus Circle project was not realized.⁴⁹ In a letter to his wife, Clarence Stein described how he and Nowicki had presented the project to the “Citizens’ Union Committee on Planning,” and it was received well. Then, revealing the challenges they faced, stated: “Now all we have to do is prove to Bob Moses that it was all his idea.”⁵⁰

California Markets

While they were collaborating on the Columbus Circle proposal in 1948, Nowicki and Stein worked closely on another project, a scheme for an open-air market structure in California.⁵¹ This project also looked to create architectural space through an advanced structural solution, in this case, a masted, tension cable-supported roof. Nowicki's design called for four steel masts with tension-cables to support a gridded roof area of roughly 90,000 square feet. (Figure 5.9) The diagonal cables were to extend radially from the masts, and attach to a roof structure made up of individual square panels, arranged in an 8 by 8 grid (64 total). Each panel was 37'-6" on a side and each mast supported 16 panels (a roof area of 22,500 square feet). Combined, the four mast-supported panel clusters covered approximately 90,000 square feet of space. The arrangement of the cables ensured the weight of the roof would be balanced on each mast. The cables would be in tension while the masts would support the weight through pure compression.



Figure 5.9 – Model view of Nowicki and Stein's California Markets, 1948. (Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library, Box 8, Folder

The cables supported the edges of each adjoining panel at the joint in between. The panels themselves were shown as light steel frames (with trussed bracing), acting as a two-way system.⁵² Each panel had a cone-shaped interior (framed with intermediate members) with an opening in the center to allow natural light to the floor below.

The cable system produced a clear span space below, allowing, “full freedom and flexibility underneath” for the unpredictable and variable program of a market space.⁵³ The roof structure would also be the primary exterior expression of the building. The four masts vertically mark four regular points in the plan, while the diagonal cables slope outward at differing angles, connecting to the roof. These cables would have appeared to cross each other and to create a mesh-like appearance when viewed at a distance.

Within this regular order, Nowicki and Stein removed seven panels, creating an area of the market open to the sky. This opening suggested an entry walkway to an open central 75' x 75' courtyard in the middle of the market space. While the removal of these panels does create unbalanced loading and thus introduced bending into the masts, the system could be designed to resist this condition. This design decision shows that for Nowicki, the need for an open walkway outweighed the resulting unbalanced loading condition, demonstrating again that Nowicki was willing to compromise a pure structural form for programmatic, human-centered demands.

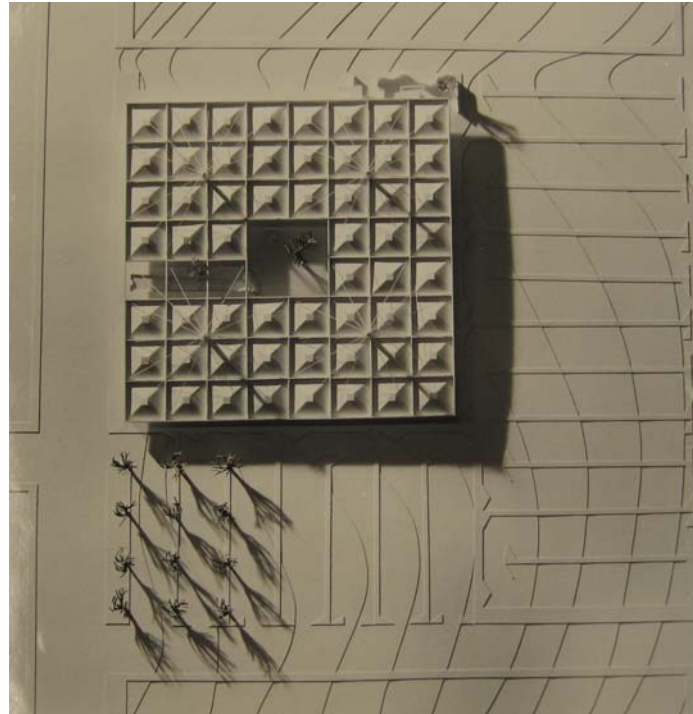


Figure 5.10 – Plan of Model of Nowicki and Stein’s California Markets, 1948. (Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library, Box 8, Folder 26)

This type of structural system is now referred to as a masted, cable-stayed roof.⁵⁴ Masted structures, as a type of tension-based system, had been gaining popularity since the 1920s. Russian constructivists (such as Alexander and Viktor Vesnin and Anatole Ludwig) had proposed masts surrounded by tension cables for the design of large pavilions in Moscow, while Buckminster Fuller’s designed the Dymaxion house (1927) to be supported by tension cables radiating from a central mast.⁵⁵ (Figure 5.11)

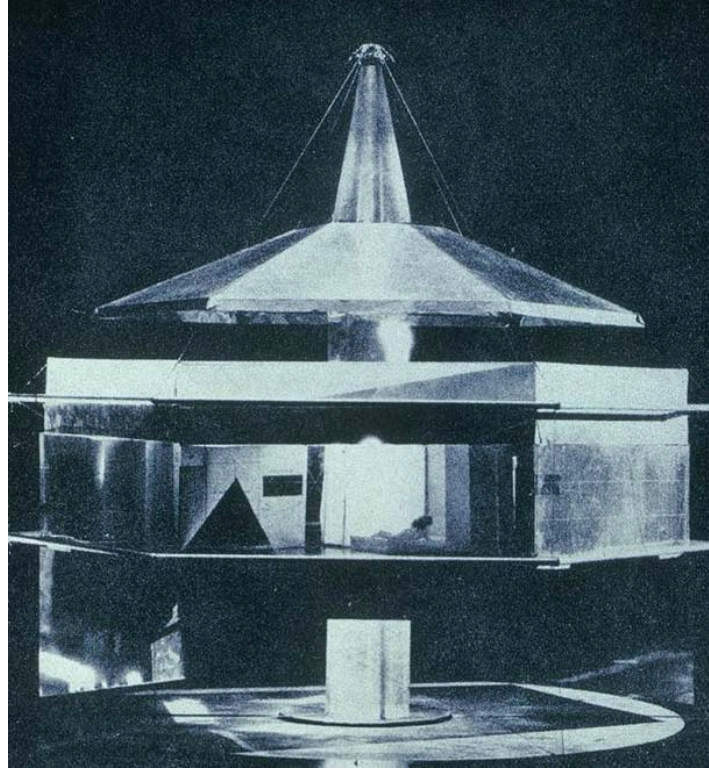


Figure 5.11 - Buckminster Fuller's Dymaxion House, 1927. (ARTstor Slide Gallery, Source: University of California, San Diego)

Other architects such as Bruce Goff, Bertram Goldberg and Eero Saarinen experimented with similar masted structures in the 1940s. Saarinen's use of masted, tension structures is of particular interest, given Nowicki's later involvement with him. In summer 1949, Saarinen proposed a prefabricated community center for the US Gypsum Company that bore a striking similarity to Fuller's Dymaxion House. Later in 1949, Saarinen designed the Aspen Music Center as a large, waterproof tent, propped up by a series of masts. (Figure 5.12) Masted structures quite similar to Nowicki's designs emerged after 1950, particularly in Europe and especially in the U.K.⁵⁶

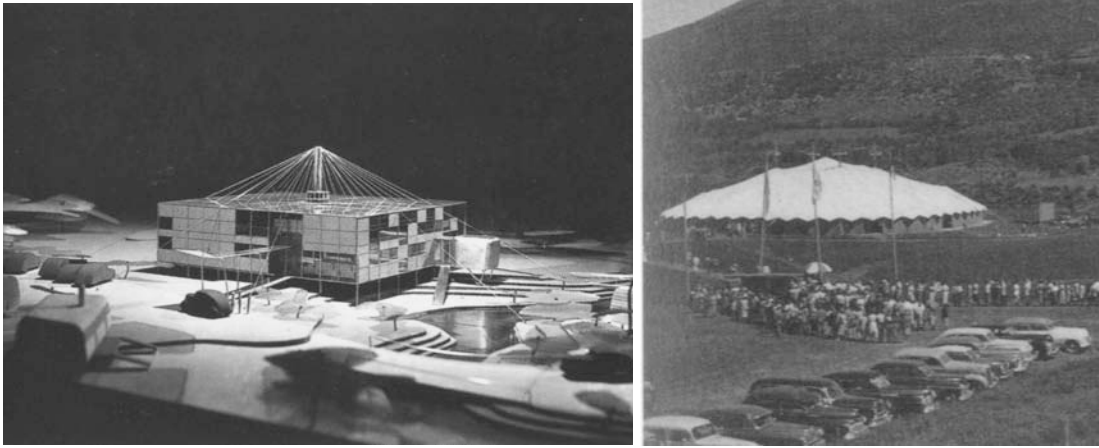


Figure 5.12 - Masted Structures by Eero Saarinen. US Gypsum Company community center, 1941, (left), Aspen Music Center, (right). (Eero Saarinen, Eeva-Liisa Pelkonen, and Donald Albrecht. *Eero Saarinen: Shaping the Future* (New Haven: Yale University Press, 2006), 165.)

While similar, Nowicki's design was distinct from these other examples. His market shows a flat, elevated plane, a rigid, modular roof supported by multiple cables, and a clear open space below. The consideration of skylights, and indication of an uncovered walkway and central courtyard suggest that engineering was not the only force driving the design. Such variations disrupted the symmetry and balance of the tension structure, but not to the point of instability or collapse. In this project, it is clear that Nowicki did not feel that pure, interrupted structure was a necessary architectural pursuit. In comparison to the rigid structural geometry of Buckminster Fuller's geodesic domes, Nowicki's project shows willingness to negotiate structural form for human-centered concerns. Structure provided the form, but the project was shaped by the architectural and programmatic demands.

This project also solidified a close relationship between Nowicki and Clarence Stein. Nowicki often stayed at his apartment in New York during his frequent trips from Raleigh. In March 1948, Stein wrote his wife:

Grand chap – Matthew Nowicki - talented to no end – I have great affection for him. But I must admit he has anything but an orderly mind. He did a fine job for me on Joshua (Mark)'s Shopping Center (don't tell Josh. I'm working at it). But the living room and bedroom looked as though a hurricane have struck them...⁵⁷

Later, in December 1948, Clarence Stein wrote to his wife from his office in New York City: “Matthew Nowicki has been here with me for two days – and will probably stay on til Wednesday next. Good companion. He is cooking with me – putting my rough sketches for California Markets into more finished shape.”⁵⁸ Stein and Nowicki developed a strong relationship working together on the Columbus Circle and California Markets projects. They would have the opportunity to work together again on the Chandigarh project, as discussed in Chapter 7.

Prefabrication Book Review

While working on these projects with Clarence Stein, which allowed him to expand his exploration of structurally expressive forms, Nowicki continued his work with the United Nations. As a “member of the U.N. Headquarters Planning Office,” in November 1948, Nowicki wrote a book review for the first *Bulletin of Housing and Town and Country Planning* published by the U.N. Department of Social Affairs.⁵⁹ In this issue, in an essay titled “Mass Production to Relieve Housing Shortages,” Nowicki reviewed the book *Manual on Wood Construction for Prefabricated Houses*, published by the Forest Products Lab of the United States Department of Agriculture.⁶⁰ In his review, Nowicki described the appropriateness of wood prefabrication to “solve housing needs of the postwar world,” noting the benefits of economy and speed of construction, as well as versatility in design. [[delete--a stretch]] In his review essay, Nowicki

also described alternative approaches to architectural design that provide insight into his own design decisions.

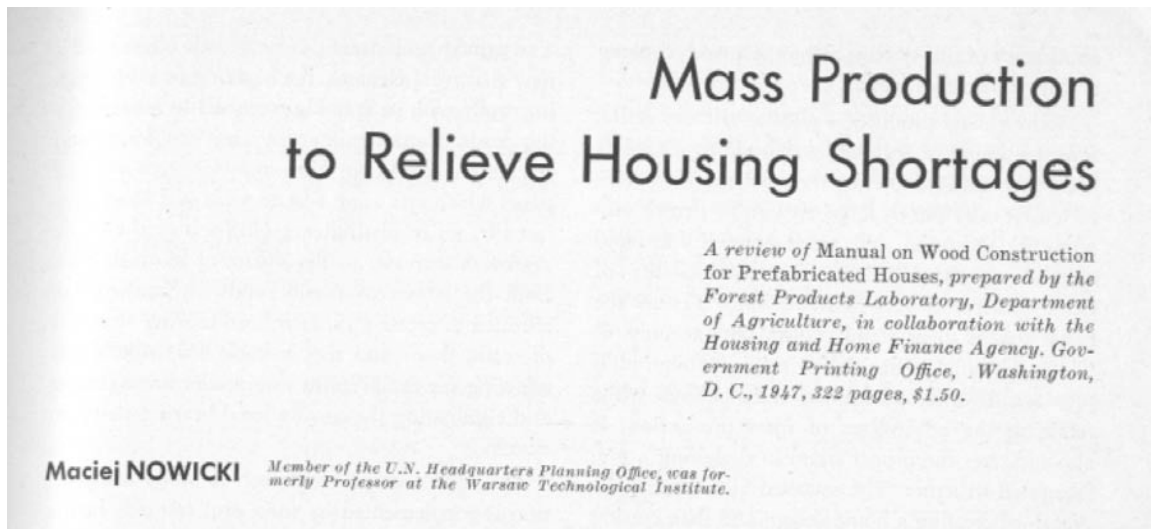


Figure 5.13 – Nowicki’s Book Review for the United Nations Bulletin, 1948. (Maciej Nowicki “Mass Production to Relieve Housing Shortages,” review of *Manual on Wood Construction for Prefabricated Houses*, In United Nations Department of Social Affairs, *Housing and Town and Country Planning*, 1 (November 1948): 38-41.)

Nowicki opened the review with a description of the large-scale demand for housing due to the wartime destruction, suggesting 100,000,000 (one hundred million) new homes were needed.⁶¹ To satisfy this need, Nowicki saw “economy and speed in new construction” as problems that could be addressed through prefabrication techniques. Like many other modern architects, Nowicki cited the mass production of automobiles as evidence that prefabrication could be easily applied to houses.⁶² He argued, “There is no reason why technical experience, skill and proper organization of production should not solve the problem of producing houses in the same way as, for instance, it solved the problem of producing cars.”⁶³

But Nowicki also realized that prefabrication required a distinctly different approach to design: “The so-called architectural approach of creating a house design and then cutting it into elements is the reverse of the logical product-designer’s approach where a unit is composed in a modular way from conveniently standardized parts.” Standardized modular elements would require an alternative approach to design, as the process of assembly would need to be considered throughout the design process, not figured out after the building form was established. Nowicki was careful, however, not to suggest a complete standardization of the modern home; instead he advised: “It is not the house which is standardized, but the units of which it is built.”

Prefabrication, an organized focus on the construction and assembly of necessary building elements, was also another way for Nowicki to discuss the role of structure in architecture. Citing the development of plywood, laminated wood, and fibers and plastics of all types, Nowicki saw exciting potential for new structural possibilities from the efficiencies of prefabrication: “The meaning of the structural revolution of synthetic resin adhesives and glues seems to be still under estimated by many contemporary builders.” Nowicki went on to describe how the “sandwich wall panel,” like those used in military aircraft where the skin of a panel acts integrally with embedded structural elements, can be used in architecture: “[to] create a uniform load-bearing structure of walls, floors and roofs suitable for wide-open spans, allowing for flexibility in the interior arrangement and eliminating the conventional bearing partition system.”⁶⁴

In his conclusion, Nowicki stated that the book was “an important contribution to the solution of the international building problems of today.”⁶⁵ The review also suggests that Nowicki maintained a broad perspective on the problems facing architecture and construction on

a global scale, and was open to new building solutions. Elements of Nowicki's structurally expressive modern architecture are present in this book review, though not made prominent.

Polish Chapel Design

The post-war period also offered Nowicki the opportunity to further develop and publish some of the design projects he had initiated in Poland. Most significant among these was the design for a small chapel intended for the rural town of Laski, a location where Nowicki and his family had taken shelter during World War II. Laski was also home to a School for the Blind, an institution run by the Roman Catholic order of Franciscan nuns, and the school's nurturing and accepting mission contrasted with the inhumane destruction of the War. Living at this school inspired Nowicki's architectural creativity, driving him to design a new administration building, cemetery gates, and a new chapel.⁶⁶ The end of the war, and re-planning of Warsaw interrupted progress on these designs, but Nowicki returned to them once established in the United States.

In an attempt to get the chapel published, Nowicki wrote to Douglas Haskell, then editor of *Architectural Record*.⁶⁷ In an unpublished manuscript, in the Douglas Haskell Collections at Columbia University, Nowicki described the church in detail, including the surrounding conditions, program requirements, and his approach to its structural and formal composition. The quotations in this section come from this manuscript. Although *Architectural Record* never published the project, images and a short caption did appear in the French journal *Architecture d'aujourd'hui* in December 1948.⁶⁸

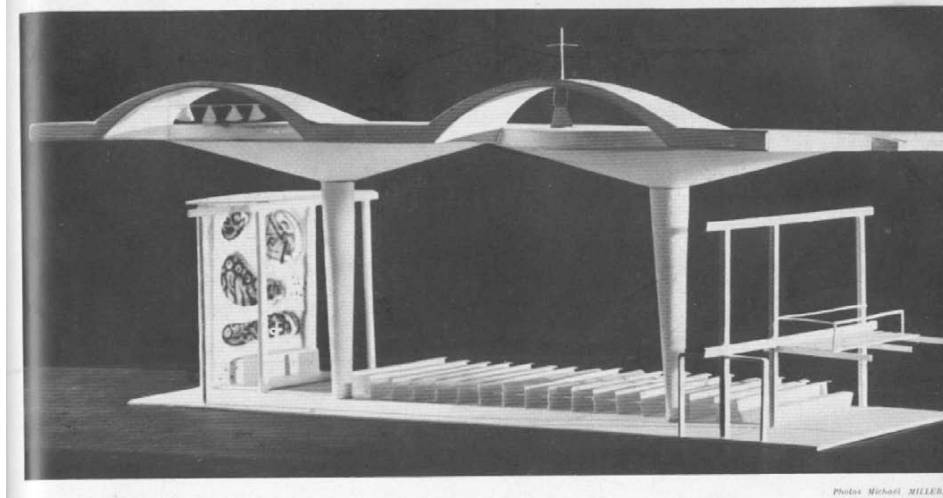


Figure 5.14 – Model view of Nowicki’s Polish Chapel Design, 1948. ("Chapelle à Laski, Pologne," *Architecture d'Aujourd'hui*. 19 (1948): 51.)

The chapel, roughly 90 by 45 feet in plan, was designed for a congregation of roughly 300 people. Nowicki sought a design where the structure and materials of the chapel directly related to the site; Nowicki wrote that he sought to use materials and structure in a way that supported the “character of the local tradition.” He stated that he believed that “both nature and time contributed to the birth of the new form.”

Nowicki's text described the “marshy” soil that offered suitable bearing only at significant depth, requiring driven piles to reach bedrock capable of supporting building loads. “The structural concept was influenced by the consideration of reducing the number of supports to a practical minimum.” Located in a forested area, Nowicki considered wood as a structural material, determined it was of poor structural quality, but found it “well suited for reinforced concrete forms.”

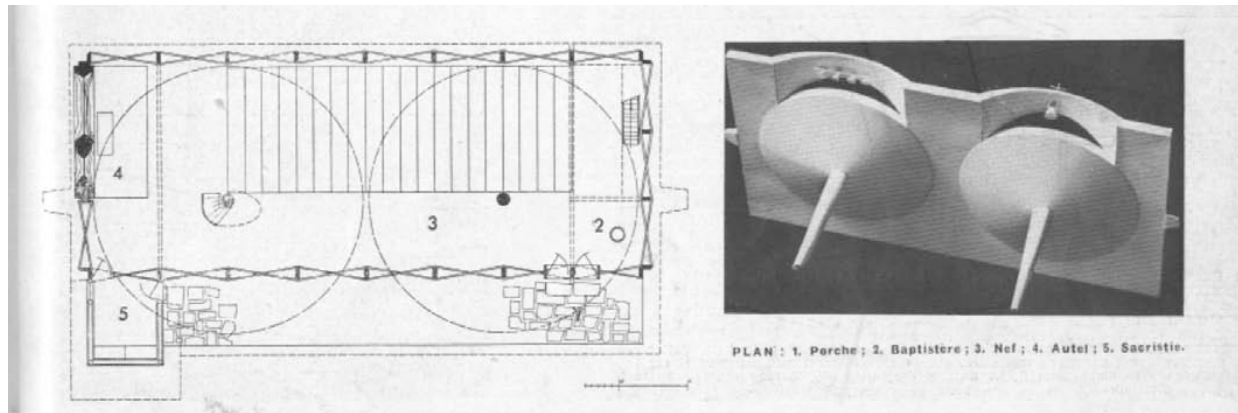


Figure 5.15 – Plan and view from underneath Nowicki’s Polish Chapel Design, 1948. ("Chapelle à Laski, Pologne," *Architecture d'Aujourd'hui*. 19 (1948): 51.)

Extending this logic, and continuing the structural themes from his earlier designs, Nowicki conceived of his building as two separate but intertwined elements: the load-bearing columns and roof and the enclosing walls. The design showed two tapered (cast-in-place) concrete columns cast integral with a circular “mushroom” elements overhead, standing roughly 30 feet high and with circular caps 45 feet in diameter. (Figure 5.15) These circular elements were aligned side by side, and supported a larger rectangular concrete slab.

Nowicki’s columns were quite similar to the ones used (and tested) by Frank Lloyd Wright at the Johnson Wax Headquarters in Racine, Wisconsin, in 1939. While the tapered columns looked nearly identical and the ceiling height above the floor (in Wright’s Main Room) was nearly the same, Nowicki’s “mushroom” tops had subtle, but significant, differences from Wright’s. Nowicki’s column tops had more depth at the central column and sloped upwards significantly, making their shape more conical than Wright’s. This sloped portion connected to a continuous flat roof; the column and flat roof worked as a continuous structure more than in Wright’s building. (Figure 5.16) While Wright’s column tops had a diameter of approximately

20 feet, Nowicki's drawings showed a diameter of 45 feet – over twice as large - an advantage that was only possible with a more cone-like “mushroom.”⁶⁹



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Figure 5.16 – Ceiling Johnson Wax Company, Frank Lloyd Wright, 1939. (Cities and Buildings Database, copyright Meredith Clausen, image USA411, University of Washington)

Nowicki's scheme also included shallow arches that rose above the flat roof plane and provided space for hanging church bells. As “open belfries are typical for church architecture in this region,” their formal expression became a way to continue “the factors of local tradition in a contemporary architectural form.” Nowicki was clearly interested in connecting this modern chapel of concrete to traditions of the region.

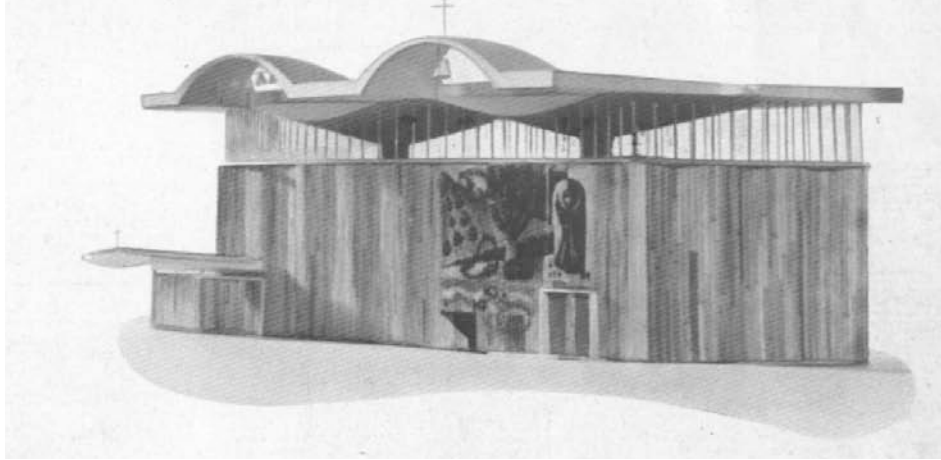


Figure 5.17 - Nowicki's Polish Chapel Design, model exterior, 1948. ("Chapelle à Laski, Pologne," *Architecture d'Aujourd'hui*. 19 (1948): 51.)

The two columns were aligned centrally under the rectangular roof plane, but were off center relative to the exterior wall. Nowicki shifted one perimeter wall inward, providing covered outdoor space with the result that the interior seating was all to one side of the two large columns. This shift created a broad aisle for liturgical processions along one side of the chapel, and a covered outdoor space outside the entrance. In plan, the chapel read as two circles contained within a rectangle, even though one outside wall was shifted inward.

The perimeter wall was proposed as a "free-standing basket" of wood cladding, based on a 10-foot module. With triangular sections in plan, the wood exterior wall would have become a trussed structure with a braced pattern that provided lateral stability through an increased thickness in certain areas. A line of glazing between the top of the wall and the underside of the roof highlighted the structural separation of these two elements. Nowicki clearly separated the gravity-load resisting system from the enclosure, and provided a distinct expression of materials for each.

Nowicki also gave significant attention to the treatment of the materials used. “All the building materials are to be used in their natural finish. The imprints of the wooden form are left visible on the concrete ceiling and columns.” The method of construction would have been visible in the final building. The chapel was tied to its site through materials and structure. He continued: “The humble simplicity of local materials used here demanded a more elaborate way in which they were to be employed to express what Ruskin called ‘The Lamp of Sacrifice.’ This sacrifice is expressed in the treatment of the ceiling and its elaborate wooden form.” Ruskin’s “Sacrifice” (from *The Seven Lamps of Architecture*) refers to this evidence of construction made visible as an ornamenting feature in architecture as a moral, or religious duty.⁷⁰ The “sacrifice” of the builders, those who would construct this chapel, would be evident in the board-formed roof and the timber walls. Their care and effort would be visible, and thus enable future generations to appreciate the manner in which it was built. Ruskin described the “spirit of Sacrifice” as: “...the spirit which offers for such work precious things simply because they are precious; not as being necessary to the buildings, but as an offering, surrendering, and sacrifice of what is to ourselves desirable.”⁷¹ Nowicki clearly appreciated Ruskin’s attention to building material, and sought the expression of “humble simplicity

In a written statement, Nowicki described the chapel as a work of “contemporary regional architecture.” This statement indicated the continued influence of Lewis Mumford, and of Nowicki’s involvement in the debate between “regional” and “International” modern architecture. Nowicki, however, provided his own interpretation of the topic:

A few words might be added here on the regionalism in architecture and the world wide allegiance of all regional phenomena, regionalism vs. metropolitanism. A search for the diversity of supremes to replace the single supreme of a modern metropolis. This is to

explain why the *Record* is interested in the contemporary regionalism of other parts of the world as examples of a trend that becomes of major importance in this country.

With this quote, Nowicki encapsulated his interest in a “diversity of supremes” in modern architecture – an emphasis on the diverse regional characteristics rather than the vision of a singular modern city. By embracing the uniqueness of each site, Nowicki tempered the universalizing tendencies of modern architecture. Nowicki’s interest in diversity was becoming evident in his use of materials and structures, selected from the site and adapted to site-specific and regional concerns. Structure was one means to express the regional diversity of different places through architecture. Structure could assist in a meaningful engagement with place – and was not necessarily a universalizing element. While Mies’s “universal space,” was shaped by a refined, logical use of structure, frequently leading to identical structural solutions, Nowicki’s approach to structure was quite different with each site requiring exploration of a unique interaction between structure, material and space.

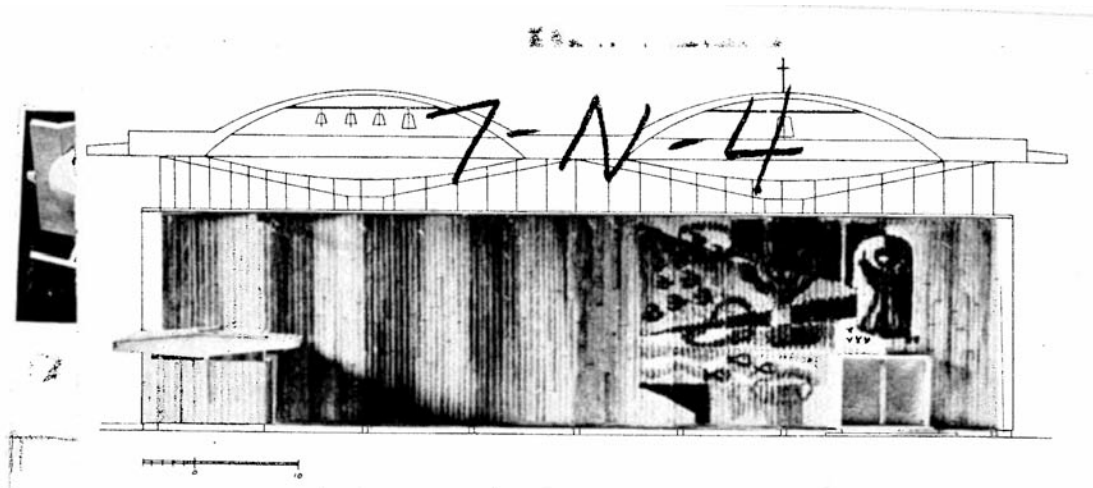


Figure 5.18 – Exterior sketch of Nowicki’s Polish Chapel Design, 1948. (Douglas Putnam Haskell Collection, Avery Library, Columbia University, Box 35, Folder 9)

Nowicki's comments on regionalism, in his letter to Haskell, coincided with the February 1948 symposium at the Museum of Modern Art, "What is Happening to Modern Architecture?" The symposium was organized to respond to Lewis Mumford's October 1947 "Skyline" column in *The New Yorker* championing the architecture of the San Francisco Bay Region as an improved approach to modern architecture. Mumford pointed to houses by William Wurster, Bernard Maybeck and others that used local materials for both structure and finishes, and exploited the natural topography for views, elements that Mumford saw lacking in architecture of the International Style.⁷² European modernists like Marcel Breuer and Walter Gropius saw the "Bay Region" architecture as a "cottage style," claiming nostalgia and inattention to detail were driving the design. Nowicki attended this symposium, though his comments were not recorded.⁷³ At this time, Nowicki was also spending time in North Carolina, a location far from the New York metropolis, and part of the American South. In this more rural setting, he no doubt was becoming much more attuned to regional differences in the USA than he would have had he stayed in New York..

Nowicki was finalizing his Polish chapel proposal in the midst of this discussion. The chapel appears to be Nowicki's design attempt to find a modern architecture with regional sensibilities. His design was clearly modern in its structural ingenuity, but also attuned to the conditions of the building's context. Structure, material, and tradition become elements of his regional approach. In this chapel, Nowicki's expressive structure is not designed as a monumental form, but rather as an intimate connection to a specific natural and physical context.

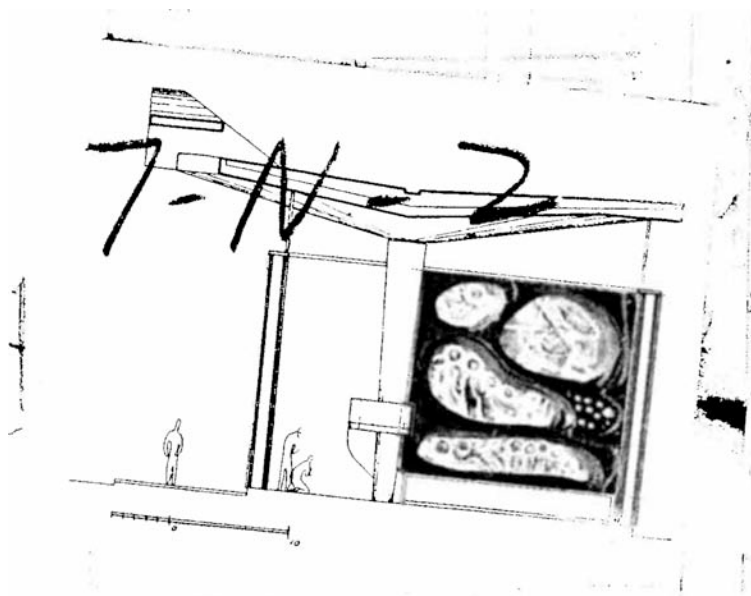


Figure 5.19 – Interior sketch of Nowicki’s Polish Chapel Design showing mural, 1948. (Douglas Putnam Haskell Collection, Avery Library, Columbia University, Box 35, Folder 9)

Architectural Forum School Design

Even though *Architectural Record* did not publish the chapel, Nowicki remained in contact with Douglas Haskell. In summer 1949, Haskell, who had just become the editor of *Architectural Forum*, asked Nowicki to design a prototypical school based on an efficient manner of construction, with a minimum perimeter enclosure. Attempting to re-think the school form that had been “shredded out into long thin wings or fingers” by other designers (which required “expensive construction in the outside wall”), Haskell asked Nowicki to design a school that had a minimal amount of exterior wall and covered a smaller footprint. Nowicki developed two schemes, one using a 24 x 24 foot rectangular module, common with inexpensive lofts or factories, and another using a circular plan. An efficient use of structure was paramount.

Nowicki’s designs were published in the August 1949 issue of *Architectural Forum*. The article stated, “*Forum* asked skilled architect Nowicki to try his hand at designing a school based

on the same undeviating repetition of a standardized bay.” It went on, “In working it out, Nowicki has brilliantly demonstrated the architect’s multi-ordinal kind of thinking, which correlates several different factors at once.” *Forum* praised Nowicki for considering multiple demands of the program and structural/construction concerns in determining the form of the school. As in his description of prefabrication (in the article published by the UN), Nowicki found himself designing through an alternate method where the materials and structures of construction were given and design required the ingenuity of the architect to employ them in useful and appropriate ways.

Nowicki's first scheme was a rectangle in plan formed by a nine by four arrangement of 24 x 24 foot bays, with a regularly spaced column grid. (Figure 5.20) The 24-foot span could be made economically from wood, concrete or light gage steel, and the separation of partitions from structure afforded complete flexibility in the arrangement of spaces. Nowicki arranged classrooms along the perimeter of the rectangular plan, with a central corridor, a gymnasium at one end, and an outdoor play area at the other.

Nowicki suggested interior corridors could be of variable width, providing space for meeting rooms, sitting areas, and a cafeteria in widened areas between the classrooms, and “make the corridor itself serve as a kind of room.” In what he called the “battle of the corridor,” he stated that “building areas devoted to circulation alone” were a “chronic waste in modern buildings” and adding flexible program within that space was essential.

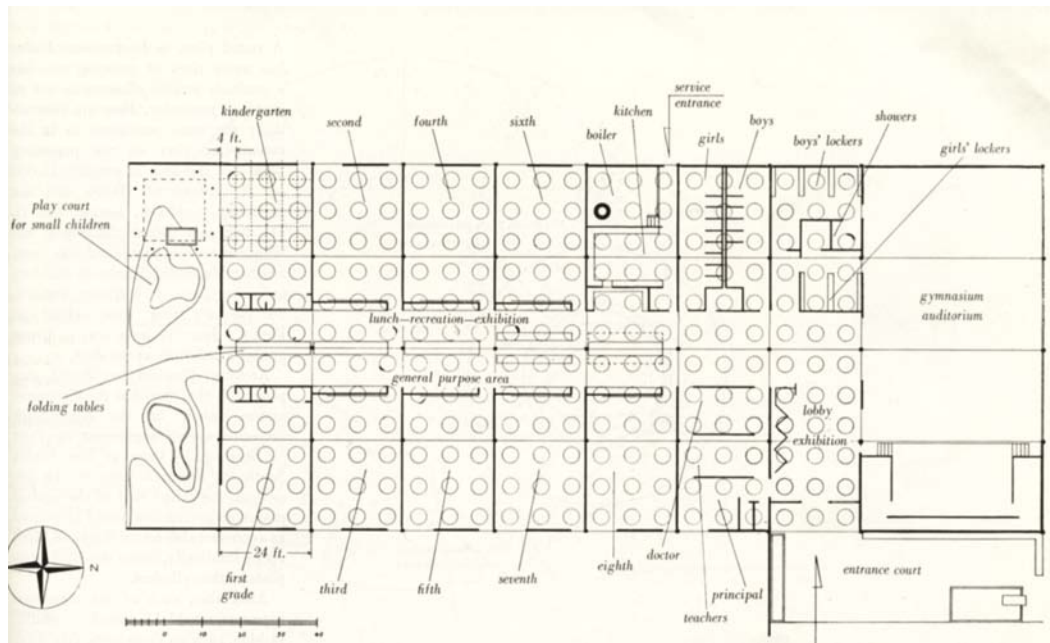


Figure 5.20 – Plan of Nowicki’s *Forum’s* School Design #1, 1949. (“Forum’s school for 1950,” *Architectural Forum* 91(1949): 135.)

Nowicki proposed the school be enclosed with a self-supporting exterior masonry wall, divided by tall vertical openings (on either side of the exterior columns) that allowed for views out. Vertical openings would be much easier to construct in masonry than horizontal ones, which would require lintels or other spanning elements. Nowicki recognized that these narrow slots would not let in enough light, so he proposed circular skylights in the roof. These openings, covered with plastic domes, were offset from the column and beam lines so as not to disrupt the linear spanning system of the roof. *Forum* stated: “By ‘cheese-holing’ the roof” with these bubbles, Nowicki can get diffused top-lighting into all parts of the school.” These skylights were similar to the grid of rounded skylights used by Alvar Aalto at the MIT Baker Dormitory, completed in 1948, and earlier at the Viipuri Library. *Forum* compared Nowicki’s use favorably to those at the Baker Dorm.⁷⁴

Nowicki's school used standardized bays, a compact plan, a limited perimeter wall and flexibly programmed corridors to attain an economical design. Nowicki's interest in this project shows his openness to many different building and construction methods as drivers of form. There is a simple functionality to the design, with the details of structure left to the particular construction of each possible school.⁷⁵

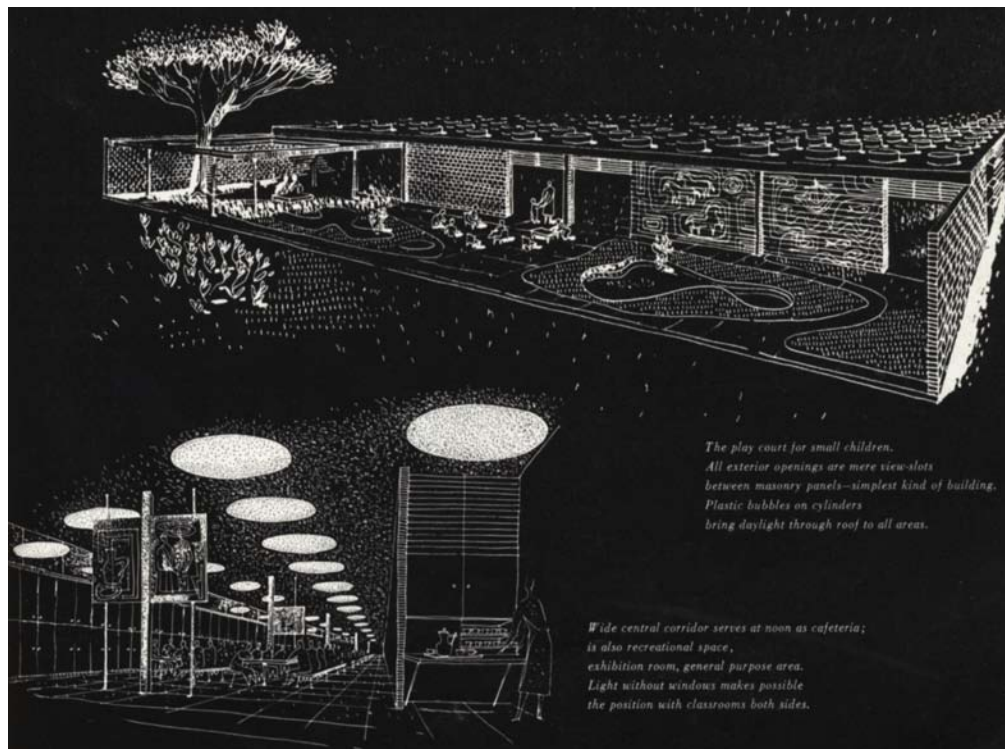


Figure 5.20 - Perspective rendering (black and white reversed) of Nowicki's *Forum's* School Design #1, 1949. ("Forum's school for 1950," *Architectural Forum* 91(1949): 135.)

Nowicki's second design explored the advantages and disadvantages of a school with a circular plan. *Forum* stated: "A round plan, as Buckminster Fuller has never tired of pointing out, has a perfectly terrific efficiency in use of area and perimeter." Responding to the geometric efficiencies of a round building (the small ratio of perimeter to area) and Fuller's

mathematical/structural sense, Nowicki attempted to solve the construction and program issues of such a plan. He laid out the classrooms and offices in wedge-shaped rooms around the perimeter, reserving the center space for the auditorium/playroom. A higher roof over the central space allowed clearstory windows and access to natural light. The lower roofs had circular skylights in the rectangular proposal. An interior circular hallway provided the circulation for the school.

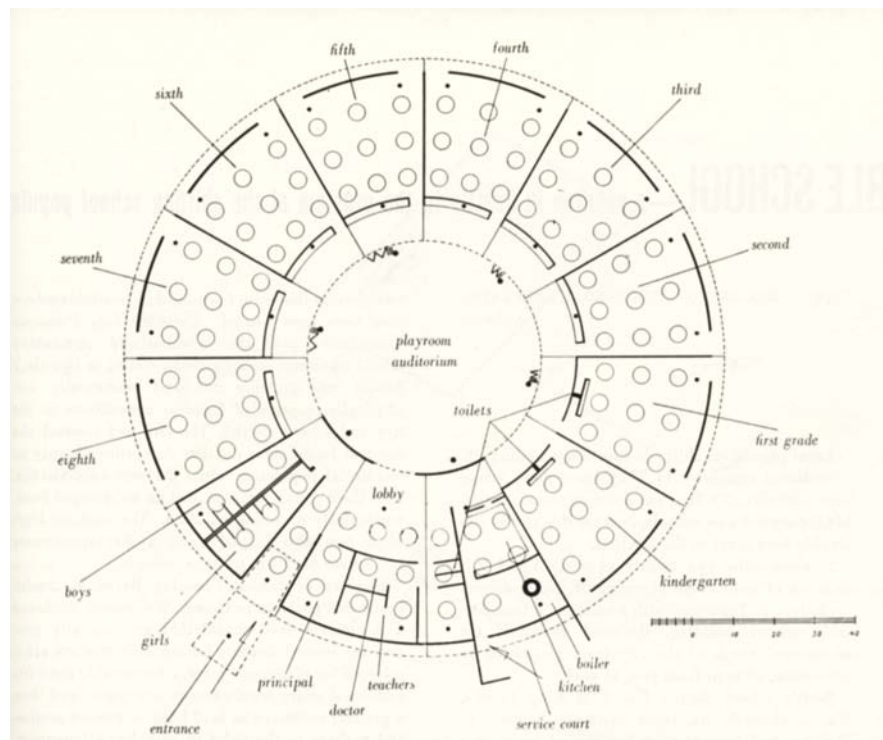


Figure 5.20 – Plan of Nowicki’s *Forum’s* School Design #2, 1949. (“Forum’s school for 1950,” *Architectural Forum* 91(1949): 137.)

Nowicki selected a structural system to accommodate the geometry, and also gave attention to construction. Referencing the work of the engineer Fred Severud, Nowicki proposed

using the new system of casting concrete slabs and lifting them into place. This new construction system was called the Youtz-Slick method. In 1949 this construction method had not been widely used. The system involved casting flat slabs on the ground, then hydraulically jacking them into place on columns. The *Forum* article stated, “the raised roof of the central playroom auditorium would be poured as a concrete slab on the floor and lifted up hydraulically, using six hollow posts as the cylinders.”⁷⁶ Cast with a slightly domed shape, the roof would act as a monolithic element, similar to a flat floor slab, with tension reinforcing around the perimeter to resist outward thrust, eliminating the need for external buttresses. The surrounding segments were to be poured on the ground as segmental wedges, then lifted on three columns into place.

Nowicki’s new association with the structural engineer Fred Severud (1899-1990) was notable for several reasons. Severud was born in Norway, studied at the Norwegian Institute of Technology, and came to the United States in 1923. In 1928, he established his own professional practice in New York City, and worked on such projects as the Tripler General Hospital in Hawaii, the Rome (NY) Air Depot, and the Columbia Broadcasting Studios in Los Angeles. Severud was interested in exploring new avenues of structural engineering. In 1945, he published “Turtles and Walnuts, Morning Glories and Grass,” an article in *Architectural Forum*, that explored the idea of bio-mimicry, taking clues from nature to inspire new architectural and engineering methods. In 1947, Severud worked with Eero Saarinen on Saarinen's entry in the Jefferson National Expansion Memorial competition and assisted Saarinen with the development of his idea for an arch on the St. Louis waterfront near the Mississippi River. Thereafter, Severud maintained a strong relationship with Saarinen. Nowicki’s connection to Severud may have been through Saarinen, or possibly through the editors of *Architectural Forum*. Either way,

Nowicki and Severud would again work together on the Raleigh Livestock Pavilion project in 1949.

In the late 1940s, Severud was active in developing the Youtz-Slick Lift-Slab system. In November 1948, the architect Philip Youtz teamed up with the “oil man” Thomas Slick to begin researching the possibilities of lift slab construction.⁷⁷ Forming a concrete slab on the ground has many construction advantages over constructing required shoring and formwork overhead. Like tilt-up construction, the slab to be lifted could be cast on the finished surface of the slab below, providing a good finish underneath. Using the columns (either steel or cast-in-place concrete) to lift the slab in place, through hydraulic jacks, eliminates the need for a crane or other heavy lifting equipment. Once the slab is in place, heavy steel collars with bearing plates on each side are attached to the column (through welding) and the slab is lowered on to these plates.

Severud was brought on as a “consulting engineer” for the Lift-Slab system, performing design calculations before testing. Severud published an article on the system in the December 1949 issue of *Architectural Record*, “Forecasting a New Era for Concrete,” in which he described several different construction techniques for concrete, including the patented Lift-Slab method. According to the Lift-Slab records, the first structure built with the Lift-Slab method was completed in 1950, placing Nowicki’s school article prior to any successful construction. O’Neil Ford (1905-1982), a Texas architect, had begun designing Trinity University in 1948, specifying Lift Slab technology, but it was not completed until 1952.⁷⁸ By choosing an experimental system, Nowicki was pushing the limits of construction and devoting an entire design to its presumed success as an economic building method. The Youtz-Slick method would go on to be a popular, economical construction type for particular markets, beginning in the

1950s, with the American Society of Civil Engineers producing a guide on “Lift-Slab” construction as recently as 2004.⁷⁹

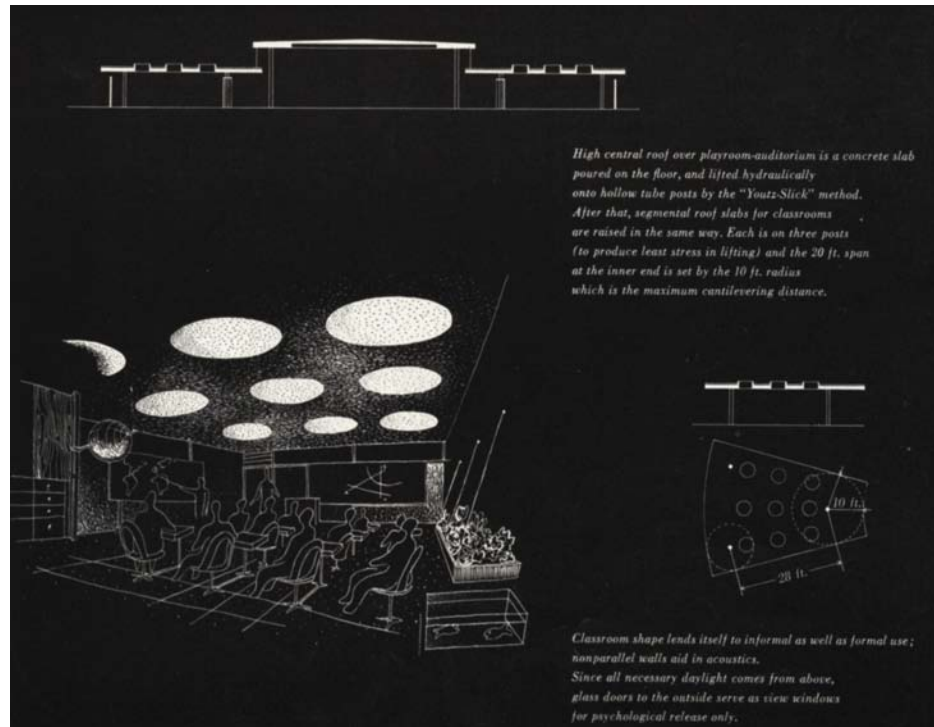


Figure 5.20 - Nowicki's *Forum's* School Design #2, perspective rendering, 1949. ("Forum's school for 1950," *Architectural Forum* 91(1949): 137.)

Nowicki choice of this structural system was integral to the design of the school, allowing a flexibility of use, and accommodating many different functions. The round, central space was designated as an auditorium, although it could double as a playroom or meeting room. The surrounding hallway, circling the auditorium served as a “gallery” space for pre-event gatherings.

Though stimulated by a search for efficient use of structure, Nowicki's designs show a particular concern for the quality of different spaces in these schools. In his sketches for both proposals, he showed active spaces filled with people. Through depictions of light and dark,

Nowicki articulated use and activity. The auditorium space showed dancers in a spotlight. The drawings suggest Nowicki's continuing concern for the people who would occupy his buildings. (Figure 5.21) Chalkboards show geometric shapes and maps, and classrooms have gardens and fish tanks. In Nowicki's schools, economical structural forms contain and provide for these vibrant, human activities. Nowicki sought to create a human-centered architecture through limited structural forms, experience that would serve him well in the coming year with the design of Chandigarh.

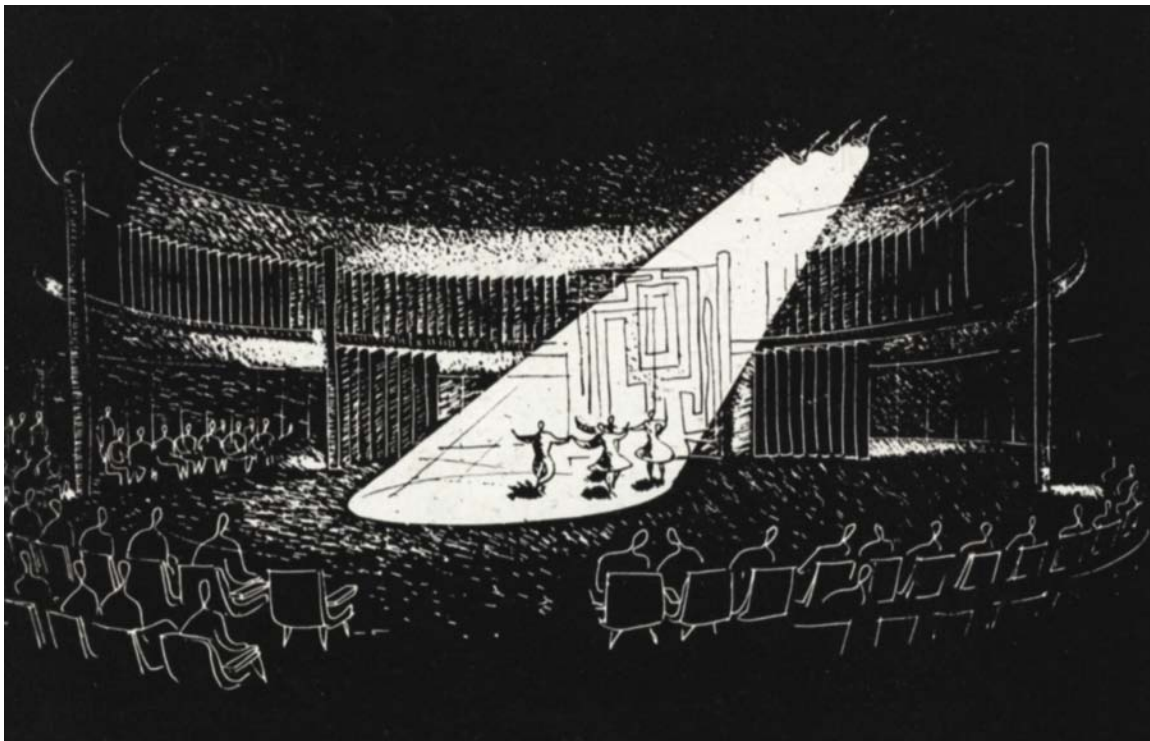


Figure 5.21 - Nowicki's *Forum's School Design #2*, interior rendering, 1949. ("Forum's school for 1950," *Architectural Forum* 91(1949): 136.)

Collaboration With Eero Saarinen

Nowicki first met Eero Saarinen (1910-1960) at the MoMA symposium "What's Happening to Modern Architecture" in February 1948. As invited panelists (not speakers), their

comments on the evening's proceedings were not recorded, but this meeting served as an initial encounter between two men of similar minds about modern architecture.⁸⁰ The two were both born in 1910, both were immigrants from northern Europe, and both had strong American influences early on in life (Nowicki living in Chicago as a child, Eero Saarinen raised in the US). Direct documentation of their continued relationship is surprisingly minimal; however its clear their familiarity grew rapidly, to the point where Eliel Saarinen, Eero's father and head of the school at Cranbrook, invited Nowicki to out to Michigan for summer 1949.⁸¹ Brought in to the office of Saarinen and Saarinen Associates specifically to help with the design of Brandeis University, a new project in the office, Nowicki wrote to Clarence Stein in August 1949: "In one week I will be off to Cranbrook where I will be working on a new college campus project. It sounds as a very interesting problem – classrooms; dormitories; meeting hall; library, etc, on a good site with a considerable differen[ce] of levels."⁸²

Brandeis University was a completely new university founded by Dr. Israel Goldstein, who wanted to create a "nonsectarian Jewish-sponsored university."⁸³ The University has acquired a site outside of Boston (in Waltham) that was heavily wooded, with marshes and rocky outcroppings. The location of an earlier medical school, this site had a few existing buildings, so Brandeis needed a new master plan.

A mutual friend strengthened the early connection between Eero Saarinen and Nowicki. In Warsaw, Nowicki had been the mentor of the young Polish architect Mark T. Jaroszewicz (1921 -), who joined the Saarinen and Saarinen Associates office in the spring 1949. Jaroszewicz later recalled that when Nowicki came to visit the Saarinen office in the summer, an instant rapport and friendship developed between the two architects.⁸⁴ With a common enthusiasm for drawing (and being exactly the same age) Nowicki and Saarinen shared a similar

design sensibility, aspiring to create expressive, sculptural forms that were rooted in material and structure.⁸⁵ During their work on Brandeis University, the two young architects would reinforce each other's emerging design thinking.

Accustomed to working collaboratively, Nowicki was primarily interested in executing the project, and was less concerned about receiving credit. In a fully collaborative design environment, as evidenced by the United Nations project, authorship and assignment of specific credit are difficult to establish. In later publications of the Brandeis work, Eero Saarinen would go to great lengths to credit Nowicki's significant contributions. The new campus master plan was described in a brochure published by Brandeis University, titled *Foundation for Learning – Planning the Campus of Brandeis University* (1950).⁸⁶ The introduction read: “The design for the expansion of Brandeis University has been prepared by the internationally prominent architecture firm of Eero Saarinen and Associates. The late Matthew Nowicki collaborated in the development of the design.”⁸⁷ Some specific attributions can be made to Nowicki because of the distinctiveness of his drawings; the majority of sketches in the master plan document were clearly from Nowicki's hand. In Nowicki's sketches, an expression of structure and space are apparent as a driving force in the design of the campus buildings.

Nowicki had been connected with higher education for most of his adult life – from work as a student, assistant, instructor in the Warsaw underground, and now as a professor leading the architecture program at North Carolina State College. Nowicki's vision for an appropriate instructional setting was shaped by his experiences and his ideas guided the design of Brandeis University.⁸⁸ Nowicki's sketch titled “The Idea of the University” provides an abstract pictorial representation of his concepts for a university. (Figure 5.22)



Figure 5.22 – Nowicki’s sketch of an “Idea of a University” sketch, 1949. (Reprinted in Eero Saarinen, Eeva-Liisa Pelkonen, and Donald Albrecht *Eero Saarinen: Shaping the Future*, (New Haven: Yale University Press, 2006), 315.)

The sketch showed a collection of students, with robes and flat hats, facing an instructor standing under a free-standing arch. The setting is a landscape of foliage, fountains and gridded paving and it is surrounded by medieval castles and fortifications. Students stand without desks. The learning environment is completely open, not requiring any building at all. This sketch suggested that the design of a university requires an open spatial arrangement that allows for a flexible student-teacher relationship to develop. The unstructured landscape may recall Nowicki’s experience teaching in Warsaw during World War II, when the infrastructure for the university was gone and yet the teaching environment continued.⁸⁹

This sketch (not published with the other master plan documents) may reflect the open layout of the Master Plan. (Figure 5.23) Buildings are grouped around large open spaces, with a

green, sloping meadow to the west surrounded by dormitories, and a more central plaza. The master plan document stated:

The heart of the University is the college quadrangle around which are located the University Library, the Brandeis Union, the new Science building, the Humanities and Social Science building, the Theatre, the Art and Music studios, and the striking University Auditorium.

As the sketch suggests, the buildings were used to frame open space for gathering. In most cases the buildings were considered background and the focus was placed on the plaza as the most important space.⁹⁰ The oblong "quadrangle" was partially divided lengthwise by a large rock protruding from the ground, adding a sense of the significant topography in an otherwise flat hardscape. (See Figure 5.24) The circular dome of the auditorium stands out; it appears to have been the one building designed to draw attention. It is possible that the round auditorium was the latest in Nowicki's sequence of such structures--a sequence that had begun with the Warsaw Parliament. The auditorium would likely have been seen as the one building on the campus that would draw all members of the campus community (faculty, students, and staff) together.

(Figure 5.24)

Nowicki provided detailed interior and exterior sketches of these buildings, with particular attention to the Student Union and Bell Tower, Auditorium and a non-denominational Chapel.

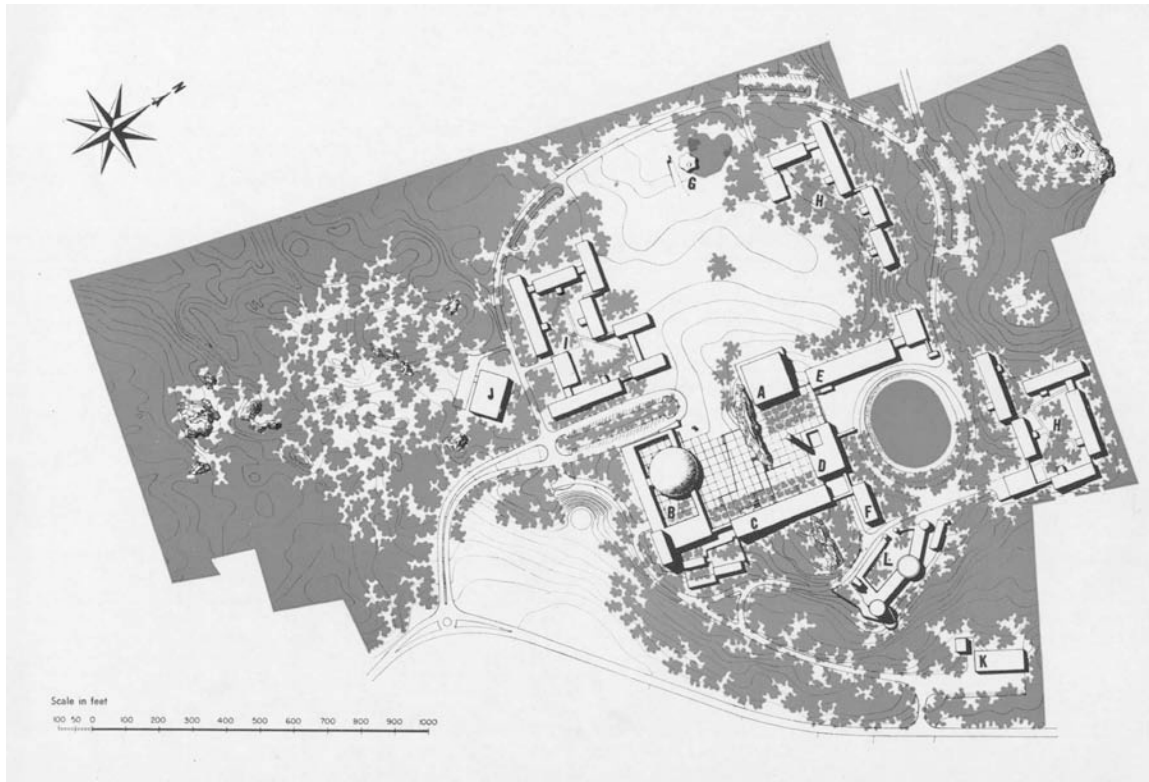


Figure 5.23 - Brandeis University Master Plan, 1949. (Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University* (Waltham, Mass: Brandeis University, 1950), 5.)

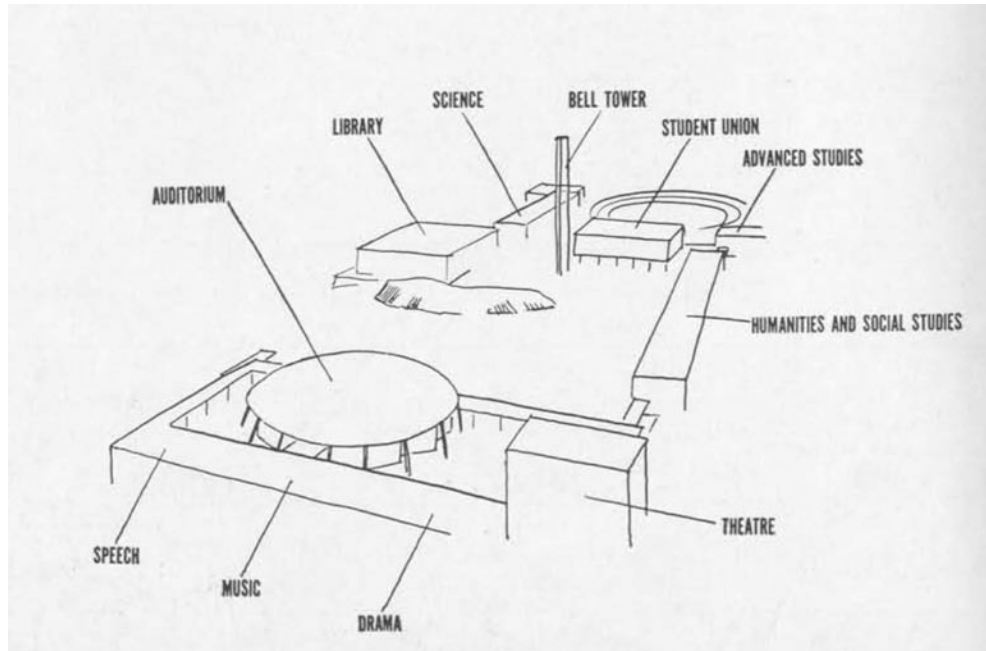


Figure 5.24 - Brandeis University, Quadrangle Detail, 1949. (Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University* (Waltham, Mass: Brandeis University, 1950), 6.)

The Student Union building and nearby bell tower frame one end of the college quadrangle, opposite the Auditorium. (Figure 5.25) The Student Union building is three-story rectilinear volume; the perimeter wall is elevated off the ground plane to allow for vehicular access to the lowest floor. At one end, exterior stairs provide access to the second level, and at the other end, an outdoor, double-height balcony is provided. At the ends Nowicki clearly expressed the regular grid of steel columns rising through the building, and the flat, cantilevered floor slab that supported the external brick cladding in the longitudinal direction.

The Student Union shared some elements with Nowicki's school for *Architectural Forum*. With the combination of steel columns and flat concrete slabs, the building form seems to indicate that Nowicki intended to use the Youtz-Slick Lift Slab method for construction – where slabs are designed as two-way elements, eliminating the need for individual beams. The

thin, flat slabs appear to rest on slender, regularly spaced columns, without indicating a framework of beams or girders. The vertical windows within the brick façade require no lintels to span the window openings, similar to the openings in the *Forum* school project. The Student Union utilized these economical construction features, but Nowicki added additional features to the design. Multi-height spaces on the interior, and the exposed lower columns celebrate and express the construction method. The protruding canopy for the carport, designed as a rigid, two-way slab (like the Lift Slab slabs), rests on only three columns, leaving a cantilevered corner to cover automobiles below. While several elements of the building appear unusual (brick supported on cantilever slabs, three-column supported canopy), one may argue that these elements derive from Nowicki's experimentation with a new construction technique. Seen in this light, this building would be feasible from both a structural and construction point of view.

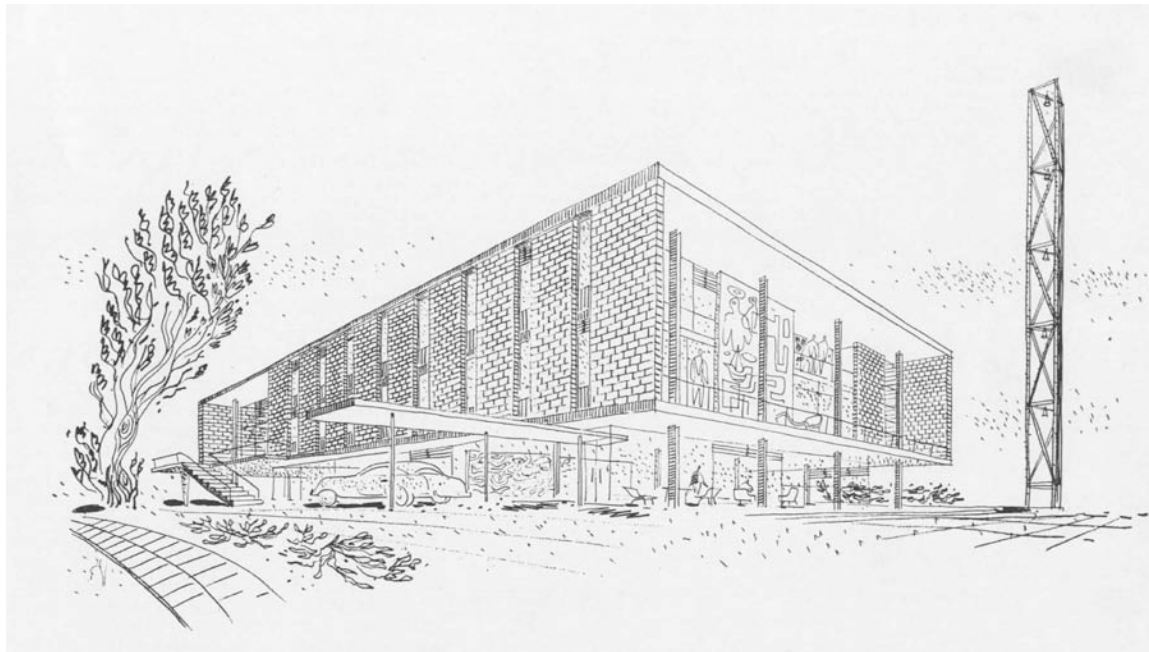


Figure 5.25 - Brandeis University, Student Union, 1949. (Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University* (Waltham, Mass: Brandeis University, 1950), 11.)

The nearby bell tower consists of three thin columns arranged in a triangular plan, and the entire structure appeared to be steel in Nowicki's sketches. Divided into five vertical levels with horizontal beams and diagonal bracing for lateral stability, each level was to support a different bell. The tower stands over 60 feet tall, a visual landmark for the entire campus locating the quadrangle and the nearby student union. As neither the bell tower or student union was built as designed, their specifics remain a point of speculation.

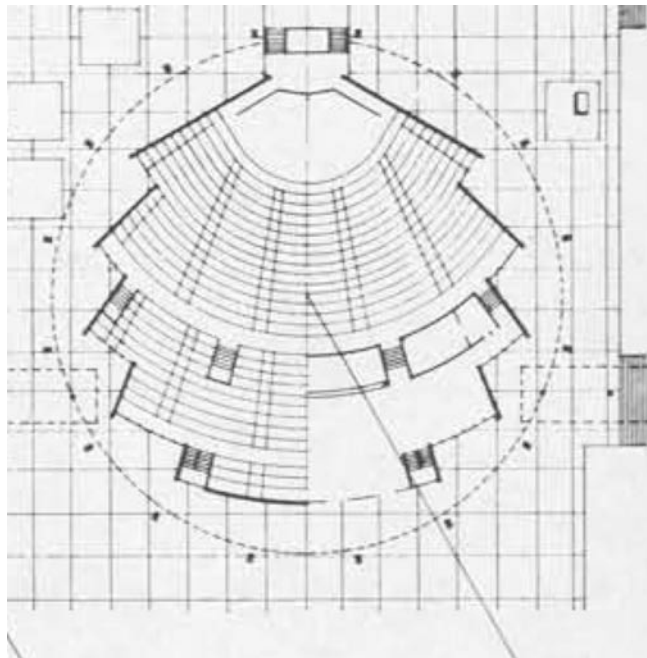


Figure 5.26 - Brandeis University, Auditorium, 1949. (Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University* (Waltham, Mass: Brandeis University, 1950), 16.)

Across the quadrangle, roughly south from the Student Union and Bell Tower, Nowicki and Saarinen placed the main Auditorium. Nowicki's sketch for the Auditorium shows a low-rise dome roughly 140 feet in diameter resting on a series of 16 perimeter columns, roughly 25 feet high. This circular dome provides the overhead shelter for the auditorium, while the interior space is contained by a series of straight walls (independent of the columns) that define the fan-shaped interior seating arrangement. The panels were shown decorated with full-height murals. The spaces between panels were shown as the locations of entrances to the auditorium.

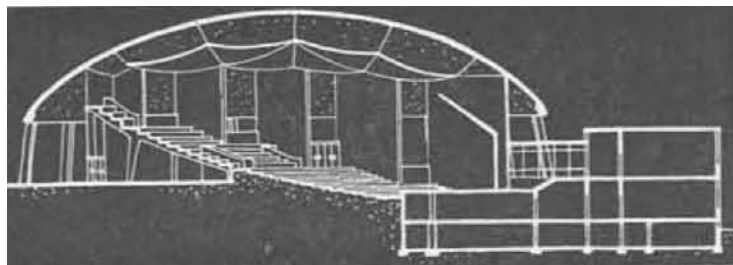


Figure 5.27 - Brandeis University, Auditorium section, 1949. ("Planning the Campus of Brandies University", *American School & University*, 23 (1951): 320.)

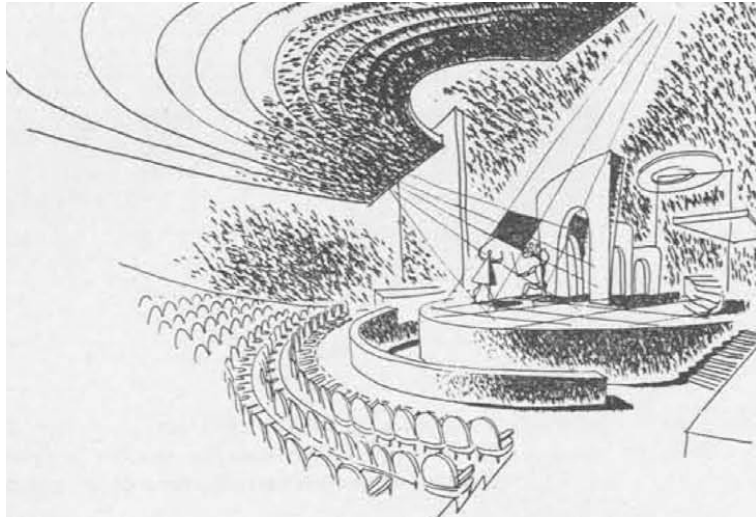


Figure 5.28 - Brandeis University, Auditorium interior, (“Planning the Campus of Brandeis University”, *American School & University*, 23 (1951): 320.)

In these sketches, the dome and column arrangement does not appear designed to accommodate the traditional demands of concrete dome construction, which would require extensive formwork, and buttressing to resist outward forces. Furthermore, placing a monolithic dome on slender perimeter columns would likely be problematic in terms of lateral stability. The layout does, however, recall the Lift-Slab technique that Nowicki had specified earlier. The master plan document claimed: “Although bold in conception and daring in execution, the proposed auditorium rests on tried and tested architectural experience.” This comment likely references the Lift-Slab technique, despite the fact that no such dome had previously been attempted.⁹¹ Presumably, the monolithic concrete dome would be first cast on the ground, and then lifted into place with hydraulic jacks off the columns themselves. The dome would be reinforced to contain all outward thrust within a lower tension ring of the dome itself, and thus not need extensive buttresses or abutments.⁹² The shallow rise of the dome may have been intended to cause the concrete to work structurally more as a two-way slab than a dome, which

would have decreased the outward thrusts considerably. The section shown in Figure 5.27 (not likely drawn by Nowicki), suggests an outward sloping of the columns, possibly to resist thrust. Yet these angled columns would not allow for the Lift Slab method to be used.

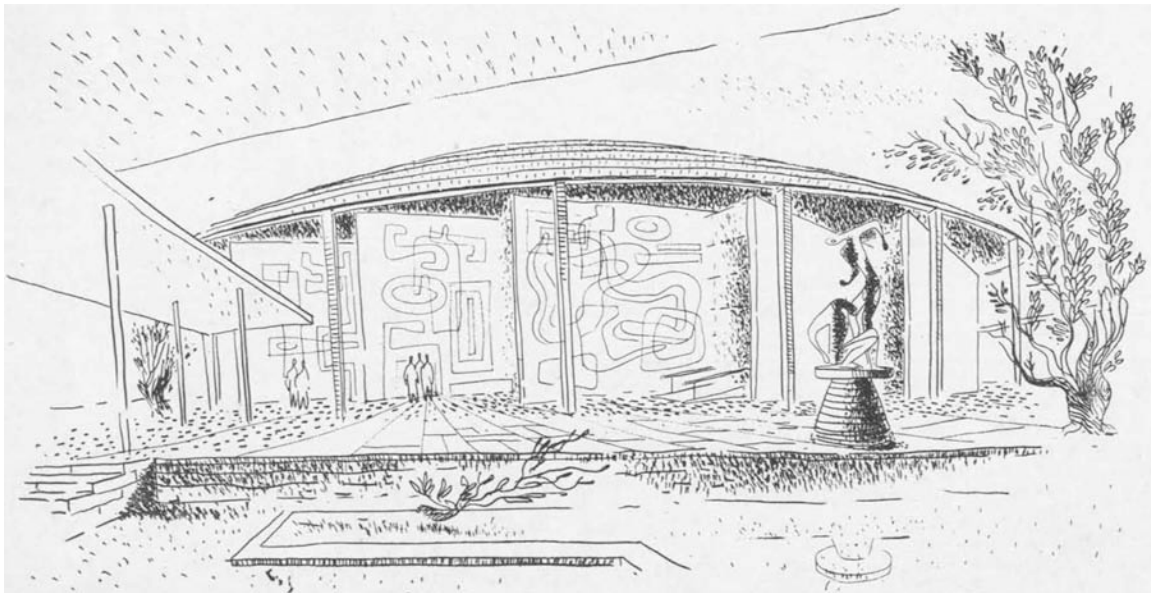


Figure 5.29 - Brandeis University, Auditorium exterior rendering, 1949. (Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University* (Waltham, Mass: Brandeis University, 1950), 18.)

The form Nowicki proposed for the Brandeis Auditorium appears to derive from structural and constructional considerations, and very likely sought to extend the capabilities of the Lift-Slab building method. However, Nowicki's concern was primarily on the quality of the space created, and its relationship to human scale. His renderings of the entry sequence to the Auditorium show the separation of structural elements with the columns and dome separated from the walls which frame the spaces for entrances to the auditorium even as they align with the sight lines required for the audience to view the stage. The form of the building -- a circular dome in the rectilinear campus -- was likely intended to signify the monumentality appropriate to

the Auditorium as a central gathering space. Nowicki's concern for the human scale is evident in the textured landscape, sculptural elements, and murals applied to the flat walls. Nowicki's authorship of the sketch, and likely the design, is reinforced by the presence of his "signature" tree.

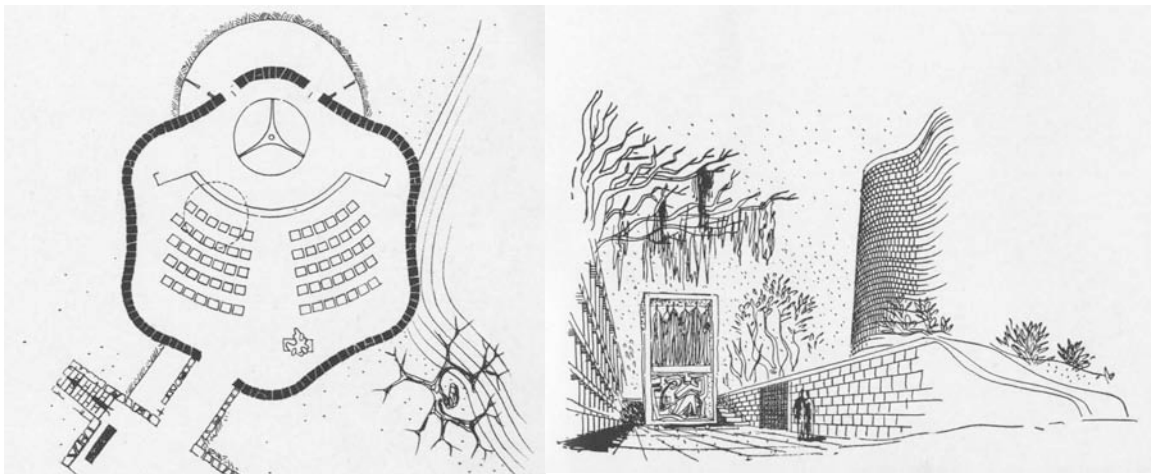


Figure 5.30 – Brandeis University, Chapel Design, 1949. (Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University* (Waltham, Mass: Brandeis University, 1950), 31.)

Nowicki's proposal for a non-denominational chapel was another notable building in the Brandeis University master plan. Located off the quadrangle, and separated by a large grassy area from other major buildings, the chapel was intended to be consistent with the school's "non-denominational pattern of instruction," while promoting the "wholesome significance of the religious experience."⁹³ The building was to be an "interfaith chapel," without explicit religious symbolism or reference to established religious building forms, so Nowicki used structure and material to shape a spiritual space. The primary form is hexagonal in plan, but the enclosing

wall of brick undulated with sections of opposite curvature so there were no precise corners. This wall encloses a single centralized space large enough for seating for about 70 people.⁹⁴ The use of curved masonry to create structural stability recalls the brick walls designed by Thomas Jefferson at the University of Virginia. Although no definitive evidence has been found, Nowicki would likely have been aware of Jefferson's Virginia campus, especially as he was regularly travelling to and from the NCSC campus in Raleigh.⁹⁵ In the chapel design, the undulations allowed for a roughly 30 foot high exterior wall with relatively thin masonry construction shown with a running bond. With no need for interior bracing of the wall, the undulations are visible on the inside of chapel as well. The roof allows for a large opening at the top, but its structure is not indicated.

The proposed entry sequence required visitors to walk parallel to a straight wall, apparently constructed of stone (or of much larger masonry units) before turning into a narrow, enclosed passageway that connected to the interior space. In one of his sketches, Nowicki indicated that the ground level was different on either side of the wall, giving the entry an almost subterranean character. This sequence, from a linear outdoor path, to a tight enclosure, and finally to release into the chapel volume is highly choreographed, and emphasizes a spatial awareness in the visitor. Without denominational clues, only a freestanding mural outside the chapel, this procession was likely intended to "prepare" each visitor for entry into a spiritual space.⁹⁶

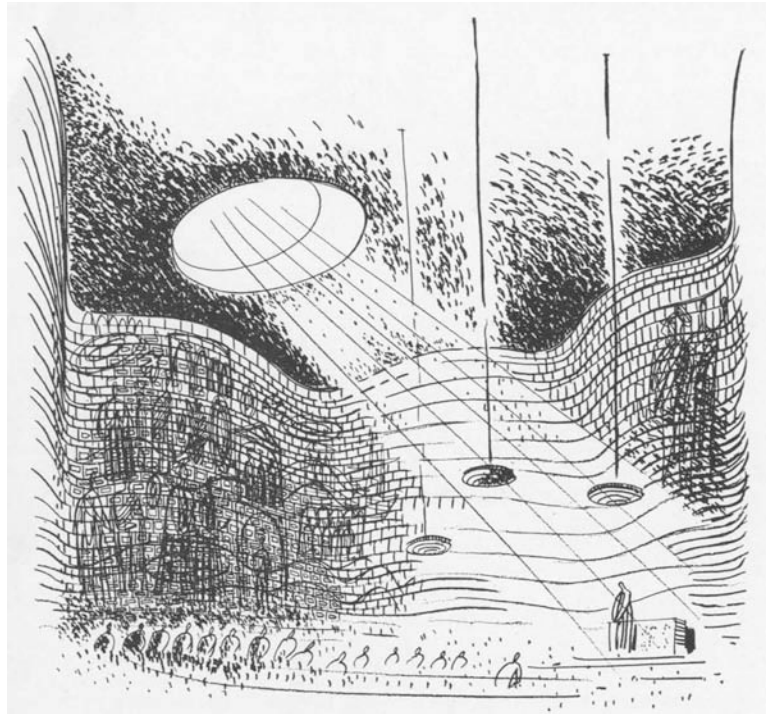


Figure 5.31 – Brandeis University, Chapel interior, 1949. (Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University* (Waltham, Mass: Brandeis University, 1950), 30.)

Once inside, the texture and form of the wall would be exposed. (Figure 5.31) The interior space was decorated with full-height murals, and lit from an overhead oculus. Nowicki sought to capture the experience of the space with his use of light and shadow in his interior sketch. A single beam of light from the offset oculus illuminates the speaker (the religious denomination is not apparent), while the rest of the assembly is cast in varying shadows. The curving perimeter wall creates a varied shadow effect. The murals on the walls are applied over the brickwork, but allow the courses and individual bricks to remain visible, maintaining the textured appearance of a masonry wall. The paintings appear to be abstract human figures, and do not appear to be specifically representing any particular religious denomination. The roof

seemed to dissolve in to the darkness above (and Nowicki did not provide any indication as to how the space was to be spanned).

The chapel design manipulated structure and materials to create a dramatic spiritual experience. From the exterior, the form would have been a striking counterpoint to the rectilinear buildings of the rest of the campus. From the inside, the structure would have offered provide intimacy and a space apart from the outside world, allowing a focus on the spiritual. The use of painted murals on brick is questionable, and may have taken away from the experience of the brick's material and texture. But the murals, applied in an abstract form may also have served to soften the hard brick walls. In his article "Composition in Modern Architecture," Nowicki wrote of his acceptance of "fresco, mosaics, tiles, brick or stone, treating them all as decorative textures, free and independent of architectural rhythm."⁹⁷ The mural over brick may have created a clash of textures, and may have detracted from the chapel's interior effect.

In fact the murals were excluded in Eero Saarinen's later adaptation of this chapel design. Though unbuilt at Brandeis, this chapel later became the primary source of inspiration for Eero Saarinen's chapel at MIT (dedicated in 1955). At MIT Saarinen provided a similar entry sequence and retained the basic layout of the centralized chapel interior. Although he used an undulating wall on the interior (with no murals), Saarinen sheathed it with exterior cylinder of masonry. Other small design changes (such as Nowicki placing his chapel at the edge of a pond, and Saarinen surrounding the MIT chapel with a circular moat) made the two projects distinct, but the influence of Nowicki on Saarinen's later work is unmistakable.⁹⁸

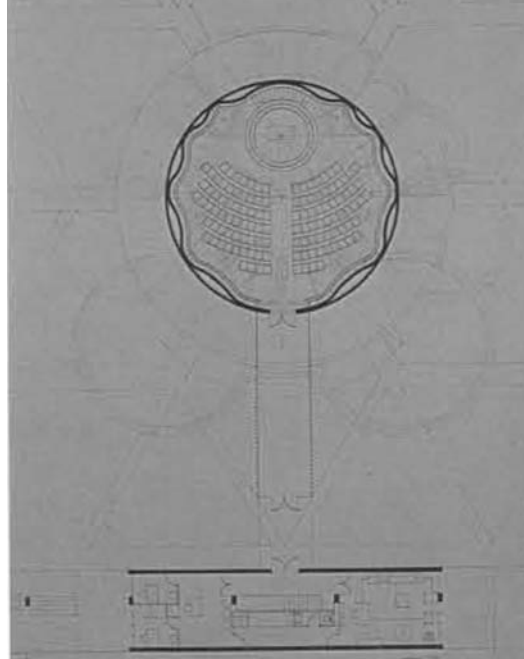


Figure 5.32 – Eero Saarinen, Chapel, Massachusetts Institute of Technology, 1955. (Eero Saarinen, Eeva-Liisa Pelkonen, and Donald Albrecht, *Eero Saarinen: Shaping the Future* (New Haven: Yale University Press, 2006), 271.)

Nowicki returned to North Carolina in the fall, with the majority of the design for Brandeis University developed. Saarinen would continue to work with Brandeis until July 1952, when he submitted a detailed master plan. By then, due to many factors including construction costs and difficulty with fundraising, several of Nowicki's buildings had been eliminated. Only four buildings that Saarinen designed were built.⁹⁹ Saarinen's relationship with Brandeis University did not end well, with a dispute over fees. Other architects were responsible for subsequent Brandeis University buildings.

These American design projects begin to show Nowicki's architectural vision and mark his emergence as a significant designer in the United States. None of the projects discussed here were built, but his structurally expressive Modern architecture is evident in each, and they set the stage for his larger design projects to come – the North Carolina State Fair and Chandigarh.

¹ Nowicki's official role with the Polish Consulate in Chicago seems to have been tied to the rebuilding of Warsaw. After publications of the rebuilding efforts, Nowicki spoke regularly on Warsaw until 1947. It is possible that with the Soviet takeover, and the drastic changes to Nowicki's building scheme, that Nowicki's connection to the Consulate ended.

² The conditions of their initial connection, or reason for their initial meeting, are not explicitly clear.

³ In correspondence between Lewis Mumford and Clarence Stein in August 1947, the two men discuss Nowicki. (Correspondence. Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library, Box 16, Folder 3.)

⁴ Donald L. Miller, *Lewis Mumford, A Life* (New York: Weidenfeld & Nicolson, 1989), 444-445. Original quote: "[Culture of Cities] was read during the war by a coming generation of urban visionaries, including Matthew Nowicki, who had told Mumford when he first called on him that it had been his 'Bible.' Whenever Matthew and his friends talked of rebuilding Warsaw, Nowicki's wife Siassia remarked to Mumford at the end of their visit, they would ask: 'How would Mumford do this?'"

⁵ Matthew Nowicki to Lewis Mumford, letter, August 17, 1947. Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania.

⁶ *New York Times*, October 14, 1947, p. 24

⁷ Nelson Aldrich Rockefeller (1908-1979) was the son of John D. Rockefeller Jr. He served as President of the Museum of Modern Art in 1939-41, and then again in 1946-1953. In 1944, Rockefeller was appointed Assistant Secretary of State for American Republic Affairs by President Roosevelt. Rockefeller was also a member of the US delegation at the United Nations Conference in San Francisco (when the charter was originally signed in 1945). See Cary Reich, *The Life of Nelson A. Rockefeller: Worlds to Conquer, 1908-1958* (New York: Doubleday, 1996).

⁸ In April 1948, Nowicki was a featured guest at the Annual Convention of the Pennsylvania Society of Architects (PSA), held in Pittsburgh. Nowicki delivered his speech titled "Composition in Modern Architecture." Nowicki agreed to let a portion of his lecture be published in the PSA journal *Charette*. "Composition in Modern Architecture" *Charette* 28, no. 4 (1948): 6. *Charette* described Nowicki as "affable" and "handsome."

⁹ Nowicki mentioned his involvement at Pratt Institute of Design in letters to Lewis Mumford but additional references to this involvement are lacking. It is unclear how he became associated with Pratt. The chairman of the Department of Architecture, Olindo Grossi, was active with the AIA, but did not have an apparent connection to Nowicki. Note, in the early years after WWII American architecture schools "scrambled" for faculty as a result of the onslaught of students due to the G.I. Bill.

¹⁰ Peter Blake, *No Place like Utopia: Modern Architecture and the Company We Kept* (New York: Knopf, 1993), 157-159.

¹¹ The combination of city planning and architecture was a popular topic of academic study at the time. Grossi wrote an article, published in the *Journal of the American Institute of Architects* in March 1949, titled "The Training of the Architect," which discussed "town planning problems" included in the curriculum. Also, Eric Mumford describes the rise of "urban design" at Harvard

University, under the guidance of Jose Lluís Sert. See: Eric Paul Mumford, Hashim Sarkis, and Neyran Turan, *Josep Lluís Sert* (New Haven: Yale University Press, 2008).

¹² Matthew Nowicki to Lewis Mumford, letter, March 25, 1948, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania.

¹³ This speech is titled “The Creation of Desirable Neighborhoods” (June 1948) and is located in the Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library. Box 7, Folder 32. It is dated, but does not indicate where (or if) Nowicki had delivered it. Nowicki compared Le Corbusier’s vision of dense mechanical cities with Wright’s rural Broadacre City.

¹⁴ Matthew Nowicki, “The Creation of Desirable Neighborhoods” lecture (1949), Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library. Box 7, Folder 32. 2.

¹⁵ Ibid 2.

¹⁶ Matthew Nowicki to Lewis Mumford, letter, March 25, 1948, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania.

¹⁷ Matthew Nowicki to Lewis Mumford, letter, June 10, 1948, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania.

¹⁸ Ibid. This letter was dated just after the 1947 “Better Philadelphia Exhibition,” a city-wide exhibition featuring the work of Louis Kahn, and praising the benefits of coordinated city planning.

¹⁹ Blake, *No Place Like Utopia*, 205.

²⁰ Henry Kamphoefner to Lewis Mumford, letter, February 2, 1948, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania

²¹ Lynne Warren and Jeff Abell. *Art in Chicago, 1945-1995*. (New York, N.Y: Thames and Hudson, 1996) for a discussion of Institute of Design and later the IIT. For a discussion of education at the GSD in the period, see Jill E. Pearlman, *Inventing American Modernism: Joseph Hudnut, Walter Gropius, and the Bauhaus Legacy at Harvard* (Charlottesville: University of Virginia Press, 2007).

²² Henry Kamphoefner to Lewis Mumford, letter, February 2, 1948, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania.

²³ Henry Kamphoefner, interviewed by Charles Kahn, September 11, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>

²⁴ Kamphoefner claimed in a later oral history that Mumford did not know about the necessity of integrating structure and architecture. Essentially, he argued that Mumford did not actually understand why Matthew was a “genius,” limiting his interest to the “social needs of architecture.” Henry Kamphoefner, interviewed by Charles Kahn, September 11, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>

²⁵ Kamphoefner had developed an appreciation for structure in architecture after his education at the University of Illinois. After observing many schools who taught that any design could be, as he stated, simply “propped up,” Kamphoefner wanted to “revise the teaching of architecture into something more meaningful” through the “integration of structure and architecture.” Henry Kamphoefner, interviewed by Charles Kahn, September 11, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>

²⁶ Matthew Nowicki to Lewis Mumford, letter, July 25, 1948, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania.

²⁷ Nowicki described his appointment as a “Visiting Professor, Acting Head of Department of Architecture” in a brochure he wrote to describe the new School curriculum. North Carolina State College, and Matthew Nowicki. *School of Design: North Carolina State College, Raleigh, N.C.* (Raleigh: NCSC Press, 1950).

²⁸ Matthew Nowicki to Lewis Mumford, September 9, 1948, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania.

²⁹ Ibid.

³⁰ Ibid.

³¹ The inclusion of Design I, II, III in the freshman year, and IV, V, VI in the sophomore year may have served as "Basic Design" classes. This arrangement may suggest the influence of the Bauhaus and the belief that "Basic Design" should be taught to give all students a common grounding in the language of Modern design before students branched into the specific disciplines of architecture. See Jill E. Pearlman, *Inventing American Modernism*; Anthony Alofsin, *The Struggle for Modernism: Architecture, Landscape Architecture, and City Planning at Harvard* (New York: W.W. Norton, 2002). Also see Jeffrey Karl Ochsner, *Lionel H. Pries, Architect, Artist, Educator: From Arts and Crafts to Modern Architecture* (Seattle: University of Washington Press, 2007), 266-73.

³² North Carolina State College, and Matthew Nowicki, *School of Design: North Carolina State College, Raleigh, N.C.* (Raleigh: NCSC Press, 1950), 10.

³³ *ibid.* 10

³⁴ *ibid.* 7

³⁵ The architectural historian Joan Ockman has described the curriculum as driven by the “new humanism” of the postwar era, and she has compared it to the curriculum started by William Wurster at the University of California, Berkeley. Joan Ockman and Rebecca Williamson, *Architecture School: Three Centuries of Educating Architects in North America* (Cambridge, Mass: MIT Press, 2012), 137. Ockman has also stated that the structural emphasis at the school started with Nowicki’s death, emerging under the direction of Eduardo Catalano, Nowicki’s successor, in 1951. Yet the curriculum description (written by Nowicki and Mumford) shows that structure was a fundamental component of Nowicki’s vision for modern architectural design education, and Kamphoefner's interview (see Note 25, above) indicates integration of structure was always part of his intention for the NCSC program.

³⁶ Stein first mentioned Nowicki in a letter to Mumford regarding a review of the United Nations plan in August 1947. Presumably, Mumford recommended Nowicki to Stein, who at this point in his career had become more of a city planner than an architect. Correspondence in Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library.

³⁷ Clarence Stein had a long career as an architect and planner. A brief biography can be found in the introduction to: Kermit C. Parsons. ed. *The Writings of Clarence S. Stein: Architect of the Planned Community*. (Baltimore, MD: Johns Hopkins University Press, 1998), 1-13.

³⁸ Clarence Stein to Aline MacMahon (wife), letter, October 13, 1948, Correspondence. Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library.

³⁹ The archival sources for this project are found in the “Projects” folder in the Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library. Several handwritten notes by Nowicki are contained there, providing details about the project.

⁴⁰ The separation of modes of transportation was a common planning principle advocated by RPAA and CIAM in the period. This approach would largely be discredited in subsequent urban design studies beginning with Jane Jacobs in the 1960s.

⁴¹ Matthew Nowicki to Clarence Stein, letter, ca.1949, Correspondence, Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library. Box 4, Folder 22.

⁴² The shape of the underside of the beam may also be inspired from the underside of Le Corbusier's Unité.

⁴³ Matthew Nowicki's "Notes on Construction" 1949, Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library, Box 4, Folder 22.

⁴⁴ Ibid.

⁴⁵ Nowicki does not mention the needed construction joints nor joints for expansion and contraction, given the large temperature variations in New York City. Expansion joints would be required but would not have necessarily compromised the integrity of the scheme.

⁴⁶ The idea of vertically separating different modes of transportation, advanced by Modernist urbanism, was prominent in Nowicki's time. The failures of such approaches have been widely documented. See: William H. Whyte, *City: Rediscovering the Center* (New York: Doubleday, 1988) and other texts.

⁴⁷ Potential drawbacks of the proposal include the risk that the columns would have severely disrupted traffic (potential collisions), extensive staining the surface with car exhaust, and the risk to pedestrians inhaling car exhaust.

⁴⁸ Alice Sparberg Alexiou, *Jane Jacobs: Urban Visionary* (New Brunswick, N.J.: Rutgers University Press, 2006).

⁴⁹ Julienne Whittesley performed traffic studies, and lobbied to the Citizens Union City Planning Committee, Sub Committee of Columbus Circle in 1949. At one such meeting, a public comment was noted on the proposal: "Jacobs from the West Side Real Estate Association liked the appearance, the restaurant trade aspect, and trade exhibit possibilities. Jacobs promised to facilitate presentation to other groups such as the Broadway Association." (Citizens Union City Planning Committee Minutes, Sub Committee on Columbus Circle, 5 October 1949, Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Archives).

⁵⁰ Clarence Stein to Aline MacMahon (wife), letter, December 16, 1948, Correspondence, Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library.

⁵¹ In the Clarence Stein archives, this project was described as intended for the "Joshua Marks Company" in Ventura, California. Marks was a developer in southern California. No other information about the project was available, and it went unbuilt. "California Markets" Clarence Stein Papers, Division of Rare and Manuscript Collection,

⁵² The detailed structure of each panel was not shown in the available drawings. With the slender sections shown, they would presumably have been made of steel, although the material was not clearly indicated.

⁵³ Lewis Mumford, "The Life, the Teaching and the Architecture of Matthew Nowicki," *Architectural Record* 116, no. 1 (July 1954), 133.

⁵⁴ James B. Harris and Kevin Pui-K. Li, *Masted Structures in Architecture* (Oxford: Butterworth Architecture, 1996).

⁵⁵ Ibid.

⁵⁶ Ibid. This text provides a good overview of the development of structures quite similar to Nowicki's California Markets. The book does not show any examples that resemble Nowicki's work before 1950.

⁵⁷ Clarence Stein to Aline MacMahon (wife), letter, March 10, 1948, Correspondence, Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library.

⁵⁸ Clarence Stein to Aline MacMahon (wife), letter, December 16, 1948, Correspondence, Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library.

⁵⁹ Maciej Nowicki, "Mass Production to Relieve Housing Shortages," review of *Manual on Wood Construction for Prefabricated Houses*, In United Nations Department of Social Affairs, *Housing and Town and Country Planning* 1 (November 1948): 38-41.

⁶⁰ The article is published using his Polish name "Maciej" rather than the English version "Matthew." The use of Maciej is surprising because Nowicki had been in the US for several years, and had previously published under the name Matthew.

⁶¹ Despite this estimate (basis of the estimate is not known), Nowicki did not discuss the destruction he had observed. Having first-hand knowledge of the loss of buildings and the dire need for housing in Warsaw, it is notable that Nowicki did not discuss specifics, or particular instances of the need for housing. This omission may reflect the fact that wood frame construction was not typical in Europe.

⁶² Buckminster Fuller with his Dymaxion house is the most famous example, though other architects like Paul Rudolph experimented with prefabricated housing. R. Buckminster Fuller, K. Michael Hays, and Dana Miller, *Buckminster Fuller: Starting with the Universe* (New York: Whitney Museum of American Art, in association with Yale University Press, 2008). Tony Monk and Paul Rudolph, *The Art and Architecture of Paul Rudolph* (Chichester, West Sussex: Wiley-Academy, 1999).

⁶³ Nowicki, "Mass Production to Relieve Housing Shortages," 41.

⁶⁴ Ibid.

⁶⁵ Ibid.

⁶⁶ Tadeusz Barucki, and Maciej Nowicki, *Matthew Nowicki: Poland, USA, India* ([Warsaw]: Salix Alba, 2010). 25.

⁶⁷ Letter from Nowicki to Douglas Haskell, (n.d.), Correspondence. Douglas Haskell Collection, Avery Library, Columbia University.

⁶⁸ Matthew Nowicki, "Chapelle a Laski, Pologne," *Architecture d'Aujourd'hui* 19 (1948): 51-52. Nowicki was fluent in French which may have facilitated publication in the leading French architectural journal. Although unverified, it is likely that he wrote the captions that accompanied the images in the published article.

⁶⁹ Nowicki did not cite any consultation with engineers for choosing this larger span, but it is certainly achievable with properly proportioned concrete. Nowicki did not indicate details of his column – whether hollow base like Wright, or hollow top as in his wartime church design. Later in the 1950s, concrete shells in forms such as hyperbolic paraboloids would surpass this span with a minimal amount of concrete.

⁷⁰ See John Ruskin, *The Seven Lamps of Architecture* (London: Dent, 1819).

⁷¹ Ruskin, *The Seven Lamps of Architecture*, 29-30.

⁷² Lewis Mumford, "The Sky Line: Status Quo ['Bay Region Style']," *New Yorker* (Oct. 11 1947): 104-10.

⁷³ Mumford was involved with exhibition of the architectural work of the Bay Area, promoting it a “regionalist” work. Also see Liane Lefavre and Alexander Tzonis, *Critical Regionalism: Architecture and Identity in a Globalized World*, (Munich: Prestel, 2003). Also see Jeffrey Karl Ochsner, *Lionel H. Pries, Architect, Artist, Educator: From Arts and Crafts to Modern Architecture* (Seattle: University of Washington Press, 2007), 278-79. Also Meredith L. Clausen and Pietro Belluschi, *Pietro Belluschi: Modern American Architect* (Cambridge, Mass: MIT Press, 1994).

⁷⁴ "Forum's School for 1950," *Architectural Forum* 91 (1949): 134-137.

⁷⁵ Other school were interested in modular construction, including some in California. The SCSD system (School Construction Systems Development) was published in *Architectural Design* 35 (July 1965): 324-339, with possible implementation in California.

⁷⁶ "Forum's School for 1950," *Architectural Forum* 91 (1949): 134.

⁷⁷ W C. Craig, *Lift Slab Engineering Manual* (Austin, Tex: United States Lift Slab Corporation, 1956). This document provided a history of the Youtz-Slick method as well as an overview of lift-slab construction.

⁷⁸ David Dillon, *The Architecture of O'Neil Ford: Celebrating Place* (Austin: University of Texas Press, 1999), 63.

⁷⁹ Rubin M. Zallen and David B. Peraza, *Engineering Considerations for Lift-Slab Construction* (Reston, Va: American Society of Civil Engineers, 2004).

⁸⁰ Inquiries to the Museum of Modern Art revealed that these comments were not recorded, and no record survives.

⁸¹ Eero Saarinen, Eeva-Liisa Pelkonen, and Donald Albrecht, *Eero Saarinen: Shaping the Future* (New Haven: Yale University Press, 2006), 332.

⁸² Matthew Nowicki to Clarence Stein, letter, August 8, 1949, Correspondence, Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library.

⁸³ Eero Saarinen, *A Foundation for Learning: Planning the Campus of Brandeis University*, (Waltham, Mass: Brandeis University, 1950), 3.

⁸⁴ Jayne Merkel, *Eero Saarinen* (London: Phaidon, 2005), 104.

⁸⁵ Ibid.

⁸⁶ Saarinen, *A Foundation for Learning*, 5.

⁸⁷ It is worth noting that Eero Saarinen changed the name of his firm to “Eero Saarinen and Associates” after the death of Eliel on July 1, 1950. This brochure must have been published in late 1950 to get the changed firm name correct. Saarinen, *A Foundation for Learning*, 4.

⁸⁸ Saarinen, Pelkonen and Albrecht, *Eero Saarinen*, 315.

⁸⁹ It is also possible that this sketch refers to the Greek educational idea -- back to Socrates and students gathered in the open air under a tree. There may also be a reference to the Medieval university in the robes that everyone is wearing.

⁹⁰ The use of buildings to frame open space in University settings was not new, having a long history. See Paul Venable Turner, *Campus: an American Planning Tradition* (New York: Architectural History Foundation, 1984).

⁹¹ Ford was also acquainted with Eero Saarinen, and the two may have shared ideas on the application of the Lift-Slab method to university buildings. Clemson University also used the Lift Slab method when building its campus in 1954.

⁹² In some sketches, the building was shown to have columns sloping inward toward the dome, while in Nowicki’s perspective sketch, the columns were vertical. The sloping of the column

would certainly affect the application of the Lift-Slab technique, and may not have been a viable option. Nowicki's perspective sketches showed vertical columns, and may indicate that he may have been more focused on construction techniques than others in Saarinen's office.

⁹³ Saarinen, *A Foundation for Learning*, 30.

⁹⁴ Under another interpretation, one could see that the chapel could contain the six-pointed star of David – recalling the Jewish origins of Brandeis University.

⁹⁵ See Frederick Doveton Nichols, and Ralph E. Griswold, *Thomas Jefferson, Landscape Architect* (Charlottesville: University Press of Virginia, 1978), 159.

⁹⁶ One could argue that the interior of the chapel was essentially scale-less--that is there really would be little to give a measurable sense of scale other than the seating or the size of the masonry units. The technique of forcing people through a small space before releasing them into a larger space is, of course, a technique used by Frank Lloyd Wright. Wright regularly forced people through tight spaces before they arrived at his double height living rooms. This is further evidence of Wright's influence on Nowicki's work.

⁹⁷ Nowicki, "Composition in Modern Architecture," 13.

⁹⁸ Jaroszewicz would later recall referencing Nowicki's Livestock Pavilion as inspiration for the Kresge Auditorium at MIT – at first attempting to hang a tension-roof from the three arches, triangular in plan, before simply inverting the curvature to create a concrete shell. Comments by Jaroszewicz, Swanson-Saarinen reunion 1995, Cranbrook Academy Archives

⁹⁹ A Student Center and Dormitory were constructed that followed Saarinen/ Nowicki designs, but they have been significantly altered since. See Gerald Bernstein, "History of Master Planning at Brandeis" *An Architectural Celebration of Brandeis University's 50th Anniversary*, (1997). Source: <http://www.brandeis.edu/masterplan/history.html>, Accessed: 11 September 2012.

Chapter 6: North Carolina State Fairgrounds

In fall 1949, after his summer spent designing with Saarinen, Nowicki returned to North Carolina State, and immediately received a commission to design another major project, the new North Carolina State Fairgrounds, in Raleigh, North Carolina.

J. Sibley “Doc” Dorton (1895-1961) became the manager of the North Carolina State Fair in 1937. After years of small-scale rides, exhibits, and competitions, Dorton aspired to make the Fair more than just a place for fun and exhibitions.¹ Dorton had previously run the Cleveland County Fair, and saw the potential for both publicity and profit. He wanted to make a “fair of the future” as a modern showpiece for the industry and culture of the entire state of North Carolina. In fall 1949, seeking a forward-looking architectural design to match his ambitions, Dorton went to Henry Kamphoefner at the NC State College of Design for a recommendation of an architect. Kamphoefner immediately recommended Nowicki, telling Dorton “if you want to do a *scene* building, [and] bring some attention to the Fair” make Matthew Nowicki the principle designer.² Kamphoefner knew the innovative, structural design talents of Nowicki, and the Fair provided a perfect venue for an exciting, Modern building.

Given his employment by the state university, Nowicki could not receive the commission alone (nor any other faculty member). In order to avoid any favoritism in state-funded contracts, the design team needed to partner with a licensed, non-academic architect, and Kamphoefner chose William Henley Deitrick (1895-1974).³ Deitrick was an officer in the Army before getting his education in architecture (in the Beaux Arts tradition) at Columbia University between 1922 and 1924.⁴ Deitrick was an early advocate of Modernism in North Carolina, pushing for the development of a modernist School of Design, even before Kamphoefner’s arrival.⁵ Deitrick had

a large office (Wm. Henley Deitrick, Inc.) with over 35 employees. The firm had a record of substantial public and private commissions, and could handle the workload of producing the construction documents for the Fair structures.⁶ By January 1950, Nowicki and Deitrick were fully immersed in the design of the Fair. Through an agreement with Wallace Harrison, Nowicki was relieved of his monthly trips to New York to work on the United Nations Headquarters, although he did remain involved as the General Assembly moved into the construction phase.⁷

In spring 1950, the North Carolina State Legislature, with support from Governor Kerr Scott, launched an \$8 million fair building program. The State provided an initial \$2 million for the design of a master plan and initial construction, and also designated 25-acres of state-owned land for the new Fairgrounds. The additional costs (\$6 million) were to be covered by private business investment. The commission required an overall site plan, a livestock pavilion, an enlarged grandstand surrounding a racetrack, surrounding exhibit buildings and a youth center.⁸ Nowicki and Deitrick held numerous meetings with Fair officials who communicated a desire to “advertise North Carolina as a progressive state” with “no copy of anything done before.”⁹

After a series of projects that had difficulty being built, Nowicki had finally found a signature project to express his architectural vision. He had finally obtained a sympathetic client, willing to pay for his expressive structural forms. Settled in the United States, released from the collaborative environment of the United Nations, and eager to use the new structural technologies available, Matthew Nowicki had found his signature project. Lewis Mumford, in regular correspondence by mail with Nowicki at the time, saw the Fair as a significant commission for Nowicki, providing him the opportunity to design a large-scale project in the United States. Mumford stated:

This opportunity to interpret the ‘spirit of the fair’ and to design a series of freestanding buildings was very close to Nowicki’s heart. Responding to the generous hospitality of

his southern neighbors, appreciating the genial simple ways he had found among them, he saw a chance to add to the gaiety as well as the dignity of their life by an architecture worthy of democracy.¹⁰

According to Mumford, Nowicki rapidly produced “hundreds” of sketches for the Fair layout and individual buildings, “lightning-like – many of them satisfying everybody but himself.”¹¹ His development of the design for the Livestock Pavilion and the Grandstand overlooking the racetrack demonstrate his continuing search for unique structural forms as solutions to specific design problems. Although Mumford wrote of hundreds of sketches surviving documentation is much more limited.

Despite the significance of the Livestock Pavilion, surprisingly limited documentation of its design survives. The primary source material was the "Matthew Nowicki Drawings and Other Material, 1944-2002" collection, found at the North Carolina State University, Special Collections Library. The majority of the drawings are undated, and very few relate specifically to the design of the Pavilion. The following analysis of the design is based on the few sketches and drawings that were found, considered in combination with available dates and material published at the time. No meeting minutes or professional correspondence has been found. While limited in its specifics, this analysis of the Livestock Pavilion provides a discussion of the culmination of Nowicki's structurally expressive modern architecture.

The Livestock Pavilion

The Livestock Pavilion was intended to host livestock shows, rodeos, and other performance events with a seating capacity of roughly 9500. The Pavilion required an oval-shaped exhibition floor and easy ground level access at each end. Nowicki's earliest sketches for

the Livestock Pavilion focused on the layout of the arena floor and the surrounding seating. Nowicki began his design from the geometric/spatial requirements, first sketching the surrounding stadium bleachers rising on either side of the longitudinal axis of the exhibition floor with a rounded exterior, embedding the oval floor within an essentially circular enclosure. The narrower ends accommodated the entrances to the arena floor with lower, narrower sections of seating.¹²

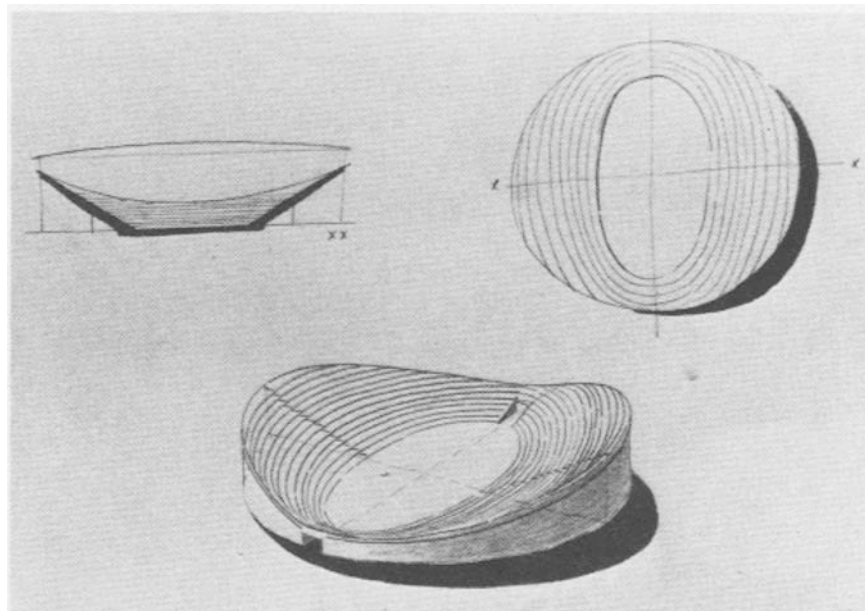


Figure 6.1 – Nowicki’s Livestock Pavilion sketches, studies of stadium seating, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Legal Box 1, Folder 8)

These initial studies of the arena floor and seating areas appear to lead to Nowicki’s first three-dimensional sketches for the building, showing the arena as a circular building, with a solid masonry base and a lighter enclosure above. (Figure 6.2) The top of the masonry wall varied in

height, following the rising and falling of the stadium seating within. From the top course of the masonry a series of thin, regularly spaced columns extended upward to support a flat perimeter ring. These columns were connected by a series of shallow arches at the top, but are otherwise unattached, allowing open views into the building. In this design the upper structure does not seem integral with the base, and the small arches seem rather out-of-place.

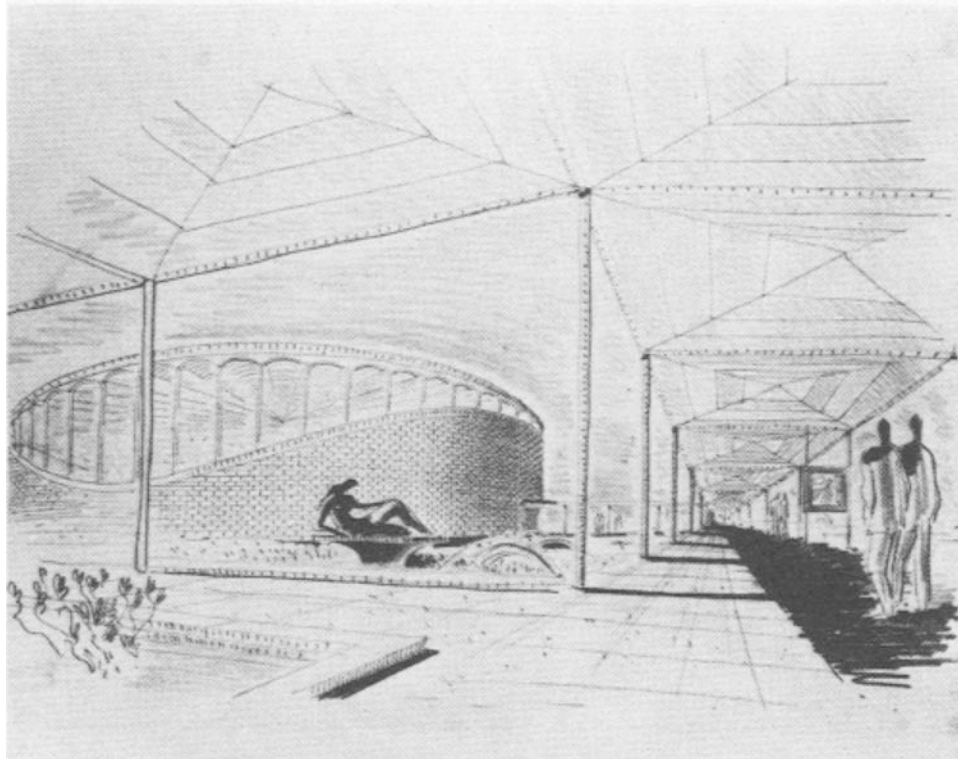


Figure 6.2 – Nowicki’s Livestock Pavilion, early scheme, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Legal Box 1, Folder 8)

In this early sketch, the roof is only partially delineated, but it appeared similar to the roof of Nowicki’s earlier Warsaw Parliament Building. The perimeter columns appear to support radial cables that extend to a point at the middle of the building. Without detailed drawings, the curvature of the roof is difficult to determine, but it may have been flat, or it may have been an inverted cone, with each cable pulled tight in a straight line, to a low point at the center of the

roof. As with his Warsaw building, the cables do not appear to curve (reflecting their catenary behavior), and the exterior buttresses are absent. How the inward thrust of the roof would have been resisted is not evident in the drawing, although the exterior perimeter could have acted as a compression ring. In fact, the thin columns, shallow arches and undefined roof show this sketch was not a fully resolved design, but rather was just one step in Nowicki's design exploration.¹³ The sketch is "finished" in that it includes Nowicki's characteristic foliage (tree branch) and sculptural elements, as well as a covered walkway, and Nowicki may have shown this to his clients, but Nowicki was likely aware that the design was only partially resolved. The scheme shows a separation of structural elements (a characteristic of Nowicki's designs) but lacks synthesis and reads as a cylindrical drum with almost classical overtones in the regular arches. Nowicki may have used a sketch like this to secure approval of the basic plan concept (oval inside a circle) even as he was still searching for a structural scheme and resolved three-dimensional design idea.

Continuing with the design, Nowicki began investigating different structural forms. In Figure 6.3, found on an un-dated sketch, Nowicki began sketching two-dimensional arches and catenary shapes. He began experimenting with their scale, geometry, and the structural implications of different arrangements – drawing arrows to indicate forces and a structure adjusted to resist them. These simple sketches appear to lead directly to his major design breakthrough.

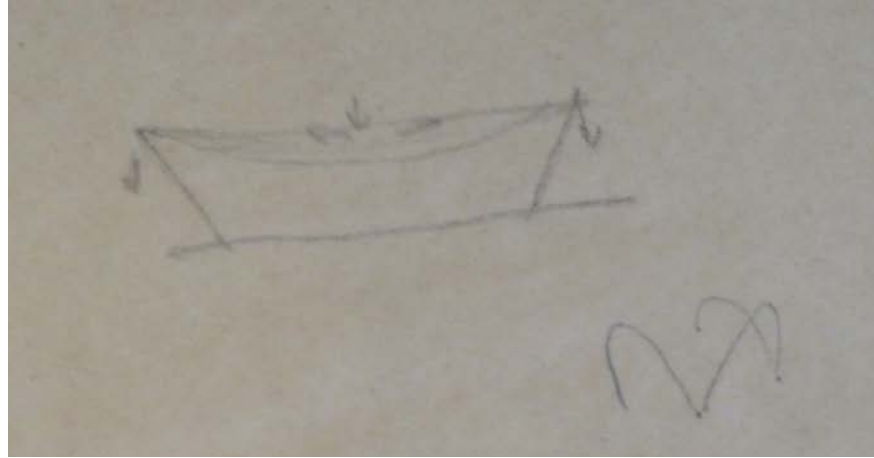


Figure 6.3 – Livestock Pavilion, structural sketches , 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 1)

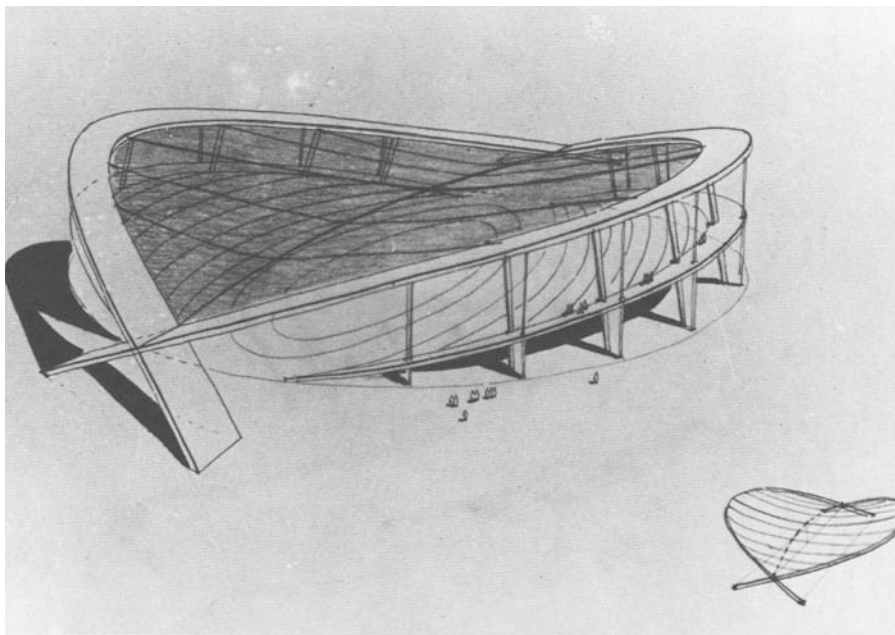


Figure 6.4 – Livestock Pavilion, concept drawing and structural scheme, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 1)

At some point, Nowicki achieved a breakthrough by discovering a three-dimensional structural scheme. Nowicki's small sketch, in the lower right-hand corner of the drawing (Fig. 6.4), captured his essential concept, showing two intersecting arches, each canted to follow the

slope of the top edge of the seating bowl. Between the arches spanned tension cables that achieved two purposes--supporting the roof and resisting the tendency of each arch to fall to the ground. The arches would act mainly in compression – pulled on by the tension-only action of the roof. In this small sketch, Nowicki embraced the curvature of the cables in a catenary form, and their relationship to the inclined arches. The double-curvature of the roof plane is shown through the arching line drawn down the longitudinal axis – rising from a constant elevation.

The larger drawing (on the left) showed how this concept could become an architectural design driven by the concept of structural form. In the architectural scheme, Nowicki placed a sloping platform along the top of the stadium seating. Supports rose above this platform to hold the slanted intersecting arches that form the perimeter of the roof. The curved arches on each side intersected at the ends of the building and continued to the ground.

In this drawing, Nowicki began to see this spatial extension of programmatic demands as a new type of structural system. The roof surface took a curved shape between the two inclined arches, utilizing the tension-cables of his earlier projects in a different way. Nowicki sketched the cables from each arch to a line running from one side to the other—this may have simply been a graphic element intended to show the shallow curve of the roof, as it would not have represented a structural element. In this sketch, the cables were parallel and the roof surface gained only a slight curvature. The building was bi-laterally symmetrical like the plan and the form almost could be understood like butterfly wings.

With a structural concept that provided the clear-span space required for the program, Nowicki drew many different versions of the design in eye-level perspectives. In different perspectives Nowicki changed the proportions and expression of the structural system, observing its effect on the ground level human experience. In one drawing, (Figure 6.5) Nowicki shows a

widening of the arches at as they reach the ground and the enclosure of the lower level with masonry. Massive, tapered columns support the edge of the seating bowl, while pairs of thin columns support the arches above. The attenuated character of these columns might relate to Nowicki's earliest design ideas, but here they are without decoration. In this perspective Nowicki appears to contrast the mass supporting the seating bowl with a relatively lightweight enclosure above.¹⁴

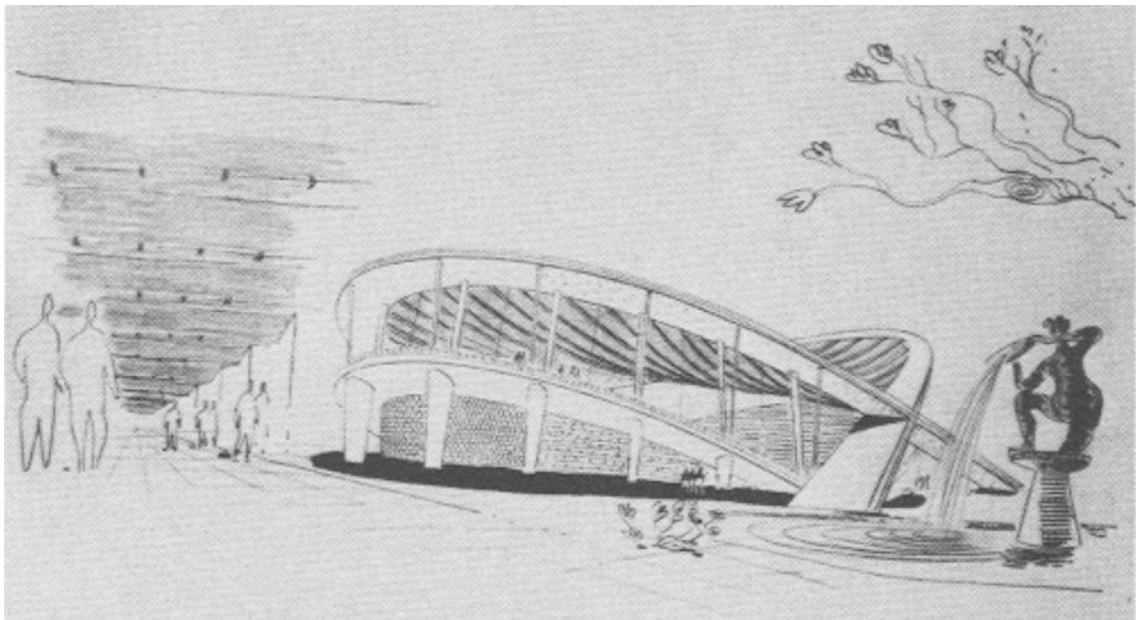


Figure 6.5 – Livestock Pavilion, scheme with heavy base, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Legal Box 1, Folder 8)

In another perspective, the outside columns slant inward to the overhead arch, creating an angled and curved window wall. (Fig. 6.6) Although enclosed by glazing, this scheme was shown as completely transparent with all structural elements and functions on display – both above and below the stadium seating. The form appears particularly dynamic.¹⁵

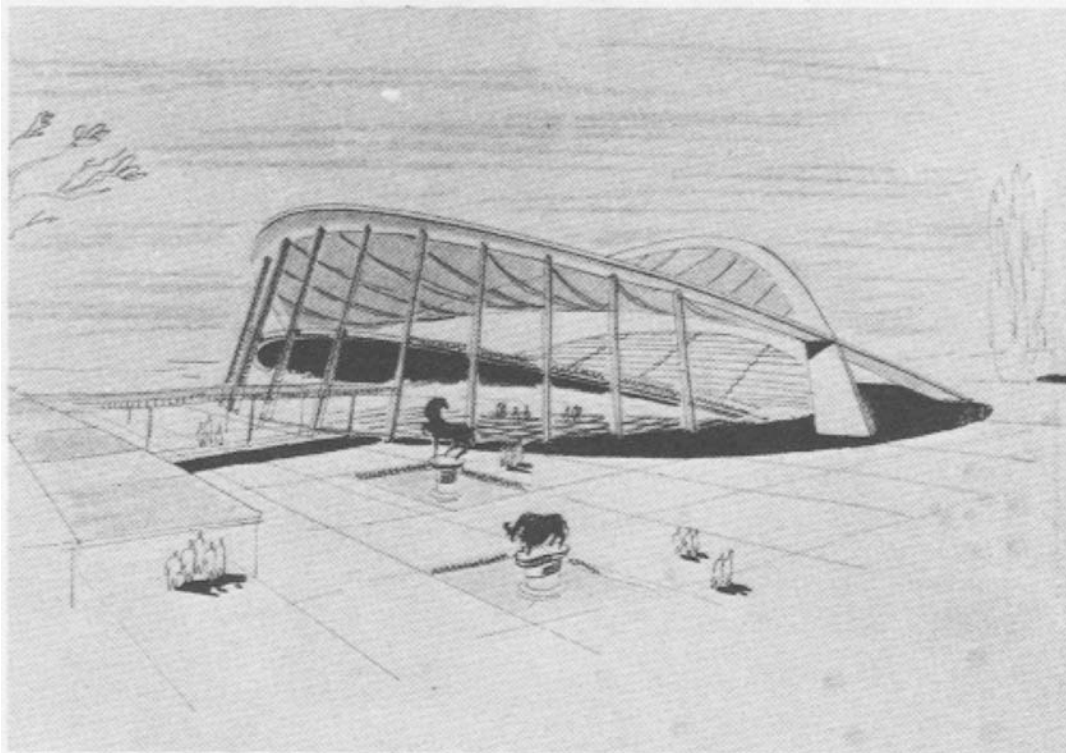


Figure 6.6 – Livestock Pavilion, scheme with inclined wall, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Legal Box 1, Folder 8)

Nowicki was particularly interested in the sloping exterior columns, and developed a detailed section of how this structure might actually be accomplished. (Figure 6.7) This section shows the crossing of the slanted arches beyond, and the sloping cable roof overhead. The curve of the stadium seating mimics the curving roof above. Nowicki drew the outside perimeter of the Pavilion with a sloping exterior column and wall, and provided a section through both the arch (shown as hollow to accommodate anchorage of roof cables) and the perimeter beam at the top of the grandstand. This perimeter beam is shaped like a trapezoid and hollow, recalling the hollow beam Nowicki drew for the Columbus Circle project. Although not drawn, the hollow beam allows for services (plumbing, electrical, and so forth) to be contained within the section,

while providing important structural depth and reducing the beam self-weight. The sloping exterior column was narrowest at the ground level, and increased in thickness at the underside of the perimeter beam. This column stops at the beam level, with only glazing in a window wall system shown above.

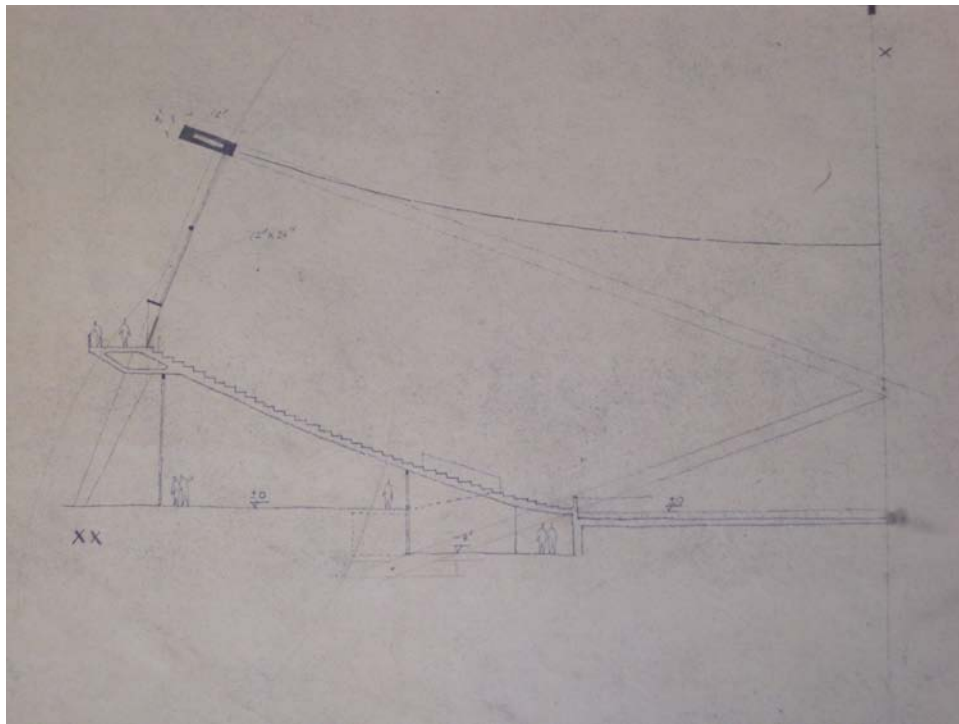


Figure 6.7 – Livestock Pavilion, section through Pavilion with inclined exterior wall, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 5)

This section is in agreement with Nowicki's earlier perspective drawings, and indicates that Nowicki was involved in working out the structural details of the building. His section indicates dimensions of structural members. He shows foundation conditions at the base of the

arches. At the time this section was drawn (though undated), Nowicki was likely again in consultation with the structural engineer Fred Severud.

While the extent to which Nowicki and Severud worked together before Nowicki's death is unknown, Severud was particularly instrumental in realizing the project after Nowicki's death. Though consistently crediting Nowicki with the building's concept, Severud appreciated the structural behavior of the arena, describing it (and showing it) as "similar to two men in a tug of war. Their weight, leaning back, is in dynamic stability, with pull in their arms."¹⁶

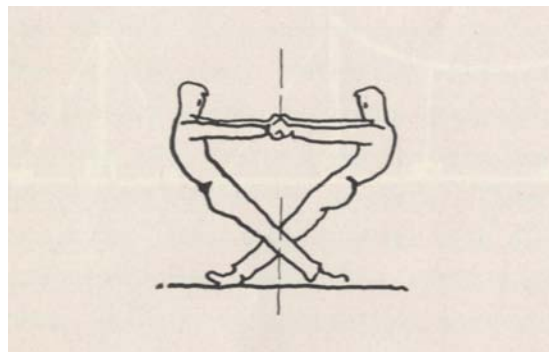


Figure 6.8 - Fred Severud's diagram of the structural forces within the Livestock Pavilion, 1956. (Fred N. Severud, and Raniero G. Corbelletti. "Hung roofs," *Progressive Architecture* 37 (1956): 102.)

In all of Nowicki's later sketches, the drape of the roof cables was revealed and articulated. The shape of catenary cables, both as form and as structure, had not been widely utilized in architectural works before 1949. Although prominent in suspension bridges, architectural applications in buildings were few.¹⁷ Henry Kamhephnoer subsequently remarked that the Livestock Pavilion "was the breakthrough where the principles that Roebling used on the Brooklyn Bridge had been brought into architecture."¹⁸ Nowicki had seen (and remarked on) the beauty of the Golden Gate Bridge during travels to San Francisco as part of the United Nations

Site Committee, and he was, of course, familiar with the suspension bridges around New York.¹⁹ The construction documents for the Pavilion (completed after Nowicki's death) specified “Bethlehem Suspension Bridge Strands,” the same cables routinely specified for suspension bridges around the country. (Figure 6.9)

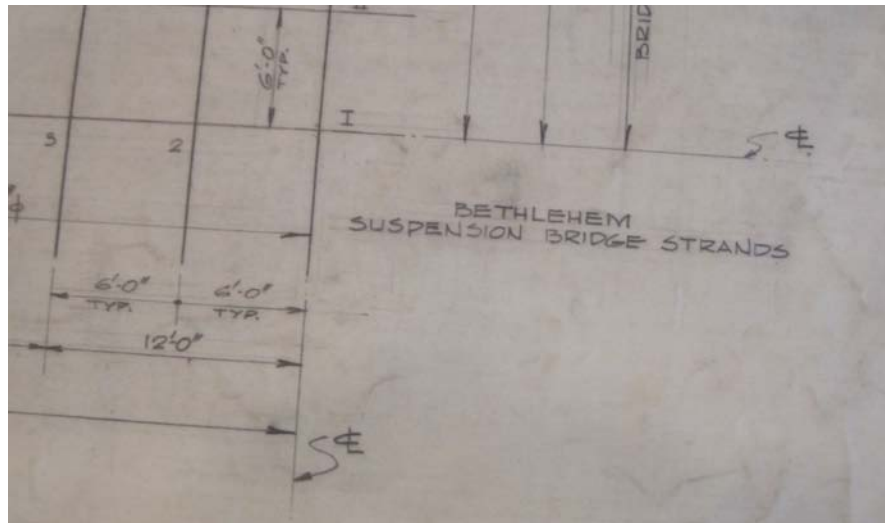


Figure 6.9 – Livestock Pavilion detail indicating Bethlehem steel for roof cables, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 5)

The perspectives and section indicate Nowicki’s conceptualization of the pavilion as a large open volume and display the intertwined program and structure. With the elegant plan of an oval inside a circle, complemented by the arches and cables, Nowicki realized a building system that was functional, flexible and dramatic. The striking form matched J.S. Dorton’s aspirations for a Fair pavilion – creating a statement building of modern form that communicated the excitement of the North Carolina State Fair events. Deitrick later stated, “It has no ornamentation whatsoever, its architecture being determined by the simple lines and surfaces necessary for its structure and use.”²⁰ Kamphoefner believed the pavilion was a fitting example

of the “integration of architecture and engineering,” recognizing the power of “structure as one of the primary creative forces in architecture.”²¹ Lewis Mumford took his appreciation of

Nowicki’s building even further:

He had escaped from the European cliché of the post-and-beam, he realized. Hence his great constructivist notion of enclosing the arena in two gigantic parabolic concrete arches, intersecting close to the ground, to support the roof and frame the grandstands. About the quality of Nowicki’s creation there is no dispute; for here all his long discipline as architect, as structural engineer, as planner, united to create, with an exquisite simplicity of means and high constructive audacity, a building that sings as only great architecture can sing.²²

An article in *Architectural Forum* on the Pavilion stated that Nowicki “was seeking first of all not for a unique structure but for a unique space. ... The remarkable *warping* of the space upward, the exact reverse of a dome, would guarantee maximum daylight. This kind of curvature of enclosed space marks a new epoch in architecture.”²³ This article recognized the nuances of Nowicki’s structurally expressive architecture as a merging of structural form and human-centered space. Daylight, comfort, and wonder were all attributes of Nowicki’s architecture, achieved through structural form.

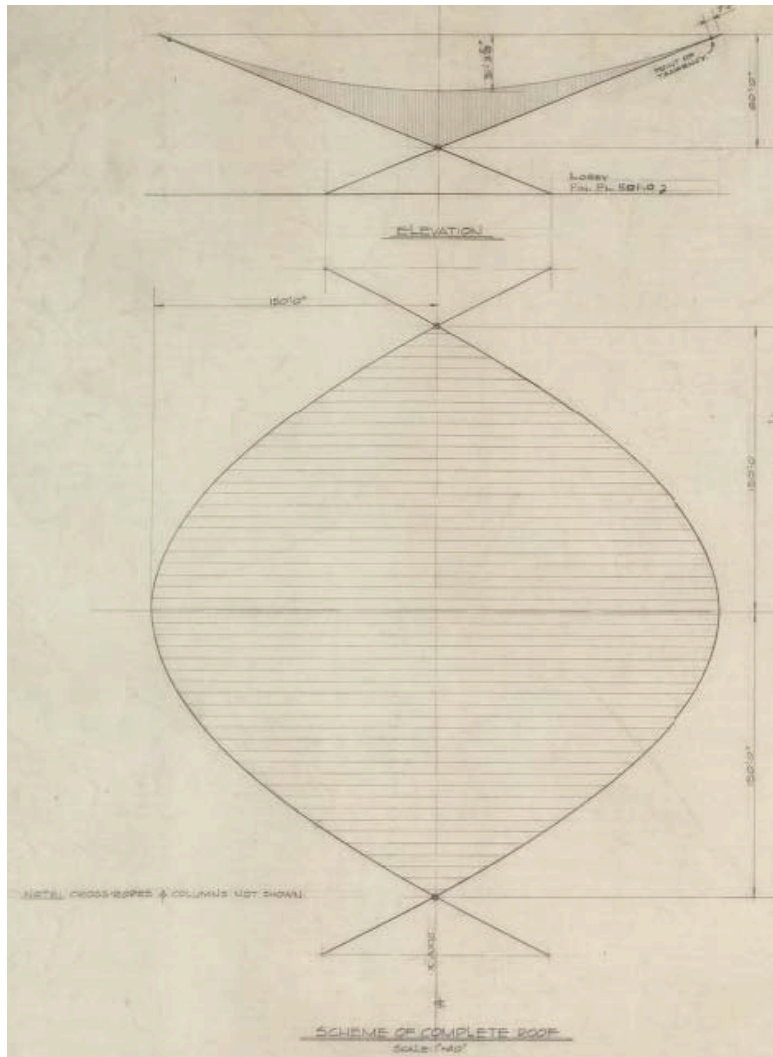


Figure 6.10 - Livestock Pavilion, “Scheme of Complete Roof,” 1950 (Construction Documents, “Roof Plan” Sheet A-S1, dated November 1, 1950, in the Matthew Nowicki Drawings and Other Material, North Carolina State University Library)

In the building as realized, several design changes severely altered the final building from what was indicated in Nowicki’s earlier drawings. Most notably, the tightly spaced vertical columns around the perimeter and the dark glazing in between significantly changed the outward appearance, yet Nowicki’s role in these design changes is somewhat unclear. Nowicki left the United States for India in late June 1950, and died on August 31, 1950. Most of the construction

drawings (fully describing the building as built) have the date of November 1, 1950, meaning that development of the design must have occurred sometime in months before hand. As Nowicki left no indication that he continued to work on the Livestock Pavilion while in India, he would have had to agree to these design changes before his departure, leaving a four-month gap between his departure and the issuing of construction documents. Deitrick claimed that the building was done “as Matthew would have wanted,” suggesting that Nowicki had been involved in the final design decisions. A sketch by Nowicki of the entire Fairgrounds shows a Livestock Pavilion that is somewhat similar to the building as realized, but still appears to have a sloping exterior wall. (Figure 6.11) The transparency of the glazing is not indicated. As a quick sketch, Nowicki captured the essence of the building’s structural behavior, but does not define the key details that changed the building’s appearance.

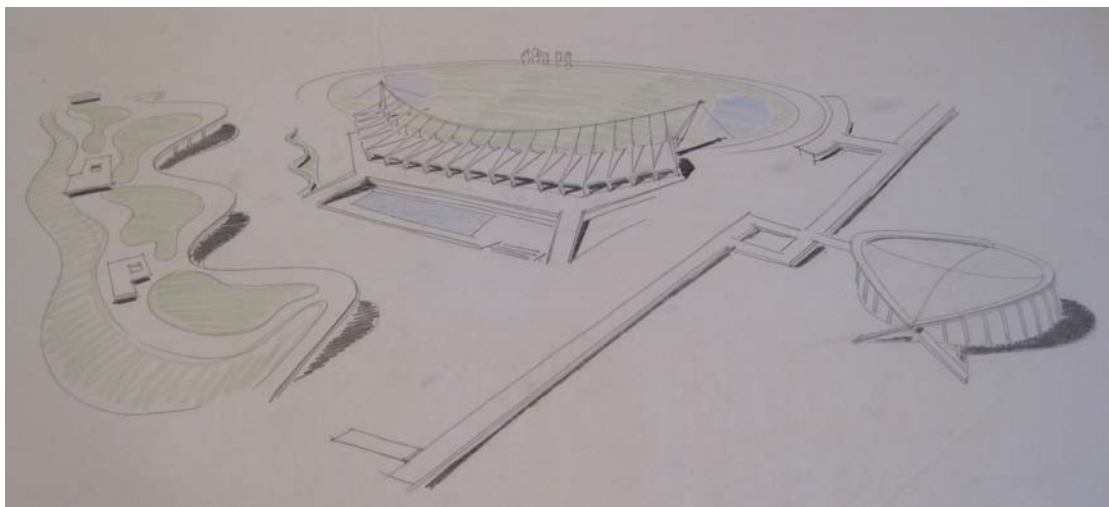


Figure 6.11 – NC State Fairgrounds, showing Livestock Pavilion and Grandstand proposal, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 5)

Many faculty members, architectural critics and Kamphoefner himself often lamented these modifications – preferring a better design in Nowicki’s earlier sketches than in the building as finally completed in 1953. William Deitrick, working with Severud, consistently maintained that he executed the building according to Nowicki’s specifications. Severud detailed the specific structure of the building, a process that required significant innovation on its own.²⁴ Construction began in 1951, and the building was completed in 1953. After the death of J.S. Dorton in 1961, the name of the building was changed to the Dorton Arena.



Figure 6.12 – Livestock Pavilion (now Dorton Arena), photo, 2011 (photo by author)

Despite its shortcomings, the Livestock Pavilion is a monumental display of the structural forces within the building. Yet its form remains tied to its program, creating an exciting yet intimate interior space, and continues to be an active event space in Raleigh. The building embodies Nowicki’s architectural approach providing accessible space through an innovative use of expressive structure and materials.

North Carolina State Fair: The Grandstand

While the design of the Livestock Pavilion was an exercise in finding an agreement between program and structure, Nowicki faced a simpler set of requirements in designing the adjacent open-air grandstand. The grandstand was simply required to include covered outdoor seating adjacent to an outdoor racetrack. For the grandstand Nowicki freely explored a variety of structural systems – testing the formal consequences and character of many different structural forms. Nowicki drew sketches at a variety of scales, including some with color and shading showing different ways to cover one tier of stadium seating with a slight curvature to match the outdoor racetrack. The following series of designs show Nowicki’s interest in a diversity of design solutions, and indicate how he was not searching for a single, correct form, but evaluating the characteristics of a variety of forms.

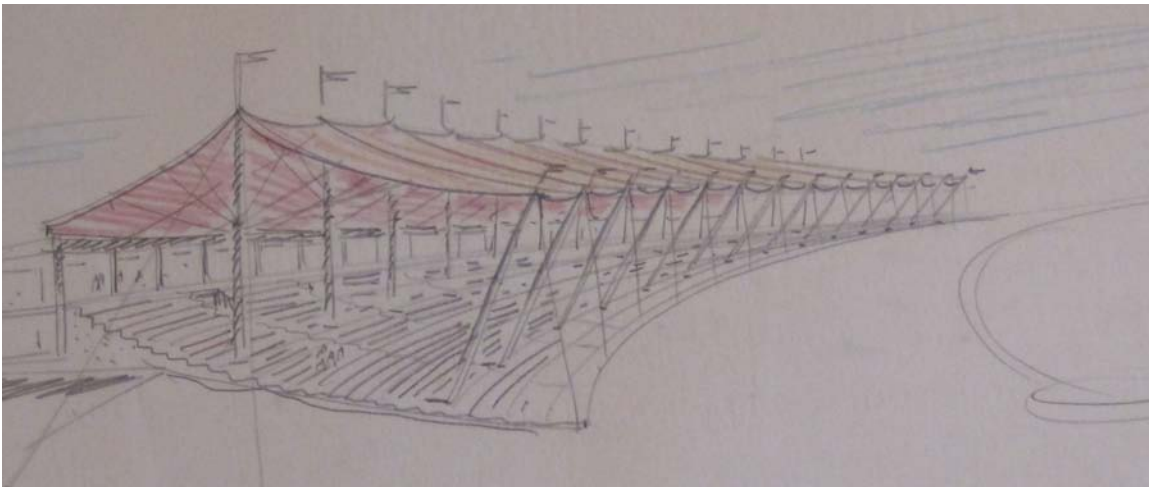


Figure 6.13– NC State Fair Grandstand, Scheme #1 (author numbered), 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 2)

Nowicki's early sketches show structures that ranged from a suspended canopy with large masts braced with guy wires cables (a system that recalls the structure of large circus tents, complete with a flag on each mast), to schemes that removed the columns to provide relatively unobstructed viewing.

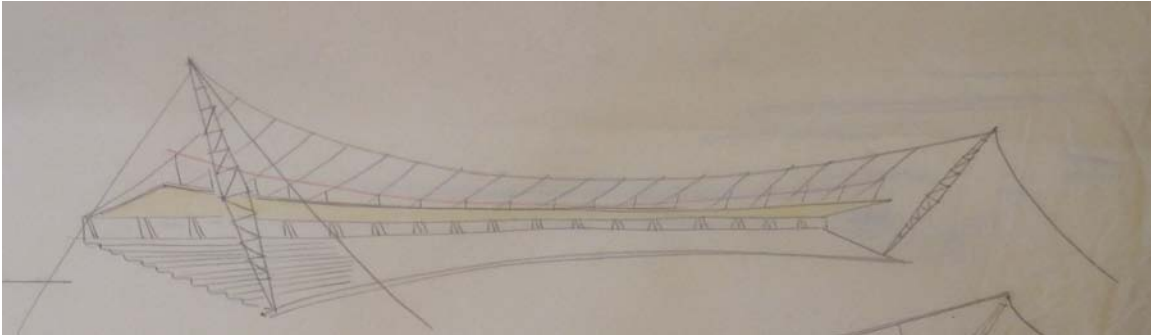


Figure 6.14 – NC State Fair Grandstand, Scheme #2, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 2)

One scheme showed two large, trusses as vertical supports, recalling construction cranes that lean outward at the ends of the grandstand, tensioning a draped cable in between, with vertical secondary cables supporting a suspended flat roof.

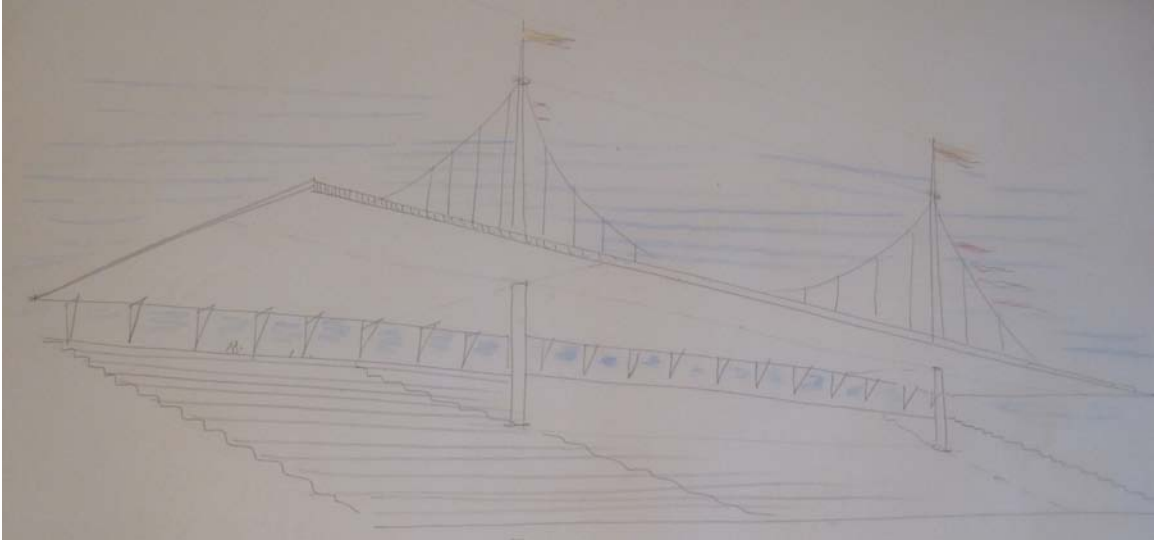


Figure 6.15 – NC State Fair Grandstand, Scheme #3, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 3)

Other sketches directly recall suspension bridges, with one scheme simply treating the overhead canopy as if it were the road deck of a suspension bridge. The specifics of supporting the canopy were not detailed, and the scheme was presumably discarded for a lack of required anchorage at either end.

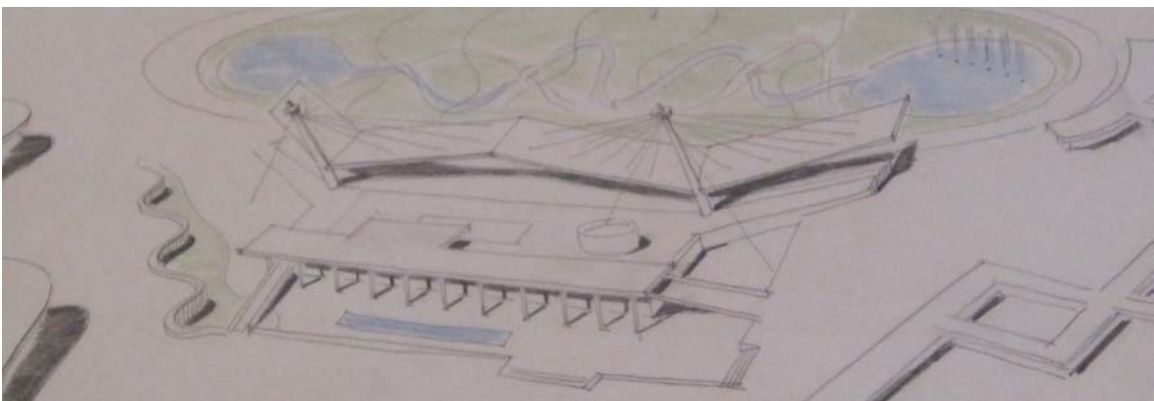


Figure 6.16 – NC State Fair Grandstand, Scheme #4, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 2)

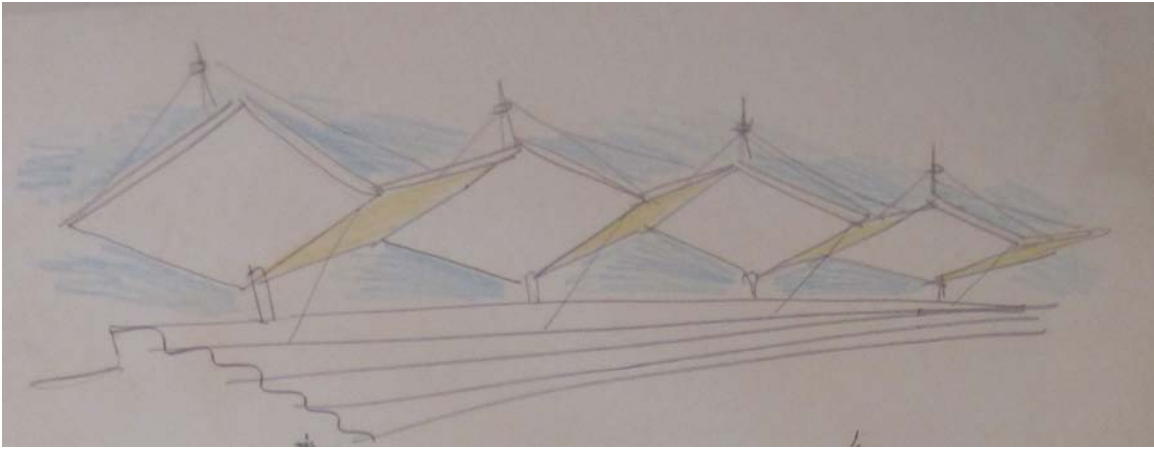


Figure 6.17 – NC State Fair Grandstand, Scheme #5, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 2)

Other sketches show Nowicki’s attempts at “cable-stayed” or “masted” structures composed of linear cables in tension. Nowicki drew a variety of roof planes, all in a perspective view, searching for a structural form to match his architectural ambitions.

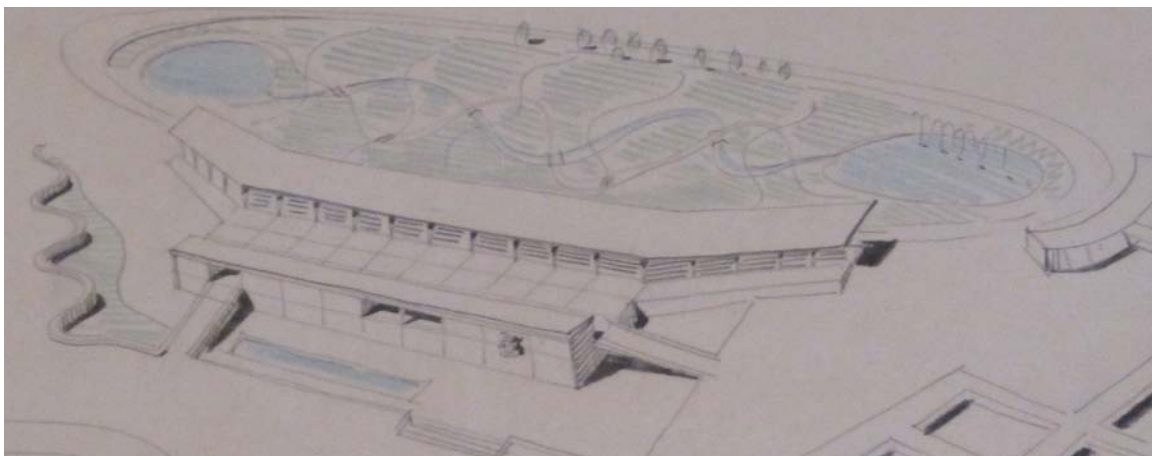


Figure 6.18 – NC State Fair Grandstand, Scheme #6, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 5)

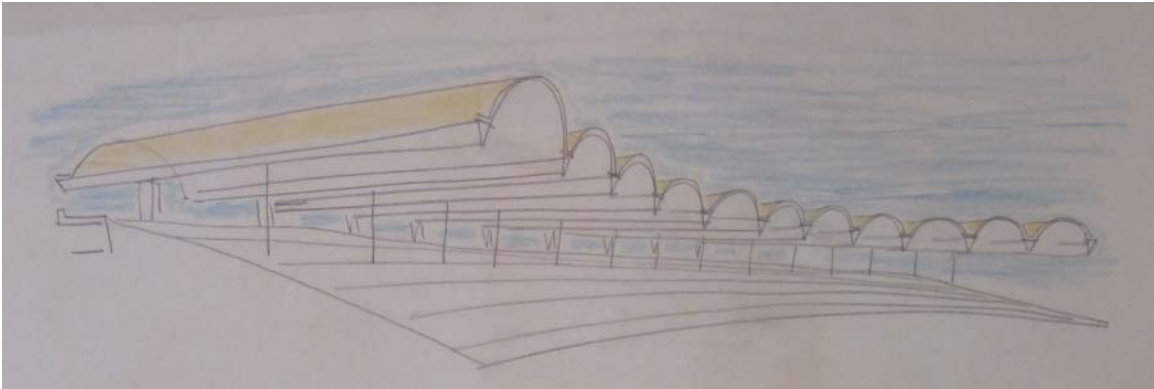


Figure 6.19 – NC State Fair Grandstand, Scheme #7, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 3)

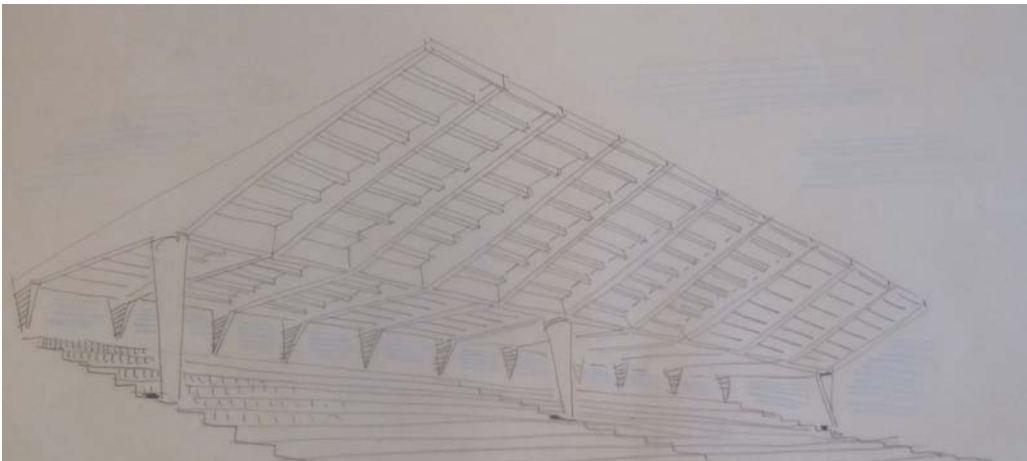


Figure 6.20 – NC State Fair Grandstand, Scheme #8 , 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 2)

While the majority of his drawings indicate some form of tension- structure, other sketches also show experimentation with rigid, section-active structures like a series of concrete barrel vaults, and up-turned cantilevers.²⁵

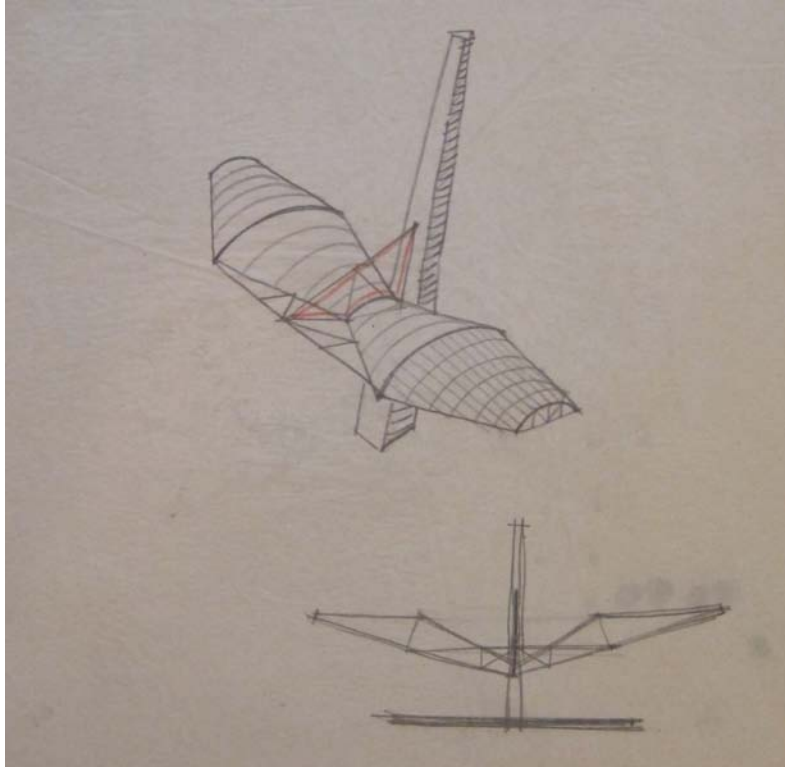


Figure 6.21 – NC State Fair Grandstand,, single tower, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Folder 2)

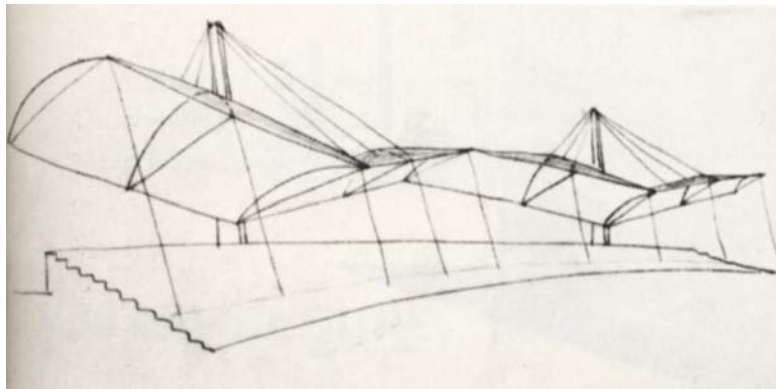


Figure 6.22 – NC State Fair Grandstand, Final scheme 1950. (“From the Legacy of Matthew Nowicki,” *Architectural Forum* 93(1950): 206)

Nowick's final scheme was a combination of tension-cable support, and trussed-wing-like canopies to cover the seating below. From two main towers (in compression) hung a cluster of cables that supported four sections of an arched roof. Each section appeared to be made of a fabric pulled tightly over a curved frame. Cables secured the canopy to the ground, likely intended to reduce the tendency of such a light structure to flutter in the wind. This project did not go forward and the design was never further resolved. Nowicki would likely have resolved the problem of cables coming right down into the seating in further design explorations. His attention to human use would likely have led him to reconsider this aspect of the design. However, he never had the opportunity to do so.

Nowicki and Deitrick incorporated both the Livestock Pavilion and the Grandstand into a master plan for the North Carolina State Fair. The entire State Fair project was published on November 25, 1950 the magazine *Billboard Cavalcade of Fairs*, in an article titled "Raleigh Plans in Works."²⁶ The article claimed that the project was "destined to make the North Carolina State Fair ... the most ultra-modern presentation among North American annuals."²⁷ The complete fairground design (including Livestock Pavilion and Grandstand) was credited to Matthew Nowicki, and the article described his recent death returning from India. The article also included several photographs of a scale model of the entire fairgrounds (likely produced by Deitrick's office). (Figure 6.24, 6.25)

As mentioned, the Livestock Pavilion (later named J. S. Dorton Arena) was constructed after Nowicki's death, and would become his most notable built project.²⁸ Despite the initial \$2 million investment from the state, Dorton was unable to raise the additional funds (\$6 million) required for the construction of the grandstand and the rest of the buildings, and the rest of the master plan remained unrealized.²⁹

Both structures show Nowicki's interest in expanding the structural language of Modern architecture to include a diversity of built forms. Both structures have exciting forms, executed through new strategies like tension-based architecture. Both structures are exemplary examples of Nowicki's structurally expressive modern architecture.

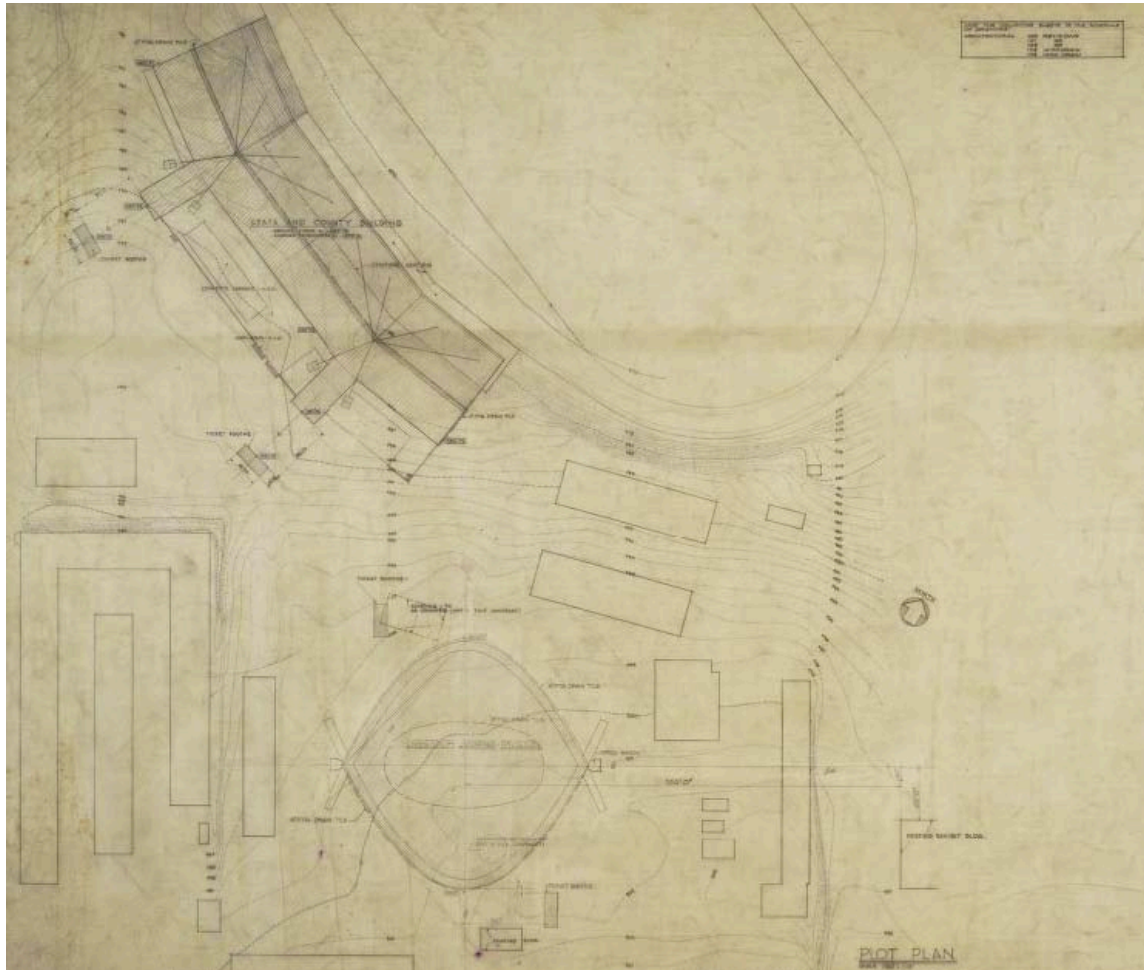


Figure 6.23 - NC State Fairgrounds, Site plan, 1950. (Construction documents for the North Carolina State Fairgrounds, Sheet AB-1, dated November 1, 1950, in the Matthew Nowicki Drawings and Other Material, North Carolina State University Library)

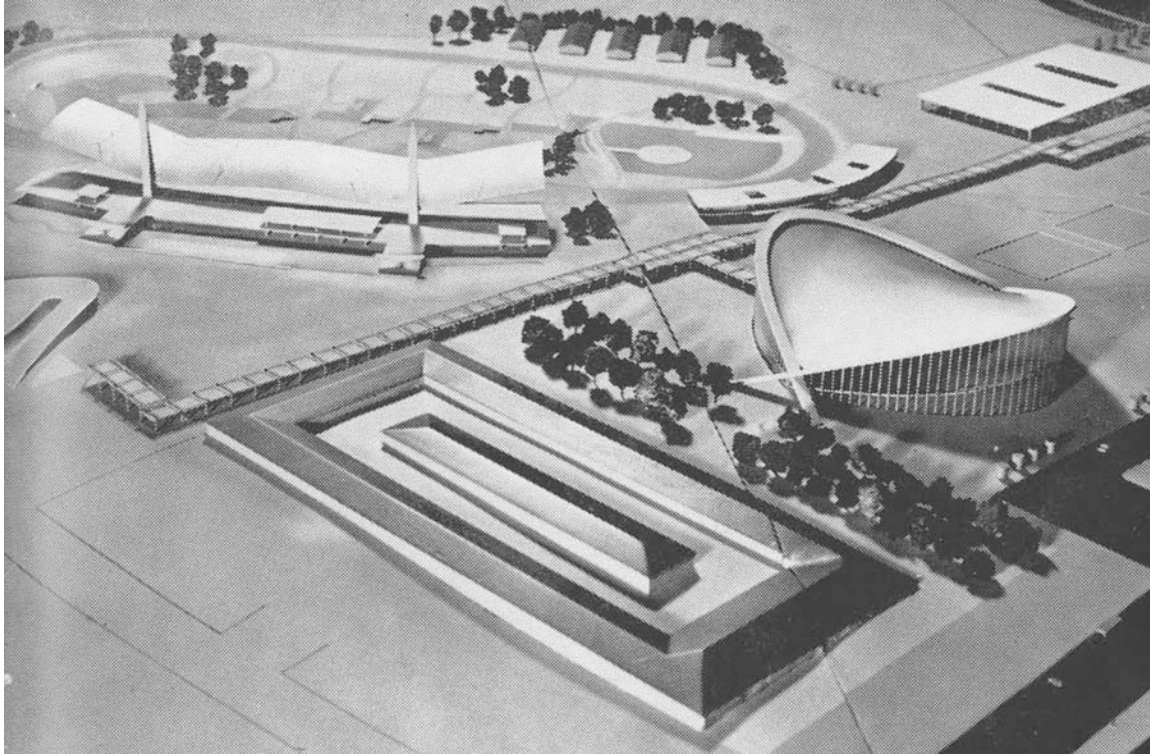


Figure 6.24 - NC State Fairgrounds, model view, 1950. ("Raleigh Plans in Works". *The Billboard Cavalcade of Fairs*, November 25, 1950, 21)



Figure 6.25 - NC State Fairgrounds, model view, 1950. (Published in Matthew Nowicki, "Origins and Trends in Modern Architecture." *Magazine of Art*, 44 (1951): 279.)

¹ "Inventions in North Carolina," Office of Archives and History, N.C. Department of Cultural Resources, North Carolina Museum of History (2005). Source: <http://www.ncmuseumofhistory.org/collateral/articles/Dorton.Arena.pdf>

² Henry Kamphoefner, interviewed by Charles Kahn, September 11, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>.

³ *ibid.*

⁴ Deitrick worked as a contractor before returning for a graduate degree in architecture. After graduation, he worked in the office of Raymond Hood (notable for the American Radiator Building in New York) in 1924.

⁵ Biography of Deitrick from *North Carolina Architects and Builders: A Biographical Dictionary*, North Carolina State University, Source:

<http://ncarchitects.lib.ncsu.edu/people/P000282>, Accessed: 10 August 2012

⁶ Originally, other members of the faculty may have been involved in the design. But Kamphoefner claimed that Deitrick convinced Nowicki he did not need the other designers from the State College, and could do better without them. Kamphoefner believed Nowicki “connived” to force out the School from the design process, to further his own ambitions. Henry Kamphoefner, interviewed by Charles Kahn, September 11, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>.

⁷ Matthew Nowicki to Lewis Mumford, letter, January 5, 1950, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania.

⁸ “Raleigh Plans in Works,” *The Billboard Cavalcade of Fairs*, November 25, 1950: 20-21.

⁹ William Henley Deitrick, “Matthew at the Fair”, *North Carolina College of Design Student Publication* 1, no. 1 (1951): 22.

¹⁰ Lewis Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” *Architectural Record* 116, no. 2 (August 1954): 175.

¹¹ *Ibid.*

¹² This basic form (of an oval) is similar to other arenas, for example, some used for college football. As an example, the University of California, Berkeley football stadium (built in 1908) has a similar plan, although it is partially sunk into the hillside. Other venues with seating on all sides include “theaters in the round.” Other livestock pavilions typically had seating on all sides, but were enclosed in rectangular buildings of simple steel framing.

¹³ It is possible that Nowicki intended the top course of the Pavilion to act as a compression ring, redistributing the outward thrust around the perimeter.

¹⁴ The sculpture in the foreground suggests highly curvilinear forms that mirror the building in the distance. Nowicki had a great fondness for sculpture.

¹⁵ Note: In some ways Nowicki’s drawing vaguely recalls some of the sketches offered by Erich Mendelsohn in his “expressionist” phase.

¹⁶ Fred Severud, “Hung Roofs,” *Progressive Architecture* 37 (1952): 102.

¹⁷ Many sources describe the Livestock Pavilion as the first modern tension-hung roof in the United State including Philip Drew, *Tensile Architecture* (Boulder, Colo: Westview Press, 1979), 153. Drew attributes the design to Nowicki.

¹⁸ Henry Kamphoefner, interviewed by Charles Kahn, September 11, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>, 17: 20.

¹⁹ Nowicki was quote as admiring “That beautiful bridge” when in San Francisco. Matthew Nowicki. [“UN Site Selection”] (c.1947), *Wallace K. Harrison Architectural Drawings and Papers*, Avery Architectural and Fine Arts Library, Columbia University, Box 3, Folder 1.

²⁰ William Henley Deitrick, “Matthew at the Fair”, *Student Bulletin of North Carolina State College, School of Design* 1 no. 1 (1951): 22.

²¹ Henry Kamphoefner, interviewed by Charles Kahn, September 11, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>,

²² Lewis Mumford, “The Life, the Teaching and the Architecture of Matthew Nowicki,” *Architectural Record* 116, no. 2 (August 1954): 175.

²³ “Parabolic Pavilion,” *Architecture Forum* 97 (1952): 137.

²⁴ A separate article in the October 1952 issue of *Architectural Forum* specifically addressed the structural engineering of the Pavilion, written by Igor Voshinin, a senior associate at the Severud firm. “Roof Structure in Tension: An Engineering Analysis of the Parabolic Pavilion in Raleigh, NC,” *Architecture Forum* 97 (1952): 158.

²⁵ As Nowicki was well travelled and well read, grandstand structures built by Eduardo Torroja and Pier Luigi Nervi may have been inspiring influences.

²⁶ “Raleigh Plans in Works,” *The Billboard Cavalcade of Fairs*, (November 25, 1950) 20-21.

²⁷ *Ibid.* 20.

²⁸ The complexities of building the Livestock Pavilion are the subject of ongoing research by the author. The execution of the building overseen by Deitrick and Severud achieved many engineering feats. Nowicki was not directly involved in this process as he was no longer alive, but his fundamental concept for the building continued to drive structural engineering innovation.

²⁹ Deitrick’s office developed complete construction drawings for the entire master plan, including the Grandstand, yet the Grandstand was never built.

Chapter 7: Chandigarh

By early 1950, Nowicki's reputation as a designer and collaborator in the United States was growing rapidly. Many people throughout the architectural profession had noticed his skill as a designer and as an educator. In a January 1950 letter to Clarence Stein, Nowicki stated: "I did not call you from Philadelphia because my interview finished very late. The work there sounded wonderful. The most important parts of the city to plan in an architectural sense. Unfortunately for me, it has to be an American citizen."¹ From these comments it appears that Nowicki had been asked to consult on the planning of central Philadelphia (or had expressed interest in being involved, and had obtained an interview), a project that later became known for the clash it evoked between the planner Ed Bacon and architect Louis Kahn.² Beginning with the 1947 "Better Philadelphia" exposition, Kahn and Oscar Sonorov had drawn multiple proposals for a modernist downtown Philadelphia, but due to differences of opinion Kahn left the project in December 1950. Bacon's interest in the Radburn, New Jersey, plan (drawn by Clarence Stein), likely led Bacon to consider Nowicki as a consultant for the project. Nowicki's lack of American citizenship, a condition he was then trying to remedy, appears to have restricted his further involvement with the planning of Philadelphia.

Nowicki wrote to Mumford on January 5, 1950: "Speaking about other things, I had recently a letter from Hudnut who mentioned that he would like to see me on some 'acute school problems' in Harvard. Maybe this means something important to me at this stage of change."³

Nowicki was becoming upset over disagreements with the other faculty members at NCSC, and was seriously contemplating a change. Dean Joseph Hudnut was in the midst of major educational reforms at the Graduate School of Design at Harvard University, with Walter

Gropius pressing for a Bauhaus-inspired approach to “Basic Design.”⁴ Hudnut may have been interested in Nowicki as a counterweight to Gropius's Bauhaus approach. Hudnut's interest may demonstrate that Nowicki's activities at NCSC were becoming known. Henry Kamphoefner, in a later interview on the history of NCSC, noticed the attention that Nowicki was getting at this time (1949-1950), stating, “Everybody wanted Nowicki. Every damn school was making overtures to him.”⁵

By late fall 1949, Nowicki's approach to architecture and structure was maturing. His seminal paper, “Origins and Trends in Modern Architecture,” was delivered as a lecture in May 1950 (although it would not be published until after his death). Working at a rapid pace, he was building a body of work using structure and material to explore new areas of architectural expression. The Livestock Pavilion, then in design, epitomized Nowicki's maturing work. At this point, in early 1950, Nowicki received the invitation to participate in the planning of the new capital of Punjab province in India, Chandigarh. In this project, Nowicki would have the opportunity to explore his structurally expressive architecture in another, drastically different environment.

Regional Development Council of America and Albert Mayer

Nowicki's involvement with Chandigarh came from his activity with the Regional Development Council of America (RDCA) and his design work with Clarence Stein. The RDCA was an American urban planning organization of professionals led by Mumford and Stein.⁶ A re-creation of the pre-war Regional Planners Association of America (RPAA), the RDCA expressed views on major national policy issues and promoted the advancement of regional development through journal articles and presentations.⁷ The RDCA was, in many

ways, the American counterpoint to the Europe-based CIAM, holding some contrasting viewpoints (such as recognizing the self-organizing character of cities) and some very similar ones (believing in the development of the neighborhood unit/ superblock as the basis for urban living). A major theoretical influence for this group was the work of Camillo Sitte, the nineteenth century Viennese architect and planning theorist, whose book, *City Planning on Artistic Principles*, published in 1889, was finally translated into English in 1945.⁸ Mumford's ideas about the region, drawn from Patrick Geddes, also contributed significantly to the positions of this group.

Nowicki was invited to join this group by Mumford, and he became an active member, attending regular meetings in New York City. In October 1949, the RDCA elected Nowicki to its Executive Committee, as part of an attempt to infuse the group with younger members.

A key member of the RDCA was Albert Mayer (1898-1981). An American planner, Mayer had been trained at MIT as a civil engineer, before being stationed in India with the Army Corps of Engineers during WWII.⁹ Inspired by his experience in India, Mayer independently developed ideas for rural village housing. Before leaving India, in October 1945, mutual friends arranged for Mayer to meet with the future Prime Minister Jawaharlal Nehru, and the two men began outlining a "pilot project."¹⁰ Executing his ideas in rural Etawah, India, Mayer began conceptualizing "model villages" that would emphasize good housing, sanitation and community structure. Mayer and Nehru intended such villages to improve social and economic well-being. Nehru subsequently implemented similar schemes throughout India.¹¹ In 1946, Mayer began work on planning for Kanpur, the largest urban center in the Uttar Pradesh region, and was appointed a Planning Advisor to the Uttar Pradesh government in 1947.¹² Mayer maintained a planning practice in New York City, but regularly traveled to India through 1950.

In October 1949, Nowicki was refining the curriculum for the North Carolina State College, School of Design, and sought comments from Mayer on his *School of Design* bulletin, the primary document outlining the direction of the school.¹³ This request was likely due to their mutual involvement with the RDCA. Mayer's comments prioritized the inclusion of a basic science course, geology, as well as English composition, public speaking and on job-the-job training, within the curriculum for the undergraduate students. He also referenced the curriculum at Harvard, developed by Joseph Hudnut, and commended the inclusion of a city-planning course within the first year. These comments showed Mayer's experience as a civil engineer and town planner, rather than as an architectural designer of individual buildings.¹⁴

In his October 1949 response to Mayer, Nowicki stated his appreciation of Mayer's comments, and added that he was "convinced we need your help here" at the NCSC School of Design, and he was "trying to organize your visit to Raleigh sometime at your convenience."¹⁵ Nowicki finished his letter by stating "I will do my best to be present at the Regional Council meeting to hear you speak on India." Thus, it appears that by fall 1949, Mayer and Nowicki had achieved a modest level of acquaintance and professional engagement.

Chandigarh Beginning

At the same time, in India, the planning process for a new Indian city was developing. With the independence and partition of India and Pakistan in 1947, the northern province of Punjab was left without a capital city; its former capital of Lahore was now in Pakistan. Nehru saw the need for a new capital as an opportunity to create a new city "unfettered by the traditions of the past," symbolic of the newly independent nation.¹⁶ With no established school of architecture or planning in India at the time, the Indian Cabinet Sub-Committee on Capital

Planning sought outside assistance in the design of the new city. Given his earlier engagement with Nehru, Albert Mayer rose to the top of the list of possible consultants.

Mayer was invited to present his ideas for the new capital city of Punjab (later named Chandigarh) on December 20, 1949, in Delhi, along with the German planner Otto Koenigsberger, who was also working in India at the time. Koenigsberger was not selected because the committee saw him as “an architect, and not a town planner in the modern sense.”¹⁷ By December 25, the Sub-Committee on Capital Planning had selected Albert Mayer (largely due to his previous experience with Nehru), and invited him to visit the mountain town of Simla to settle the details of the contract.

Mayer’s contract, signed in January 1950, required him to provide a master plan for the city, prepared for an initial population of 150,000 people, with options to expand to 500,000.¹⁸ The plan would indicate major roads, differentiated areas for residential, commercial and recreation, as well as grading and utilities. As the seat of governance for the Indian state of Punjab, Chandigarh required a significant capitol complex - a collection of government buildings including assembly, secretariat, high court and office buildings - to be designed in detail. Drawings and plans for a university, industrial area, civic center and railway station were also requested.

The plan would also establish the architecture of the new city through broadly applied architectural controls. The Sub-Committee on Capital Planning required Mayer to provide perspectives and plans of typical streetscapes, housing types, markets and schools, as well as detailed plans of the Capitol complex and special areas. Mayer was clearly selected for his abilities and experience as a modern town planner, and he needed assistance in designing architecture of the master plan.

Sometime in January 1950, Mayer asked Clarence Stein to join the planning effort, as a general consultant to the Chandigarh project.¹⁹ Still searching for an architect to lead the detailed architectural work, Stein recommended Matthew Nowicki to Mayer. In February 1950, Mayer formally wrote to Nowicki, and asked him to “join us in designing the East Punjab Capitol [Chandigarh].”²⁰ Realizing this was a major design opportunity, Mayer revealed that he had “canvassed the field pretty thoroughly,” and he believed that Nowicki was the designer who had the “technical qualifications with the necessary sensitivity to play a significant role in planning an entirely new city for an alien people.”²¹ Indeed, Nowicki’s experiences working in difficult design settings (Warsaw reconstruction, United Nations) were considered critical to the success of the Chandigarh project. Acknowledging the short notice of his proposition, Mayer stated that a condition of Nowicki’s involvement was that he must use his “talent, training and temperament to spend six weeks to two months on the ground in India.”²² Nowicki, who had not left the United States since his arrival in 1946, would be required to travel to India and to leave behind his wife and two young children. Mayer finished his letter with, “I might add out of my now rather intimate knowledge of India, and without wishing to flatter you, I believe we serve our country well in sending as our representative abroad such prospective citizens as yourself.”²³

Mandatory travel to India would also require citizenship documentation, a significant issue as Nowicki was then actively pursuing United States citizenship. His citizenship status would become a major issue as he prepared for his travel to India - petitioning ambassadors, hiring lawyers and paying substantial fees.²⁴

Although he was still involved with the United Nations Headquarters (then under construction), and with the North Carolina State Fair project (in design) and Brandeis University (being detailed), and was teaching full-time, Nowicki accepted the commission. Somewhat

similar in scale to his unrealized Warsaw planning, Nowicki likely saw the Chandigarh project as a second chance to shape the future growth of a capital city. Newly independent India had attained the self-governance that continued to elude his native Poland. Nowicki's vision for a large "world capital" compound for the United Nations Headquarters had given way to a small Manhattan site for a "workshop for peace." The Chandigarh project offered an open site, with few design limitations. It also brought the opportunity to not only provide for the needs of a new capital city, but also use his structurally expressive architecture to create symbol for a new post-war nation, the world's largest democracy.

Nowicki joined a design team already involved with the planning of Chandigarh. This group included Mayer's partners Julian Whittlesey and Milton Glass, as well as Clarence Stein, James Buckley (an economist), Ralph Eberlin (civil engineer) and Clara Coffey (landscape architect).²⁵ Initial planning meetings were held in Mayer's office in New York City, with regular correspondence from the Indian officials in New Delhi. Nowicki, teaching in North Carolina, was only able to attend about half of these meetings in person.

The Chandigarh site was located on the eastern side of Indian Punjab, on the gently sloping plains at the base of the Himalayas, roughly 150 miles north of Delhi.²⁶ Albert Mayer and Clarence Stein took the lead in planning the city, and developed the master plan around the idea of the RDCA-inspired neighborhood superblock. Roads for high-speed traffic, in a curving, fan-shaped pattern, separated the city into large, roughly rectangular, blocks. (Figure 7.1) Roads for slower traffic divided these blocks into three- "neighborhood superblocks," each intended to house roughly 1000 families. (Figure 7.2) In the middle of each three-block section, Mayer placed schools, markets, health centers, meeting halls as communal resources to be shared by each neighborhood.

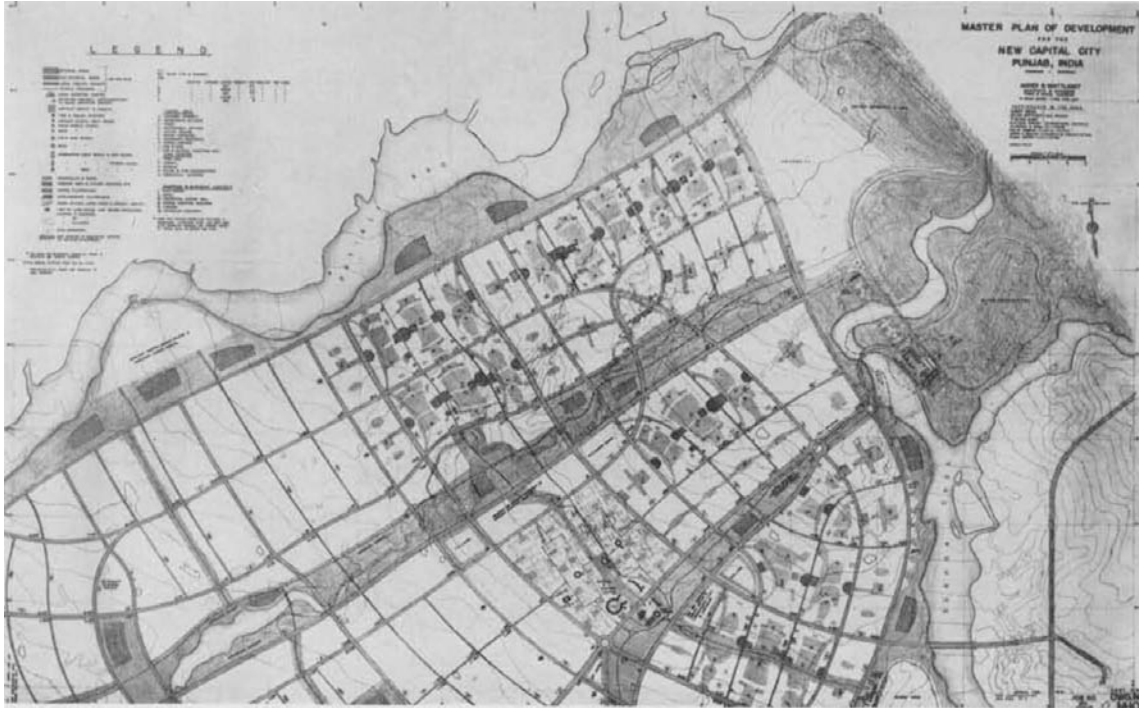


Figure 7.1 – Mayer’s Plan for Chandigarh, May 10, 1950. (Albert Mayer, “The New Capital of the Punjab,” *Journal of the AIA* 15, no. 5 (1950): 168.)

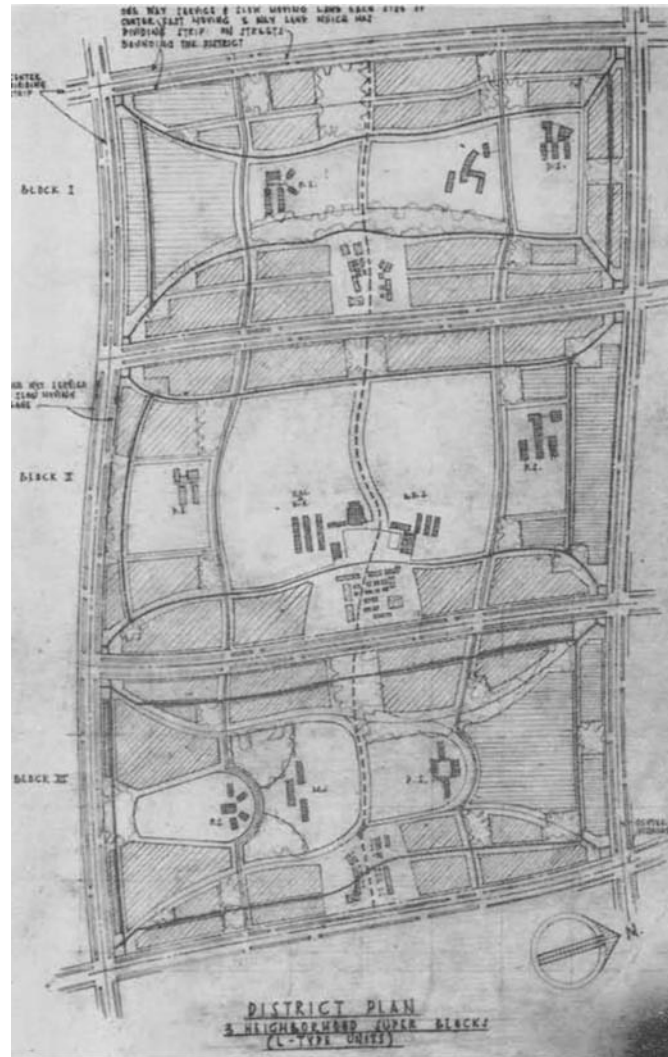


Figure 7.2 – Mayer’s Three-Superblock Neighborhood, Chandigarh (May 10, 1950), (Albert Mayer, “The New Capital of the Punjab,” *Journal of the AIA* 15, no. 5 (1950): 167.)

The overall town plan derived from this neighborhood-centered approach as the three-block units were placed within the network of curved streets. Mayer also included two substantial green belts (the shaded areas in Figure 7.1). Mayer placed the capitol complex at the base of the foothills (at a slightly higher elevation), and the roughly fan-shaped city sloped to the southwest. By separating the capitol complex from the rest of the city, Mayer was able to focus on the city and his neighborhood unit as the generator of the city form. In a presentation May

10, 1950, to a “Urban and Regional Planning” symposium of the American Institute of Architects, in Washington D.C. he stated: “So we build up the town from these living units and district trilogies. We did not plan down to them, but up from them.”²⁷

Nowicki’s “Leaf Plan”

Nowicki did not readily accept Mayer’s approach to city planning. Although they were both members of the RDCA, Nowicki and Mayer maintained somewhat different views regarding the planning of Chandigarh. During a meeting on March 11, 1950, Nowick presented “several schemes of the Town Plan,” but they were rejected by the group on the grounds that “the transportation system was not flexible enough” and the “location of the business and industry in the strip along the center of town was found impractical.”²⁸ Although not explicitly referenced in the meeting minutes, these comments likely refer to an original, undated plan for Chandigarh, authored by Nowicki, known as the “Leaf Plan.” (Figure 7.3) In this plan, the city was organized by an urban structure similar to that of a leaf, with a major commercial axis connecting to the capitol complex with a highway, and smaller roads connecting to either side. These roads connect to smaller and smaller roads that eventually frame residential neighborhood blocks. The scheme united the city, yet provided smaller, more intimate, residential areas. The clear road hierarchy provided easy circulation from neighborhoods to the commercial axis and areas of civic function such as the capitol, the lake, the public forum (amphitheater) and the “great park” in the hills. (Figure 7.4)²⁹

The hierarchy of the Leaf Plan is formally similar to the structural strategies that Nowicki often used. By breaking down a building (or a city) into ordered, yet interconnected elements, Nowicki’s metaphors for structure are similar to his metaphors for urban design.

3. The "leaf plan" for Chandigarh by Matthew Nowicki.

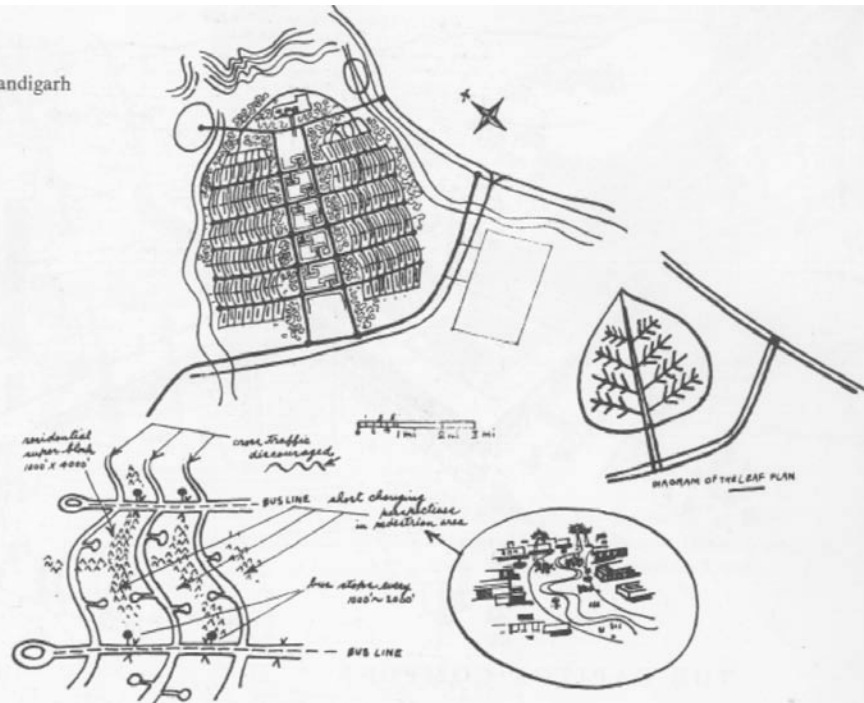


Figure 7.3 – Nowicki’s Leaf Plan, Chandigarh, 1950. (Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966))

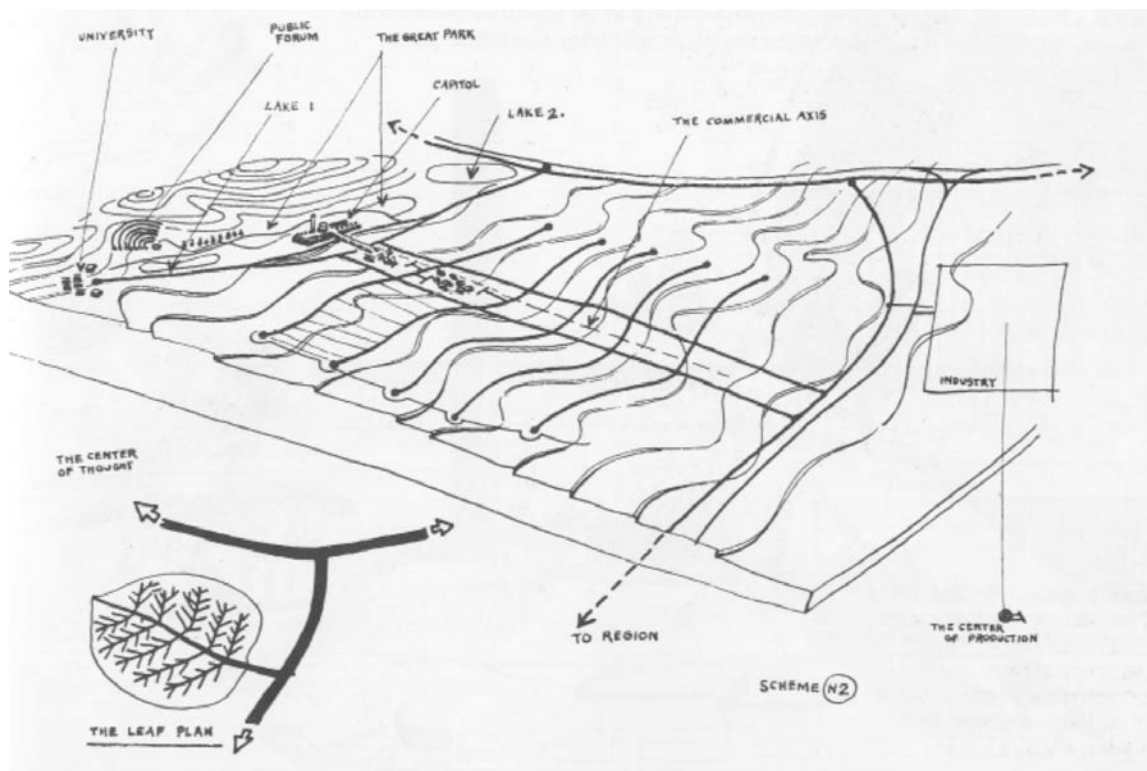


Figure 7.4 – Nowicki’s Leaf Plan, Chandigarh perspective, 1950. (Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966))

The basis of the group criticism of Nowicki’s “Leaf Plan” is not readily apparent. The system of roads appears to be flexible (multiple ways of reaching different locations, while moderating traffic speed) and a central axis of commerce (easily accessible, expandable) appears reasonably practical. Mayer and Stein had been immersed in “Radburn-inspired” planning, and may have been resistant to trying new city forms.³⁰ Further, Nowicki’s organizing structure of a leaf may have evoked the top-down planning schemes of CIAM, and been seen as disconnected from the life of the citizens.

Discouraged by the rejection of his plans, on March 14, 1950, after the March 11 meeting in New York, Nowicki wrote a letter to Mayer. In his letter he detailed his ideas on city planning, and the founding concepts behind his “Leaf Plan.”

Dear Albert,

Back home I am trying to summarize my impressions of the present stage of the plan and to analyze the validity of any principles which might be involved. ... First of all, I come back to my very strong feeling that we admired the plans of beautiful cities mostly for the clarity of their concept.

The organizing concept of the city was very important to Nowicki. He sought a city organization that provided order to the diverse functions, and argued that well-organized cities were the ones people considered beautiful. Nowicki’s “Leaf Plan” provided a clear structure with an understandable form, and this would have become the image of the city in the mind of its inhabitants. Nowicki's organization was not arbitrary. Dividing the functions of the city into the

“holiday” (recreation, civic functions, weekend) and the “everyday” (dwelling, working, family life), Nowicki believed that the holiday function could set the “basic concept of the great scale composition.” Nowicki stated:

The holiday function unites the city, becoming a graphic symbol of its plan. ... In planning the holiday function for the entire city it is legitimate to strive for magnifying of the space which means that there should be a complete continuity of one composition instead of dividing it into not related parts.³¹

In the “Leaf Plan,” the "holiday function" united the neighborhoods with the main civic center through the clear hierarchy of roads. As this was to be a governmental city, the capitol complex would be the focal point.

Contrary to Mayer’s "bottom-up" design approach, Nowicki’s approach was more "top-down," visualizing the city as a whole, rather than as a sum of individual parts. The "Leaf Plan" organized the communal functions of the city (commerce axis, capitol complex) into a comprehensible whole. By prioritizing civic functions and recreational activities, Nowicki developed a planning approach similar to Giedion’s emphasis on “monumentality,” where civic gatherings could bring communities together.³² Giedion had stated “civic centers will originate when cities are not regarded as mere agglomerations of jobs and traffic lights. ... Community life is closely connected with a sense for relaxation... an influence capable of expanding men’s narrow private existence.”³³

Nowicki’s faith in an organizing civic structure related to his overall approach to architecture. Structure (in a gravity-resisting, load-bearing sense) provided an order to Nowicki’s architecture, just as the community-based, “holiday” function infrastructure provided

an order to his urban planning. Nowicki described in his letter further similarities to his architectural theories in his approach to uncertainty and future change:

In planning a city for ages of its future growth it seems that we must be continuously beware of trends in our present task which might not be appreciated in the future. ... one must secure the greatest possible flexibility for unpredictable future changes. Therefore, it has to be what I would call the “functional flexibility” which is very much different from the “functional exactitude” I spoke of these terms before and I hope you remember what I mean.³⁴

The flexibility that Nowicki built into his architectural schemes, by looking to structure and materials is reflected in his emerging approach to urban planning. While specific city functions may change over time, the need for a sense of community should remain. The evolution of Nowicki's urban thinking is evident in this passage. His earlier work in Warsaw reflected the aim to separate functions through allocation of specific functions to specific locations. Here he argues for acceptance of the possibility of functional change, seeking order in the infrastructure and in overall geographic locations of elements such as the capitol complex, while accommodating the possibility of change at the smaller scale. Nowicki finished his letter to Mayer stating:

The main objective should be order, not diversity. It seems to me that only in this way one can achieve the highest standard and the uniqueness of a truly great plan. I have the impression that up to now none of our plans has approached this standard and the purpose of these remarks is to clarify the objectives for my own thinking. I trust you will not take them as a negative stand, but as an effort to crystallize our program.³⁵

Although he joined the team as an architectural consultant, Nowicki was clearly interested in contributing to the planning of Chandigarh. Like other modern architects, Nowicki saw the

importance of unifying architecture and urban design, with the theories of one directly informing the other.

Nowicki's Capitol Complex #1

Along with his "Leaf Plan," Nowicki proposed a capitol complex of monumental proportions, intended to signify the importance of the new capitol for independent India through structural form. The complex was proposed as a single, rectilinear block of large proportions, resembling a walled complex, placed at the edge of the lake created by the dammed river, the Sukhna Cho. The block was roughly 1000 feet by 400 feet, and would have stood three stories tall, the maximum height for the economical, load-bearing brick construction methods Nowicki intended to use. Slight balconies progressively cantilevered along the exterior, with the largest at the top, with a full-height row of columns at the lake shoreline. (Figure 7.7) The top surface of the block was broken up with numerous courtyards, and three parabolic arched forms of varying sizes rose above the top surface, containing the Assembly Halls.

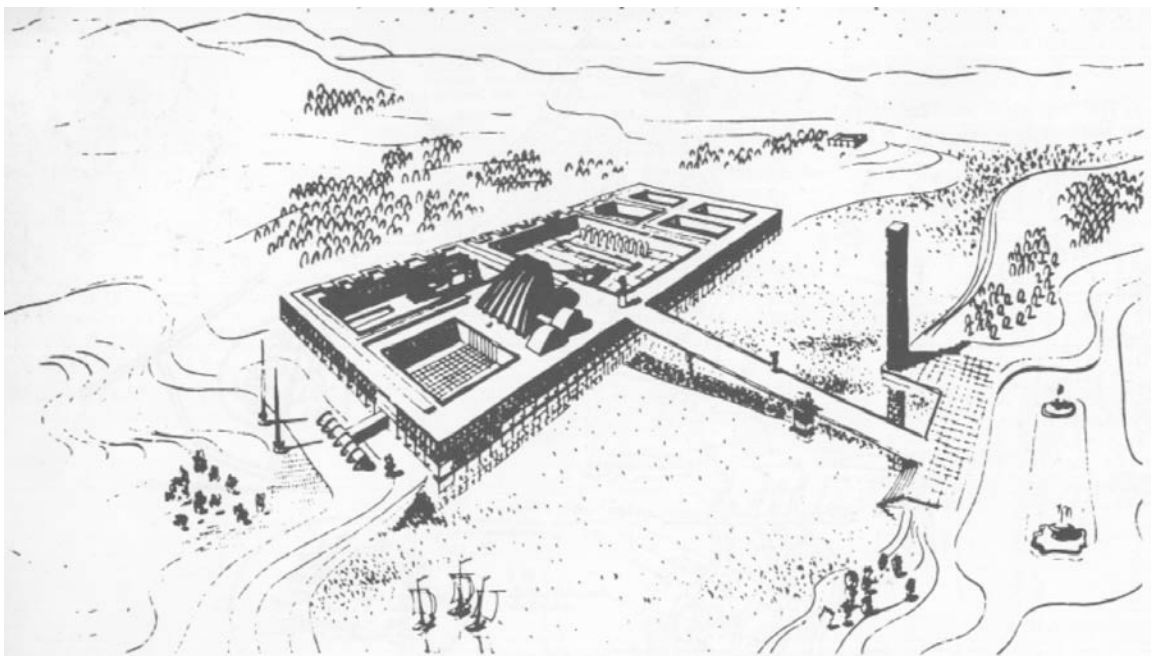


Figure 7.5 – Nowicki’s Capitol Complex #1, aerial perspective, 1950. (Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966))

All administrative operations of the Capitol were contained within the lower levels of the block, while the Assembly chambers gained dramatic expression through the high arches. In this scheme, Nowicki effectively placed the space of the tall, UN Secretariat (tower) on the ground, avoiding the highly mechanized and costly construction of a tall building, and allowing the Assembly chambers to rise above the upper surface to become dominant expressive forms. The courtyards broke up the large mass into narrower corridors, allowing for natural light and ventilation. Courtyards would also create pools of shade, creating cooler areas in the hot summer climate of Punjab.

Nowicki intended the top of the block to serve as an open public plaza. The Complex was to be accessible to pedestrians via a long ramp that crossed the Lake, and connected the Capitol to a vehicular drop off point. While the exaggerated perspective of the ramp raises questions about the practicality of its construction, the large ramp does show that Nowicki wanted to connect the complex to the city through a “monumental” arrival sequence. Renderings show pedestrians walking on the upper plaza, admiring the views of the city and the lake. The plaza is drawn full of life, with different groups of people milling around the Assembly Halls, and looking over into the water below. Staircases provide access to the sunken courtyards, drawn with trees and other landscape elements. Boats paddle and sail on the lake below, showing the entire complex full of public activity.³⁶

The vehicle drop-off was given its own treatment, an oval space framed by a monument at each end, and scaled for automobile circulation. Nowicki noted, in his Letter to Mayer, that

the Place de la Concorde was an example of a “simplicity of composition” contributing to the perfection of Paris.³⁷ From this drop off, vehicles would cross a separate bridge, and access the Capitol Complex through a modest side entrance at the ground level. No parking spaces are indicated.

Nowicki’s scheme was also carefully placed relative to the natural setting of Chandigarh, between the hills, water and trees of the site. The proximity to water (the river was to be dammed to create the lake) recalls Nowicki’s experience in Warsaw, where he provided a large public plaza at the water’s edge, and again at the United Nations, located on the shore of the East River. Each of Nowicki's drawings included the surrounding hills as a part of the composition. As in Figure 7.5, the exaggerated perspective from the opposite side of the lake casts the Assembly hall as a darkened mass against the backdrop of the Shivalik Hills and the Himalayas beyond. The flat mass created a linear horizon, like the plateau of Chandigarh, while the parabolic silhouette of the Assembly Halls mirrored the hills beyond.

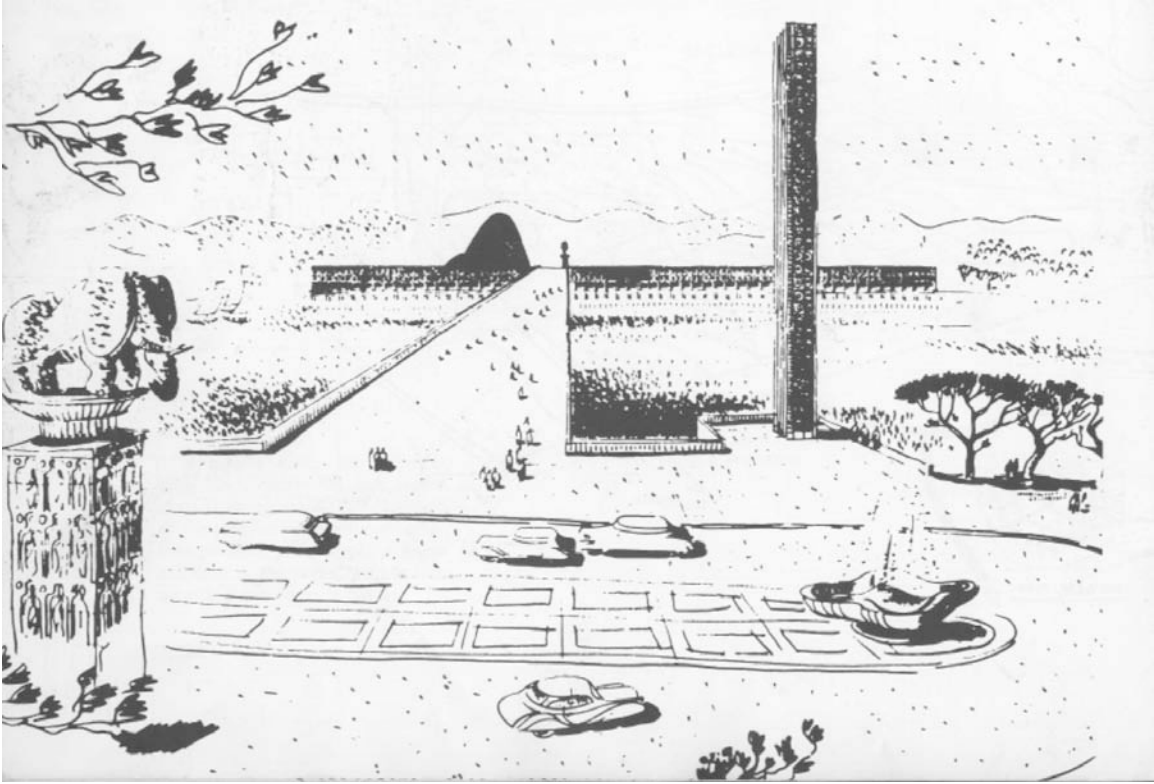


Figure 7.5 – Nowicki’s Capitol Complex #1, perspective from vehicle drop off, 1950. (“From the Legacy of Matthew Nowicki,” *Architectural Forum* 93 (October 1950): 201.)

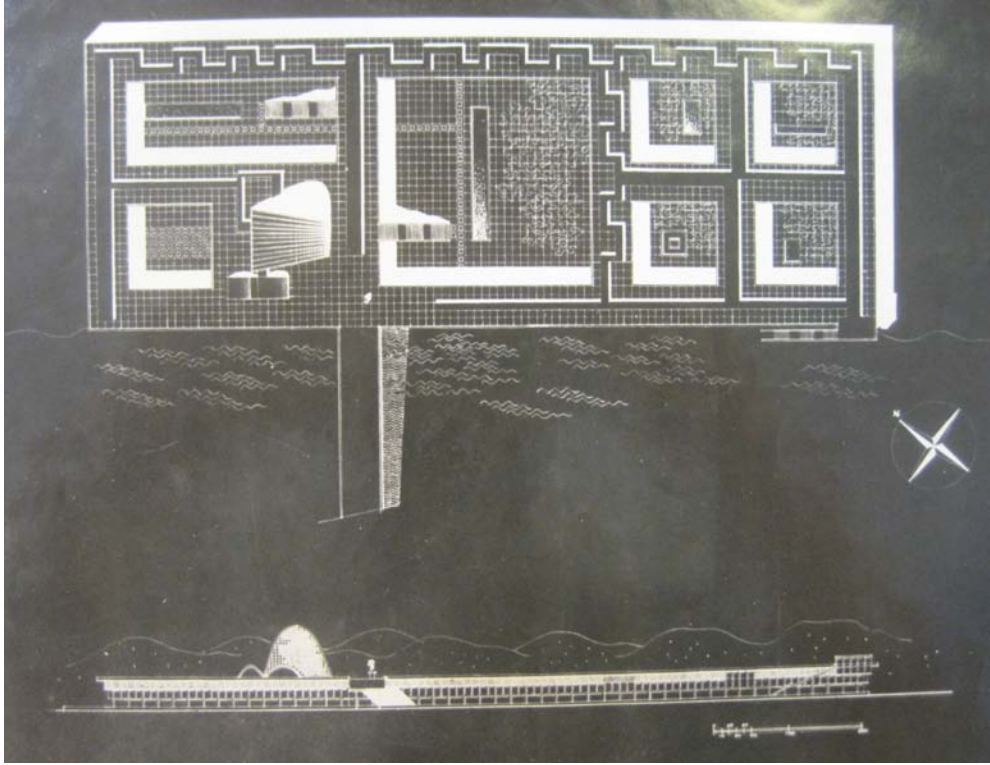


Figure 7.6 – Nowicki’s Capitol Complex #1, plan and elevation, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Oversize Flat Box 2, Folder 3)

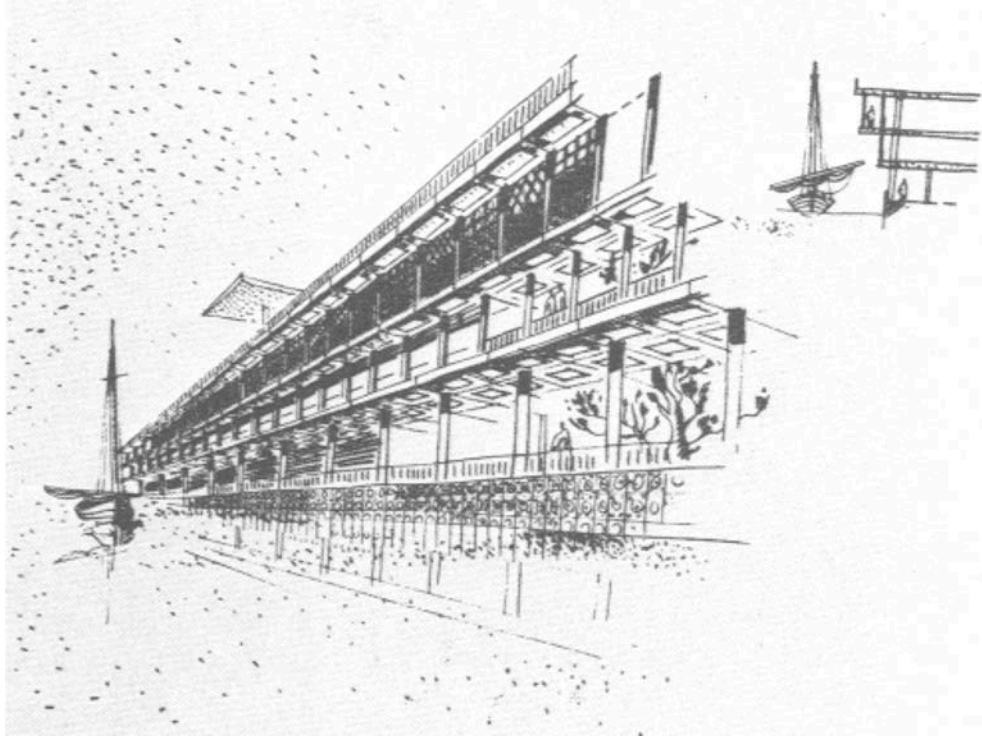


Figure 7.7 - Nowicki's Capitol Complex #1, view from the lake, 1950. ("From the Legacy of Matthew Nowicki," *Architectural Forum* 93 (October 1950): 206.)

Nowicki clearly wished to make the Assembly Halls the signature element of the composition as the only built element rising above the pedestrian plaza level, and the most visible form from a distance. In addition to a birds-eye perspective of the entire complex, Nowicki drew two perspectives of the primary Assembly Hall – one from the outside and one from the inside (Figure 7.8, Figure 7.9). Ascending the ramp, the pedestrian would have encountered the Assembly Halls to the left. Nowicki drew the glazed façade of the largest hall gridded into small squares, each showed individual detail similar to stained glass windows. The patterns were largely geometric, swirls, spirals, diamonds and squares. The roof surface of the main Assembly Hall is made up of six parabolic structural ribs, raised above the roof surface, that fan out slightly at their highest point. Square tiles, arranged in an offset pattern similar to

masonry construction, are set between. While the details of construction are not all complete, it appears that he was proposing to use concrete structural arches with masonry tiles in between.

The exterior form of the main Assembly Hall was exposed on the inside, with the arches tracing across the high ceiling. In Figure 7.9, light streams in through the glazed façade, illuminating the speaker who stands at the base of the structural ribs. The audience is located in a shallow arc facing the speaker. The interior rendering resembles those Nowicki drew for Brandeis University chapel and auditorium, emphasizing the orderly gathering of a large group focused on a single person.

The arched Assembly Hall, with glazed elevation recalls Oscar Niemeyer's 1943 Church of St. Francis, in Pampulha, Brazil, that had been widely published.³⁸ Nowicki had worked closely with Niemeyer on the United Nations project, and had published a photo of this church in his own essay, "Composition in Modern Architecture" (1949), under the subheading "ornament."³⁹ In his Chandigarh scheme, Nowicki appears to have drawn from the combination of the curved vaults and the mural façade as an approach to expression with the structure shaping the space, and decorative features providing humanizing elements.

The two smaller arches were left with plain surfaces, as though made from reinforced concrete.⁴⁰ Nowicki did not indicate their programmatic function, though it is possible they simply served as smaller Assembly chambers or conference rooms.

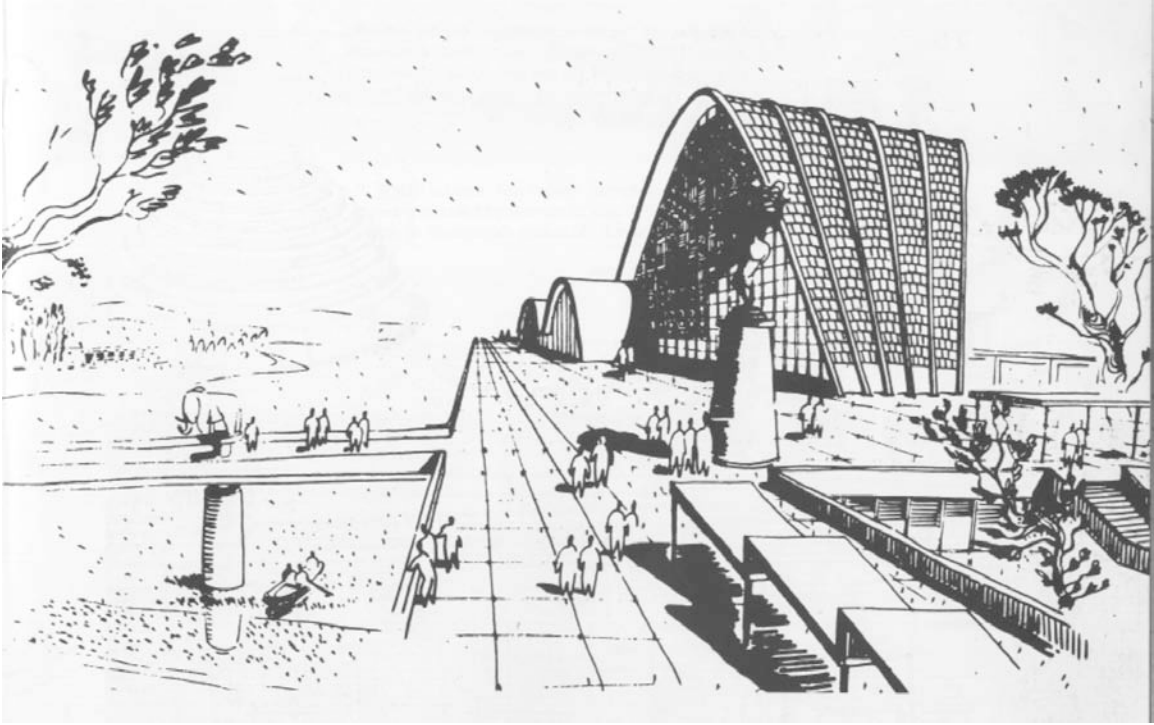


Figure 7.8 - Nowicki's Capitol Complex #1, perspective view of the Assembly Hall, 1950.
(Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966))

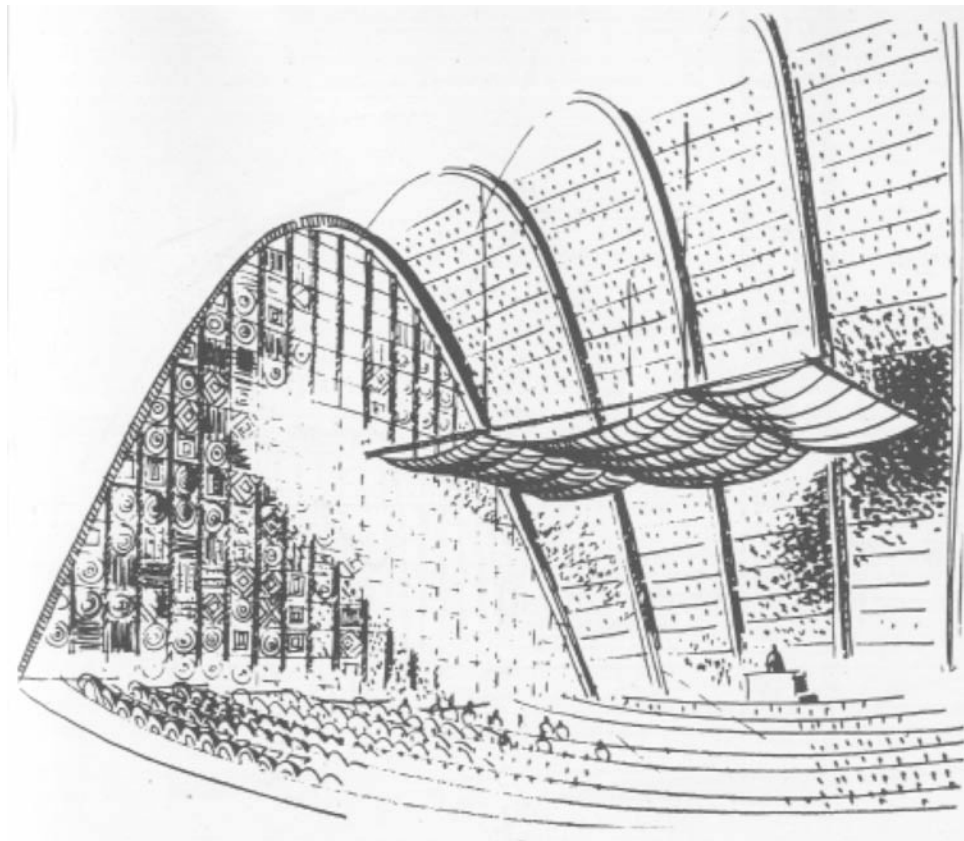


Figure 7.9 - Nowicki's Capitol Complex #1, interior view of the Assembly Hall, 1950. (Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966))

This Capitol complex appears to be Nowicki's creation alone, drawn as part of Nowicki's "Leaf Plan." Located at the culmination of the hierarchical network of roads, Nowicki's first scheme for the Capitol demonstrated his vision of the programmatic and symbolic needs for the seat of governance, the civic minded, "holiday function" serving the citizens.⁴¹ Nowicki's design presented a reorganization of program elements similar to those he had faced at the United Nations Headquarters, but freed from the compromises of the group design process. Stemming from his vision of a "world capitol" at the United Nations, Nowicki sought to give the Capitol of the Punjab a symbolic significance.

Mayer later described Nowicki's capitol proposal in an article for *Architectural Forum* as an "effort to express the people's dominance by plainly placing the Assembly over the Secretariat, and a long, imposing bridge-ramp leading directly to the hall of the legislature. Whether one approaches up the suspended ramp, or at ground level, one is constantly aware of the higher, exalted place of the Legislature."⁴²

The "Leaf Plan" and Nowicki's capitol complex sketches presented an alternate approach to Chandigarh – one quite different from Mayer's. The planning group met on March 20, 1950, but Nowicki did not attend (for unknown reasons). Mayer responded to Nowicki on March 23, thanking him for his "thoughtful painstaking letter about the theory of town plans," but noted that the issue was unresolved, stating "however that we may best settle this on your next visit."⁴³ Clarence Stein wrote to Nowicki, "Your suggestions had been drawn up to compare with the earlier suggestion which had been further developed. I am sorry you could not be present."⁴⁴ Records show, however, that Nowicki's plan did not gain significant discussion at the March 20 meeting, and the group proceeded with Mayer's general plan for the city. No further mention of Nowicki's plan can be found.⁴⁵

A week later, on March 27, Mayer sent a letter to Nowicki containing a "list of public buildings" that Mayer's plan required, as well as a "district plan: 3 Neighborhood superblocks," a "neighborhood plan: example of 'L' superblock," and a letter to the Indian officials describing the progress so far. Mayer requested Nowicki's review of these plans on two matters: "the content, for agreement or disagreement," and "the question of clarity."⁴⁶ Mayer made no mention of Nowicki's "Leaf plan" nor of any alterations to the superblock scheme.

Nowicki did attend the next meeting, on March 31. The planning group discussions centered around the particularities of Mayer's plan – specific location of the capitol complex,

railroad station, and various services within the superblock. Nowicki made no comments recorded in the meeting minutes. Nowicki's effort was likely too late, and his absence at the crucial meeting may have doomed any chance of acceptance of his "Leaf Plan." The plan was never discussed in the group meetings again.

Nowicki's Capitol Complex #2

The design team never accepted Nowicki's "Leaf Plan" or his unified capitol complex, returning to Mayer's fan-shaped plan. Mayer later wrote that he felt Nowicki's complex was overtly theatrical and introduced "some questionable other symbolism."⁴⁷ Mayer believed that the separating lake created a "remoteness" of the legislature from the city proper.⁴⁸ In an attempt to address these issues, Nowicki and the design team next developed a markedly different capitol complex scheme. (Figure 7.10)

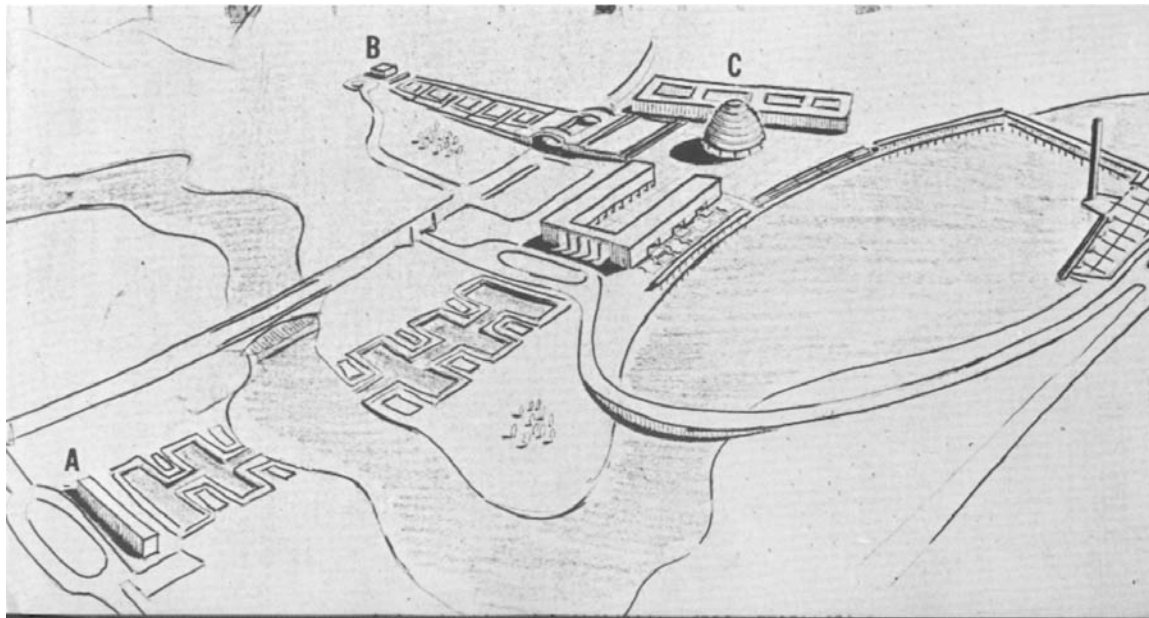


Figure 7.10 - Nowicki's Capitol Complex #2 showing the High Court (A), Governor's Palace (B), Assembly (C), 1950. (Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966))

The second capitol complex scheme was a sprawling collection of separate buildings, a complete shift in design approach.⁴⁹ (Figure 7.10) The new version of the capitol complex was located on the perimeter of an expansive, L-shaped plaza with the High Court at the end of one leg, and the Governor's Palace at the end of the other (towards the hills). The complex was placed at a bend in the Sukhna Cho River, and adjacent to a large lake created by a new dam. The space leading to the High Court was the site of a series of rectangular pools connected to the river, while the Governor's Palace was located at the end of a tapering open space, exaggerating the perspective view of the Palace, and making it appear farther away than it actually would have been. A network of roads and bridges around the complex provided vehicular access over the river and lake to all the buildings in the complex. A freestanding Assembly Hall and a pedestrian plaza occupied the intersection of these two long open spaces.

Despite Mayer's concerns about Nowicki's first scheme (disconnected from the city), this second capitol complex scheme remained separated from the city by a large body of water. The dispersal of the capitol functions into many separate buildings reduced its monumental appearance (a concern of Mayer), but the convenience of interaction between different parts of the government was compromised. The drawings showed discrete buildings for the High Court, Legislative (Assembly), Secretariat and Governor's Palace (a program element missing from Nowicki's earlier scheme). Though only roughly sketched, the buildings appear as low

rectilinear forms, with narrow widths, except for the Assembly Hall, a circular building standing in the plaza, possibly recalling Nowicki's earlier auditorium proposal at Brandeis.

Architectural historian Norma Evenson, in her book *Chandigarh*, later described the complex as a “series of vistas carrying the eye out from a central focus.”⁵⁰ This organization of the capitol complex along linear spaces recalls Nowicki's Warsaw plan, but this capitol complex lacks a sense of cohesion. The central plaza near the Assembly Hall appears undersized for public gatherings (especially when compared to Nowicki's previous scheme), yet the long distance to the other elements creates a sense of remoteness and separation. Further reinforcing this sense of remoteness, the pedestrian bridge crossing the Lake (on top of the proposed dam) was placed off axis and would have required a circuitous path to reach the public plaza.

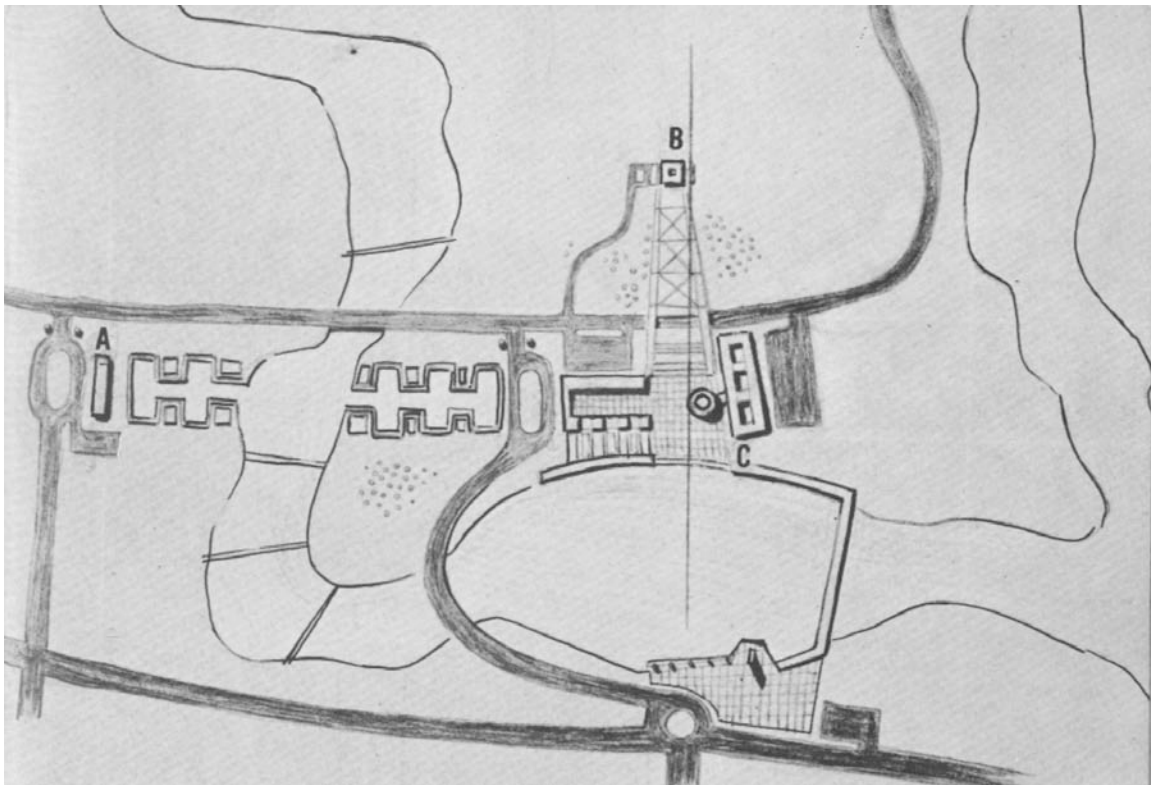


Figure 7.11 - Nowicki's Capitol Complex #2, plan, 1950. (Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966))

The majority of Nowicki's drawings for the second capitol complex address the design of the Assembly Hall. (Figure 7.12) For this stand-alone building Nowicki maintained the parabolic ribs from his earlier scheme, but in the second scheme he proposed a circular dome-like structure with six radial ribs. These ribs came to the ground at twelve discrete points (each rib on two points), allowing open circulation at the ground level. Circumferential sunshades cantilevered from the ribs give the dome the appearance of layers. Nowicki's section and plan of the Assembly Hall showed tiered seating, so although the exterior form appeared similar from all directions, the interior was bilaterally symmetrical and focused on a stage fairly close to the perimeter. The section showed a hanging acoustical reflector and recalls the section Nowicki had drawn for the Brandeis auditorium. (Figure 7.13) Nowicki showed the glazing as a series of vertical layers, stepping back at each horizontal sunshade, creating a stepped effect. This approach to glazing a curved dome recalled Max Berg's Centenary Hall erected at Breslau, Germany, from 1911 to 1912. Located in Poland after 1945, Breslau was renamed Wroclaw. As an extraordinary example of a ribbed dome of concrete construction within Poland's new borders, Nowicki no doubt knew this building. Nowicki's dome, with parabolic arches, presented a more vertical appearance than Berg's Centenary Hall, but Nowicki's layers of horizontals with vertical glazing appear similar to Berg's project.

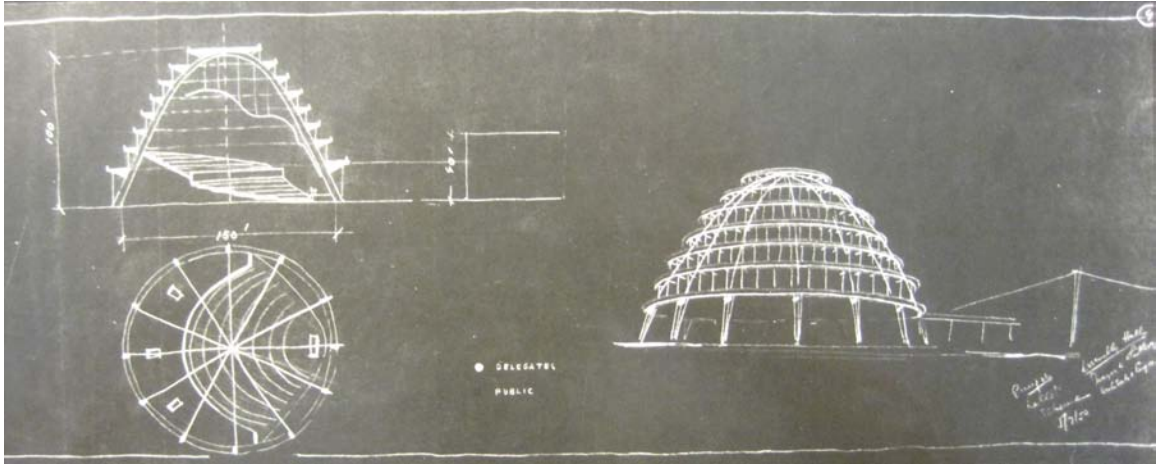


Figure 7.12 - Nowicki's Capitol Complex #2, Assembly Hall, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Oversize Flat Box 2, Folder 2)

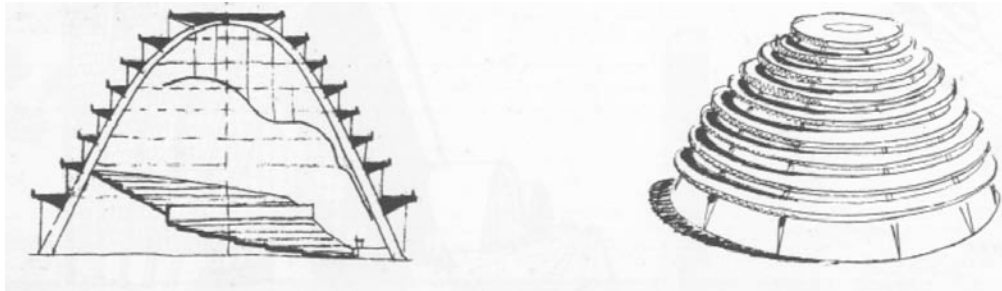


Figure 7.13 - Nowicki's Capitol Complex #2, Assembly Hall, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Oversize Flat Box 2, Folder 2)

Nowicki's drawings of the Assembly Hall presented the building as a structurally-determined design, showing locations of supports, proportioning and dimensions of the ribs. These radial ribs recall the steel ribs of the UN Assembly dome, although that structure was hidden behind exterior cladding. As in his other projects, Nowicki proposed the dome as a

space-enclosing structure, appropriate for accommodating and expressing the gathering of a large group of people.

Albert Mayer apparently had a very different understanding of the derivation of the domed Assembly Hall. Evenson quoted Mayer as claiming this dome was intentionally related to the traditional form of the Indian *stupa*. “We felt this a happy solution in the Indian context, where it is, I believe, most important for national pride and self-respect to tie in their past with the modern and future.”⁵¹ Ravi Kalia stated that Mayer was inspired by the Buddhist stupa in Sanchi (south of Chandigarh in Madhya Pradesh), which Mayer felt would be an important source of “national pride.”⁵² An ancient monument, well known to the Indian population, it is not clear why Mayer chose this building as an appropriate symbol for Chandigarh, and Kalia rightly expressed reservations over the decision to use a Buddhist form in a prominently Sikh and Hindu population of Punjab.⁵³

While Nowicki embraced historical inspirations, he almost certainly did not see the dome as derived from the *stupa* form, but rather understood it as a modernist structural form, like Berg's Centenary Hall, appropriate for a place of gathering. Structurally, the solid, semi-circular *stupa* had a heavy, stone or masonry continuous base with limited access points. Nowicki's dome was much lighter, made of thin structural elements, and resting on few, discrete points. As a monolithic dome, the traditional *stupa* had no openings on its exterior. Nowicki's dome allowed for extensive circulation of light and air.

The overall design of the second capitol complex does fit with Nowicki's established approach to architecture, in which he used a minimal amount of structure as an organizing element. With its dispersed layout, and Mayer's claims about the Assembly Hall form, the second capitol complex scheme was likely the result of a collective design process by Mayer and

Nowicki (and possibly others on the design team). No discussion of the second capitol complex appears in the design team meeting minutes; however it appears that Mayer may have played a significant role in the layout of the second capitol complex.

Nowicki never developed this second capitol scheme beyond these early drawings, and he left the buildings (apart from the Assembly Hall) left un-designed. Even so, these early drawings lack the vibrancy and excitement that was so characteristic of Nowicki's work. The drawings do not show any people, landscape elements (other than the river), the surrounding hills, or even his characteristic tree branch. The "clarity of concept" that Nowicki believed was central to city design (stated in his March 27 letter) was lacking in this second proposal for the capitol complex. Nor did the proposal for the second capitol complex provide the civic gathering place envisioned in Nowicki's letter, an essential element of his "holiday function" of the city.⁵⁴

Even with all its evident flaws, the design team selected this second capitol complex, without much discussion recorded. On April 10, 1950, Mayer sent the most recent master plan ideas to the Indian officials for approval, including the second capitol complex scheme, and it was enthusiastically received.⁵⁵ On May 10, 1950, Mayer presented the plan to a "Urban and Regional Planning" symposium at the national convention of the American Institute of Architects, in Washington D.C., and included the second capitol complex scheme.⁵⁶ Despite seeing his ideas on city planning largely brushed aside, Nowicki continued to be a productive member of the design team, though in a more strictly architectural sense.

Architectural Approach to the City

After work on the second capitol complex plan concluded, Nowicki shifted his design efforts to the individual buildings within the city. From the beginning, the architectural designs developed by Nowicki and the Mayer team were intended to be conceptual – a starting point for establishing the architectural character of the city. In an effort to save money, the Indian officials had agreed that Mayer and Nowicki, once in India, would direct government staff - young Indian architects - to develop their design concepts into more resolved designs and construction documents. Nowicki appears to have taken the lead in establishing architectural controls for the city, determining the fundamental principles on which the city should be built.

As a means to communicate the design intentions for the entire city succinctly, the planning team decided to study on superblock in detail, providing plans, sections and perspectives. Nowicki described his approach to this study and by extension to the architecture of the city of Chandigarh in a May 12, 1950, document titled “Supplementary notes to the Architectural study of super-block L-37.”⁵⁷ This document accompanied a longer report submitted by Mayer to P.L. Verma, the Chief Engineer for the project, and the Indian Planning Committee, titled “Report on Master Plan of the New Punjab Capital” that described the entire city plan.⁵⁸ Nowicki’s “Notes” described his basic architectural approach to a model super-block neighborhood (with no mention of a capitol complex design).⁵⁹ While specific to block L-37, they were intended as the basis for controls to be applied across the city.

Nowicki began by describing the public buildings of each superblock: “6 nursery schools, 2 primary schools, 1 middle school, a shopping center,” an “all-purpose office structure,” a temple, a health center (plus swimming pool) and an open-air meeting place (amphitheater).⁶⁰ While the principles of land use and circulation within a superblock were established in the Mayer document, Nowicki stated that “the architectural solution need[ed] an additional

description,” including an “analysis of the various kinds of urban beauty that our period seems to be capable to offer.” It is notable that, in an era when functionalism was most architects' dominant justification for their designs, Nowicki continued to state his desire to create “urban beauty,” a major theme in his earlier letter to Mayer. Referencing the urban visions of Le Corbusier, Nowicki pointed in a different direction:

In deciding on the low-height and specific character of our solution we had to discard the metropolitan beauty of free-standing structures separated by large areas of verdure. This dream of some modern planners depends entirely on a high degree of mechanization... and a way of life alien to that of India.⁶¹

Having worked alongside Le Corbusier at the United Nations Headquarters project, and then having helped finalize the Secretariat, Nowicki had first-hand knowledge of tall-buildings, and the mechanized systems they required. As the dominant, most internationally visible, urban planner of the early post-war years, Le Corbusier (along with other members of C.I.A.M.) had set a standard for modern urban centers. Nowicki, at Chandigarh, was creating a low-rise, yet still modern, urban counterpoint. Drawing upon the heritage of the "Garden City" movement and the work of Mumford, and recognizing the limited technology of movement available to most Indian citizens at this time, Nowicki explained, “Some other kind of beauty had to be strived for- contemporary to the same degree as the first, equally expressing a trend of our century and yet better suited to our conditions and better expressing the character and spirit of the country.”⁶² Nowicki wanted Chandigarh to be an embodiment of the time and place of its construction, fully a part of the cultural and political “character” of India. However, Nowicki was not interested in looking backwards, in a nostalgic reflection of the Indian past, but instead looked forward to a modern city, with modern buildings. He stated: “The fact that is was

considered as most essential to provide a modern architectural solution has to be strongly emphasized. It was felt that if this city should be appreciated not only by us but by future generations, it has to express as frankly as we can make it, the full truth of our times.”⁶³

Nowicki strove for modern form, yet looked to the past for those elements that were relevant and useful. By 1950, Nowicki’s architectural approach was not about newness, or a rejection of the past, but about the continuity of architecture through time. Influenced by Mumford's advocacy of regionalism as an approach to modern architecture, Nowick drew upon the richness of history as he sought modern interpretations of past building Indian practices. As key elements of his structurally expressive modern architecture, Nowicki sought both permanence and diversity in the architecture of Chandigarh.

In striving for a diversity of solution and for its local character only those elements were used which were preserving a message conveyed through historic architecture to our specific problems and means. In avoiding a repetition or a copy, it was felt that the architecture of this city should continue and develop the building tradition of India.⁶⁴

This overall approach to architecture took a specific form in Chandigarh based on several factors that Nowicki identified. Nowicki summarized key factors that influenced his design as: 1) the “village” origin of the Punjabi “way of life”; 2) the structural and material capabilities of the region; and 3) the “spirit in which our city should be built.”⁶⁵

Architectural Approach: “Way of Life”

Nowick’s explanation of the Indian “way of life” was intended to link his approach to Modern architecture with the Chandigarh site. Nowicki argued that the people of Punjab

maintained a way of life based on a village origin, prioritizing “the privacy of the household and at the same time the consciousness of blood ties that relate larger groups than one family unit.” This meant “people will like to live in small compact groups often of mixed income, preserving the privacy of their family life, but welcoming a bond of common space with a selected group of others.”⁶⁶

Nowicki had been faced with the question of understanding the organization of communities and families in planning for Warsaw. In post-war Poland, Nowicki had stated that “a strong family life” was the “base of social structure” yet required engagement with a community unit. About Warsaw he had written:

The present emergency program calls for a minimum of space in a small private apartment, in scale with the economic possibilities. As an indispensable supplement to this situation is a number of communal facilities that are to be added... The need for complete privacy of life leads in a paradoxical way to the necessity of those supplementary communal facilities.⁶⁷

Thus, the issues presented by the Indian “way of life” were not unknown to Nowicki. He recognized the need to balance communal and private space as a fundamental component of his proposals. His designs focused on creating screened private houses, surrounding a network of closed courtyards for communal use.

Nowicki continued: “Another characteristic of the people of Punjab has been their love of celebrations which provided an opportunity for gay decorations and festivity. The native art flourished on the walls of their homes and their love for colour and richness of form should find its fulfillment in the new town.” Painting on walls of homes was a characteristic of both Punjab and the neighboring state of Rajasthan.

Nowicki had proposed painting or mosaic decoration on the walls of his buildings in earlier projects. His school for *Architectural Forum*, for example, included murals on the exterior brick walls, the interior of his Brandeis University chapel was decorated with murals and his Polish chapel included graphic forms on the walls – a “color composition painted on wood.”⁶⁸ In his article, “Composition in Modern Architecture,” Nowicki had stated, “An architect of today hesitates to design an ornament but welcomes into his compositions fresco, mosaics, tiles, brick or stone, treating them all as decorative textures, free and independent of architectural rhythm.”⁶⁹ In the article, Nowicki cited Mies’s onyx wall in the Tugendhat House and Oscar Neimeyer’s mosaic façade at the Chapel of St. Francis as examples. Again, the inspirations that Nowicki found in Chandigarh seemed to reinforce his earlier architectural ideas. While certainly relevant and developed in good faith, it is difficult to tell if Nowicki’s inspirations truly supported his approach to Modern architecture, or if he simply sought out what was familiar as he worked in different contexts.

Another element of Nowicki’s Chandigarh architecture was tied to the climate of the site, a justification for providing accessible flat roofs. He suggested that, “The climate of the Capital demands protection from heat. The outdoor life of the day extends into the hours of the night when sleeping under open sky is almost part of tradition. Sleeping in one’s yard or on the roof demands a low building...”⁷⁰ Again, Nowicki’s approach to design in Chandigarh can be understood both as a response to local conditions and as a sensible adjustment of well-established modernist tendencies. The principle of the occupiable roof plane was a fundamental component of Le Corbusier’s “Five Points,” creating an inhabitable roof garden to replace the footprint of the building. Many of Nowicki’s early schemes had included flat roofs, including

his early design for his parents' house and he had also proposed a rooftop amphitheater in early sketches for the United Nation's Secretariat

In addressing the "overall relations" of the housing units to one another, Nowicki sought a "richness of perspectives within the areas of pedestrian movement."⁷¹ The views of the individual, the experience of being in the city, were a priority for Nowicki, where public space is shaped by the quality of the architecture. The architecture became a "frame for a particularly interesting view where color and silhouette are seen in shade, or strong projections offer diversified shadow pattern in sunlight."⁷²

Here Nowicki's urban vision comes through in his architecture. In designing multiple buildings, proportion and scale, order and variation were Nowicki's primary means of shaping the three-dimensional space of the city. He stated:

The influence on the happiness and the spiritual values of the life within our time will be profound if we succeed in taking the full advantage of relations between width, height and distance. Human well-being seems to depend on the emotional quality of space as much as on the sanitary factors of light and air... A diversified and beautiful space within a town offers one of the basic ties of its citizens.⁷³

The list of elements of the Punjabi way of life may have come from Mayer, as Nowicki had never been to India prior to June 1950.⁷⁴ On April 25, Mayer had written to Nowicki: "As promised we are sending you herewith 8 photostats of 'Indian architecture.'" ⁷⁵ Mayer claimed this was "the only material we have available in the office at this time." This note indicates that Mayer contributed to Nowicki's knowledge of India, which, in turn, Nowicki addressed in his designs. Nevertheless, even in his earliest designs for Chandigarh, Nowicki showed remarkable sensitivity to local conditions. This sensitivity reflects both his interest in the circumstances for which he was designing in India, and, more generally, his receptivity to local conditions in his

approach to architectural design. Both of these elements are present in his structurally expressive work.

Architectural Approach: Structure

With a basic understanding of the spaces and facilities required for the city's architecture, Nowicki turned to a specific study of structure and materials. He wrote:

The structure most logical under existing conditions seems to be brick wall and reinforced brick ceiling. In spite of the planned research and investigation of new methods of precasting reinforced concrete elements, brick might prove to be the cheapest medium. The tradition of the familiar workmanship coupled with the small price of labor will probably prove to be the decisive argument for using brick in most cases.⁷⁶

With his recognition of the budget restrictions on the capital project, Nowicki did not see brick construction as a limitation, but simply the most appropriate means of construction. Explicitly describing the structural range of brick, Nowicki developed his designs as "low structures up to 3 floors high and small spans up to 14'." This designation is consistent with the large three-story block of Nowicki's first capitol complex scheme.

Nowicki had already accumulated substantial experience with brick as a modern building material. Beginning in his years in Warsaw, Nowicki had taught "bricklaying" in the architectural "trade school" during the war. In his proposals for Brandeis University, Nowicki produced several designs that explored the expressive and structural potential of brick construction, particularly the chapel design.

Nowicki developed enthusiasm for the structural and material characteristics of his new site, and his architecture would reflect his acceptance of its qualities and potentials. All of

Nowicki's designed buildings contain expressive structural elements within the capabilities of the available materials.

Architectural Approach: Spirit

In the final section of his notes, Nowicki addressed the "spirit in which our city should be built." He wrote:

The reason for its creation is to provide accommodation for various well known physical functions of the Capital. But above all it should be conceived as a symbol of national unity and a contribution of our period to the life of the coming generations. This final synthesis of the town's purpose demands a sacrifice.⁷⁷

In summary, Nowicki believed the city should be more than a "functional" artifact. His emphasis on symbolism may, in part, be a reference to Giedion's arguments for "monumentality." As a symbol of national unity, Nowicki believed that Chandigarh could transcend simple, everyday demands. Nowicki's use of the term "sacrifice" clearly refers to Ruskin's "Lamp of Sacrifice." Following Ruskin, Nowicki argued the resources needed for the construction of the city, and the hard work of the builders, should be celebrated as a sacrifice to the greater purpose.⁷⁸

Nowicki here argued that this monumentality, and sacrifice required, applied not just to the capitol complex, but to all building types in Chandigarh. His statement indicated that significance of construction was a part of all the buildings of the city, an everyday monumentality. "It would be a mistake to consider only the public buildings as possessing the symbolic value. All areas of the city should be influenced by this stand and this should include the low cost housing as well."⁷⁹ Nowicki's notes outlined the ideas that shaped his proposals for

the architecture of Chandigarh. His comments touched on many different themes in modern architecture, and all were central themes in Nowicki's structural approach. The clear emphasis on materials and structures is tempered by sensitivity to both the societal needs and the diversity that arises from unique characteristics of the region. Written very close to the time he delivered his "Origins and Trends" lecture, these "Notes" clearly reinforce Nowicki's articulation of his structurally expressive architectural position.

Building Types

Within the single superblock L-37, Nowicki proposed designs several different building types. These included five different housing types (to provide for a diversity of living situations), a shopping center, schools, an amphitheater, and a temple. All of his designs displayed a similar attention to materials and structure as a medium of expression. Through manipulation of basic structural forms, Nowicki created a variety of buildings and spaces attuned to the anticipated needs of the future residents.



Figure 7.12 - Nowicki's Superblock, diagram with reference housing types, 1950. (*Student Publication of North Carolina State College School of Design* 1, no. 1 (1951): 10.)

Nowicki designed the housing schemes for maximum flexibility. He stated, “As the income of the future inhabitants nor the amount of eventual state subsidy, was not precisely defined, it seemed as the most practical approach to study a maximum number of variations of each housing type.”⁸⁰ But Nowicki was not just interested in the limitations this uncertainty placed on the design. He was also concerned with how economic uncertainty would affect users of his buildings over time. With the unknown economic capabilities of the future occupants, “each major type has three stages of development allowing for future expansion according to the rising standard of life of the occupant or meeting different income possibilities.”⁸¹ In this way, Nowicki's housing schemes accommodated both the limitations imposed on the design process and the economic possibilities for urban living in contemporary India.

Nowicki took his understanding of the need for flexibility, with some changing and some unchanging elements, and looked to structure and materials for solutions. “It was assumed after

conferences with the Chief Engineer that the most practical structure in our conditions is a 13 ½” brick bearing wall and reinforced brick ceiling. All the row houses are based on the most economic use of this structure.”⁸² Nowicki’s careful attention to the “most practical structure in our conditions” provides a direct link between the structure of his buildings and the site of its construction.

Nowicki designed housing types A-D as multi-family, row houses in a low-rise setting. His approach was based on three factors “a way of life for future occupants, a consideration of income and future rent scales, and the most economic and practical structural method of building.”⁸³ Structure must not only be practical, but adaptable as well. He wrote, “Each housing type may grow through a diversified sequence of stages offering a choice for many slight variations of income and rent.” Nowicki’s structural solution had to accommodate expansion and growth over time.

Nowicki grouped the housing around the perimeter of the superblock, with clusters consisting of multiple ground-level units with shared walls, around a central courtyard, which families and neighbors could share, and children could use as play areas.

Type A consisted of single-story units that could be expanded to two stories over time. Load-bearing walls enclosed each unit on its sides serving as a simple structural system, while moveable, highly decorated infill panels provided spatial flexibility. Nowicki provided a central stair that led to the roof of the unexpanded unit that could later serve the additional floor. A modest cantilever shaded the ground floor entry, while permitting a small balcony above once expanded. Nowicki also used *jalis* – the perforated brick screen-shading device – on the upper level. Arranged into crescent-shape, these units shaped the interior courtyards.



Figure 7.13 - Nowicki Housing Scheme, Type A, 1-story, 1950. (Matthew Nowicki Collection, Chandigarh Art and Architecture Museum, Chandigarh India, Panel 131)



Figure 7.14 - Nowicki Housing Scheme, Type A, 2-story, 1950. (Matthew Nowicki Collection, Chandigarh Art and Architecture Museum, Chandigarh India, Panel 131)

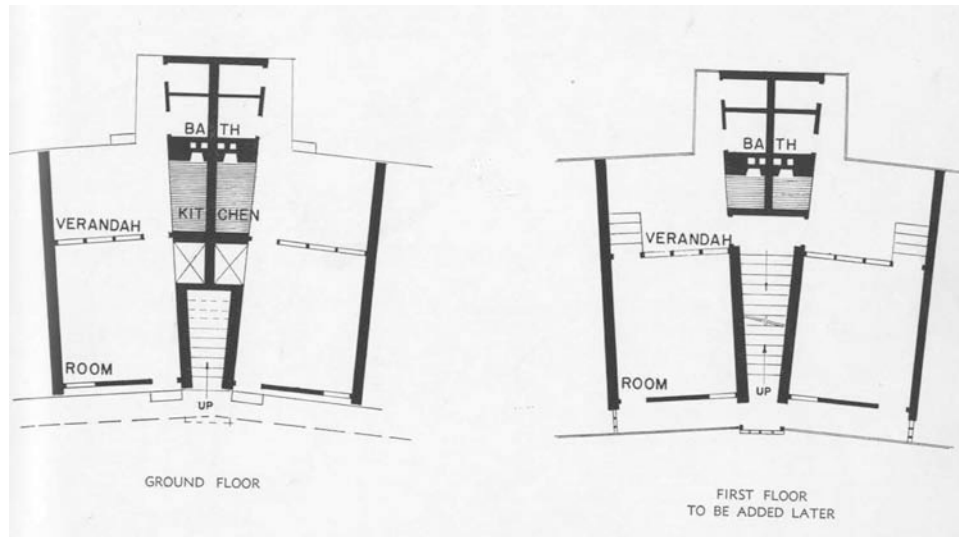


Figure 7.15 - Nowicki Housing Scheme, Type A, Floor Plan, 1950. (*Student Publication of North Carolina State College School of Design 1 no. 1 (1951)*)

Nowicki's other housing types used similar architectural devices including load-bearing party walls. Types B and D had staggered facades to completely enclose a central courtyard for a more private setting. Type C offered a linear appearance with popped out *jalis* at varying elevations and a braced awning along the top.

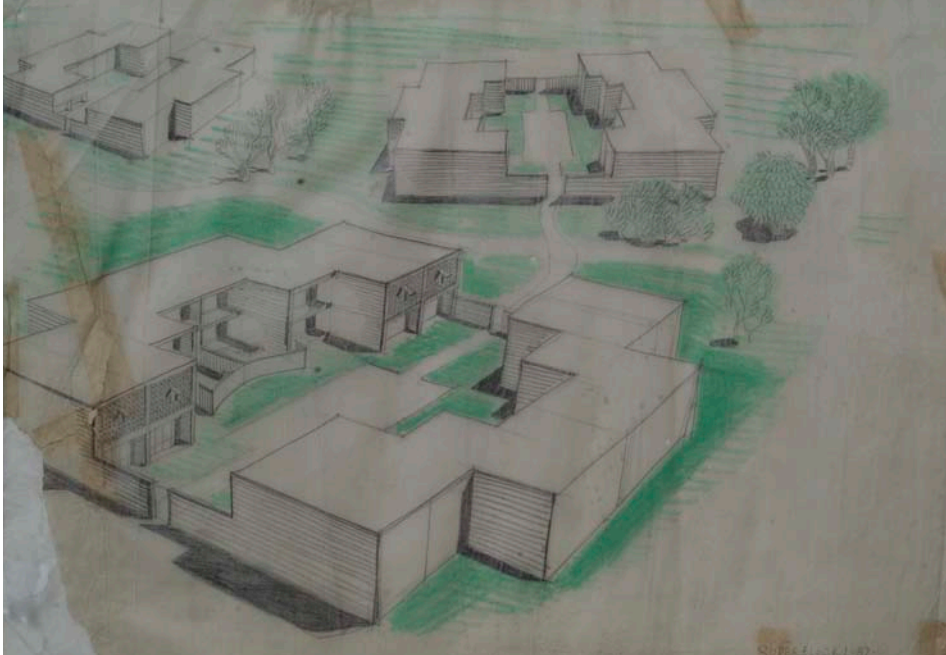


Figure 7.16 - Nowicki Housing Scheme, Type B, perspective, 1950. (Matthew Nowicki Collection, Chandigarh Art and Architecture Museum, Chandigarh India, Panel 134)



Figure 7.17 - Nowicki Housing Scheme, Type C, 1950. (Matthew Nowicki Collection, Chandigarh Art and Architecture Museum, Chandigarh India, Panel 133)



Figure 7.18 - Nowicki Housing Scheme, Type D, 1950. (Matthew Nowicki Collection, Chandigarh Art and Architecture Museum, Chandigarh India, Panel 134)

Nowicki also designed a mid-rise apartment building as a higher density housing option. A pair of long, narrow, blocks of units run parallel to each other, connected by two walkways and stair towers. The arrangement created a large interior courtyard, overlooked by the units on either side. Each block cantilevered progressively outward at each level, creating a balcony on the inside (facing the courtyard) and providing shading for the outward façade. A ground-floor rendering showed the building lifted on *pilotis*, with perforated screens on the levels above.⁸⁴



Figure 7.19 – Nowicki’s Apartment Housing, 1950. (Matthew Nowicki Collection, Chandigarh Art and Architecture Museum, Chandigarh India, Panel 140)



Figure 7.20 – Nowicki’s Apartment Housing, perspective, 1950. (Matthew Nowicki Collection, Chandigarh Art and Architecture Museum, Chandigarh India, Panel 141)

Nowicki's designs for other building types demonstrated a similar attention to structure and materials, but included increased flexibility of future use. For the school building proposals, Nowicki designed a series of two-story, barrel vaulted spaces of varying sizes, gathered around a central courtyard. (Figure 7.21) The rounded roofs appeared to rest on masonry bearing walls, and long ramps provided access to the second floor levels. As with his school for *Architectural Forum* and his designs for Brandeis University, Nowicki intended these roofs to be cast on the ground and lifted into place in a method similar to the Lift-Slab technique developed by Severud.⁸⁵ This method would have allowed the use of the structurally expressive shallow curved vaults, while eliminating the costly formwork required to cast these roofs in place. (Figure 7.22)

Nowicki saw a connection between the construction methods used and the public reception of the school. "The finish of the school buildings may be as simple as we can make it. But the construction should be daring and imaginative even if there was a way of building the same space for less money. Those buildings, the property of all the citizens, should express their pride."⁸⁶ While economical construction was important, it was not the only priority. While finishes should be simple and contextual, Nowicki believed that structurally dramatic could express important social sentiments and play a key role in the satisfaction the city's inhabitants.

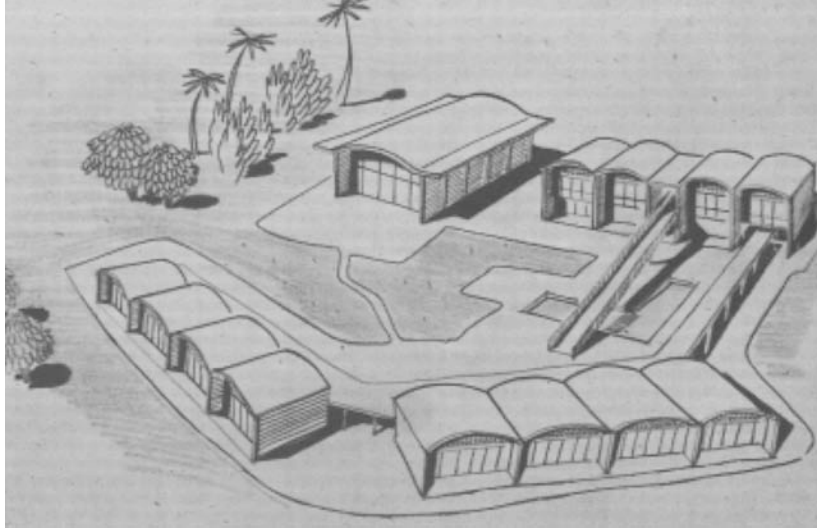


Figure 7.21 – Nowicki’s School Buildings, 1950. (Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966))

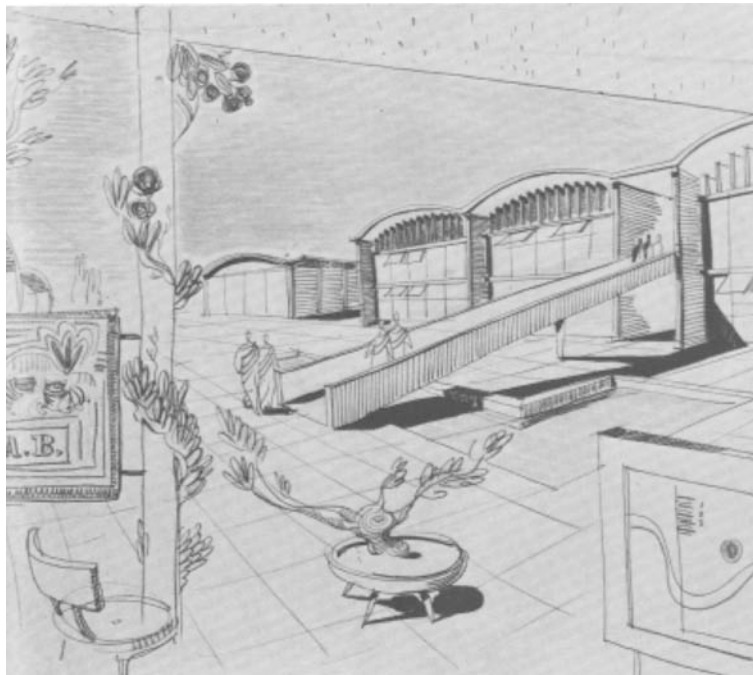


Figure 7.22 – Nowicki’s School Buildings, 1950. (Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966))

Nowicki's civic center buildings, railroad station, office buildings and market spaces showed a similar attention to structure and use of space. (Figures 7.23- 7.27) In these designs, Nowicki was selective in his use of brick and concrete construction, using brick for short, massive, compression-only locations, preferring reinforced concrete for cantilevers (requiring tension), tall slender columns, and flat slabs. Nowicki used different structural systems to shape different types buildings – finding alignment between structural capabilities and programmatic spatial demands. Nowicki interpreted these systems as diverse formal solutions to different architectural problems.

In many cases, Nowicki blurred the division between inside and outside space by using perforated brick screens as enclosure, showing modest cantilevers for covering market vendors, or using *piloti* to create open circulation at the ground level. Nowicki avoided long, linear facades and overly expansive urban plazas, showing a diversified arrangement of spaces. His sketches are full of human activity, landscaping (fountains and trees), and many informal elements (like tents over market stalls, people sitting on the ground).

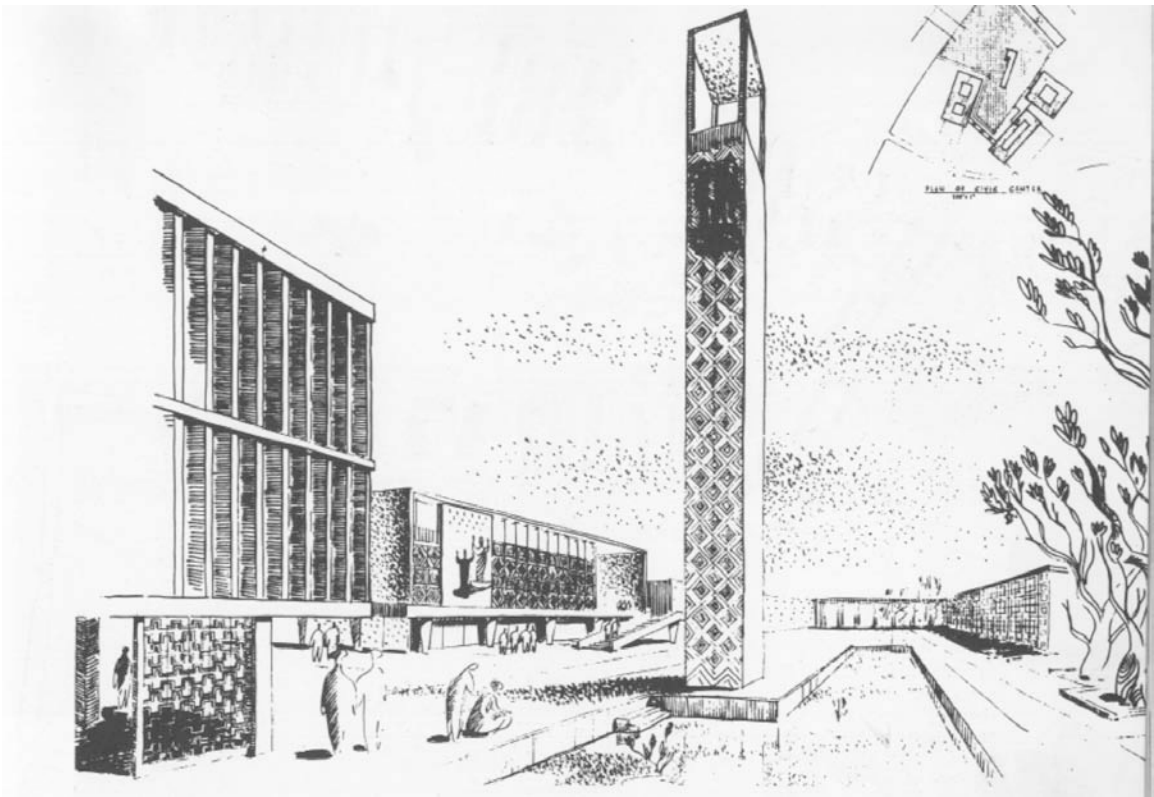


Figure 7.23 – Nowicki’s Civic Center, Chandigarh, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Flat Box 2, Folder 3)

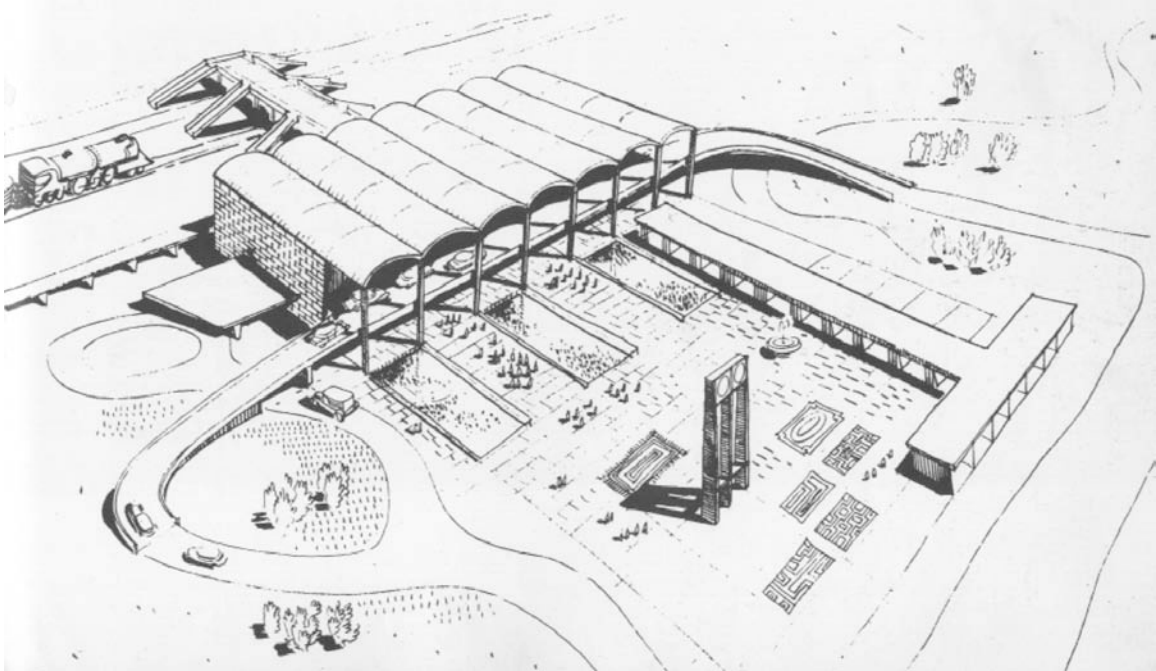


Figure 7.24 – Nowicki’s Railway Station, Chandigarh, 1950. (Matthew Nowicki Drawings and Other Material, North Carolina State University Library, Oversize Flat Box 2, Folder 1)

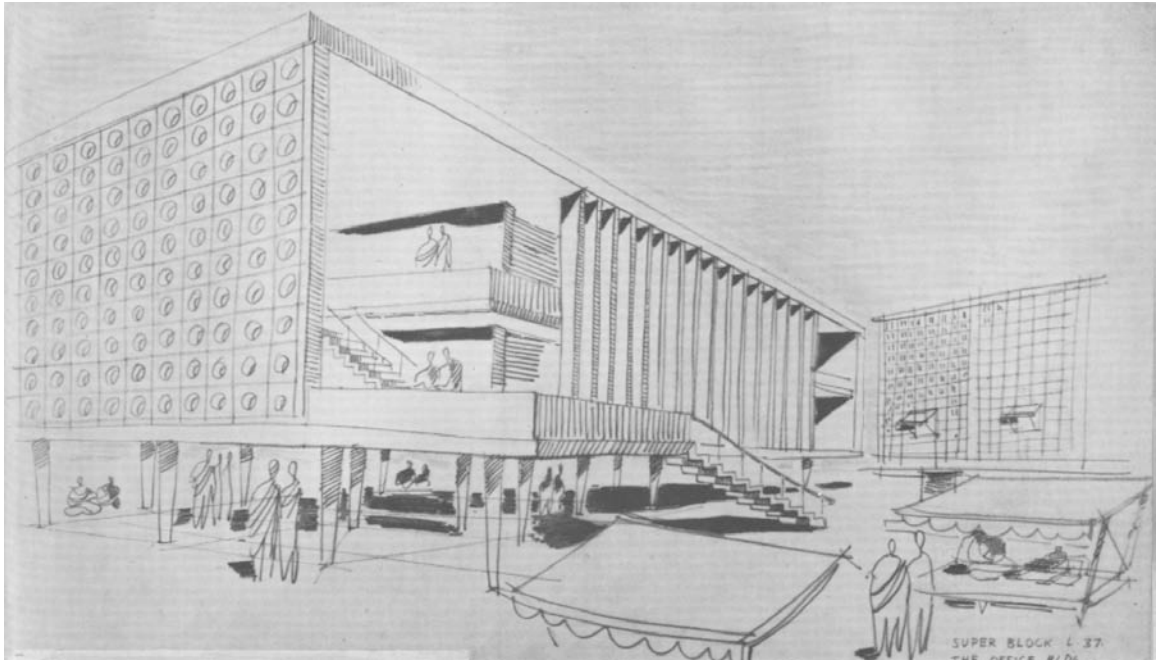


Figure 7.25 – Nowicki’s Bazaar Office Building, Chandigarh, 1950. (Lewis Mumford, “The Life, Teaching and Architecture of Matthew Nowicki,” *Architectural Record* 116, no. 3 (September 1954): 153.)



Figure 7.26 – Nowicki’s Market Space, Chandigarh, 1950 (Matthew Nowicki Collection, Chandigarh Art and Architecture Museum, Chandigarh India, Panel 132)



Figure 7.27 – Nowicki’s Market Space, Chandigarh, perspective, 1950. (Lewis Mumford, “The Life, Teaching and Architecture of Matthew Nowicki,” *Architectural Record* 116, no. 3 (September 1954): 159.)

Travel to India

Nowicki left the United States on June 28, 1950. This trip was his first to the Indian subcontinent. Albert Mayer had left earlier, and met Nowicki in Delhi. From there, the two men traveled north to see the Chandigarh site, and began work in the mountain town of Simla.⁸⁷ Simla had been the summer capital of the British government prior to Indian independence, and became the de facto capital of Indian Punjab before the building of Chandigarh. On July 12, 1950, Nowicki wrote to Lewis Mumford:

The city has a beautiful site from which one can see not only the hills but the Himalayan Range. The people are kind and charming. The two ingredients of the future city are as one would wish them to be. ... At the moment I am stationed in Simla 120 miles from the Tibet border. Most of the time the town is enveloped in clouds and when the sun shines the clouds are in the valley below. With a bit of imagination one can feel the radiation of philosophy from the not distant monasteries.⁸⁸

Despite their beautiful surroundings, Nowicki and Mayer found that little had been done to facilitate their work in India. The designs they had sent ahead had been given little attention by the Indian officials. Mayer recalled:

The first shock was that nothing had been done with our plans. No one had really studied them, no one had closely studied the reports; there was as yet no program beyond what we had crudely proposed. ... Not even the house plans had been developed appreciably beyond our own diagrammatic indications. There was no assembled staff and no drafting room.⁸⁹

Mayer and Nowicki were also faced with a dysfunctional Sub-Committee on Capital Planning. Their primary contact, the Indian administrator and engineer P.L. Verma, was struggling with other Indian officials over budget allowances and administrative control. Mayer stated, “The Cabinet had previously approved the plans, but there was still dissention and indecision – a part of the general political malaise and confusion in this province, truncated by partition.”⁹⁰

Still, Mayer and Nowicki began to work. Although they had hoped to perform high-level work, such as designing the capitol complex while directing others in the execution of smaller projects, Nowicki and Mayer instead undertook smaller, detailed work. Given the state of the project, they decided to design a single superblock fully – adding detail and refinement to their earlier schemes.

M.N. Sharma (1923-), a young, Indian architect, was assigned by the Sub-Committee on Capital Planning to assist Mayer and Nowicki on the Chandigarh project.⁹¹ Sharma described the office as “a 5m x 5m space with three large tables, stools and drawing boards.”⁹² Working without support staff, he recalled, “Mayer started detailing his Master Plan while Nowicki started giving practical shape to one of his sectors. He produced beautiful sketches, very colourful... Chandigarh would have looked very different from what you see today if that team had

continued.”⁹³ Sharma was impressed with Nowicki’s ability to quickly create intricate sketches, and noted Nowicki’s habit of using colored pencil on the backside of an architectural sketch (on vellum), to provide a muted, colored effect, as seen in Figs. 7.14, 7.16-7.20, 7.26. But Sharma, as a young architect, did not get to know Nowicki’s design approach well.⁹⁴ After Mayer returned to the United States, Nowicki wrote to Mayer and frequently mentioned Sharma in his letters. Nowicki referred to Sharma as a capable young architect, yet not the most diligent or punctual. Nowicki ended up doing most of the work himself. In one letter to Mayer he commented:

The work proceeds. My helpers [the young Indian architects] adopted a new method and they take turns not coming into the office. Everyday I have only two of them. Yesterday was Sharma’s turn. However that does not make too much difference because I am now working on the sketches preparing a good illustrating material. There are some new housing types which proved to be cheap and look well.⁹⁵

In another letter, Nowicki stated, “Sharma is more difficult than ever.”⁹⁶

On August 9, after Mayer had departed, Nowicki attended a meeting of the “Cabinet Subcommittee on Capital,” where he presented the “proposed scope of the present stage of work” as a “full architectural definition of one superblock.” In meeting minutes, Nowicki is quoted as saying:

It was felt that concentrating on a careful architectural study of one independent area of the plan instead of studying several of them in a less detailed manner, has the following advantages: 1) It establishes an example and a standard for future work. 2) It becomes a good training ground for the staff and a preparation for more independent work in future.⁹⁷

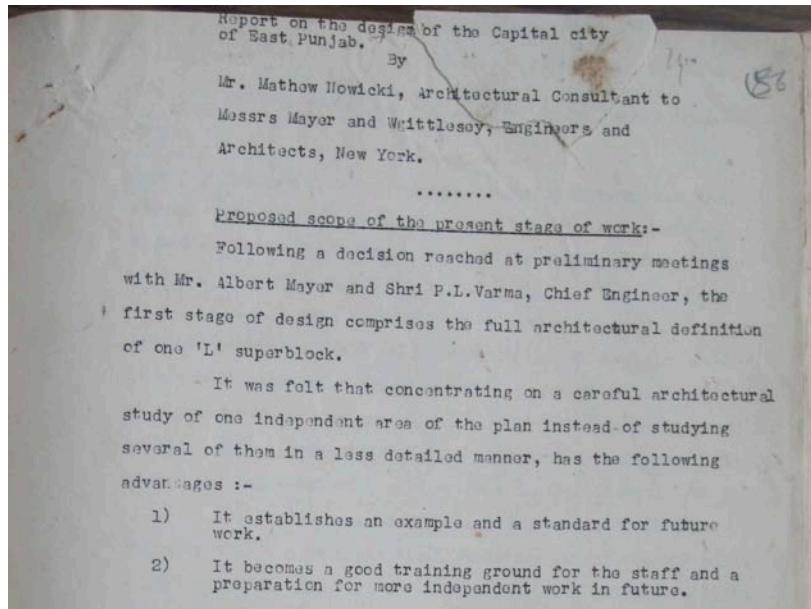


Figure 7.28 – Nowicki Report to Cabinet Sub-Committee on Capital Meeting, 1950. (Nowicki, Matthew “Report on the design of the Capital city of East Punjab,” (August 9, 1950) *Cabinet Sub-Committee on Capital Agenda & Minutes Etc., 1949-1950*. Chandigarh Reference Library, Chandigarh)

At this meeting, Nowicki also summarized his earlier “Notes,” and gave recommendations for moving forward which included recruiting staff “as sanctioned,” moving into a larger “independent working space,” and acquiring “cost estimates and structural advice on the architectural and technical problems involved.”⁹⁸

The details of Nowicki’s time in India were not well documented, except through his letters home. Nowicki’s letters to Mayer described the difficulties of working in India including lack of staff, constant disagreements among Indian officials, and continued protests over the selected site by displaced villagers. At one point Nowicki claimed “no one shows interest in what is being done.”⁹⁹

The lack of documentation makes it difficult to determine which designs Nowicki produced in India, and which designs were developed before he left the United States.¹⁰⁰ While

the drawings stored in the Chandigarh museum were likely drawn in India, earlier sketches suggest these designs had been developed prior to arrival. Nowicki mentioned that he was developing his designs for a shopping center (which allowed shopkeepers to live upstairs), refining his school designs (with assistance from M.N. Sharma) and detailing his housing schemes (including fenestration options to avoid too many window sizes). Mayer was particularly impressed with Nowicki's designs for small houses, as "conceptual and careful studies of levels of economy, convenience and scale," which emphasized the streetscape as part of the living experience.

Nowicki's drawings were intended both to work out spatial details of different buildings and to serve as a means to communicate the architectural potential of the project. His colorful renderings impressed the Indian officials during tense cabinet meetings, and helped maintain excitement for the project despite financial and administrative difficulties.¹⁰¹ Nowicki was able to get a model started, although no photographs were taken (or remain), and attempted to create a booklet of their designs for publication (similar to the one he proposed for Brandeis University).¹⁰²

On August 15, 1950, the *Indian Tribune* published an article, titled "Salient Features of Punjab's New Capital."¹⁰³ The article outlined the major planning and architectural themes of the design process. Nowicki mentioned the *Tribune* article in a letter to Mayer:

The article will appear, I am afraid, without any illustrations because the photographer of their publicity department does not have the plates to his camera. I gave them all the originals that were supposed to be used and they have sent them to the Tribune. Maybe the Tribune people are better equipped.¹⁰⁴

The newspaper article contained five images (but no model photographs): a large map of the Mayer plan, a drawing of an example super block, a photograph of the “Chandigarh temple” (temple to goddess Chandi, the city’s name sake), a photograph of “sinking tube wells” for drinking water, and a “stone-crushing” operation.



Figure 7.29 – Newspaper describing the work done by Mayer and Nowicki, 1950. (“Salient Features of Punjab’s New Capital” *Indian Tribune* (Lahore), August 16, 1950.)

Although the article does not list an author, its articulate tone and in-depth discussion of planning principles suggests Nowicki wrote it. It contains all the major elements of the Mayer planning approach and Nowicki’s vision for the city, yet these have been distilled for public appreciation. In describing the general concepts, the article stated:

The new capital city will be modern, should give living actuality to all those creative elements in city planning and civic design which have been discovered and talked about and hoped about for the last generation. It should also avoid those excesses of hectic

living and development which have accompanied modern work, but which are not integrally a part of it.

It will be Indian in feeling. The planners believe they have taken into account not only of modern discoveries, but of the basic eternal human and architectural relationships that are found in the best Indian work and in great exemplars everywhere.

The necessity for stimulation and inspiration is not only a planner-architect's passion, but fills a deep psychological need of the citizen. This is always true everywhere. It is particularly true for India today, when its citizens need to take pride in their newfound independence, in their great past, in their greater future. Of particular importance are great symbols to create pride and confidence in himself and in his country.¹⁰⁵

The similarity between this newspaper article and Nowicki's previous writings is obvious. Themes such as the importance of "psychological" concerns of the city's inhabitants, the emphasis on the "modern"-ness of the city, the "Indian feeling," and the "pride" that the city should instill are all present in Nowicki's earlier "Notes on the Architectural study...." The article also stated that despite the perceived importance of the main civic centers (capitol complex), the true importance lays with the "quality of the city's texture" – smaller market spaces, schools and housing – repeating Nowicki's earlier claim.

Published relatively late during Nowicki's time in India, the article shows the optimism that Nowicki maintained about the project. Chandigarh was to be the culmination of modern planning efforts, striving to create the best of modern living without the common stresses and complications. Chandigarh was to be both site-specific and universal, relating to the traditions of Indian architecture and great architecture everywhere, and accommodating the psychological needs of both Indian citizens and people everywhere.

While his attention to the materials of construction and structural capabilities of India grounded his work in the building tradition of the region, his desire for “daring and imaginative” structure was intended to inspire the citizens of Chandigarh, and to give them pride and confidence in their new nation.

At first glance, Nowicki’s work in Chandigarh may seem starkly different from his American designs; however they share the underlying principles of Nowicki’s approach to modern architecture. While the daring building form of the Livestock Pavilion accorded with the desires of the fair organizers, its dominant structural form emerged from a deep understanding of the program as well as a search for appropriate monumental form (in the sense advocated by Giedion). Similarly, in Chandigarh Nowicki was focused on finding appropriate building forms (and structures) to meet the needs of a young nation. Just as Nowicki had made the experimental tension-based structure the basis for his pavilion, so he made local, low-rise reinforced brick and concrete structures the basis for a new regional capital. While these decisions were certainly made in response to client demands, Nowicki, fundamentally saw architecture as the art of organizing accessible space through an appropriate use of material and structure. Nowicki embraced the significance of the Chandigarh project and the pressing demands that were placed on the architecture of the city, demands that reinforced his approach to architecture.

Nowicki’s contributions to the Chandigarh project illustrate his continued interest in structurally expressive forms. He designed a large number of different building types, in a location where material availability and labor limited many of his structural options. Yet Nowicki used a wide variety of structural solutions in practical ways, demonstrating his belief in the diversity of architectural form. He also embraced his role in shaping the future life of

Chandigarh citizens, both giving them a permanence of residence and accommodating future change.

Life in India and After

Living in India for eight weeks provided Nowicki with an understanding of the country, one that he could not have been attained from the United States. However, he did not have the opportunity to travel across India. He wrote to Albert Mayer:

I have seen little of India by now, but hardly enough. One realizes that it will take a long time and travel to see it better which I certainly hope to do sometime in my life. I developed a pretty good knowledge of the basic conditions of life, which I could not have done being a tourist. In short, I will have a long story to tell as soon as I see you again.¹⁰⁶

Nowicki further indicated his embrace of Indian culture. He continued: "I have found at last the exact words of Krishna: 'Indifferent to pleasure and pain, to gain or loss, to conquest or defeat, thus make ready for the flight... As do the foolish, attached to works, so should the wise do, but without attachment, seeking to establish order in the world.'" Nonetheless, in uncertain conditions and away from his family, Nowicki did occasionally communicate, in his letters to Mumford and Stein, a sense of depression. Nowicki was deeply troubled by the news of the Korean War. On June 25, 1950 (just as Nowicki departed for India), North Korea had invaded South Korea, leading President Harry Truman to commit military support to the region. After World War II, Nowicki had expressed his hope for a "world capital" for "one world." Now, he saw the postwar world again in conflict over democratic versus communist rule. Nowicki was deeply saddened by the violence. He wrote to Mumford: "It's the future itself which seems dark and gloomy. Somehow in Asia one can feel it more than anywhere else. The recent events are

but a symptom. They of course are responsible for the scope of one's instinctive reactions."¹⁰⁷ In a letter to Clarence Stein, written on August 21, 1950, Nowicki communicated a deeper depression.

I was feeling so disturbed by the recent developments in Korea (and also by the general problem in Asia which one could feel here so well) that I did not want to spread my pessimism. As a matter of fact during some time at the beginning I was quite resigned not to see you all anymore (this including my family) for I was sure that the conflict will spread.¹⁰⁸

The Korean War was also having an effect on the many projects Nowicki had begun in the United States. As part of the North Carolina State Fair, he and Clarence Stein had begun a museum project what was now in danger of being delayed. He wrote to Stein:

[I] Received news that due to the rearmament program there is a tendency to postpone other projects which might affect next design stages of the museum. I hope this does not happen and will let you know all the details as soon as I reach home. Anyway, there seems to be a definite slowing down of all building schemes. Albert had the same news from Julian [Whittelsley].¹⁰⁹

As Nowicki's time in India was coming to a close, Punjab government officials (P.L. Verma and P.N. Thapar) were so impressed with his work that they sought to retain him as an employee of the Indian government.¹¹⁰ Evenson stated that Nowicki was planning to return to the United State to simply "settle his current commitments" and that he was willing to accept payment in rupees,¹¹¹ Although this assertion is not substantiated by documentary evidence, it is clear that Nowicki intended to return to India. He wrote to Mayer, "As far as payment is concerned it might be 50% in dollars and 50% in rupees to make things easier for Varma. But I

cannot figure at the moment what fixed price should be suggested. Trips here are indispensable if the job should resemble what we have in mind.”¹¹²

Nowicki met with Albert Mayer for the last time on August 22, 1950, in Delhi. The two men discussed the progress that Nowicki had made (both architecturally and administratively) during his time in India. Nowicki was planning to go to Jaipur for a day, before heading to Bombay to fly home to the United States. In a final postcard to Mayer, Nowicki wrote, “You’re right. Bombay is wonderful. Don’t make any mistake, Albert. With all the grief, I’ve had a great time in India. We’ll crack it open.”¹¹³ This was the last correspondence from Matthew Nowicki, he would die in an airplane crash returning to the United States less than a week later.

Chandigarh After

Following Nowicki’s death, the Indian officials for the Chandigarh project needed a new architect and they took the opportunity to seek an entirely new design team. The value of the dollar relative to the rupee was rising, and paying the American design team in dollars was a major point of concern. While certainly looking to cut costs, the immediate move to another design team suggests a lack of confidence in Albert Mayer, who was now operating without Nowicki. Within a few months, the Indian officials settled on a European design team of Le Corbusier, Pierre Jeanneret, E. Maxwell Fry and Jane Drew – who were willing to accept at least partial payment in rupees. While officially hired to execute the *Mayer master plan*, this European team quickly distanced themselves from Nowicki and Mayer’s work. Fry called Nowicki a “brilliant young architect,” but described his designs as “rather romantically based on Indian idioms.”¹¹⁴ Le Corbusier made no recorded mention of Nowicki, despite his experience working alongside him at the United Nations.

Considering the time and effort given to the Chandigarh project by Mayer, Clarence Stein, and others, animosity was inevitable. In 1954, Lewis Mumford disparaged the work of Le Corbusier in Chandigarh, calling it “disastrous” and a step backward in progress of modern city planning.¹¹⁵ Clarence Stein was angry at the exclusion of Mayer in virtually all publications of Chandigarh that followed. Norma Evenson took a similar position in her later book, criticizing virtually every aspect of Le Corbusier’s plan.¹¹⁶

In *Architecture and Independence*, published in 1997, John T. Lang, Madhavi Desai and Miki Desai drew a clear distinction between the two design teams, claiming Nowicki was a “revivalist” architect.

Intellectually, Nowicki was more a descendent of Lutyens. Indeed he advocated a stupa form for the Assembly Hall – Le Corbusier later drew on the cooling towers of the power station in Ahmedabad for symbolic inspiration on his design of the Assembly Hall. The contrast between drawing on traditional India and industrial India for inspiration can hardly be clearer.¹¹⁷

Still, similarities between the Nowicki/Mayer approach and the European approach are readily apparent.¹¹⁸ As Mr. M.N. Sharma said “It was not that Le Corbusier copied ideas from Mayer and Nowicki, it was just that these were the most logical decisions.”¹¹⁹ The authorship of Chandigarh, even to this day, remains a contentious topic with Nowicki’s influence often the subject of debate.¹²⁰

¹ Matthew Nowicki to Clarence Stein, letter, January 2, 1950, Correspondence. Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library.

² See Scott Gabriel Knowles, *Imagining Philadelphia: Edmund Bacon and the Future of the City* (Philadelphia: University of Pennsylvania Press, 2009), 10.

³ Matthew Nowicki to Lewis Mumford, letter, January 5, 1950, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania.

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- ⁴ Jill E. Pearlman, *Inventing American Modernism: Joseph Hudnut, Walter Gropius, and the Bauhaus Legacy at Harvard* (Charlottesville: University of Virginia Press, 2007).
- ⁵ Henry Kamphoefner, interviewed by Charles Kahn, September 11, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>.
- ⁶ Reference to the short-lived Regional Development Council of America can be found in Edward K. Spann, *Designing Modern America: The Regional Planning Association of America and its Members* (Columbus: Ohio State University Press, 1996), in the chapter "Regionalism: Mumford, McKaye et.al."
- ⁷ Clarence S. Stein and Kermit C. Parsons, *The Writings of Clarence S. Stein: Architect of the Planned Community* (Baltimore: Johns Hopkins University Press, 1998), xxviii.
- ⁸ Camillo Sitte and Charles T. Stewart, *The Art of Building Cities: City Building according to its Artistic Fundamentals* (New York, N.Y.: Reinhold Pub. Corp., 1945).
- ⁹ Ravi Kalia, *Chandigarh: The Making of an Indian city* (New Delhi: Oxford University Press, 1999), 21.
- ¹⁰ Albert Mayer, *Pilot Project, India: The Story of Rural Development at Etawah, Uttar Pradesh* (Berkeley: University of California Press, 1958).
- ¹¹ Alice Thorner, "Nehru, Albert Mayer, and Origins of Community Projects". *Economic and Political Weekly* 16, no. 4 (1981): 117-120.
- ¹² Ibid.
- ¹³ The curriculum of the School of Design was also sent to Lewis Mumford and Clarence Stein in April 1949.
- ¹⁴ Albert Mayer to Matthew Nowicki, letter, October 14, 1949, Albert Mayer Papers, University of Chicago Library. Box 19, Folder 5.
- ¹⁵ Matthew Nowicki to Albert Mayer, letter, October 24, 1949. Albert Mayer Papers, University of Chicago Library. Box 19, Folder 5.
- ¹⁶ Vikramaditya Prakash, *Chandigarh's Le Corbusier: The Struggle for Modernity in Postcolonial India* (Seattle: University of Washington Press, 2002), 156.
- ¹⁷ Minutes of an emergency meeting of the Sub-Committee on Capital held at 10:45am on the 25th December 1949, at Barnes Court, Chandigarh Reference Library, Chandigarh, India.
- ¹⁸ Albert Mayer, "Report on the New Punjab Capital," (1950) Albert Mayer Papers, University of Chicago Library, Box 18, Folder 30. 1
- ¹⁹ Stein is included in project correspondence early on as a consultant, although the actual date of him joining the project team is uncertain.
- ²⁰ Albert Mayer to Matthew Nowicki, letter, February 3, 1950, Albert Mayer Papers, University of Chicago Library, Box 19, Folder 5.
- ²¹ Despite Mayer's comments, no evidence has been found of Mayer actually contacting other architects for the Chandigarh job.
- ²² Albert Mayer to Matthew Nowicki, letter, February 3, 1950, Albert Mayer Papers, University of Chicago Library. Box 19, Folder 5.
- ²³ Ibid.
- ²⁴ This uncertainty of Nowicki's citizenship caused him much grief. Most of the correspondence at this time between Nowicki and Mayer, Stein and Mumford refers to his ongoing citizenship struggles.
- ²⁵ Very little else discussed about the other team members, as they do not seem to have been major contributors to the design concept. Kalia, *Chandigarh*, 55.

²⁶ Other sites were considered for the city, but Chandigarh was selected for its topography and water resources. The site selection required the displacement of several villages – a constant source of conflict throughout the project.

²⁷ Albert Mayer, “The New Capital of the Punjab,” *Journal of the AIA* 15, no. 5 (1950): 174.

²⁸ Chandigarh Meeting minutes, March 11, 1950, Albert Mayer Papers, University of Chicago Library, Box 19, Folder 4.

²⁹ The drawings for Nowicki’s Leaf Plan are undated, but were republished in Norma Evenson, *Chandigarh*. (Berkeley: University of California Press, 1966).

³⁰ See Daniel Schaffer, *Garden Cities for America: The Radburn Experience*. (Philadelphia: Temple University Press, 1982).

³¹ Matthew Nowicki to Albert Mayer, letter, March 14, 1950, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania.

³² See Siegfried Giedion, “The Need for Monumentality,” In Zucker, Paul., ed. *New Architecture and City Planning, a Symposium* (New York: Philosophical Library, 1944): 549-568.

³³ Giedion “The Need for Monumentality,” 566.

³⁴ Matthew Nowicki to Albert Mayer, letter, March 14, 1950, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania.

³⁵ Ibid.

³⁶ This level of activity is typical of renderings of this era, but when built these kinds of upper level spaces were most often barren and sterile. Nowicki appears to be anticipating the megastructures of the 1960s, such the campus of University of Illinois-Chicago, and the National Congress Building of Brasilia -- an upper level plaza that is often barren of activity

³⁷ Nowicki had visited Paris several times, and had a great admiration for the city.

³⁸ Neimeyer’s church was published in Pierre Guegen, “Chapelle a Pampulha (Bresil)” *Architecture d’Aujourd’hui* 17 (1946): 54-55.

³⁹ Matthew Nowicki, "Composition in Modern Architecture," *Magazine of Art* 42 (1949): 109.

⁴⁰ Nowicki had worked closely with Niemeyer on the United Nations project, as well.

⁴¹ This capitol complex was similar to a very early scheme that was originally sketched in Nowicki’s “leaf plan” and placed at the top of the central commercial axis.

⁴² Albert Mayer, “Architecture with Inner Meaning,” *Architectural Forum* 135 no. 4 (1971): 61.

⁴³ Albert Mayer to Matthew Nowicki, letter, March 23, 1950, Albert Mayer Papers, University of Chicago. Box 18, Folder 6.

⁴⁴ Clarence Stein to Matthew Nowicki, letter, March 21, 1950, Correspondence. Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library.

⁴⁵ At a meeting on March 31, which Nowicki did attend, no mention is made of alternate plans or any modification to the planning approach.

⁴⁶ Albert Mayer to Matthew Nowicki, letter, March 23, 1950, Albert Mayer Papers, University of Chicago. Box 18, Folder 6.

⁴⁷ Mayer, “Architecture with Inner Meaning,” 61.

⁴⁸ Ibid.

⁴⁹ The explicit reasons for this shift are not apparent, but it was likely due to Mayer’s insistence on a different scheme that was more in line with his city plan.

⁵⁰ Evenson, *Chandigarh*, 21.

⁵¹ Ibid.

⁵² Kalia, *Chandigarh*, 67.

⁵³ Others have called Nowicki a “revivalist” and a “descendent of Lutyens” for the stupa form, perceived to be searching for a symbolism in historic India. While Nowicki’s design does show a formal similarity to Lutyens’ Viceroy’s Palace in New Delhi, the architectural intent is quite different. Jon T. Lang, Madhavi Desai, and Miki Desai, *Architecture and Independence: The Search for Identity--India 1880 to 1980* (Delhi: Oxford University Press, 1997), 215.

⁵⁴ Evenson cited the influence of Camillo Sitte’s *City Planning on Artistic Principles* (first published in an English-language version in 1945, and also noted by Mayer and Nowicki) on the arrangement of the buildings, but she acknowledged the “overscaled” and “scattered” character of the proposal. Evenson, *Chandigarh*, 24.

⁵⁵ Mayer actually sent three subtle variations of his master plan (A, B, and C) with slightly different placements of the university, train station and a shifted capitol complex to the east. All three plans were organized around the superblock idea.

⁵⁶ Mayer, “The New Capital of the Punjab,” 166-175.

⁵⁷ Mayer’s notation for describing super-blocks was based on their economic status, U=upper, M=middle, and L=lower class.

⁵⁸ “Report on Master Plan of the New Punjab Capital,” Albert Mayer Papers, University of Chicago Library. Box 18, Folder 28.

⁵⁹ Mayer’s “Report on Master Plan of the New Punjab Capital” includes a complete description of his intended city.

⁶⁰ Matthew Nowicki, “Supplementary Notes to the Architectural Study of super-block L-37”, May 12, 1950, Albert Mayer Papers, University of Chicago. Box 18, Folder 30.

⁶¹ Ibid.

⁶² Ibid.

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ Nowicki explicitly discussed additional factors including the “economy of each unit” when he discussed the importance in keeping land values at a reasonable level.

⁶⁶ Nowicki, “Supplementary Notes...”, 1.

⁶⁷ Matthew Nowicki [“Speech on Warsaw Reconstruction”] (c.1947), Wallace K. Harrison Architectural Drawings and Papers, Avery Architectural and Fine Arts Library, Columbia University, Box 3, Folder 1.

⁶⁸ Matthew Nowicki, “Notes on Chapel Design”(1948), Douglas Haskell Papers, Avery Architectural Library, Columbia University. Box 35, Folder 9.

⁶⁹ Nowicki, “Composition in Modern Architecture,” 111.

⁷⁰ Nowicki, “Supplementary Notes...,” 2.

⁷¹ Ibid.

⁷² Ibid.

⁷³ Ibid.

⁷⁴ Mayer had spent the last five years designing for rural village communities in the Uttar Pradesh region, a neighboring province, but not specifically in Punjab, and appeared to be informing Nowicki of his experiences.

⁷⁵ Albert Mayer to Matthew Nowicki, letter, April 25, 1950. Albert Mayer Papers, University of Chicago, Box 19, Folder 5.

⁷⁶ Nowicki, “Supplementary Notes...,” 2.

⁷⁷ Ibid.

⁷⁸ India had been an English colony and the educated upper classes to whom his report was addressed, would no doubt have encountered Ruskin, since Ruskin had been the most widely read theorist in English-speaking countries until the post-World War II period.

⁷⁹ Nowicki, "Supplementary Notes...", 2.

⁸⁰ Ibid.

⁸¹ Ibid.

⁸² Nowicki, "Supplementary Notes...", 3.

⁸³ Nowicki, "Supplementary Notes...", 1.

⁸⁴ The building appears intended to have been constructed of reinforced concrete, as it exceeded Nowicki's previously stated three-story limit for brick construction.

⁸⁵ M.N. Sharma, one of the first Indian architects to work on the Chandigarh project, recited Nowicki's interest in precasting the roof shells and lifting them into place.

⁸⁶ Nowicki, "Supplementary Notes...", 5.

⁸⁷ Albert Mayer, "Matthew's Last Eight Weeks were Spent in India," *North Carolina State College, School of Design, Student Journal* 1 no. 1 (1951): 25.

⁸⁸ Matthew Nowicki to Lewis Mumford, letter, June 12, 1950, Lewis Mumford Papers, Rare Book and Manuscript Collection. University of Pennsylvania.

⁸⁹ Mayer, "Matthew's Last Eight Weeks...", 25.

⁹⁰ Ibid.

⁹¹ M.N. Sharma would go on to have a significant architectural career of his own – after working with both the Mayer/Nowicki team and the later Le Corbusier-led team. Sharma was later the chief architect of Chandigarh, taking over from Pierre Jeanneret, and remains active in the issues surrounding Chandigarh's architectural legacy.

⁹² M.N. Sharma, "Other Contributors" In Takhar, Jaspreet, ed. *Celebrating Chandigarh: 50 Years of the Idea*. (Chandigarh, India: Chandigarh Perspectives, 2002), 72.

⁹³ Ibid. 72

⁹⁴ MN Sharma interviewed by Author, February 9, 2011. Chandigarh, India.

⁹⁵ Matthew Nowicki to Albert Mayer, letter, August 16, 1950, Albert Mayer Papers, University of Chicago, Box 19, Folder 5.

⁹⁶ Matthew Nowicki to Albert Mayer, letter, n.d. (second), Albert Mayer Papers, University of Chicago, Box 19, Folder 5.

⁹⁷ Nowicki, Matthew. "Report on the design of the Capital city of East Punjab", (August 9, 1950), *Cabinet Sub-Committee on Capital Agenda & Minutes Etc., 1949-1950* Chandigarh Reference Library, Chandigarh.

⁹⁸ Ibid.

⁹⁹ Matthew Nowicki to Albert Mayer, letter, August 16, 1950. Albert Mayer Papers, University of Chicago Library, Box 19, Folder 5.

¹⁰⁰ The Chandigarh Architecture Museum provides the other evidence of Nowicki's specific work in India. These drawings – which remain on display – show several sketches of housing schemes, school buildings, and sketches of pergolas. Other documents were clearly sent to Chandigarh prior to Nowicki's arrival, and the display of Nowicki's "Leaf Plan" is clearly a reproduction from a later date.

¹⁰¹ In his letter to Albert Mayer, August 16, 1950, Nowicki wrote: "Later I produced some sketches which made a very good impression." Albert Mayer Papers, University of Chicago Library, Box 19, Folder 5.

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- ¹⁰² Both of these are mentioned in letters, yet no photographic evidence remains.
- ¹⁰³ "Salient Features of a New Capital," *The Tribune*. (Lahore: Tribune Press) August 16, 1950, 5.
- ¹⁰⁴ Matthew Nowicki to Albert Mayer, letter, n.d. (second). Albert Mayer Papers, University of Chicago Library, Box 19, Folder 5.
- ¹⁰⁵ "Salient Features of a New Capital," *The Tribune*. (Lahore: Tribune Press) August 16, 1950, 5.
- ¹⁰⁶ Matthew Nowicki to Albert Mayer, letter, n.d. (second). Albert Mayer Papers, University of Chicago Library, Box 19, Folder 5.
- ¹⁰⁷ Matthew Nowicki to Lewis Mumford, letter, June 12, 1950, Lewis Mumford Papers, Rare Book and Manuscript Library, University of Pennsylvania. Correspondence.
- ¹⁰⁸ Matthew Nowicki to Clarence Stein, letter, August 21, 1950, Correspondence. Clarence Stein Papers, Division of Rare and Manuscript Collection, Cornell University Library.
- ¹⁰⁹ Ibid.
- ¹¹⁰ Evenson claimed Nowicki accepted their offer, citing P. N. Thapar (an Indian official) as the source. Note 13, Chapter 4. Evenson, Norma. 1966. *Chandigarh*. Berkeley: University of California Press, 104.
- ¹¹¹ Evenson, *Chandigarh*, 23.
- ¹¹² Matthew Nowicki to Albert Mayer, letter, n.d.(first), Albert Mayer Collection, University of Chicago. Box 19, Folder 5.
- ¹¹³ Mayer, "Matthew's Last Eight Weeks..." 29.
- ¹¹⁴ Maxwell Fry, "Le Corbusier at Chandigarh," In Russell Walden, ed. *Essays on the Open Hand* (Cambridge: MIT Press, 1977): 351-352.
- ¹¹⁵ Lewis Mumford, "The Life, Teaching and Architecture of Matthew Nowicki", *Architectural Record* 116, no. 3 (September 1954): 153.
- ¹¹⁶ Evenson, *Chandigarh*, 23.
- ¹¹⁷ Lang, Desai, and Desai, *Architecture and Independence*, 215.
- ¹¹⁸ Nihal Perera, "Contesting Visions: Hybridity, Liminality and Authorship of the Chandigarh Plan," *Planning Perspectives* 19, no. 2 (April 2004): 175-199.
- ¹¹⁹ M.N. Sharma interview with author, Chandigarh, February 9, 2011, Chandigarh, India.
- ¹²⁰ Nowicki's "ghost" is still present in Chandigarh – as his designs are on display in the Chandigarh museum, and citizens still speculate about Nowicki's design drawings, providing an alternative to Le Corbusier.

Chapter 8: After Nowicki's Death

On August 31, 1950, Nowicki left India for the United States. The Trans-World Airlines Bombay to New York route included two stops, in Cairo and Rome, as this was prior to the era of passenger jets. Nowicki was a passenger in a four-engine plane, the "Star of Mary." Shortly after departing Cairo, at roughly 2 a.m., Nowicki's plane crashed in the Egyptian desert, about 65 miles northwest of Cairo. The high-speed impact left a trail of wreckage over 500 yards long, tearing up a portion of a small-gauge railroad track. All on board the plane were killed. The crash made the front page of the New York Times the next day.¹ (Figure 8.1) The high death toll made the crash one of the biggest commercial air disasters to that date.



Figure 8.1 – *New York Times* Front Page (*New York Times*, September 1, 1950. 1)

The *New York Times* published short biographical sketches of seven people who died in the crash, including one for Matthew Nowicki:

Matthew Nowicki was acting head of the Architecture Department of the School of Design of North Carolina State College. He came to the United States from Poland to serve with the United Nations board of design. He took out first citizenship papers last spring.

Mr. Nowicki left Raleigh last June 28, carrying with him architectural plans for a new capital city for the Punjab Province of India. Surviving him here are his widow and two children.²

Nowicki's death sent shock waves through the architecture profession. Obituaries in *Architectural Forum* and *Architectural Record* described the loss of one of the most "promising young architects of his generation."³

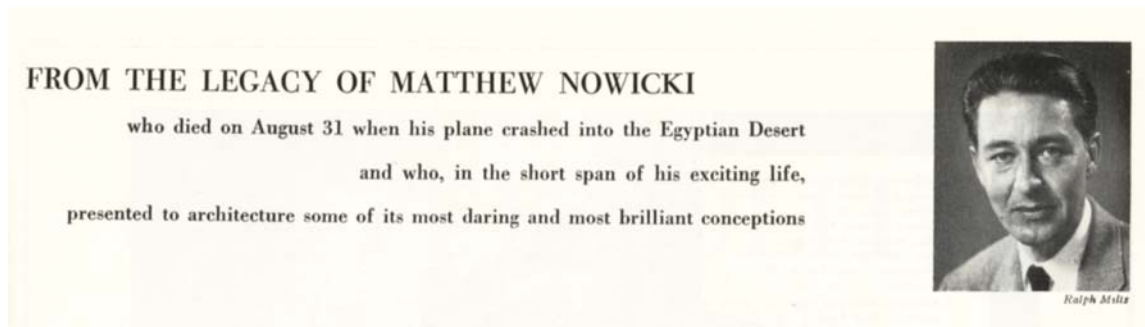


Figure 8.2 – Nowicki's obituary, 1950 ("From the Legacy of Matthew Nowicki," *Architectural Forum*, 93 (1950): 200)

While Nowicki's friends and family, and professional acquaintances mourned his passing, some of his projects stalled, and others continued under the direction of others, although usually with modifications. The United Nations headquarters construction proceeded under the guidance of Wallace K. Harrison. The California Markets and Columbus Circle projects stalled in the languishing economy of the Korean War period; neither was built. The Brandeis University plan went unexecuted, with only four buildings realized under Saarinen's guidance.⁴ The Raleigh Livestock Pavilion, shepherded by William Henly Deitrich and Fred Severud, continued according to Nowicki's intentions, although significant changes were made in the exterior design. After the death of Nowicki, Indian officials Verma and Thapar sought a new design

team and the Chandigarh project went forward under the direction of Le Corbusier and Pierre Jeanneret.

Beyond these specific projects, Nowicki's ideas continued to resonate with some of the prominent architects of his generation. Architects including Philip Johnson, Eero Saarinen, Paul Rudolph picked up elements of his structurally expressive approach, and critics and theorists, such as Lewis Mumford, were deeply influenced by Nowicki's lectures and writings. In their subsequent work (built and written), each responded to encounters with Nowicki in different ways, taking his emphasis on structure in a different direction.

Immediately after Nowicki's death, Philip Johnson, as the Director of the Department of Architecture and Design at the Museum of Modern Art, began organizing a tribute to Nowicki. On September 1, 1950, just one day after the plane crash, Johnson was in contact with Lewis Mumford, Julian Whittlesey and Nowicki's widow, Stanislava. Johnson wanted a MOMA exhibit to include Nowicki's drawings for Chandigarh, the Raleigh Livestock Pavilion, Columbus Circle and the California Markets, as well as written statements from his colleagues in tribute to Nowicki. The exhibit was assembled quickly and ran for three weeks, from September 28 to October 18, 1950.

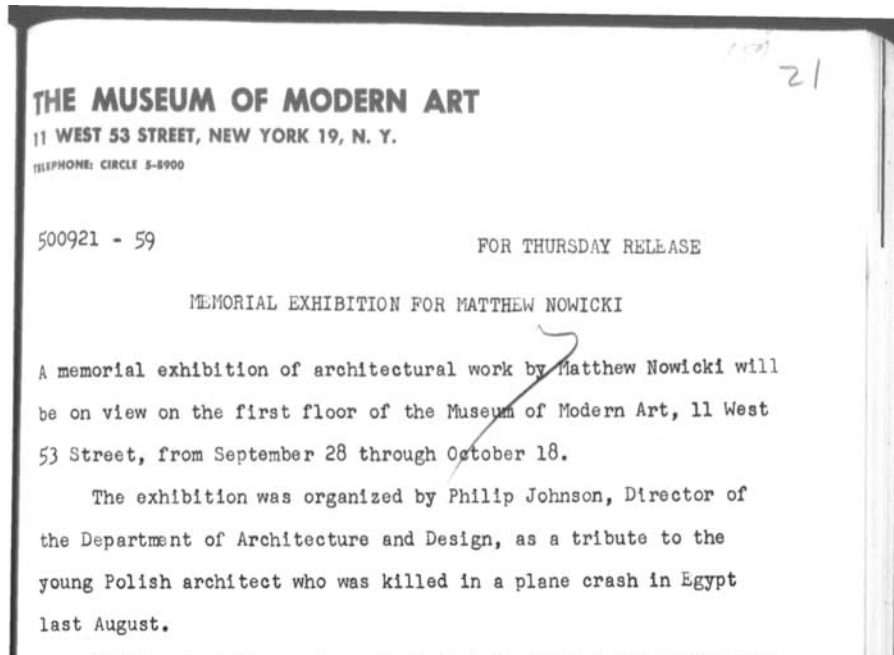


Figure 8.3 – Press Release, Nowicki Memorial Exhibition, 1950. (“Memorial Exhibition for Matthew Nowicki,” Museum of Modern Art Press release, New York, September 21, 1950)

In an article, publicizing the exhibit in the *New York Times*, Johnson described Nowicki as “a new kind of modern architect... in that he represented equally engineering innovation and the form of past architecture.”⁵ With this comment Johnson noted Nowicki’s attention to structure and engineering as well as his awareness of the architecture’s past.

Johnson had previously perceived Nowicki as a “rival,” although he would often acknowledge Nowicki’s influence through his career. For example, in a 1953 review of Le Corbusier’s *Complete Works: Volume 5*, Johnson quoted Nowicki: “The late Matthew Nowicki once wrote: ‘All architecture is interior architecture.’ Perhaps. The Parthenon must be sculpture, but the Acropolis as a whole is a work of architecture. So with Le Corbusier’s great roof at Marseille, spatially his greatest work yet executed.”⁶ By interior architecture, Johnson referred to Nowicki’s concern for the human-centered, psychological impact of architecture. Johnson would use this same Nowicki quotation in another lecture in 1975 (“What Makes Me Tick”).⁷

In a lecture to architecture students at Yale University in 1958 (eight years after Nowicki's death) titled "Retreat from the International Style to the Present Scene," Johnson listed "eleven names" of people who defined the current condition of architecture. He noted that the "old boys" (Le Corbusier, Mies and Wright) were all over seventy years old. Then proceeding alphabetically, Johnson listed Marcel Breuer, Gordon Bunshaft, Bruce Goff, Johnson (himself), Louis Kahn, and Frederick Kiesler, before introducing Nowicki with the remark, "Matthew Nowicki, who is dead, was the pioneer wavy-roof boy." Johnson called Eero Saarinen "wavy-roof boy number 2."⁸ In this lecture, Johnson discussed Nowicki's Livestock Pavilion in detail:

This is Nowicki's Livestock Judging Pavilion for the State Fair Grounds at Raleigh, North Carolina. He was a man in his thirties when he designed it, a great friend to all of us, probably the most brilliant young architect that any of us ever knew, and he was about to build Chandigarh before Le Corbusier was hired to do that city, and on a flight returning from India the plane crashed, and he was killed. The pavilion was completed after his death, and he worked, I remember, all one summer making sketches and casually, because he lived that way, on this conception which has been, I am sorry to say, almost ruined in execution. ... But it was a very daring thing for a man in his thirties to accomplish and extraordinary that the State of North Carolina should have commissioned it; and it has been extremely helpful to all of us ever since, and to Saarinen in particular, to have this model in front of us. Now that is the wavy-roof beginning.⁹

Johnson would later draw from the "wavy-roof" typology for his own designs. In his biography of Johnson, Franz Shultze described Johnson's Boissonas House (1964) as a series of "Miesian-pavilions" sheltered "partially by an undulating concrete parasol, the kind of 'wavy roof' Philip had associated ... with the architecture of Matthew Nowicki and Eero Saarinen."¹⁰ In fact, the

diversity of structural forms that Nowicki explored became a source of architectural exploration for Johnson.



Figure 8.4 - Boissonas House and “wavy” roof canopy designed by Philip Johnson, 1964. (Franz Schulze, *Philip Johnson: Life and Work* (New York: A.A. Knopf, 1994): 297.)

More than just "wavy-roofs" from Nowicki influenced Johnson. In a 1966 review of Robin Boyd's book, *The Puzzle of Architecture*, Johnson discussed Boyd's classification of the three “phases” of modern architecture. While the first phase produced rectangular boxes with “modular rhythm” (the International Style), the second phase was a reaction to the commercialization of the first – producing arbitrary architectural shapes, like Yamasaki's gothic tracery. Searching for the origin of the “third phase” of modern architecture (“a new way toward the synthesis of unity and diversity”), Johnson cited Nowicki's "Origins and Trends" essay published in 1951. Rather broadly, he stated, “Matthew Nowicki once wrote, 'Form does not follow function. Form follows form.' The Third Phase forms must have come from somewhere.”¹¹

Johnson drew on Nowicki's ideas throughout his career, sometimes exaggerating them to make his own point. Keith Eggener's *American Architectural History: A Contemporary Reader*, includes a 1992 interview with Johnson in which he stated:

At the end of 1930, George Howe, Buckminster Fuller, Philip Johnson, and Matthew Nowicki founded the journal *Shelter*. It became the forum for the views of the members of the Philadelphia T-Square Club... which would contribute significantly to a rapprochement with modernism during the following years.¹²

In 1930, Nowicki was only two years into his architectural education at the Warsaw Polytechnic. Nowicki made no mention of involvement with the magazine, nor does his name appear in the publication at any time. Such associations in 1930 seem highly unlikely, and Johnson (age 82 at the time of the interview) was likely completely mistaken in his recollection. Still, Johnson's inclusion of Nowicki in that statement further indicates Johnson's continuing fascination with Nowicki's life and work more than forty years after his death.

Nowicki had even more direct influence on the career of Eero Saarinen. After Nowicki's death, Saarinen acknowledged that Nowicki was the third-most significant influence on his own career (after his father and Charles Eames), with Mies van der Rohe fourth and Alvar Aalto fifth.¹³ Saarinen described the group as "Men who's [sic] appraisal but not necessarily agreement one would like to have."¹⁴ For Nowicki's obituary in *Architectural Forum*, Saarinen stated: "If time had allowed his genius to spread its wings in full, this poet-philosopher of form would have influenced the whole course of architecture as profoundly as he inspired his friends."¹⁵

In addition to their collaboration on the Brandeis University plan, Saarinen was greatly influenced by Nowicki's ideas for the Raleigh Livestock Pavilion. After Brandeis University,

Saarinen's next major project was a group of buildings at Massachusetts Institute of Technology (MIT). In the design of the MIT chapel, Saarinen drew directly on Nowicki's sketches for the Brandeis University chapel. Saarinen's undulating brick interior (enclosed in an exterior brick cylinder) and choreographed entry sequence were nearly identical to Nowicki's proposal. In the design of the MIT Auditorium, Saarinen worked with Nowicki's former student, Mark Jaroszewicz, and created a concrete dome supported on just three points forming an equilateral triangle. In a later recollection, Jaroszewicz stated:

At that time [of the MIT project], I was fascinated by Matthew Nowicki's work. I knew him before the War in Poland – in fact he was the man who originally talked me into becoming an architect. After arriving in the States, he designed the famed Cattle Pavilion in Raleigh, with its two inclined arches and the suspended roof in between. So, on top of my equilateral triangle, I decided to try three inclined arches with a suspension roof with cables going to a tension ring in the center. It became quite an interesting and, really beautiful form, except – there was a very major problem... there was nowhere near enough headroom. Eero was sitting right behind me... and, hearing my distress, came forward. He took the pencil out of my hand and sketched a shell, still resting on the points of my triangle.¹⁶

Nowicki's influence and connection to Eero Saarinen (working together in 1949), and to Jaroszewicz (as a former teacher) surrounds the design of the MIT Auditorium and Chapel. Though not the designer, Nowicki's spatial-structural concepts, his structurally expressive modern architecture, underlie the composition of the MIT buildings.

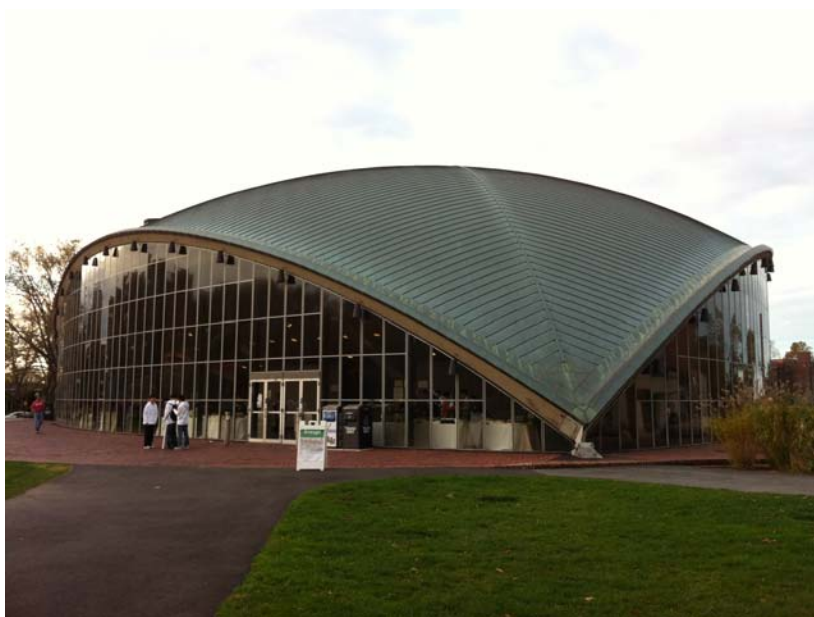


Figure 8.5 – Eero Saarinen’s MIT Auditorium (top) and nondenominational Chapel (bottom), 1954. (Photos by author)

Architectural publications often recognized the similarity between Saarinen's and Nowicki's work. In November 1956, *Architectural Record* listed the Raleigh "Stock Pavilion" in its "One hundred years of significant building" as a significant Public Assembly Building, alongside Saarinen's MIT Auditorium. With regard to Nowicki's building, Joseph Hudnut stated:

The oppressive uniformity of their structural resources has prompted architects to look for avenues of expression in the more varied and dramatic inventions of engineers. They have been successful recently in giving these an architectural eloquence. The great concrete arches that form the essential structure of the Stock Pavilion at Raleigh are like athletes who grasp each other by their hands as they lean outward over the circus-like arena. Like acrobats they exhibit their naked strength, daring, tense and sensational. They are charged also with a promise for American architecture.¹⁷

Hudnut celebrated the expressive structure of Nowicki's Pavilion, acknowledging the structure as having an "architectural eloquence." In the same article, Eliot Noyes described Saarinen's Auditorium:

The interior form of the large auditorium expresses clearly, convincingly, and somewhat surprisingly its relationship to the exterior form of the great structural shell, and this major interior-exterior relationship is strong enough to make the design convincing, despite one's awareness that considerable ingenuity has been exercised in enclosing and concealing some of the less sightly elements.¹⁸

Through Nowicki's work, both Hudnut and Noyes recognized the potential of structural forms, expressed on both the interior and exterior, to become legible, organizing elements of architecture.

Saarinen continued similar explorations in his subsequent projects. The tension-hung roof, as an architectural and structural form, played a prominent role in Saarinen's Yale Ingalls Ice Rink (1956). Designed with the engineer Fred Severud (Nowicki's engineer on the Livestock Pavilion) this building consisted of a single concrete arch and a series of tension cables draped to either side. (Figure 8.6) Dulles Airport (1958) was designed as series of draped cables between two inclined supports. The TWA Terminal at JFK (1959) expressed formal possibilities of concrete shell construction, and, in some ways, its shape recalls Nowicki's unbuilt North Carolina Fair grandstand roof. Saarinen would use expressive structure to shape architectural experience in a substantial number of his later works. In her recent monograph on Saarinen, Jayne Merkel has noted Nowicki's influence. She stating: "Clearly, Nowicki, who was also interested in expressive form and saw architecture as a humanizing art, helped Saarinen break out of the International Style straightjacket that never quite provided an outlet for his sculptural impulses. Saarinen was not intimidated by Nowicki's genius but, rather, liberated by it."¹⁹

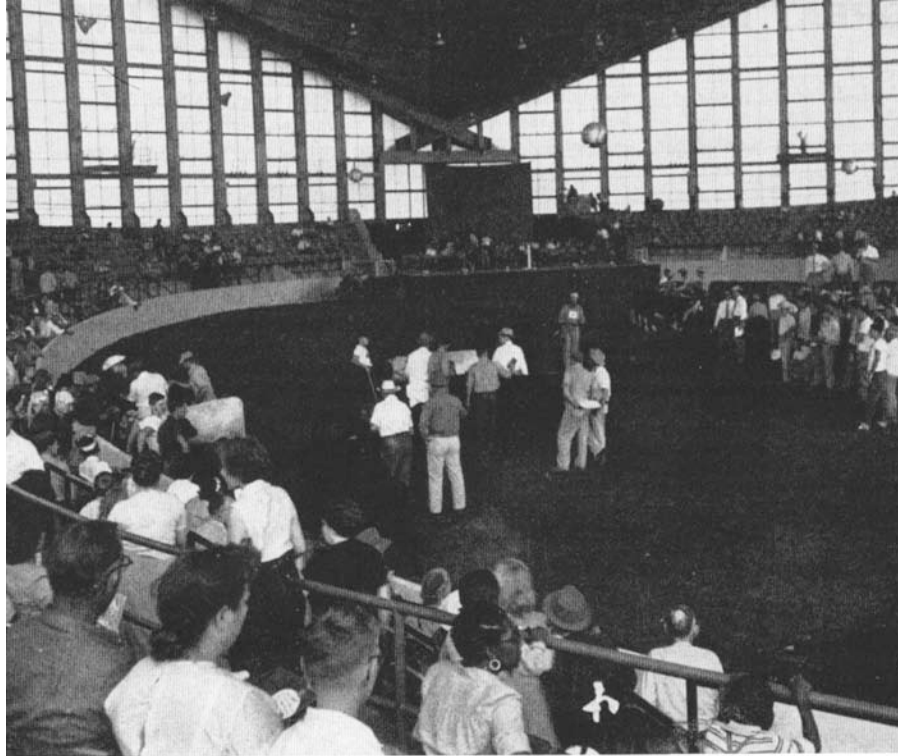


Figure 8.6 – Eero Saarinen's Ingalls Ice Arena, 1959. (Photo by author)

While it is not clear if Paul Rudolph knew Nowicki during his life, Rudolph certainly became familiar with Nowicki's work after his death. In 1954, Rudolph wrote a review of Nowicki's Livestock Pavilion for *Architectural Forum*. Of the Livestock Pavilion, he wrote:

It was a demonstration that, while Mies van der Rohe's concept of "universal building" may be valid for the vast majority of our buildings, we have need for more expressiveness to emphasize our places of worship, meeting places of government bodies, gateways to our cities and centers of recreation. Nor was the basic design of the building mere structural exhibitionism, that popular applause-sure act... It is a testimony to Nowicki's good sense that he proposed this structure for a building peculiarly adapted to such an expression: one, single, great room.²⁰

Rudolph encapsulated Nowicki's ideas of expressive structure in his description of the Livestock Pavilion, and Rudolph would continue to reference Nowicki later in his life. In his 1956 article, "Six Determinants of Architectural Form," published in *Architectural Record*, Rudolph described Nowicki as playing a central role in opening up Modern architecture to include a diversity of forms: "We no longer think that when the problems of function have been solved, the exterior form will be crystallized. As Matthew Nowicki warned us in his famous article..., we cannot keep pretending that we solve our problems without precedent in form."²¹ Rudolph had also begun to utilize a variety of structurally expressive forms in his own work, including tension-hung roofs and thin-shell concrete.



A magnificent space with some confusion and inconsistency of detail
—a criticism by Paul Rudolph

Figure 8.7 – Paul Rudolph’s Review of the Livestock Pavilion, 1954. (“The Great Livestock Pavilion Complete [Raleigh, N. Car.],” *Architectural Forum* 100 (1954): 130.)

In the years following Nowicki’s death, many articles were published highlighting the role of structure in architectural design. In June 1953, *Architectural Forum* published an 11-page article titled “Is this Tomorrow’s Structure?” celebrating new structural advancements and their architectural implications.²² In February 1954, Sigfried Giedion called for expressive structure in Modern architecture, in a manner quite similar to Nowicki’s earlier writings. He wrote about the need for “spatial imagination” in Modern architecture, more specifically the need to find an appropriate solution to the “vaulting problem.”

At a certain stage of its development, each civilization has solved the vaulting problem in a way that has expressed its own emotional ideas ... We are sometimes compelled to

recognize today, as in the nineteenth century, that the possibilities for solving the vaulting problem offered by structural engineers can provide the stimulus to push the architect into new spatial adventures.²³

Giedion echoed Nowicki's reference to the nineteenth century, as well as his call for structure to take a dominant role in the expression of a space. Beyond just engineering feats, Giedion stated – as Nowicki had three years before - that structure must be attuned to the emotional reception of a space, a blend of architectural and structural thinking in response to human psychology.

In 1955 (five years after Nowicki's death), Felix Candela referred to Nowicki in his speech "Structural Digressions Around Style in Architecture" delivered at Nowicki's former school (now led by Eduardo Catalano) North Carolina State College. He stated:

The professions of Architect and Engineer, once united under the title "Master Builder," have widened to such a dangerous extent that today few dare to tread the no man's land between them. Yet on those numbered occasions when someone has had the courage and talent to take his stand there – such as Maillart and Nervi from one field and Nowicki and at times Wright from another – the results have been so extraordinary as to force us to consider whether it is not there, finally, that lies the hidden solution to the fundamental architectural problem of our age.²⁴

Candela's own thin shell concrete designs were becoming iconic works of postwar Modern architecture, celebrated in their own right as a union of architecture and engineering. Candela found the "hidden solution" to the architectural problems of Modern architecture at the intersection of architecture and engineering, and placed Nowicki there as well.

Nowicki's death had a profound effect on Lewis Mumford, and may have significantly impacted his later thinking. Mumford had developed a father-son relationship with Nowicki and

Mumford admired Nowicki as the architect he himself could never be.²⁵ Their personal connection is reflected in their continuing correspondence before Nowicki's death and the deep sadness Mumford expressed afterward. In a letter to Clarence Stein, Mumford wrote:

Though I'd known him such a short time, as friends go, it always seemed when we were together that we had been friends for a whole lifetime; indeed, he seemed even more than that: both brother and son, too. There is no one whose life and spirit gave me so much hope for the human race as his did; and as you well know, he had every indication of becoming one of the great architects of our age, perhaps of all time. His going leaves an irreplaceable and unfillable gap in all our lives.²⁶

Mumford also included Nowicki's two major articles, "Composition in Modern Architecture" and "Origins and Trends in Modern Architecture" (re-titled "Function and Form"), in his edited volume *Roots of Contemporary American Architecture* published in 1956.²⁷

It is also important to note that only after Nowicki's death did Mumford adopt a more pessimistic tone regarding the future of technology in his two-volume book *Myth of the Machine* (first volume *Technics and Human Development* (1964) and second volume *Pentagon of Power* (1974)).²⁸ The onset of the Cold War, and Mumford's unsuccessful petition to Congress for increased control of atomic weapons (and accusations of being a Communist), had greatly discouraged him, but the failure of a four-engine plane---a work of modern technology--that cut short Nowicki's life, may also have been a factor in his less optimistic view of the future of technological civilization.²⁹

Later in his life, Mumford frequently referred to Nowicki. A review he wrote for Albert Mayer's book *The Urgent Future* in 1967 is typical. Mayer's book outlines the critical importance of effective planning for the urban future.³⁰ While it only briefly mentions Nowicki

(while discussing his design for a small house in Chandigarh), Mumford's review in the November 1967 issue of *Architectural Record* describes Mayer's Chandigarh work "in association with the brilliant and still lamented Matthew Nowicki."³¹ Mumford also referred to Nowicki in a 1970 publication³² and Albert Mayer republished Nowicki's first Capitol Complex for Chandigarh in 1971.³³

Although some of Nowicki's projects proceeded under the direction of others, and his friends and colleagues continued in their careers, Nowicki's influence persisted long after his death. Going beyond obituary remembrances, these individuals continued to refer to Nowicki into the 1960s and 1970s, and they interpreted his life and work in his or her own way. In their work, they pursued a variety of different design directions, and collectively came to portray a wide range of architectural positions. Their common link to Matthew Nowicki, demonstrates both his expansive influence and the variety of interpretations he stimulated.

¹ *New York Times*, September 1, 1950, Front Page

² *New York Times*, September 1, 1950, p. 12 Other crash victims included Everett Moore Baker, the dean of students at MIT, and S. S. Pillai, a professor of Mathematics at Calcutta University.

³ Nowicki's obituary, "From the Legacy of Matthew Nowicki," *Architectural Forum* 93 (1950): 200-201, 206-207.

⁴ Disputes over fee, and a change of university administrators doomed the Saarinen master plan. A Student Center and Dormitory were constructed that followed Saarinen/Nowicki designs, but they have been significantly altered since. See Gerald Bernstein, "History of Master Planning at Brandeis" *An Architectural Celebration of Brandeis University's 50th Anniversary*. (Waltham: Brandeis University, 1997). Source: <http://www.brandeis.edu/masterplan/history.html>, Accessed: 11 September 2012.

⁵ Aline B. Louchheim, "Nowicki Drawings at the Modern Art," *New York Times*, September 28, 1950, 35.

⁶ Philip Johnson, "Correct and Magnificent Play" In Philip Johnson, *Philip Johnson: Writings* (New York: Oxford University Press, 1979): 200-205.

⁷ Philip Johnson, "What Makes Me Tick" (1975) In Johnson, Philip, *Philip Johnson: Writings* (New York: Oxford University Press, 1979): 258-265.

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- ⁸ Philip Johnson, "Retreat from the International Style to the Present Scene" (delivered 1958 at Yale University) In Philip Johnson, *Philip Johnson: Writings* (New York: Oxford University Press, 1979) 84-97.
- ⁹ Ibid. 92
- ¹⁰ Franz Shultze, *Philip Johnson: Life and Work* (New York: Alfred A. Knopf, 1994), 296.
- ¹¹ Philip Johnson, "Review of Boyd: The Puzzle of Architecture" (1953) In Philip Johnson, *Philip Johnson: Writings* (New York: Oxford University Press, 1979), 128-133.
- ¹² Eggener, Keith, ed. *American Architectural History: A Contemporary Reader* (London and New York: Routledge, 2004), 301.
- ¹³ Eero Saarinen, Eeva-Liisa Pelkonen, and Donald Albrecht, *Eero Saarinen: Shaping the Future* (New Haven: Yale University Press, 2006), 332. The source states: "in a letter, Eero subsequently declares the deceased architect to have been the third most significant influence (after his father and Charles Eams) on him, putting Mies van der Rohe fourth, and Alvar Aalto fifth. He writes that these are 'men whose appraisal but not necessarily agreement one would like to have.'"
- ¹⁴ Saarinen, Pelkonen and Albrecht, *Eero Saarinen*, 332.
- ¹⁵ "From the Legacy of Matthew Nowicki," *Architectural Forum* 93 (1950): 201.
- ¹⁶ Recollections of Mark Jaroszewicz. *Saarinen-Swanson Reunion Transcripts*, Cranbrook Academy Archives, 1995, 2.
- ¹⁷ "One hundred years of significant building, 6: Public Assembly," *Architectural Record* 120, no. 5 (1956): 197-200.
- ¹⁸ Ibid, 200.
- ¹⁹ Jayne Merkel, *Eero Saarinen* (London: Phaidon, 2005), 108.
- ²⁰ Paul Rudolph, "The Great Livestock Pavilion Complete," *Architectural Forum* 100 (1954): 130-134.
- ²¹ Paul Rudolph, "Six Determinants of Architectural Form," *Architectural Record* 120, no. 4 (1956): 83-190.
- ²² "Is this Tomorrow's Structure?" *Architectural Forum* 98 (1953): 150-161.
- ²³ Sigfried Giedion, "The State of Contemporary Architecture," *Architectural Record* 115, no. 2 (1954): 186-191.
- ²⁴ Felix Candela, "Structural Digressions Around Style in Architecture," *Student publication of the North Carolina State College School of Design* 5, no. 1 (1955): 18.
- ²⁵ Henry Kamphoefner, interviewed by Charles Kahn, September 11, 1976, Triangle Modernist Houses Archive, <http://trianglemodernisthouses.com/videos.htm>, 19:00.
- ²⁶ Lewis Mumford to Clarence Stein, letter, 5 September 1950, The Clarence Stein Papers, Collection Number 3600, Division of Rare and Manuscript Collections, Cornell University Library.
- ²⁷ Lewis Mumford, ed. *Roots of Contemporary American Architecture: A Series of Thirty-seven Essays dating from the Mid-nineteenth Century to the Present* (New York: Reinhold Publications, 1951).
- ²⁸ Lewis Mumford, *The Myth of the Machine* (London: Secker and Warburg, 1971).
- ²⁹ See Donald L. Miller, *Lewis Mumford, A Life* (New York: Weidenfeld & Nicolson, 1989).
- ³⁰ Albert Mayer, *The Urgent Future* (New York: McGraw Hill, 1967).
- ³¹ Albert Mayer and Lewis Mumford, "Trend is not destiny," *Architectural Record* 142, no. 6 (1967): 131-134.

³² In a reproduction of Mumford's "Art and Symbol," he quoted Nowicki as stating "a great client was essential in the production of a great building." Burnett, Whit, ed. *America's 85 Greatest Living Authors Present: This is My Best in the Third Quarter of the Century*, (Doubleday & Company, Inc. Garden City, New York, 1970), 90-95.

³³ Albert Mayer, "Architecture with Inner Meaning" *Architectural Forum* 135, no. 4 (1971): 60-63.

Chapter 9: Conclusion

This dissertation has shown that a focus on structure – specifically expressive structure – can offer a comprehensive framework for understanding Matthew Nowicki’s life and work. While other scholars (Ockman, Goldman and Legault, and others) have argued for a view of Nowicki as a “humanist architect,” this dissertation has shown that viewing Nowicki through his expressive structural forms serves to tie his humanist intentions to the material reality of his architecture. This view celebrates the dynamic interplay between Nowicki's structural, load-carrying forms and the complimentary space they enclose, and highlights how Nowicki turned to expressive structure to address the conditions his time. Through his structurally expressive modern architecture, Nowicki aimed to create accessible, human-centered space.

This dissertation argues that Nowicki's design explorations were driven by a belief that structure could embody permanence in architecture, as the resistance to the force of gravity was a fundamental, unchanging necessity – a common requirement of all buildings throughout history. He asserted that although functions changed over time, structure could remain constant, and thus could be considered the enduring foundation of any work of architecture. Nowicki's attention to permanence, however, did not lead to a search for a singular universal structural or spatial solution. Nowicki believed the “minute exigencies of life” inspire “creative invention,” and he therefore designed diverse structural forms, seeking in each a solution that arose from the specific project conditions.

Nowick’s approach to structure was a blend of typically American and European traits. Scholars have described other Modern architects’ approach to structure, most notably the development of the steel frame in Chicago. Colin Rowe contrasted American Chicago-based

architects, who adopted the frame as a necessary means of construction in the evolution of tall-buildings, and European architects who saw the steel frame as a theoretical construct representing a shift in the understanding of architecture, one that reflected the changed cultural condition of modernity.¹ For the Americans, according to Rowe, the frame was simply required by the real estate forces in Chicago that demanded more height and larger floor area. For the Europeans, the frame allowed spatial innovation (the free plan) and had the potential to change way people understood and interacted with buildings. Rowe emphasized that this difference was based on a contrast of perspectives, American pragmatism versus European theorizing.

In his attention to structure, Nowicki exemplified traits from both perspectives. Nowicki experienced a variety of different locations, and was raised with a broad international awareness. He came permanently to the United States at the still-young age of 36. As a member of a younger generation than the early Modern architects, Nowicki was educated in a system shaped by Modernism; he was not involved in its emergence (like those described by Rowe) or its early polemics. As William Henley Deitrick once said “he was young enough to not have to be Modern.”² Nowicki was able to admire but also to critique work by Le Corbusier, Mies, Wright and Gropius, based on his understanding the changing conditions of the postwar world.

Nowicki demonstrated his approach to architecture through a wide range of projects across his career. While all of his projects helped define his career trajectory, several stand out for their particularly expressive structural forms. Nowicki’s first significant project is his first Polish Church, designed during the German occupation of Warsaw (c. 1942). Clearly drawing on both Gothic churches and Frank Lloyd Wright’s Johnson Wax building for inspiration, Nowicki’s design was nonetheless experimental, using structural elements to shape the

building's spaces. The slender columns support an impossibly high roof, which dissolves into shadows through little, articulated concrete ribs. Counterweights on the exterior relieve the bending moment of the roof at the middle, but also serve as an exterior detail. The articulated wall, undulating in and out, created interior chapels, while providing lateral resistance. In this design, Nowicki indicated the rich potential of structure to shape architectural space.

The next project that significantly advanced Nowicki's architectural position was the Warsaw Parliament building, which he designed with a large tension-cable roof (1945). He proposed linear tension cables spanning from the perimeter of the circular building to a center point; these would support the large roof over the Assembly hall in a materially efficient manner. The surrounding spaces were shaped by the buttresses needed to transmit the cable forces to the ground – requiring that each legislator pass through the muscular, supports before passing into the wide-open clear-span space. Nowicki recognized the advantages of evenly distributing structural forces around a circular perimeter, and the coincident appropriateness of a circular building for an assembly hall. In this design, Nowicki found an alignment between the structural form and programmatic requirements. Placed in a prominent position in the landscape, the building was to be a symbol of modern structural technology serving the democratic good. This project, conceived at a large scale, demonstrated how Nowicki's structurally expressive design thinking could address the then-current question of monumentality.

Once in the United States, Nowicki often designed in cooperation with other architects – either as part of a collaborative effort (United Nations, Eero Saarinen) or because he lacked a professional licensure. One project that clearly shows Nowicki's evolving design thinking is the smaller Polish chapel (c. 1947). Designed on a small scale, Nowicki focused his attention to the detail of material, structure and construction. In this design the two concrete mushroom columns

provide overhead shelter, while the wood siding provided enclosure – a separation of the supporting and supported members. This separation allowed for a clearstory illumination of the chapel space, and the off-center alignment of the two allowed for an exterior overhang on one side. Nowicki also differentiated the structural materials – using board-formed concrete for the columns and roof, and thin wood slats to truss the walls. In their detailing, these structural materials revealed their place of origin, and the intimate setting of a rural chapel surrounded by woods. This project, in developing this strong connection to place, showed how Nowicki’s structurally expressive architecture could become regional.

In his next significant project, Nowicki again proposed tension-cables as a primary structural element. For the California Markets project (with Clarence Stein) Nowicki designed a series of masts, with diagonal tension cables supporting a large roof (1949). This project showed the potential of structural form to create open, flexible space tailored to human use. Various sections were removed to indicate the pathway into the market to a central courtyard, and individual panels contained skylights to get daylight into the floor below. Such variations disrupted the symmetry and balance of the tension structure, but not to the point of instability or collapse. In this project, it is clear that Nowicki did not feel that an absolute, uninterrupted structure was a worthy architectural pursuit.

Nowicki’s structurally expressive approach culminated in the Raleigh Livestock Pavilion (1950). Here, Nowicki produced a large-scale convergence of structural form and dramatic space that exemplified his architectural perspective. The swooping concrete compression arches of the Livestock arena both support the catenary cables of the tension roof and contain the audience below. The warped surface of the roof that shaped interior space like nothing before arose from a relatively simple arrangement of structural materials acting in tension and

compression. The Pavilion is both bold in its presence in the landscape, and intimate for those inside. Dynamic, expressive structural forms contain the visitors to the building.

Identification of these significant works most clearly defines Nowicki's primary legacy. The forms and materials that Nowicki used in a structural manner (tension cables, thin shell concrete, wood trusses, and concrete arches) influenced two decades of structurally expressive work. While Nowicki produced his most significant work between 1947 and 1950, the majority of structurally expressive work in the postwar era came after this time. Felix Candela designed his Cosmic Rays Pavilion in 1951, the first of many significant works in thin shell concrete work. Eduardo Catalano took over at North Carolina State in 1951, after Nowicki's death, stating he was "continuing the work begun by Nowicki."³ He designed his hyperbolic paraboloid house in 1954.⁴ Eero Saarinen's most notable, expressive works, the MIT Chapel and Auditorium (1954), the Yale Ice Rink (1956), TWA Flight Center (1956) and Dulles International Airport (1958) all came later, after his time with Nowicki. Pier Luigi Nervi, as an engineer, designed notable buildings for utilitarian uses earlier in his career, but these buildings had few human-centered demands. He designed airplane hangers (1935-1941) for airships, but the majority of his celebrated architectural/ structural work came later, like the Turin Exhibition Building (1948), Palazzetto dello Sport (1956), and Palazzo dello Sport (1958).

Nowicki's career recalls the essay by Henry-Russell Hitchcock, published in 1947 in *Architectural Review*, "The Architecture of Bureaucracy and the Architecture of Genius."⁵ Hitchcock argued that the practice of architecture could be divided into two groups of architects - those with larger practices that would design successful projects, and those of individual genius who would originate new responses to architectural challenges and invent new forms to take

architecture in new directions. Hitchcock wrote that the architecture of bureaucracy is often marked by the absence of “personal expression”, while the architecture of “genius” depends on the creativity of an individual, creating work that has an “overall impact, just as the qualities of the more intensely expressive types of art such as poetry or painting or music do.”⁶ Hitchcock recognized that this “genius” architecture “may or may not produce master pieces”, but “rarely just gets by”.

With his structurally expressive forms and space, Nowicki clearly meets Hitchcock's definition of "genius," opening the door to a wider array of design solutions for many other Modern architects. Well spoken with a remarkable ability to draw, Nowicki was particularly influential because of his ability to understand structural principles, discuss structure in both pragmatic and theoretical terms, and synthesize these complex thoughts in to a single architectural project. With many levels of interpretation, Nowicki's focus was never on the simplest, easiest structural form but rather an expressive structure that created dynamic space well suited for human use. For Matthew Nowicki, structure was the medium of his architectural exploration, addressing human concerns that extended far beyond structural engineering. Despite Nowicki's death in 1950, this manner of architectural thinking shaped the profession for many years after.

¹ Colin Rowe, “Chicago Frame.” In Colin Rowe *The Mathematics of the Ideal Villa, and Other Essays* (Cambridge: MIT Press, 1976).

² William Henley Dietrick, “Matthew at the Fair”, *Student Publication of the School of Design* 1, no. 1 (1951): 23.

³ “Parabolic Pavilion,” *Architectural Forum* 97 (1952): 137.

⁴ “A New Way to Span Space,” *Architectural Forum* 103 (1955): 170.

⁵ Henry-Russell Hitchcock, "The Architecture of Bureaucracy & The Architecture of Genius," *Architectural Review* 51 no. 601 (1947): 3-6.

⁶ *Ibid.* 6.

Appendix A: List of Works

The works listed below are dated according to the following method. When only one date is given, this date indicates either the beginning of the design process (and no additional information can be found to verify time of completion) or, for competition or graphic design work, the date of exhibition or display. When two dates are given, the first date marks the beginning of the design process and the second marks the completion of construction.

Date	Project	Location
c. 1930	Parents' House	Warsaw, Poland
1935	Mosque	Warsaw, Poland (w/ S. Nowicki, competition 2nd place)
1936	Thesis project	Warsaw Polytechnic, School of Design (unbuilt)
1937	graphic design	Paris Exposition (w/ S. Nowicki, Gold Medal)
1938	Voivodship Office	Lodz, Poland
1938	Sports Center	Podskarbinska St., Warsaw
1938	Spa Building	Druskienniki, Poland
1938	Resort Hotel	Augustow, Poland (w/ S. Nowicki)
1939	Polish Pavilion project	New York World's Fair (competition, 2nd place)
1939	graphic design	New York World's Fair (exhibit on economic development of Poland, w/ S. Nowicki)
c. 1943	Polish Church project	Prandocin, Poland (w/ S. Putowski, unbuilt)
1945	Warsaw reconstruction	Warsaw, Poland
1947-49	United Nations Headquarters.	New York City (Special Consultant to Design Team)
1948	Polish Chapel project	Laski, Poland (unbuilt)
1948-49	Carolina Country Club	Raleigh, NC (interior design w/ W. H. Detrick, & S. Nowicki)
1949	illustration of <i>Made in Poland</i>	Alfred A. Knopf Publishers (w/ S. Nowicki)
1949	<i>Arch. Forum</i> School	Published design study for education
1949	California Markets project	Ventura, CA (w/ C. Stein, unbuilt)

1949	Columbus Circle project	New York City (w/ C. Stein, unbuilt)
1949	Brandeis University projects	Waltham, MA (w/ E. Saarinen, unbuilt)
1950	Illustration of <i>Eleanor of Aquitaine</i>	University of North Carolina Press (w/ S. Nowicki)
1950	Halifax Courts Housing Complex	Raleigh, NC (w/ W.H. Deitrick)
1950	N. Carolina State Fair Projects	Raleigh, NC (w/ W.H. Deitrick)
1950	Masterplan	Raleigh, NC (w/ W.H. Deitrick), partially implemented
1950-1953	Livestock Pavilion	Raleigh, NC (w/ W.H. Deitrick)
1950	Grandstand project	Raleigh, NC (w/ W.H. Deitrick)
1950-51	NC State College Student Union	Raleigh, NC (w/ W. H. Deitrick & Milton Small)
1950	Art, Science & History Museum	Raleigh, NC (w/ W.H. Deitrick, unbuilt)
1950	Chandigarh projects	Chandigarh, India (w/ A. Mayer, C. Stein & others)

Appendix B: Stanislava (Siasia) Nowicki

Matthew Nowicki's wife, Stanislava Nowicki (nee Sandecka) was also trained as an architect and was a life-long collaborator and inspiration – an architect and teacher worthy of her own independent scholarly study. This appendix offers a limited review of her life and career. In Matthew Nowicki's obituary, their mutual friend, Lewis Mumford, described the relationship between Matthew and Stanislava.

When his future wife met him at school she had no doubt of his architectural genius; but, as so often happens in academic life, it was she who often carried off the prizes, and it was to her, rather than to her future partner, that her professors looked as to a future architect of distinction. And perhaps her teachers were not altogether mistaken, for from the beginning to the end of his professional career theirs was the closest of partnerships; so close that they had a common signature for the work they did together in illustrating books and designing fabrics. As sympathetic critic and catalyst, if not always reagent, the wife played a productive part in the husband's work.¹

Stanisława Sandecka was born in 1912 (two years after her husband) in Pultusk, Poland, and, like Matthew Nowicki, studied architecture at the Warsaw Polytechnic. Early in their education, Matthew and Stanislava together produced many poster designs advertising events (such as university dances) and raising awareness of certain civic causes (such as tuberculosis). Their poster designs were considered part of the Polish avant-garde, described in detail by other sources.² The couple designed shop windows, boutiques, and other interiors while in school.³

While still in school, in 1936, Stanisława received a scholarship from the French government to study in Paris; she worked for a short time in the atelier of Le Corbusier. It is known that she worked on the photomontage exhibition within Le Corbusier's *Pavilion des*

Temps Nouveaux for the 1937 International Exhibition in Paris (*Exposition Internationale des Arts et Techniques dans la Vie Moderne*).⁴ She was also named the architect in charge of construction for the Polish Pavilion at that Exhibition and was awarded a Gold Medal for Graphics for her exhibit work within the Polish Pavilion.⁵

After her time in Paris, Stanislava returned to Warsaw, and graduated in 1938. The marriage of Stanisalva Sandecka and Matthew Nowicki in 1938 (just after her graduation) solidified an architectural partnership of two equally talented architects and they began practicing architecture together. They collaborated on many different design competitions including a mosque in Warsaw and a spa building in Druskininkai. Together the Nowicki's designed the Tourist hotel in Augustow which was built in 1938, destroyed during World War II, and subsequently rebuilt. For the 1939 Exposition in New York City, Stanislava and Matthew jointly produced "cartograms" to illustrate portions of the Polish exhibits within the Polish Pavilion.⁶

In 1941, during the German occupation of Warsaw, Stanislava gave birth to the couple's first son, Paul.

Once in the United States, Stanislava continued to pursue a career in graphic design. In June 1948, at the suggestion of Lewis Mumford, she submitted samples of her design work to the *New Yorker* (where Mumford wrote his "Skyline" column) as possible material for their cover, but no publication resulted. When Matthew became chair of the School of Design at North Carolina State College in 1948, Stanislava, despite no previous teaching experience, was given a position as a "Visiting Assistant Professor," and taught in the first year architecture studio within the School of Design. She quickly proved herself to be an exceptional educator drawing the continued praise of Dean Henry Kamphoefner.⁷

Stanislava worked in the field of graphic and textile design, both independently and with her husband. She designed the graphics and layout of the North Carolina State College, *School of Design Bulletin*, where Matthew's text described the School's new curriculum.⁸ In 1949, Knopf publisher printed the book *Made in Poland: Living Traditions of the Land* by Louise Jareck, a history book for young adults, promoting the values of Poland.⁹ Matthew and Stanislava jointly produced illustrations for the book, using their joint signature (as referenced by Mumford) "M. S. Nowicki." In 1950, the University of North Carolina Press published a history book, *Eleanor of Aquitaine*, by the Vanderbilt University professor Curtis Howe Walker, and the illustrations were again jointly credited to "M. S. Nowicki."¹⁰

In January 1950, Stanislava gave birth to their second son, Peter. That year Stanislava worked closely with Matthew on the interior of the Carolina Country Club in Raleigh, (in association with William Henly Deitrick). For this project, the couple designed tapestries and interior finishes.

The extent to which Stanislava may have offered critiques or suggestions for Matthew Nowicki's various projects from 1945 to 1950 cannot be ascertained. Given her design skills, it seems unlikely that she did not offer some advice relative to at least some of the projects. Matthew's death, in August 1950, left Stanislava Nowicki with two young sons and living alone in Raleigh, North Carolina. A year later, in 1951, Stanislava moved to Philadelphia, and, at the persuasion of Dean G. Holmes Perkins, began teaching in the first year studio at the University of Pennsylvania. There she developed the basic design course taught to first year students, and was widely praised as a demanding, yet inspiring educator.¹¹ Her home in nearby Villanova was a converted carriage house, and served as an example of the simple design composition that she

continually referenced in her teaching. Stanislava maintained a friendship with Lewis Mumford after Matthew's death, as Mumford often acted as a surrogate father to Paul and Peter.

Stanislava taught for one year at the University of Southern California in 1962, but returned to the University of Pennsylvania, where she became the first woman full Professor of Architecture in the United States.¹² She taught there until her retirement in 1977. After retirement she designed her own home in Norwich, Vermont.

Stanislava Nowicki received the national AIA Medal in Education in 1978.¹³ In 1986, Stanislava was awarded the ACSA Distinguished Professor Award, the same year as Christopher Alexander and Harwell Hamilton Harris.¹⁴ In early 2013, Stanislava Nowicki (age 100) was alive and residing in Washington, D.C. This limited discussion only hints at the quality and depth of Stanislava Nowicki's work – work worthy of further academic study.

¹ Lewis Mumford, "The Life, Teaching and Architecture of Matthew Nowicki," *Architectural Record* 115, no. 1 (June 1954):142.

² Andrea Austoni. "The Legacy of Polish Poster Design" *Smashing Magazine*. Jan. 17, 2010. Source <http://www.smashingmagazine.com/2010/01/17/the-legacy-of-polish-poster-design/>. Referenced: 23 February 2013.

³ Tadeusz Barucki and Maciej Nowicki, *Matthew Nowicki: Poland, USA, India*. ([Warsaw]: Salix Alba, 2010), 11-19.

⁴ "Stanislawa Nowicki Architectural Papers – Biography", *International Archive of Women in Architecture*, Virginia Institute of Technology, Blacksburg, VA. Source: <http://spec.lib.vt.edu/IAWA/inventories/Nowicki.html>. Accessed February 23, 2013.

⁵ North Carolina State College, and Matthew Nowicki. *School of Design: North Carolina State College, Raleigh, N.C.* (Raleigh: NCSC Press, 1950), 26.

⁶ *Official Catalogue of the Polish Pavilion at the World's Fair in New York, 1939* (Warsaw: s.n., 1939), A111.

⁷ Kamphoefner quoted in: American Institute of Architects. 1978. *North Carolina architect*. Raleigh, N.C.: North Carolina Chapter of the American Institute of Architects, 2, (March/April 1978), 42-43

⁸ Credit is give to Stanislava at the end of the Bulletin, as "designed by: Stanislava Nowicki." North Carolina State College, and Matthew Nowicki. *School of Design: North Carolina State College, Raleigh, N.C.* (Raleigh: NCSC Press, 1950), 28.

⁹ Louise Llewellyn Jarecka and M. S. Nowicki. *Made in Poland; living traditions of the land*. (New York: A.A. Knopf, 1949).

¹⁰ Curtis Howe Walker, *Eleanor of Aquitaine* ([Chapel Hill]: University of North Carolina Press, 1950).

¹¹ “Happy Birthday, Stanislava Nowicki” 2007. *AIA Architect*, News headlines, vol. 14, March 30, 2007. Source: http://info.aia.org/aiarchitect/thisweek07/0330/0330n_nowicki.cfm. Referenced: February 23, 2013.

¹² “Pioneering Women Architects in North Carolina” *Triangle Modernist Houses*. Source: <http://www.trianglemodernisthouses.com/newwomen.htm>. Accessed: February 23, 2013.

¹³ “Happy Birthday, Stanislava Nowicki” 2007. *AIA Architect*, News headlines, 14 (March 30, 2007). Source: http://info.aia.org/aiarchitect/thisweek07/0330/0330n_nowicki.cfm. Referenced: February 23, 2013.

¹⁴ Association of Collegiate Schools of Architecture, “Distinguished Professor” award history, Source: <http://acsa-arch.org/programs-events/awards/archives/DP>. Accessed: February 23, 2013.