

Tomorrow was Yesterday:
Urban Options for Preserving Historic, Modern Chandigarh

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Abstract

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This paper explores planning options for the preservation of the historic, modern city of Chandigarh, India. As a modern city, Chandigarh was designed and built with an edict that emphasized an intent that the city would evolve to meet the needs and desires of the future. Chandigarh was neither built to represent a static monument to the past, nor was it intended to be frozen in time by oppressive regulation. This city is a unique urban experiment that possesses relevant historic resources on various scales. As the city's anticipated future has now come and gone, action must be taken to protect the invaluable historic resources of its stylistically modern past while allowing the city to evolve in a contemporary urban mode. In response to this seemingly paradoxical issue, an examination of other historic, modern urban areas has suggested the importance of a flexible heritage preservation plan that protects Chandigarh's urban and architectural character while developing strategies that promote contemporary development. A preservation proposal is introduced that outlines goals, obstacles, and methods that may be considered for Chandigarh. This paper was written with hopes that the city will be able to maintain both its experimental, urban foundations and also embrace its evolution as city that plans realistically for the future.

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PREFACE

As an undergraduate at New York University, I had the opportunity to study abroad twice, once in Chandigarh, with the University of Washington. During my first visit, in 2009, I was able to explore the history and present condition of a city I had only read about. Its modern plan, and experimental foundation fascinated me; after my first visit to Chandigarh I decided I must continue my education and pursue a Master of Urban Planning degree to learn more about cities like it.

As a graduate planning student, I was able to return to Chandigarh with two and a half more years of school and additional research about the city under my belt. In early 2012, I returned to Chandigarh during a time of change, as wealthier residents built and rebuilt in the city's organized plan, I wondered what would become of the city in another three years, or ten, or hundred. Would the historic core lose its modern architectural identity? How can a city built for the future save its historic structures while allowing development and growth? With no existing preservation plan, I had my work cut out for me, and I was determined to find an answer to the seemingly paradoxical issue of preserving the modern city.

Though I did not find only one answer, I did come up with a proposal that, I believe, is an appropriate response to the question of preserving Chandigarh's historic, modern heritage.

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This project would not have been possible without the support of my wonderful family, friends, educators and classmates. Thank you to my professor and thesis committee chair, Dr. Vikramaditya Prakash, for introducing me to the history and character of Chandigarh and also to my committee member, Dr. Robert Mugerauer, for keeping us on track along the way. I was lucky enough to spend two exciting terms abroad, in Chandigarh, with wonderful, and curious students that participated alongside me in the Chandigarh Urban Lab 2009 and 2012 sessions. Thank you to all of my classmates from New York University and the University of Washington that shared my interest and excitement of trying to understand the living city (especially Kevin Doyle, Margot Malarkey and Samantha Kollmeyer). I could not have done any of this without my parents, who always believed in me and encouraged me to follow my dreams. Special thanks to my sister, Claire, and Nicolas Hammond for giving me the support and motivation I needed to make it this far, and for reminding me that this is only the beginning.

*To all of the designers that took part in the evolution
of Chandigarh past, present and future*

Chapter 1: Introduction to the Modern, Planned City

In an increasingly commercial, and rapidly urbanizing society, it is vital to recognize and protect the assets unique to a locality. There is inherent value in the preservation of cultural, political and aesthetic heritage, whether that comes in the form of tourism dollars or the peace of mind that residents gain by urban planning that honors their sense of place.

Over half a century after the construction of what were once idealized, modern cities built for the future, the future has come and gone. It is now the time to make vital decisions that will guide development of the historic, modern city of Chandigarh. This foresight will determine the type, quantity, quality and limits of present and future growth in the city.

Chandigarh is an important modern experiment in architecture and urban planning that represents the country's faith in its democratic image. Thoughtful action must be taken to protect the physical and ideological assets of Chandigarh. When considering preservation of the modern city, one must decide (1) what needs to be protected and (2) how to plan and design for the present and the future. For Chandigarh, a productive discussion regarding the appropriate aesthetic expression for future design and building in the city must take place.

This paper will describe the value of Chandigarh's urban fabric by looking at its history within the context of existing resources, while examining the preservation tactics of other large-scale, modern, urban experiments. Finally, this paper will conclude by suggesting an innovative, flexible approach based on current practices by which the preservation of Chandigarh can take place.

The Story of Chandigarh

The purpose of this paper is not to explore the history of Chandigarh. However, by preparing a brief history of the city, the reader may be more informed of the key issues regarding preservation via a historical lens.

Chandigarh was built to be "a new city...unfettered by the traditions of the past" (Prakash 2002). After the partition of India and Pakistan in 1947, the Indian state of Punjab was left without a capital, as its former capital, Lahore, was lost to Pakistan. In the vision of a new, modern, and independent India, then Prime Minister Nehru enlisted the assistance of American Albert Mayer and Polish-born Matthew Nowicki to design and plan the new capital for the Punjab state, Chandigarh. Nehru noted:

There are very few town planners in India...the average engineer, however good he may be, and even the average architect, has no special qualifications for town planning which is a very specialized job (Gopal 1984). In hopes that this new city would represent a new and independent India, the proposed vision was modern. It was modern in every sense of design, in

order to clearly separate it from any village-like or colonial settlement of “the old” India. Prime Minister Nehru envisioned Chandigarh as a modern city with adequate infrastructural services and open spaces “liberating Indians from the tyranny of overcrowded and filthy cities as well as from the confines of agricultural, village life,” (Khan 2009). Chandigarh was designed to symbolize democracy and the ideals of modernism as appreciated by the newly independent nation.

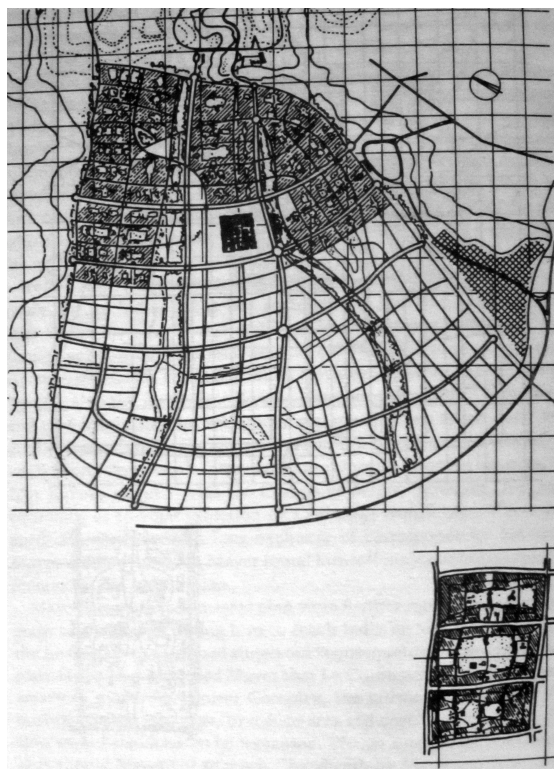


Figure 1: The Mayer Plan and Sector (Kalia 1987)

The Mayer Plan for Chandigarh actualized the idea of the superblock and the neighborhood unit, as historically innovated by Clarence Perry and built by Clarence Stein, The use of the cellular neighborhood unit provided a

preconceived structure for the city which emphasized adequate housing, public health and community organization (Banjeree 2009). In the language of modernism, these elements were all crucial components of both the garden city and the modern city. These elements have only become more important as time has passed and their contemporary implications need to be considered.

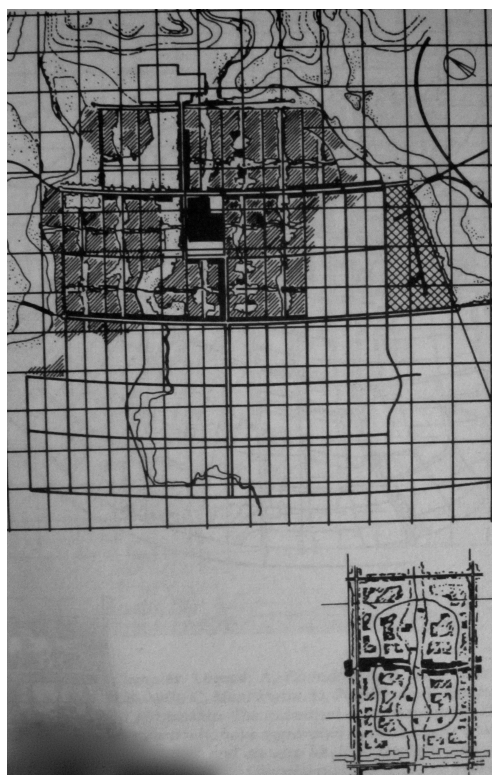


Figure 2: The Le Corbusier Plan and Sector (Kalia 1987)

Le Corbusier was brought in to contribute to the planning process for Chandigarh after a tragic plane crash in 1950 that killed Mayer's planning partner, Matthew Nowicki. Not afraid of radically altering the urban environment, Le Corbusier had already proposed several "cities for the future", but no large-scale urban project had yet been built. Le Corbusier was known for

designing beyond a given project, and now he had the opportunity to build out a utopian, modern city (Cohen 2008). Le Corbusier made some improvements to Mayer's plan, though the general concepts (the cellular neighborhood and omnipresence of green space) are essentially owed to Mayer. Most notably, Le Corbusier straightened the once curving street network, proposed a road hierarchy (the 7Vs) and enlarged the sector sizes. Albert Mayer objected to many of his alterations and proprietorship of the city plan; and ultimately, many visitors, residents and some scholars do not attribute Chandigarh's plan to Mayer at all (Banjeree 2009).

In the language of the modern city, as envisioned by as Le Corbusier, the modern city should embody the notions of, "Living, Working, Care of Body and Spirit, and Circulation," (Khan 2009). The rich historical resources evidenced in his design of Chandigarh illustrate his faith in the Congrès International d'Architecture Moderne.

Political Situation

Today, Chandigarh is home to three governments and over one million residents. The city is capital to both states of Punjab and Haryana and also has its own government, the Union Territory(U.T.) of Chandigarh administration, which is the most local form of government and is responsible for guiding future development and growth within city limits. Because of this bureaucratic

pluralism, many of the iconic architectural works have been left in a state of disrepair. This is likely due to a bureaucratic system that identifies restoration and historic preservation as the responsibility of some other government agency.

Significance

In an age of globalization, commercialization, and environmental degradation, the issue of place takes on a key role. Chandigarh has, and was intended to have, a very distinct, modern sense of place. Its identity was and will always be its own, as it was built in and of itself.

Modern urbanism in its most utopian form, as it was described in the Athens Charter, had rarely been implemented on such a large, urban scale. Significant, mid-century applications, as capital cities, only exist in three cases: Chandigarh, Brasilia and Islamabad. That said, its vast scale, historical significance and enforcement of design in the context of perpetuity are of the utmost importance. These considerations become all the more important as Chandigarh is on the eve of a UNESCO heritage site determination.

Its architectural inventory is also significant; it is composed of well-known architectural works by international modern architects as well as key Indian modern architects. The inventory of modern architecture in Chandigarh is both plentiful and exists in a modern urban context; it demonstrates a distinct, Indian, modern identity found nowhere else in the world in such quantity and quality.

The preservation of the modern city is in a sense contradictory to the basic ideology of the modern city. The modern city was meant to thrive and grow to respond to the needs of the future city. In the other modern, capital city, Brasilia, which has been identified as a UNESCO World Heritage site, has since been “frozen” in order to preserve its architectural and urban significance. By freezing the historic, modern era Chandigarh, one would be hurting both the city itself and the foundational ideology of the city. How can preservation and growth work hand in hand to preserve a healthy, living, historic, modern city?



Figure 3: Chandigarh City Map

Chandigarh's Resources

In this section I will identify significant historic resources. The selections in this section might certainly be expanded upon, but at a minimum, these are highly significant urban and architectural elements of Chandigarh's heritage. The descriptions of these works are minimal and are presented primarily for informational purposes. For additional information regarding specific historic resources, please see the works cited.

The Edict of Chandigarh

Perhaps the most significant historic and important advocate for a unique approach to the preservation of the city is the document that accompanied the inception of Chandigarh. Upon completion of the city's design, the *Edict of Chandigarh* was prepared by Le Corbusier to guide future development and growth of the city. The UT Chandigarh Administration suggests:

The object of this edict is to enlighten the present and future citizens of Chandigarh about the basic concepts of planning of the city so that they become its guardians and save it from whims of individuals (UT Chandigarh n.d.).

Le Corbusier points out the importance of urban components from the use of sectors as organizational units, to the road network hierarchy, to the inward nature of the neighborhood unit, and to certain frame controls (to be discussed later on). The final item in the edict is the importance of truthfulness of building

materials; this will be further explored in this document as a key part of the preservation implications.

The *Edict of Chandigarh* established that, “the seed of Chandigarh is well sown. It is for the citizens to see that the tree flourishes,” (UT Chandigarh n.d.). This notion of intentional adaptation as it is a part of the city's history is key in the development of a flexible and appropriate preservation plan. *The Edict of Chandigarh* implies that there should be necessary alterations to the urban fabric decades pass, and as new generations of buildings come up, the urban environment *will* change, but will use the modern foundation as a mode to guide the transformation as the city evolves.

The Urban Form

Chandigarh is most known for its modern plan that was based on the garden city concept and the use of a rectilinear city grid. Albert Mayer originally designed the city in 1949. Mayer's master plan was in the shape of a fan; Mayer's Chandigarh had curves. In the initial design of the city, the proposed development was between two riverbeds, creating valleys for recreation and green spaces. Mayer's plan had a government center that was separate from the commercial core and the neighborhood units were called residential superblocks, each contained a small commercial area within the sector. The city

was connected with a few different road classes (designed for the automobile, no doubt) but not strictly geometric.



Figure 4: Chandigarh Master Plan by Le Corbusier (Prakash 2002)

When Le Corbusier was brought in to finalize the plan, he altered certain elements of the Mayer plan. He famously said:

I believe it to be natural that an inner law should animate a work created by a human being. Let me refer to the dictionary: Rule: to guide; principle, law: discipline, order (Evenson 1966).

One of the most noticeable changes was in the geometry of the urban form and the densification of the city. The Mayer plan occupied 6,908 acres while Le Corbusier's plan occupied only 5,380 acres (Prakash 2002).

Le Corbusier made a more formal, geometric road network to accommodate the city. This was a scheme to separate different classes of traffic (from V1, the highway, to V7, the sidewalk). Le Corbusier also eliminated one of Mayer's "leisure valleys." Overall, the Chandigarh plan is historically significant in and of itself because of its guiding vision and utopian, modern

organization. Chandigarh was an experiment of the modern era. It combated the pre-modern issues of congested, polluted, more organically grown cities with design elements that promoted light, air and speed.

The Street Hierarchy- the 7Vs

Le Corbusier famously organized the road network into a hierarchy he called the 7 V's. This road network forms the basic structure of the rectilinear, modern city. These roads are intended to be the "arteries" that keep movement within the city in orderly circulation. The intent was to have only cultural institutions, defined commercial spaces, and public green spaces face the V-2 roads (as opposed to residential units). The hierarchy is defined in this way:

- V-1 Fast moving roads that connect Chandigarh to other cities
- V-2 Major arterial roads within the city
- V-3 Fast moving vehicular roads that divide sectors
- V-4 Winding roads dividing the sector; home to neighborhood commercial
- V-5 Circulation roads within the sector
- V-6 Roads for access to residential properties
- V-7 Pedestrian and Bicycle paths

Historically, these roadways are important in defining the urban character of the city. This does not mean that the character of the roads should not be allowed to change, but rather that their form and layout should remain. There are large vegetative buffers along the V-2 and V-3 roads which were built in to accommodate future modifications to the road network. In a city built for the future, these buffer areas might be used to accommodate a public transit network, pedestrian paths or bicycle networks. All of these types of alterations to the historic road network would contribute to the ideological condition and aspiration of the historic, modern city. For additional information about the character of these different roadways, please refer to the table located in the appendix.

The Sector

The sector is an important urban form, especially for Chandigarh. As the building block to the city, each sector is a superblock. Clarence Perry first explored this model of the neighborhood unit though only in concept and design (Mumford 1961). The concept was implemented successfully in a few modern, planned developments and A.L. Fletcher, a senior Indian bureaucrat, thought this type of urban structure would be a good model to apply to the design of the modern Indian city (Prakash 2002).

The Chandigarh sector is inward facing and composed of mainly residential parcels, though each sector has a small commercial core to meet the everyday needs of its residents. Essentially, the sector contains elements like schools, small grocers, local businesses and other services (i.e. religious institution, medical clinic). The sector also has smaller local roads for access to residential properties (so as to move local traffic off the main arterials). Each sector has designated green spaces for its residents to enjoy a local option for leisure activity.

The Capitol Complex

The governmental center, or the head, of the city is situated at the far north end of Chandigarh, in Sector 1. The Capitol Complex was designed entirely by Le Corbusier and is the site of his three most well known architectural works in Chandigarh. In plan, the Capitol Complex represents the brain of the body of the city. The complex is composed of three main buildings: the Assembly, the High Court and the Secretariat.

As the focal point of Le Corbusier's architectural work in Chandigarh, the Capitol Complex is an architectural masterpiece in and of itself. Coupled with the work of other architects and planners, the Capitol Complex and Chandigarh are wholly representational of what it means to be modern.



Figure 5: The Capitol Complex

In the vision of democracy and independence, the Capitol Complex was seen to be the most important sector in plan. The whole complex was designed on site, and the large massings set up against the Himalayan foothills; this sector created a dramatic, symbolic image of Indian independence. These buildings are proudly cherished by residents who see them as the most direct artifact of Le Corbusier in Chandigarh. Sadly, they remain in a state of disrepair and are in definite need of restoration and protection. It is clear that neither the exposed concrete nor the carefully placed reflecting pools have been well maintained.

The Commercial Core

The commercial core, located in Sector 17, is historically significant because of its form, design and historical meaning. This core is home to a pedestrian plaza and copious amounts of at-grade, surface parking. The literal heart of the city is unique in plan in comparison to other sectors. While the intent

of most other sectors was to be a neighborhood unit, the makeup of Sector 17 was primarily designed to accommodate commercial space. In the commercial core, there is little residential settlement, rather there is an emphasis on business, office, municipal and commercial land uses. Its intention by Le Corbusier was to be a “pedestrian paradise” with no vehicular activity in the plaza space.



Figure 6: Neelam Theater at the Heart of Sector 17

This sector was chosen as the commercial core of the city because of its central location and its proximity to the Capitol Complex (a straight road connects the heart and brain of the city). At the core of this sector is the historic Neelam Theatre and a still vacant site originally planned (even designed) for a public community-gathering center.

The commercial core is built in the image of Chandigarh's strict frame control and is certainly in danger as more global chain retail outlets move in and subtly alter the facade to suit their brand. Needless to say, these buildings

need significant restoration to ensure that their historic form is kept. A criticism in the early years of Chandigarh was the strict frame controls designed by Le Corbusier; by placing “commercial establishments behind a uniform facade [does not allow one to] establish landmarks by which one might be oriented,” (Evenson 1966). This is a key point in the discussion of controls and preservation of structures in Sector 17.

The Green Space

The green spaces of Chandigarh represent the breath and lungs of the city. In the original plan, Mayer had mapped out two very distinct green valleys, which ran north/south throughout the entire city along two ancient riverbeds. In Le Corbusier's adjustment, one of these was eliminated. Le Corbusier's vision was that green space would provide city residents a place for “care of the body and spirit.” Smaller, local park spaces are intentionally scattered throughout each sector in line with this purpose.



Figure 7: Green Space in Sector 8

Leisure Valley

Today, Chandigarh is home to the “Leisure Valley” a park system, which runs virtually uninterrupted from one end of the city to another. This parkway was typical in Le Corbusier’s utopian schemes and Chandigarh’s Leisure Valley is full of connected green space from the Asian continent’s largest rose garden to rambling paved walkways for pedestrian enjoyment. This recreational valley is an important part of historic Chandigarh, and it would be appropriate to alter the landscape to encourage greater usage of the large recreational space.



Figure 8: Leisure Valley



Figure 9: The Lake

Sukhna Lake

On the northern end of the city, set among the foothills of the Himalayas, lies Chandigarh’s main body of water, the Sukhna Lake. This lake was constructed in the late 1950s along with the city. The lake is man-made and was originally envisioned by Le Corbusier. In vision and present, the lake is

completely isolated from motorized vehicles and is part of the serene vision for Chandigarh's open space. There is a Lake Club (members only) that was designed by Le Corbusier and should undoubtedly be included as an integral part of the city's architectural resources.

The Education Corridor

Museums

Sector 10 is where two key museums lie and the area of the city that Le Corbusier had hoped would be the primary cultural zone within Chandigarh. Chandigarh's City Museum and the Government Museum and Art Gallery are both huddled together in between a sculpture park, part of leisure valley and the Chandigarh's College of Art. Le Corbusier designed the Government Museum and Art Gallery with its uninterrupted brick facade and clerestory windows. The building has a deep porch at the ground level and a detached auditorium. Because of its use and occupants, the building is in relatively good condition and is surely a landmark structure within the city. The Chandigarh City Museum was only built in 1997, but hosts archival and informational materials from early plans and sketches to models and photograph collections.



Figure 10: The Government Museum and Art Gallery

Colleges and Universities

Also in Sector 10 is the Chandigarh College of Art, designed by Le Corbusier, which stands just northeast of the museums. After the partition, the Indian state of Punjab was also in need of a university as the previous one had been in Lahore. DAV College in Sector 10 was founded in the late 1950s and both the Government College for Boys and Government College for Girls can be found in Sector 11. In 1954 the University of Punjab purchased Sector 14, and one year later construction began. Many important and iconic buildings of Chandigarh make up this campus; campus was primarily designed and planned by Pierre Jeanneret and B.P. Mathur though works of many Indian modernists house the students (boys and girls hostels) and academic institutions.



Figure 11: Punjab University's Fine Arts Museum

Other educational notable institutions may be found on the northwestern side of the city. In Sector 12, both the Punjab College of Engineering and the Chandigarh College of Architecture stand strongly amongst a more residential area of the city. J.K. Chowdhury designed the College of Engineering and its campus is composed of many courtyard spaces and open corridors to make the most of the Indian climate (Evenson 1966). The College of Architecture, designed by Aditya Prakash in the image of Le Corbusier's Chandigarh College of Art, is an architectural monument in itself. In terms of structural and design integrity, the building is well-maintained, with only a few interior alterations.

The Housing Schemes

Maxwell Fry, an important architect in the creation of Chandigarh's housing schemes once said:

Taking Chandigarh as an example, we may see all at once the democratic idea which allows us to devote an equal care to housing all classes of society, to seek new social groupings, new patterns of education and public welfare (Evenson 1966).

It was architects Maxwell Fry, Jane Drew and Pierre Jeanneret who were responsible for proposing ways to tackle the challenges of residential sectors and government housing. Colonial practice determined that a government employee would be assigned a specific residential unit and the rent would be 10% of his salary (Evenson 1966). This system of government housing, then, was first divided into thirteen classes of housing. Sector 22 was among the first residential sectors built in Chandigarh. This was designed to be a higher density sector with a low-income district on the southern end of the sector. There are mixed-income housing types in this neighborhood unit; Jane Drew and Maxwell Fry primarily drew up the variations of the housing schemes.



Figure 12: Housing by Jeanneret and Mathur (Prakash 2002)

The different designs for each house type (1-13) were based upon climate, technology, local materials and budget. All of the different modern

designs are very sensitive to the Indian climate as many have jalis and brise-soleil's to allow for ventilation without direct sunlight. Each unit usually had access to an outdoor space whether it was directly at ground level or the roof of an adjacent unit. Many of the structures were brick-faced or brick-faced with exterior plaster stucco. Brick walls facilitated the easy building of balustrades, sun breakers and even interior shelving (Evenson 1966). There have been many alterations to these housing types as air conditioners and extra interior space is desired due to changes in local lifestyles. Today, government-housing schemes are best kept in Sector 9, Sector 16 and Sector 22.

The Private Housing Stock

Chandigarh also has a private housing stock that contributes significantly to the urban character of each sector. Because sectors are inward facing, it is mostly private housing stock that lines V5 and V6 roadways. These residential, privately owned parcels were developed at different times throughout Chandigarh's young history, usually the older, historically modern residential



Figure 13: Example of the Private Housing Stock

structures are found in the lower numbered sectors, as these were some of the first sectors to be built up in the 1950s and 1960s.

As is the case in most urban areas, the private housing stock responds to market forces and houses might be altered, renovated or even demolished depending on the needs and desires of the owner of the property. As these changes occur within the urban fabric, a system of controls (which once existed as Frame Control, though might now managed by design guidelines and building bylaws) can be utilized to make the private housing stock represent the aesthetic character desired by the larger urban unit.

Present Heritage Scenario

In 2006 and 2007, the Chandigarh Tourism Board prepared a nomination for "The Architectural Works of Le Corbusier in Chandigarh" as a proposed site on the United Nations Educational, Scientific and Cultural Organization's (UNESCO) World Heritage List. These were weak proposals in that they addressed and credited only Le Corbusier, who was but one player in the game of designing Chandigarh and all of its elements. Had either nomination been accepted to the World Heritage List, some key buildings by other architects would not be protected or acknowledged.

The city's office of the Chief Architect has reportedly worked on compiling a list of works that include more than just those of Le Corbusier (from Jeanneret and Sharma to Drew and Fry). Also, it was reported that the committee in charge of heritage wants to create a new UNESCO World Heritage Site proposal, which includes the collaborative efforts of the entire Chandigarh design team. They hope to have two sections: the Capital Complex and the Cultural Complex (Mohan 2011).

When the proposals were first drawn up there were no local preservation or heritage laws in the city and the UNESCO proposal was the only hope some saw at protecting the city's valuable historic resources. In 2011, the Chandigarh administration did not submit its report to the Archeological Survey of India (this

is the national agency responsible for submitting nominations to UNESCO) in time.

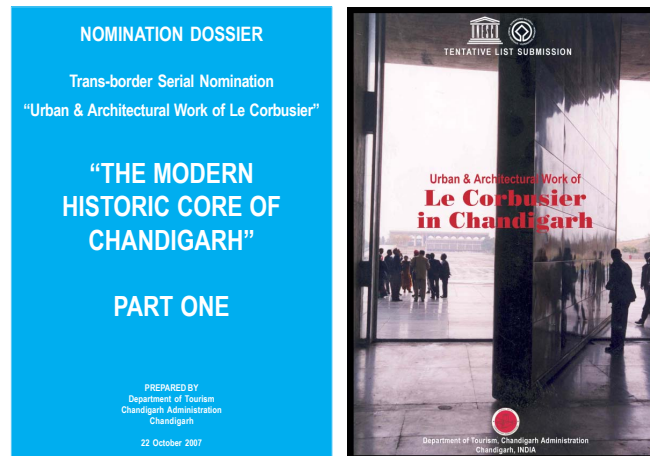


Figure 14: UNESCO Nominations

Vibhor Mohan believes “at the rate at which it is going, the heritage of City Beautiful [Chandigarh] would soon be everywhere except Chandigarh” (Mohan 2011). This is very true in today’s city, and is important to see how this statement might be substantiated. The most recent debacle started in 2007.

The Furniture Debacle

It was 2007 when a Chandigarh manhole cover was sold at an auction for over \$20,000 (Punjab News Line 2011). Manhole covers and other architectural and interior artifacts like this are historic elements of Chandigarh’s heritage. This auction was among the first wherein heritage items were sold; needless to say, this was only the beginning. Since 2007, the municipal corporation of

Chandigarh has inventoried the existing heritage manhole covers throughout the city (Times of India 2011).

In early 2010 a European architect visited Chandigarh and informed the former Chief Architect, M.N. Sharma, that heritage items once property of the UT Chandigarh administration were slated for auction in Paris (Mohan 2010). Mr. Sharma went to high-ranking government officials for some guidance; this was the beginning of the investigation to discover how precious heritage items their way to the auction house in Paris. When asked about the transfer of these heritage items, former Chief Architect Sharma responded that in Chandigarh "it is not easy to hold anyone accountable...all said and done, drawings from official records could only be taken by those who had easy access," (Mohan 2010). Sharma told the interviewer that the most valuable heritage items were taken from the Chief Architect's office; while there is no official record of these items being taken. In August of 2010, it was announced that more items from Chandigarh would be auctioned in London and in April 2011, a table that Punjab University thought was "junk" was sold for over \$10,000 at a Chicago auction house (Punjab News Line 2011). The transfers of these cultural items for profit possible represents the standards by which these treasures were "officially" held.

Thankfully the Chandigarh Administration is now taking a more hands on approach to managing artifacts and objects of Chandigarh's history. In mid May 2011, the administration began to take action to protect the various

heritage artifacts within their own administrative properties. Home Secretary, Ram Niwas, says that these departments must inventory all existing items and prepare a report outlining which have been auctioned or sold and note “with whose approval the said auction had been carried out” (Punjab News Line 2011). It is noted that a committee has been appointed to assess the value (both heritage and monetary) of inventoried artifacts; details regarding the makeup and selection of this committee were unable to be obtained by the public.



Figure 15: Creative Preservation of Heritage Furniture (Chandigarh Urban Lab 2012)

The fetishization and auction-value of these modern artifacts may serve as a catalyst for the conversation about the necessary legislative protection of

objects and structures that embody Chandigarh's heritage. Also, beyond the issue of preserving a locality's heritage, the issue of preserving *modern* heritage is at the core of this discussion. These highly valued objects were developed for the city in a fashion that intended their mass-production and usability. Now, by fetishizing these objects (chairs, desks, etc.) the very utilitarian intent of the object is lost. The city, with a vulnerable, but plentiful amount of heritage desks, chairs, etc. in use and storage, must face the issue: what should be done with these heritage objects? Is it their use value and instilled intent or monetary value and fetishization that will dictate their fate?

Just recently, the Chandigarh Urban Lab suggested the transformation of these historic, modern objects into urban street furniture. As an example, they proposed turning heritage chairs into swings. They believe that this will result "in the removal of the market value (fetish) while still maintaining the function (sitting)," (Chandigarh Urban Lab 2012). This thought emphasizes both their historic presence in the city in addition to the use value of the objects by the contemporary society. Their interpretation pushes the boundaries of the standardized heritage artifact discussion toward a truly modern and site-specific approach.

The Heritage Conversation

Spurred by the issue of lost heritage and the value of their modern aesthetic, the UT Chandigarh administration has discussed options to give local structures and sites a “heritage status” to further protect artifacts and structural elements of Chandigarh’s heritage (Mohan 2011). In 2011, UT Chandigarh administration decided that they wanted to designate local buildings and zones that related mainly to the work of Le Corbusier and Pierre Jeanneret with a “heritage status” (Mohan 2011). The committee decided that they should continue, “grading of heritage zones, heritage precincts and heritage buildings based on their significance and importance” using controls and legal instruments to regulate the extent of change to a given grade (Mohan 2011). In April 2011 the owners of a Jeanneret-designed residence in Sector 5 announced that they were opposed to heritage preservation status of their site (Mohan 2011).

Property owners perceive that heritage status would make it impossible to change any part of their structure’s layout. The owner remarked:

We would feel most privileged if the city of Chandigarh were declared a heritage site. Of course this and other private houses named would be a part of that patrimony. But making such a declaration entails many requirements, first and foremost in having an administrative body that fully knows its history and is competent to draw up the rules of the game in line with best international practice (Mohan 2011).

The owner, Ranjit Sahgal, believes that any heritage status given to private homes should initially invite voluntary listing if a structure is nominated. He looks at the current state of Chandigarh's heritage and preservation actions and notes that it is merely an "example of bureaucratic arrogance" (Mohan 2011).

Many private property owners in Chandigarh agree with Sahgal's statement: "UT has no right to wake up and tell me what to do with my property when it has not even been able to look after the public structures...in terms of their maintenance and upkeep" (Mohan 2011). Because there are many historic resources on municipal lands, there should be more consistency between what the municipality might require of privately owned properties and how the city maintains and manages municipal properties. Sahgal grew up in this house, his parents commissioned Jeanneret to design the home and Sahgal and his family now still are deeply connected to the design and construction of the house with little intention to dramatically alter the structure.

In December 2010, the city's committee responsible for heritage decisions decided "we should first take proactive local measures to safeguard the city's heritage" (Mohan 2011). With historic objects from government buildings showing up on the auction block, residents are left questioning the motives and care of the government in preserving the city's history. In short, the city must lead by example. The historic sites and structures which are municipal property need to be repaired, maintained, and in some cases, restored.

Because Chandigarh is an important, historic urban project of the modern era and a vibrant city of contemporary India, there are a few considerations in terms of the financial and legal burdens inherent to proactive heritage preservation. It is important to note that the legal and economic backing of historic preservation in the United States does not exist in India and because of the varied scale of the historic resources, from specific sites and structures to the entire road network, there is no one-size-fits-all approach to historic preservation in Chandigarh. One cannot “freeze” the city in time; rather, one must take an innovative, multi-level approach to allow the historic, modern fabric to accommodate urban dwellers of the 21st century and beyond.

Chapter 2: Historic Preservation in Context

A prominent thinker that explored themes linked to preservation and the man-built environment is Hannah Arendt, a German political theorist. Her work *The Human Condition* describes the public realm and its dependence on permanence. Arendt noted “if the world is to contain a public space, it cannot be erected for one generation and planned for the living only; it must transcend the life span of mortal men,” (Arendt 1958). Not only does Arendt allude to the idea of sustainability, but also the importance of the man-made, built environment in linking those generations before and after us. Arendt’s look at permanence within the context of the natural degradation of human artifice is ever relevant in the preservation community when including preservation as an important facet of the contemporary built environment, community and its dwindling resources.

In an effort to address the issues of heritage and the public realm, the discussion protecting an urban fabric like Chandigarh can be looked at from many perspectives. This paper focuses on the local level, on citizen-supported initiatives and citywide governmental action and implementation. It is important, however, to understand the different scales that citywide preservation might be relevant to, including the perspective of the international

community in realizing the goals set forth in an effort to preserve important global heritage.

As previously alluded to, a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site is a globally recognized listing that acknowledges a site to have outstanding universal value. There are several different criteria and scales that a site might be listed. From a site like the Capitol Complex to that larger historic core, a designation as a UNESCO World Heritage Site would outline specific resources and strategies to preserve the area. Three historic modern cities, Brasilia, Tel Aviv's White City and Auguste Perret's Le Havre have achieved this designation. There are over 25 designated sites in India today though none represent the Indian modern era of architecture and planning. This is the most overarching global organization seeking the preservation of a variety heritage sites from all eras and locations around the globe.

Another group interested in historical preservation at a global scale, is Docomomo, an international nonprofit concerned with a specific era of the past: the modern. The international committee for Documentation and Conservation of buildings, sites and neighborhoods of the Modern Movement (Docomomo) is an international organization that has groups functioning at the international, national and even regional levels. The aim of the group is primarily educational; they function by establishing forums for information and idea

exchange in addition to developing outreach materials that encourage public interest in the modern movement. Though they also developed standards used to decipher “the Icon from the Ordinary,” (van Oers 2001). Currently, there is no Docomomo chapter for India, though a chapter should certainly be proposed.

The Heritage of Modernism

As previously noted, there is an organization that deals specifically with the heritage of the modern movement in addition to a devoted academic sector, but the average person might see the preservation of modern sites and structures as premature. On the other hand, the architectural community has already deemed certain structures of the era as monuments; it is important that one disregard the lacking time frame and act in a manner that distinguishes those monuments of the modern era from the mundane. Of course, historians and preservationists face the issue of a generally poor and disinterested popular appreciation towards structures and sites of the modern era. It has been said that people “base their understanding of twentieth century architecture on the routine mass features of the international style” which are often vague and simplistic views which lead to discussions of demolition of this recent heritage (Dushkina 2008).

The modern era in urbanism and architecture in the 20th century was devoted to just that: modernization. Coming off of forces demanding

industrialization, modernism was representative of a number of different forces and processes that led to decidedly new types of political power, national identity, increasingly urban societies, and above anything, a changing social and economic process that allowed new, modern, planned cities like nowhere had seen before. Because the “heritage” of modernism is still close in time to our present day, and because ever-evolving technological innovation threatens the survival of many modern structures (as some are declining at a fast rate), decisions regarding the place that modernism will play in heritage decisions is crucial.

Preserving the Modern City

As the intent of the modern movement in the 20th century was to look away from the old and move toward the new, futuristic visions of what could be, preservation of the modern takes on its own ideological challenges distinctly different from preservation challenges before. Modern architecture has a language that provided its modern cities with a “powerful means to foster a national identity...[while suggesting] a bond should exist between an erudite avant-garde and traditional and popular features,” (Anon 2010). Though contemporary visions of the future have since changed, the modern movement intended to look away from the past, rejecting the architectural constraints, technology and theories that were responsible for the built environments before

it. Modern architects, planners and theorists had visions of radically new cities where once stood the old, organic city of the past. Modernists recreated the image and purpose of the city. Though many utopian schemes may have been explored, but five mid-century, modern, urban sites were built out in all their glory: Chandigarh, Brasilia, Le Havre, Tel-Aviv's White City and Islamabad.

It is important to remember that as time passes, the notion of "the future" evolves. In the realm of modern architecture and planning, built "for the future," and now, the future has come and gone and the now dated, historic, modern structures and urban forms show the wear of time, and an antiquated notion of the once unknown future. This is a very unique notion when looking through the lens of heritage and historic preservation. Looking at both the effect of time (wear of materials, structural failure, popular trends, valuations and devaluations) and the ideological importance of the conceptual basis of modern built environments one must remember the synthesis of these two is inherently contradictory to the modernist vision.

Now, in the general case of the modern city, or any historic city for that matter, one has three different approaches to weigh when planning for future development and growth. These options will be further explored and discussed in more detail later on in this paper but they are important ideas to keep in mind while reading.

The first option for the city is the most conservative: preserve the city by freezing the city- allow no new growth within a historic core and preserve the city as it is. The frozen, historic city will exist as an artifact of the past, representative as a distinct moment in time. This option was selected by the modern city of Brasilia once it was selected as a city-scale UNESCO World Heritage Site. This option negates any ideological foundations of the city, as it negates and excludes organic and timely growth that may contribute to its viability and relevance as a city of the times.

The second option for the historic modern city is simple: do nothing. Though this option is not intended to enforce preservation of specific historic structures and sites, it does allow the city to change organically, leaving to chance the survival of various elements of the built environment. Theoretically, modern cities, specifically, were built to change and built to remain viable and vibrant cities of the future, and this option may suggest a sense of a more intangible, ideological preservation rather than the preservation of the specific built environment.

The third and final option for the historic, modern city is a natural combination of the two. The third option is a synthesis of strict historic preservation of important, historic elements and the flexibility to allow new development and growth within the core. Though each city may utilize a slightly

different balance of these options, this will be discussed further in the urban options for the city of Chandigarh.

A modern city built as a monument *for* the future that is left as an artifact (say, Brasilia), rather than a creatively preserved living city has distinct failures and facets that other preservation projects certainly do not. Though one might see the structure as the artifact, a large part of the modern city's ideology would be lost if it were preserved as a static monument to the modern past. How can one synthesize these issues and explore ways to preserve Chandigarh in such a way that values both the ideology behind the modern city and the ethos of the experimental project? There obviously is an aspect of intangibility one must explore when discussing the preservation of such a unique site.

The modern city form (in Chandigarh, the sector scale organization) does and can exist in harmony with newer urban forms. Take Mohali, a satellite city on the southern edge of Chandigarh, for example, the V2 and V3 arterial extensions set up the city in a similar organizational urban form while allowing contemporary, new urban forms to exist within the new sectors. This coexistence between the modern and contemporary urban forms gives versatility to the future viability of the city while ensuring the ideological bequest of the modern city.

The Threat to Modern Cities

As anyone who has ever visited Chandigarh would observe, the city's architectural monuments and public spaces have become less grand than their once modern aspirations. It has been said:

The threats that these [modern] survivors face in the early twenty-first century are manifold. Chronically deferred maintenance...has plagued facades and concrete skeletons. Ad hoc additions of recent decades have disfigured the major structures...a more pervasive threat is...the relative invisibility of many of these buildings," (Cohen 2008).

There is nothing more 'invisible' than a modern site or structure (in the case of Chandigarh, think: the Capitol Complex) that discourages public access. Jean-Louis Cohen, in reference to modern architectural works in Russia, brings up important points that may be applied to preservation efforts in Chandigarh. Cohen points to western preservation organizations and academic institutions as key players in invigorating the preservation ethic (Cohen 2008). Cohen suggests, "creating a permanent framework for methodological and technical cooperation between scholarly institutions, local authorities and nongovernmental organizations" as a way to ensure the survival of modern buildings facing neglect (Cohen 2008). This establishment and governmental interaction with local, non-governmental activism regarding preservation is an important part in preserving modern heritage, as seen in the case of Tel-Aviv's White City.

The Threat to Chandigarh

It is important to assess a variety of resources when discussing historic preservation in developing countries and especially the case of the preservation of an entire city. There are many *other* and often conflicting priorities to weigh, most notably: economic development and social equity (Fletcher et al 2007). Chandigarh, more so than its bustling satellite cities, has put a heavy weight on the preservation and restricted growth within its historic core without addressing the impacts and interaction this emphasis has had upon economic and social pressures.

The Threat to Urban Character

Chandigarh has become a major hub in northern India and attracted the attention of international commerce and business. Due to a number of stressors (rapid population growth, rising property costs, infrastructural strains, insufficient housing, increased auto usage and environmental degradation to name a few) satellite cities have developed surrounding the city demanding Chandigarh to react to the impact of development and growth in the city. In this respect, Chandigarh's historic plan for efficiency has become a victim of its own success.

The roles that tourism, economic development and growth incentives will play in Chandigarh's future will be ever important in the development, implementation and success of its preservation plan.

The Threat to Historic Structures

It is no surprise to historians, preservationists and architects that the construction methods and materials used in the construction of modern buildings requires significant maintenance. In Chandigarh, this fact is omnipresent when one steps foot onto the Capitol Complex. The most well known structures of the city, those in the Capitol Complex, depend on the city administration for their preservation and restoration. Presently, no maintenance or restoration of these structures in progress or planning stages.

The structural challenge that these historic, modern buildings face requires specialized management and immediate attention; under present legal conditions, buildings of the modern era are ineligible for national protection because the Indian heritage preservation process does not recognize historic monuments that are less than a century old.

It is ever apparent in Chandigarh that many of the original, modern building materials show wear, decay and often alteration. Weak, spalling concrete, concrete carbonation and high alumina cements are generally what cause untimely deterioration for Chandigarh's modern masterpieces (Rich 2006). This visual decay is also apparent in the heart of the city, Sector 17, where the large commercial buildings show signs of age and neglect.

Another threat to historic structures in Chandigarh is the continued option to alter historic buildings. Many of the historic structures (from housing units to the Secretariat) have been altered since their construction to accommodate air conditioners or give dwellers more living space. There have been unalterable changes made to the landmark structures; these changes should spur additional conversation in the discussion about possible threats to historic resources in the city.

Chapter 3: Looking to Other Modern Cities

In an effort to understand more about the different options that Chandigarh might explore in dealing with the issue of preserving a modern city, I decided that taking a look at other cases that had some similarities to Chandigarh. Though there are several modern urban experiments, I chose to explore two, Brasilia and the White City of Tel Aviv. Brasilia, another capital city of the modern era built 'from scratch,' shares a similar modern, urban character and was preserved at a city-wide scale. Tel Aviv's White City, though not as vast a scale as Chandigarh or Brasilia, has a large number of modern, heritage structures that exhibit the preservation of the modern, architectural aesthetic in an urban area and a preservation process that started locally. Both urban areas are designated on the UNESCO World Heritage list.

Learning from Brasilia

Brasilia, though on a different continent, shares many similar attributes with Chandigarh. Well-known architects built both Chandigarh and Brasilia as new capitals in the utopian, modern style and they share a similar importance to both India and Brazil (respectively) in addition to the larger world heritage community. In many ways, Chandigarh is lucky to have the case of heritage

preservation in Brasilia to look to though there is no indication from the Chief Architect, Sumit Kaur, of Chandigarh that this case study has been explored.

Brasilia was inaugurated later than Chandigarh, in 1960. During the first year of its inhabitancy, government officials drafted and adopted preservation legislation that protected the original plan and gave government “absolute power over development,” (Pereira 2009). A few years later development on the periphery served as a catalyst to uncontrollable development outside the historic core.

The significant differences when we compare Chandigarh and Brasilia today involve the active preservation of Brasilia's historic core and its listing as a UNESCO World Heritage Site. Norma Evenson once said, “Chandigarh is a city of monuments but in Brasilia, the city is a monument,” (Smith 2010). As a modern city, Brasilia and Chandigarh were built with the intention of evolving to meet the needs and desires of the city of the future. The modern city was not built to function as a monument to the past, nor the original mater plan call for the city to be frozen in time, the end result of oppressive regulation. This unfortunate end result fuels the sentiment at the core of the argument for innovative preservation planning.

At the time of its inception, the Brazilian government believed:

that in order to build the ‘new man’ it was necessary to lay foundations in the past, but a past that would not be based on the veneration of classical antecedents and a shameful disinterest in national production (Caldeira et

al. 2009).

Brasilia was listed on the UNESCO World Heritage list in 1987 and Brazilians have placed an importance on the preservation of the city despite many claims that the listing hurts more than it gains.

Brasilia, like Chandigarh, was a city built for the future; now that “the future” has come, a challenge is presented questioning the preservation of the modern city. Brasilia was constructed on once rural lands with plans for social housing and expansion. Can a modern city be preserved *and* honor its futurist plan, pay homage to its historical importance and improve the quality of its citizens *without* having a negative impact on/or freezing the potential for development? It has been said that:

the question is even more complex given that the real future is, obviously, less ideal and uniform than the one aspired to and foreseen at the time of its foundation (Caldeira et al. 2009).

Like Chandigarh, Brasilia is the seat of many government officials in a rapidly developing country. It is home to a significant economically elite population that want “ostentatious architectural luxury that is not keeping with the character of the city,” while those on the other side of the socioeconomic spectrum are left “to build slums that compromise the city's zoning and building laws,” (Caldeira et al. 2009). Like Chandigarh, Brasilia has faced similar challenges: How can the city accommodate all sectors of the population while maintaining the order and organization of the historic, modern plan? While

population continues to increase, growth is concentrated in Brasilia's satellite cities while the population of historic Brasilia sees none (Pereira 2009). Is this an inherent social cost to heritage restrictions?

One scholar believes that Brasilia needs "to reconcile its social housing and urban conservation challenges while restoring the egalitarian values at the heart of its original plan," (Pereira 2009). Some critics might say the same of Chandigarh; Brasilia has been described as both "a masterpiece of creative genius" and "a city divided between the rich and poor," (Pereira 2009). Ultimately, scholars look at Brasilia and see low-density living protected by preservation that "triggered an artificial housing shortage within the heritage boundaries, raising land prices...and driving low-income residents out," (Pereira 2009). Does this outward movement pull commerce centers out of the historic core? Brasilia's heritage preservation plan has been compared to that of Venice, creating a city that acts solely as an artifact representative of a single moment many years past. Recently, a group of UNESCO heritage consultants visited Brasilia with the intention of evaluating the risk to the city, as it may tentatively be added to the "in-danger" list of UNESCO World Heritage Sites (Guardian 2012).

Learning from Tel Aviv's White City



Figure 16: Historic, Modern Residence in Tel Aviv

Tel Aviv's White City is another modern city that has been designated as a UNESCO World Heritage Site. While this city does not inspire many direct parallels with Chandigarh (as compared to Brasilia), the White City presents similar preservation issues and demonstrates an alternative preservation solution than the example of Brasilia. The White City was nominated in 2003 for UNESCO World Heritage site designation after a preservation process that began in the last decade of the 20th century. Jewish architects that “immigrated to Palestine from Europe and introduced the modern architectural language” constructed the White City in the 1930s and 1940s that they had practiced while in Europe (Fabian et al. 2009). The modern style became the prominent in the city center. Though each building is architecturally unique, a similar language is shared:

“three or four stories high, horizontal emphasis, plaster walls, flat roofs and windowed staircases,” (Fabian et al. 2009). The White City saw decay quickly; the modern structures began to wear due to substandard building materials and “within a short while, the modern architecture of the city center appeared ugly and dull,” (Fabian et al. 2009).

In the case of the White City, private funding backed the initial advocacy efforts of the city's historic preservation. It was hard to justify preservation in Israel because of the many cities there that “have archeological and historic sites, few operate comprehensive preservation programs and even fewer succeed in integrating the historic districts into the living city,” (Fabian et al. 2009). Local governments in Israel looked at preservation in a similar fashion to early American local governments; the government thought that heritage preservation policies and programs would hurt the city's economic vitality by limiting development. Ultimately, it took the work of several different citizen groups that convinced the local government to implement a government sanctioned preservation policy. In Tel Aviv's White City, it was the:

persistent, coordinated action, with the help of influential partners, [that utilized] their own professional and personal status,” that led to the successful, local preservation effort and “changed the urban landscape in like with their own values [while contributing] substantially to the richness of the urban fabric,” (Fabian et al. 2009).

This public-private alliance is a good model, and may minimize the financial and organizational pressures of over-burdened bureaucratic systems.

Chapter 4: Elements to Consider

In determining an appropriate plan of action for the city of Chandigarh one must explore the different themes and measures that relate to the protection of the city. This compilation of concepts is by no means exhaustive but was composed in hopes that some of the key questions might initiate a conversation before a plan of action is formally proposed.

Concepts for Contemplation

These concepts were derived from newspaper articles, academic journals, historic preservation seminars and conversations with those interested in the preservation of Chandigarh. Again, this is not an exhaustive list but is intended to present some interesting concepts that need to be considered before any formal process for preserving Chandigarh has begun.

The Ideological Developer

Roy Fabian and Nurit Alfasi introduced the concept of the Ideological Developer in their essay, "Preserving Urban Heritage: From Old Jaffa to Modern Tel-Aviv," a body of work that discusses urban heritage preservation in Israel. Though the concept is not entirely new, it is an important piece of a successful, living, heritage city. Fabian and Alfasi describe the ideological developer as a developer whose motivation is ideological rather than financial (Fabian et al.

2009). Though there is likely no purely ideological developer, the concept of appreciating and exploring the benefits urban heritage is a trait that cities should promote and incentivize, especially to large landholders and major developers. Recognizing the benefit, especially in Chandigarh's case, of utilizing "the best contemporary design" to preserve the modern ideological heritage of Chandigarh is crucial. By informing developers about the potential future value of properties that can contribute to their era's presence in Chandigarh better design decisions might be made with a contribution to the city that will be greater than any potential jobs and housing prospects the development or redevelopment of the site might have. In the case of Tel Aviv's White City, it was a group of persistent ideological developers that pushed the case for heritage preservation using their own "human and social capital," (Fabian et al. 2009). Perhaps there might be land use or financial incentives that Chandigarh might promote in order to attract better development. How can Chandigarh foster and enhance an environment that attracts better developers and subsequently better development?

Adherence to the Original Vision

Ideological arguments, such as those made in the Viollet-le-Duc versus John Ruskin argument is at the core of the discussion of preservation in Chandigarh's Capitol Complex, which tops the list of unbuilt/planned works

found in Chandigarh's original plan. For example, in the original vision, there was a fourth monumental building among the Secretariat, High Court and Assembly buildings. The site is currently vacant and the municipality now has the money to build out the already designed, modern-era building. The designs for the building were prepared by Le Corbusier but have languished in the hands of the government for the past 50 years awaiting funds and approval to construct the fourth monumental building.

Unfortunately, Le Corbusier is obviously not around for comment on whether or not it is appropriate to carry out the designs of his structure well past his mortal life. Preservationist Viollet-le-Duc would likely go ahead with the completion of the already 75% complete Capitol Complex, noting that Le Corbusier's designs have been carried out elsewhere in the world after his death.

Many preservationists today scoff at the idea of constructing a "historic" building in a style that brings up questions of authenticity and integrity, especially on such an important site for the city. What is an appropriate way to respond to the issue of adherence to the original vision and new construction on a landmark site? As is the case on most high-profile historic sites, it might be more appropriate to build something contemporary that is decidedly *not* of the modern era, but does not detract from the visitors experience at the Capitol Complex.

Also, when considering adherence to the original plan, how much might one address any gaps in the original vision, or what about unintended consequences of the master plan? Chandigarh, in plan, is thought to be very successful, though how can one adapt the historic plan to address issues that may have not been intended or anticipated? These issues range from using the historic street network to accommodate mass transit or developing areas along greenways to provide additional services for cyclists or runners.

Given that now that there are funds to carry out the construction of the Museum of Knowledge, it is important to have the discussion regarding appropriateness, authenticity and goals of the proposed structure. With effective marketing, this project (or potentially any other projects resulting in consequences/opportunities left over from the modern master plan) could potentially have the power to attract the attention of the public, nurturing an enthusiastic public support for creative preservation of those landmark sites and structures of Chandigarh.

Social Equity Concerns

There is consensus in the preservation community that heritage protection is good for the community at-large. It is beneficial for many reasons but ultimately, it benefits the welfare of the people. New York City's Landmark Preservation Commission declares part of their mission to "promote the use of

landmarks for the education, pleasure and welfare of the people," (Landmarks 1965).

As many scholars who have examined heritage preservation in Brasilia have noted, the issue of social equity and historic preservation must be addressed jointly. It is a crucial element of preservation, especially in the large-scale, urban context, to ensure that preservation (1) is for the right reasons and (2) that it advocates for all sectors of the population.

Historic preservation might be seen as a mask for the upper class to exclude certain social strata, which naturally gives the sense that "the struggle for the preservation of urban heritage is a rather elitist issue," (Fabian et al. 2009). With no new construction, a city can claim they are preserving the historic character while also perpetuating the issue of disparity in housing. In Chandigarh, this might mean that people who cannot afford a home in the historic core are forced to find alternate housing in the periphery (often in the form of slums), or for those with more economic resources, in the ever-densifying satellite cities of Panchkula or Mohali. So long as the administration addresses the issue of social equity and can provide alternatives for all socioeconomic strata, historic preservation can benefit the welfare of the community at large. The aim of an innovative plan for the protection of urban heritage is to achieve both (1) protection of historic urban heritage and (2) promote the welfare of all residents.

Aesthetic Legislation

After Chandigarh's inception, Le Corbusier insisted upon the development of a series of guidelines that would provide aesthetic guidance for the maintenance of the character of Chandigarh. These guidelines were originally identified in Clause 4 of the Capital of Punjab Development and Regulation Act of 1952. These original controls gave the government power to direct building elements that included, for example, architectural features of a façade or construction of accessory dwelling units to monitoring the new development in terms of architectural character (Punjab 1952). Most of the time, these regulations are referred to as Frame Control. These rules and regulations have been deemed too restrictive and irrelevant for the city today but the creation of some design guidelines (separate from the city's usual building code) is necessary, at least in the Historic Core of the city, in order to maintain its modern urban and architectural character. These design guidelines would need to be in both textual and visual form, so that the guidelines are easily accessible to the greatest number of people. Given that guidelines such as these are already in place in many historic areas, the task of building a set of guidelines specific for Chandigarh will be facilitated by an evaluation of already published material.

On a related note, Chandigarh's existing aesthetic legislation controls all building along major arterials and in commercial areas. There should be a

review and revision to existing aesthetic legislation so that is consistent with both existing building bylaws and any design guidelines put forth by a Chandigarh Heritage Commission.

Urban and Architectural Character

Because Chandigarh is an important site for both its urban and architectural significance the city must define the modern urban and architectural character as they wish to preserve it well into the future. The way that Chandigarh defines its modern urban and architectural character will shape the specifics of their identification, designation and plan for preserving the city.

Chandigarh lies flat along the Himalayan foothills and has a well-organized sector based plan. This organization of the master plan serves as the foundation to its modern urban form. The flat topography helps emphasize the linear nature of all V1, V2 and V3 roadways. The historic core is made up of super block formed sectors; most are regularly shaped 800 meters by 1200 meters. Using the cellular neighborhood to create a larger urban organism, the city functions with a few 'special' sectors that are home to the Capitol Complex, the commercial core, and a variety of regional institutions.

There is a remarkable amount of green space that connects residential and commercial land uses in addition to larger green spaces that function as

recreation and leisure spaces for all city residents. Chandigarh enjoys an impressive ration of green space per capita not often seen in an Indian urban area.

Since its inception, Chandigarh has become a regional hub and destination of Northern India. Its unrivaled quality of life makes it a very desirable place to live and work, this desirability serves as a catalyst which increases property values and stimulates development and growth within and beyond city limits. One might define Chandigarh's urban character to be of one piece, with slight variations noticeable only to the investigative eye. Chandigarh's neighborhood unit, organized street hierarchy, presence of communal green space and its naturally evolving development and growth characterize its urban fabric.

Chandigarh's architectural language is functional, minimalistic and its composition is decidedly of the late modern era. There are certainly adaptations to the forms that are distinctively Indian, as the forms are adapted to regional climate, materials and local orientation. Within the historic core, commercial buildings are no more than four stories high and residential structures do not exceed three stories. The modern structures are freestanding and surrounded by landscaped open spaces. There is a general sense of horizontality in all building facades and flat rooftops are common. The lots are oriented inward, towards the center of the sector and buildings are generally set

back from the street. Homes are made of simple and pure materials like brick, and concrete and are complimented by light, monotone, muted colors. While decorative elements exist, they are all intended to be functional elements. Its modern forms define Chandigarh's architectural character: horizontality in elevation, flat roofs, smooth cornices, flush windows and pure, simple materials.

It is the play of both the urban and architectural character that gives residents and visitors alike feelings of openness, vitality and freedom- all elements that impact the necessity of preserving the urban and architectural character and the quality of life provided by Chandigarh. Even these relatively intangible and certainly unquantifiable feelings provided by the urban and architectural fabric of the city are important to consider while discussing the preservation of the city.

Components for Heritage Preservation in Chandigarh

Because I was unable to access neither the heritage study nor the proposed/working heritage preservation plan due to 'sensitivity,' my suggestions and proposed action items are based under the assumption that there is no government sanctioned preservation plan for the city. This proposal was informed by the existing UNESCO Nomination Dossiers as mentioned above. The following proposals begin essentially from scratch, and reflect a preservation process specifically designed for Chandigarh.

As was the case in Tel Aviv, key components to the successful development and implementation of any preservation plan is the support and preservation ethic of the local community. Chandigarh, home to some of the wealthiest families in India, supports the preservation movement in order to preserve the high quality of life found in the city, provided it does not challenge the relatively homogeneous socioeconomic structure of the city. The preservation ethic should be expanded to include the perspectives of less advantaged residents of the city, as the movement, in theory, would improve the quality of urban life for all citizens and visitors. On the other hand, because the preservation movement in Chandigarh is presented in local media as a “freezing” of the city, Chandigarh risks following blindly, in the footsteps of Brasilia, where it was said “the struggle for the preservation of urban heritage [was] a rather elitist issue,” (Fabian et al. 2009).

Along with citizen support of heritage preservation, the U.T. Chandigarh Administration should be responsible for hosting and mediating public outreach events so that the preservation process is both transparent and responsive to direct citizen feedback regarding the preservation of their city, regardless that this is not a current administrative practice, it absolutely should be. This particular proposal assumes that the process would encourage a conversation between citizens and relevant administrative agencies throughout the process.

Accountability

It is vital important to start the preservation movement on a local scale. It should be a priority to assemble a local, specialized commission that will be accountable and responsible for managing heritage designation and compliance. A local heritage commission should establish a manageable and visionary preservation philosophy for the city in addition to their planning and regulatory function. This commission should be made up of people with technical expertise, preservation education and knowledge of the city. A more detailed explanation of commission participant selection follows.

Transparency

Because of the existing political situation in Chandigarh, a certain level of transparency (along with accountability) is necessary to ensure the implementation and successful preservation of many of the urban and architectural works. The mere fact that the preservation plan is currently not a publicly accessible process (noting that there lacks even academic access to the documents in their review form) illustrates the bureaucratic obstacle facing the preservation issue in Chandigarh. There is a definite need for transparency in the preservation process because there is only government and “expert” engagement in the process as currently there is only alleged government and “expert” engagement in the process.

Development of a Chandigarh Heritage Master Plan

Any preservation actions should be guided alongside the development of a Chandigarh Heritage Master Plan to ensure minimal fragmentation during the process while providing a comprehensive course of action along with well-developed heritage preservation policies. This will provide a comprehensive course of action that will compliment heritage preservation policies. Because this kind of planning is likely under the jurisdiction of the Department of Architecture + Urban Planning, they might be a partner agency (along with the Chandigarh Heritage Commission) enlisted to develop a Chandigarh Heritage Master Plan. It is helpful, on that note, to consider preservation plans from urban areas across the globe that are already complete and easily accessible.

The American Planning Association suggests ten components of a historic preservation plan. While some points are not readily relevant to urban India, they are a good place to start when assessing the necessary components of a preservation plan for Chandigarh (Roddewig et al. 1994). A selective evaluation of the components of the Roddewig List provides a framework for Chandigarh's preparation of a preservation plan that ensures three primary elements: historic preservation, a living city, and a vibrant city core. A cohesive Chandigarh Heritage Master Plan must:

1. Establish the goals and objectives of preservation in Chandigarh.

2. Define the historic urban and architectural character of the city.
3. Evaluate preservation efforts to date.
4. Survey and evaluation of historic resources in Chandigarh.
5. Clarify the legal basis for preservation.
6. Designate and codify the relationship of historic preservation in other governmental sectors (i.e. land use, zoning, and utilities).
7. Define the extent of the public sector's responsibility for sites and structures that are owned and/or operated by the government.
8. Specify incentives designed to promote historic preservation.
9. Detail a clear program of goals, objectives and policies.
10. Implement, in a timely manner, all of the above.

Unified Recognition of the Historic Core

Imagine Chandigarh in 200 years. As a scholar, and visitor of the the city, I would hope that Chandigarh might retain its experimental urban form in addition to its distinctively modern urban and architectural character. I also have aspirations for Chandigarh to accommodate contemporary development and growth as the city was inevitably intended to. Chandigarh has the opportunity to manage change within the city to achieve this vision. For the sake of the city as a whole, I recommend the designation of the historic core as a type of historic district (later described as Zone A). That said, not all buildings

would be listed as landmark or contributing modern structures to the historic, modern core, but the core would be seen as an urban unit. The use of zones allows the regulatory process a lens to fairly and consistently manage different areas of the city in a responsible, defensible and informed manner. This might also support future national or international designations of the city as a whole.



Figure 17: Original Chandigarh Master Plan (Amand 1961)

That said, the type of unified designation of the historic core that I am proposing must be carefully defined. It is a common misconception that all larger, preservation districts have to be areas frozen and artificially representative of an era untouched by time. The freezing of a historic, modern urban area (as seen in the case of Brasilia) is decidedly "un- or even anti-historical...[but] also profoundly anti-urban in the sense that it denies the diversity that is the very essence of urban life," (Hamer 1998). It is important to approach the preservation of a larger urban unit in a flexible, innovative manner

that addresses this issue and importance of change and evolution, especially in cities designed in the modern mode.

I propose a unified historic core designation, similar to a Historic Preservation Overlay Zone, where the pre-existing zoning controls for new development would still be valid, but the new zone designation would further define an area where additional care needs to be taken in the case of new construction, major renovation or additions to structures. This oversight would provide a long term contribution to the historic, modern urban and architectural character of the city. The intent of this designation is not governed by an intent to restrict or forbid growth within an area, rather it is an attempt to prevent long term losses to the city within the goals of this heritage preservation proposal. The intention of a unified designation of the historic core is ensure consistency to the historic urban character of the city while allowing the city to actively manage change within Chandigarh to develop the city in the most desirable way possible.

I must reemphasize that the historic core will not be “frozen in time,” but that the larger, historic core of Chandigarh will, through mindful zoning and controls discussed in more detail in later sections, maintain its historic, modern urban and architectural character. Obviously, the first and foremost benefit of establishing larger historic zones is to protect historic properties, but beyond just the protection of historic properties, the establishment of historic districts will also

aid in the control of new development or construction. Historic districts also to stabilize (and in most cases increasing) property values while also encouraging a sense of community (Tyler 2002).

In order to properly designate the historic core as a historic zone, it is important to identify those sites and structures that are historic resources. I have identified three categories for a site and/or structure to qualify as: landmarks, contributing modern and non-contributing (later defined as contributing contemporary). Landmark buildings within the historic core might include sites and structures like the Capitol Complex or the City Museum. Structures that contribute (within the historic core) to the modern urban and architectural character of Chandigarh might include residential structures along V4 roads, or those commercial structures lining V2's (like those along Madhya Marg). These two classes of historic sites and structures help ensure the preservation and legacy of the cultural and architectural history of the city. The criteria and controls suggested for designation of landmark and contributing modern sites and structures is discussed in more detail in subsequent sections of this paper.

Those sites and structures not designated as landmark or contributing modern are important parts of the preservation plan as well. These sites and structures are responsible for maintaining the character and ideology of the modern city and shall be designated contributing contemporary sites. These sites should be encouraged to develop and/or redevelop to meet the needs of

the contemporary Chandigarh urbanite. As a modern city, its dedication to change and response to future preparedness is just as important as its landmark structures. Non-contributing sites and structures should be encouraged to build honestly, and in their own time. I have identified some goals later in this paper that describe the kinds of regulation that can help further this mission of the modern city.

Identification of Historic Sites and Structures

In order to preserve structures that exhibit the most integrity and/or historic importance, the local heritage commission must establish benchmarks for heritage integrity. In the proposed plan of action I recommend, those sites and structures in the historic core should be designated first. There are a few ways to go about this, the easiest and perhaps best starting point for Chandigarh is a four level (poor, average, good and excellent) categorical assessment of possible contributing modern and landmark structures. Poor might denote disrepair and neglect, average might denote properties of more significance and complicated private ownership. Good might be appropriate for industrially or governmentally owned structures that are associated with significant events or architectural designers. Excellent would likely only apply to monuments of great significance to the larger population.

Once a general survey of possible historic landmark and contributing modern structures throughout the entire city (within and outside the historic core) has been completed and a preliminary inventory has been prepared, the process would follow a more regular designation process that I have outlined in subsequent chapters. The identification of historic, modern sites and structures at the beginning of the preservation process would be the most extensive step in the jumpstart of a preservation plan.

With adequate financial allocation of government resources, the ideal way to assess the integrity of the historic resources within the Historic Core (Zone A) and outside the historic core (Zone B) would be to hire preservation consultants to prepare historic integrity assessments of each site and/or structure on the preliminary list of historic resources. Please note that the preliminary listing is a step that should be completed in the early stages of the Chandigarh preservation planning process; this is not the same as nominating or designating sites and structures, an important subsequent step that is discussed further on.

Guidance for New Construction in the Historic Core

New construction and renovation in the historic core should be allowed on both infill or contributing contemporary sites. Specific guidelines for new construction, renovation, additions, etc. should be developed at the city-level and regulations should be decided based on (1) what type of road the site

faces and (2) by the existing character of the site's surrounding urban fabric. New development should adhere to commonly determined and existing building bylaws: these might include common FAR, setbacks, yard size, heights and materials (if relevant). They should have minimal, if any, adverse effects on the neighboring sites (built or open) and should appropriately relate to the street and surrounding buildings. That said, new buildings should be just that: new. Contemporary buildings are an important feature of an evolving, modern city; contemporary buildings and sites are the modern of their time and portray a key intent of Chandigarh at its inception as suggested in the *Edict of Chandigarh*. New construction should *never* try to replicate, mock or mirror a historic home, new construction should be distinctly different in composition, material and innovation. There is a more detailed discussion in subsequent sections which will delve into greater detail about development on contributing contemporary sites in Chandigarh and in a matrix, found in the appendix.



Figure 18: Possible Contributing Contemporary Site

Preservation Professionals and Rehabilitation Standards

To repair and/or restore specific historic, designated landmark structures in Chandigarh the city must employ technically trained preservation professionals with knowledge of modern materials, aesthetic education, heritage protection and architectural history. Geoff Rich, a Winston-Churchill fellow, visited Chandigarh and suggested five simple rehabilitation techniques specific to modern structures and Chandigarh. He suggests (1) repair with minimal intervention, (2) use materials honestly without seeking to deceive, (3) make interventions reversible, (4) use tried and tested materials, and (5) ensure necessary changes are well designed and are of their time (Rich 2006). Rich's list seems to be appropriate and in line with many of the suggestions the worldwide preservation community has proposed for the rehabilitation and restoration of historic structures. A detailed and comprehensive set of standards should be composed in the development of a Chandigarh Heritage Master Plan.



Figure 19: Rehabilitation Needed at the Capitol Complex

Chapter 5: Proposed Local Course of Action

Core Ideas

The prior sections are intended to convey the academic and historic importance and challenge of preserving the modern city of Chandigarh. Those sections may be a supplement or compliment to this section, which takes some of the more unbounded, academic issues and concerns and transforms them into a more tangible takeaway for the Chandigarh resident, administrator or enthusiast. I propose a path that was developed in such a way that treats the city as a living organism that needs to grow and evolve while carefully selecting and maintaining its historic, modern past.

This section is also meant to look further into the academic theory that what the modern city requires is a flexible, innovative, informed preservation plan. This process both protects and promotes the development of a truly modern, city built and maintained with the future in mind. This section brings the notion of the preservation of Chandigarh one step closer to reality and proposes a local course of action designed to suit the unique needs of Chandigarh.

Chandigarh is important for a variety of reasons. It is a symbol of the new, independent, democratic India. It is a built out experiment of the modern era displaying innovative planning and design technique known on a scale only

comparable to one other city in the world. It is home to architecturally and historically significant structures designed by a variety of international, modern architects. Chandigarh is a city home to a population proud of a quality of life, unknown elsewhere in India.

Vision

Designed to both preserve and proliferate desirable development and growth in the city of Chandigarh, a Chandigarh Heritage Master Plan must be produced. This plan must anticipate a Chandigarh that both enhances and restores its key historic sites and structures while incorporating them into a vibrant, living heritage city that welcomes contemporary and appropriate development and growth strengthening a historic city that was built for the future.

Mission

The goal of this proposal for the preservation of Chandigarh is simple: to preserve the historic, modern character of the city. In order to successfully do this, adequate controls within Chandigarh are necessary to ensure (1) protection of the historic, modern aesthetic and (2) proliferation of the historic, modern ideological legacy.

It is the mission of this proposal to ensure that, say, two hundred years from now, Chandigarh retains its unique character as a once utopian, modern city while allowing room for contemporary development and growth. In order to preserve the modern architectural aesthetic, it is the hope of this proposal that about one half (>50%) of the sites and structures within the historic core be designated landmark or contributing modern. The remainder of sites and structures shall be designated as noncontributing to the modern aesthetic and shall be guided to incorporate contemporary building methods, materials and aesthetics to reinforce the legacy of Chandigarh's modern city ideology- to be "a city built for the future."

Benefits of Historic Preservation for Chandigarh

As understood in many cities, towns and rural areas across the globe, the presence of historic resources is valuable to the community at-large. Beyond the crucial issues facing the global heritage community and the preservation of Chandigarh as a modern experiment of the modern period, there are direct, local benefits to residents of Chandigarh presented by the heritage preservation movement. The value can be aesthetic, educational, cultural and economic. In terms of Chandigarh, some important benefits include:

Improved City Identity and Image

Along the same lines as the enhanced quality of life, the Chandigarh identity will be well managed and encourage a citywide preservation ethic. The preservation of important historic structures and sites, along with the allowance of appropriate, well-designed new development in the city core, will boost the image of Chandigarh as a viable, well-planned city of the future, as it was intended to be upon its inception.

Enhanced Quality of Life

In addition to living in an already desirable regional hub, residents of Chandigarh will experience an increased quality of life as years go on and their beloved city is well protected and its growth is efficiently and creatively managed during a time of rapid urbanization. Though the city will not be frozen in any time, its historic, modern elements will be well protected and growth will be managed in such a way that the visual prominence of the historic, modern city will be emphasized in terms of the city's identity. Historically, designated and well-protected historic districts have experienced stabilization and often increased property values.

Educational and Cultural Values

Naturally, historic preservation of any urban area will help visitors and residents alike maintain a clear view and appreciation of the history of Chandigarh. Educational benefits of an innovative heritage master plan in Chandigarh are similar to any other urban area, but its cultural benefits are very distinct. By providing the city with an innovative, flexible approach to preservation, the Chandigarh's historic sites and structures can be preserved while the founding ideology of the city can be perpetuated beyond any one moment in time. As the city, representative of a newly independent India, the protection and management of development and growth is ever important in ensuring Chandigarh's cultural and historical value for generations to come.

Increased Tourism

Perhaps the most obvious benefit of historic preservation intervention in Chandigarh is the benefit seen from increased tourism. Because Chandigarh is currently only a tourist destination for architects, planners and historians interested in the modern legacy, a well-designed preservation plan will promote the city as a heritage destination. Facilitated tourist and public access to the city's heritage sites and structures to make Chandigarh an attractive place to visit for the larger, international demographic, not just those designers and historians interested in Chandigarh as an urban experiment. With increased

tourism and educational programs, Chandigarh's related industries, hospitality, retail and commerce, will also see growth with increased tourism.

Employment Opportunities

Because rehabilitation, preservation and restoration work on the built environment relies on the skills and knowledge of preservation and construction professionals, there are more jobs for each dollar per dollar in investment on historic structures than in conventional new construction. Restoration and rehabilitation work is a definite necessity for Chandigarh to restore not only its key architectural structures (like buildings in the Capitol Complex) but also to historic, privately owned structures. Employment in construction, craftsman, landscape and architectural design industries are all included in this increased employment opportunity.

Identification of Additional Municipal Challenges

Other than those challenges previously discussed relating to the preservation specific to Chandigarh, there are other potential obstacles, from a municipal standpoint, that should be addressed in the preparation of a preservation plan for Chandigarh.

Lack of an Existing Regulatory/Legislative Heritage Framework

Currently, Chandigarh lacks a hard-wired, comprehensive structure for the preservation of its historic core. Not only is it necessary to prepare a comprehensive preservation plan, but it is crucial for all municipal agencies involved in Chandigarh heritage to coordinate and work together. Agencies involved would come from an already jurisdictional cluster (UT Chandigarh Administration, Punjab Government and Haryana Government) and agencies within these administrations. Agencies and professions that will be involved in the planning and implementation of a preservation plan include, but are not limited to: architecture, planning, development, environment, public works, transportation and housing. A clear, concise framework identifying responsibilities and jurisdictional boundaries for heritage issues must be prepared because agencies that have unclear or overlapping jurisdictions or responsibilities can complicate and undermine efficient implementation of the preservation process.

Lack of a Shared Preservation Ethic

For many residents in Chandigarh there are the “heritage people” and “everyone else.” In the present situation there is very little productive interaction of compromise between these two, exclusive groups. In order for a successful preservation plan to both (1) preserve Chandigarh’s historic sites and structures

while (2) letting the modern ideology of the city guide future development and growth to ensure Chandigarh's relevancy into the future, there must be compromise between Chandigarh's "heritage people" and the other residents. Once residents realize the benefits (discussed above) and possibilities that a flexible preservation plan would have on the city, a unified, Chandigarh preservation ethic could exist and provide support to manage change in Chandigarh in such a way that would satisfy multiple stakeholders.

It is also important in fostering supportive preservation ethic that the city sponsors outreach programs that foster awareness and education relating to the heritage preservation process. These marketing campaigns may include easy to understand informational material that explains the unique nature of the preservation (and subsequent proliferation) of Chandigarh. Educational programs, using a variety of media, will help inform residents and visitors about Chandigarh's historic resources.

Insufficient Funds

The establishment of a Chandigarh Heritage Commission and subsequent development and implementation of a Chandigarh Heritage Master plan would require a significant government investment. Though financial and economic benefits would follow a well-protected historic core and investment in the city, the initial investment in the development of an adequate administrative

framework and survey of the city resources is required. Currently, there are some economic resources budgeted for heritage protection, but more of an investment is certainly necessary.

Preservation Efforts in Chandigarh

For a city that is less than a century old, Chandigarh has aged significantly in the last 20 years. Unfortunately, the city has not made much progress in the protection or care of its publicly owned historic resources. Though a heritage preservation conversation has begun, the existing model that determines which buildings need to be preserved is orchestrated by one player: the architect. Buildings designed by the world-famous Le Corbusier and other European architects usually occupy the top spots on the list of buildings that are preservation-worthy in Chandigarh. Though using the architect as a proxy to identify preservation-worthy buildings is one way to designate landmarks, it is *not* the only way. Part of the significance of Chandigarh is its architecture and planning contribution of a team of often forgotten Indian Modernists, and when discussing sites and structures that should represent historic Chandigarh in hundreds of years, their aesthetic contributions to the city should be neither omitted nor overlooked.

Heritage Preservation and the Administration

Chandigarh has completed a heritage study (not available to the public or to scholars) and has begun to discuss heritage preservation at an administrative level. According to local newspaper articles and a discussion with a UT Chandigarh Senior Architect, the scheme is based on the idea of sector-wide heritage zones and some individual sites. "Heritage zones," in this case, refer to sectors that are to be preserved. According to a UT Senior Architect the city plans on preserving at least four sectors as heritage zones (Sector 1- the Capitol Complex, Sector 22- the first built sector, and Sectors 7 and 8- the Mayer planned Sectors). Additionally, it was suggested that landmark structures (like many of Punjab University's iconic structures, say, the Gandhi Bawan or the Fine Arts Museum) would also be preserved though an inventory of these soon-to-be historic landmarks is unavailable to the public at this time.

Much like the idea of a historic district, the use of heritage zones/districts has been a successful model for the preservation of historic clusters (regardless of monumentality) in many cities worldwide. For example, New York Landmarks Preservation Commission designates both city landmarks (like Grand Central Station) and city historic districts (like Greenwich Village). The combination of using both zones and individual nodes allows for the preservation of historic

clusters, say, residential housing, which are much more meaningful as a unit than as separate entities.

Public and Private Sector Cooperation

Involving the public and private sector as a cooperative front in guiding responsible, desirable new development and growth is a crucial component for Chandigarh in its quest to build for tomorrow while preserving important sites and structures of its modern past. As seen in the case of Tel Aviv's White City, the insistence of local citizen groups, nonprofits, and other NGOs (and even scholarly support) is key in the promotion of a local preservation ethic and subsequently an effective preservation plan. Using preservation and rehabilitation incentives to encourage the use and reuse of existing structures for private sector developments works in favor of a preservation plan and in the larger scheme of economic development within the city. Involving the private sector with the public sector goals for preservation is crucial when fostering a city-wide preservation ethic.

Proposed Local Preservation Framework

This section outlines the suggested course of action the local administration might take in order to achieve the aforementioned goals and objectives relating to the preservation and proliferation of the historic, modern

city. A user-friendly matrix and chart, synthesizing some basic information, has been created to introduce some of the ideas and concepts. These can be found in Appendix A and B, respectively.

Establishment of a Chandigarh Heritage Commission

In Chandigarh, it is important to identify and protect specific sites and structures within the historic core of the city. "A historical monument is the embodiment of a linear concept of time that is based on the uniqueness of form and substance and the irreversibility of events" (Dushkina 2008). As a decidedly modern experiment in urban planning and architecture, the historic core is an important historic, architectural, and cultural place. Because of its unique foundational ideology, it is important to allow the city to grow and continue to change, but the preservation of distinct urban elements will also preserve the city's unrivaled modern heritage. With the creation of a Chandigarh Heritage Commission (CHC) the city would be able to:

- Identify and designate important landmarks and contributing modern sites and structures in the historic core of Chandigarh.
- Regulate changes to landmark and contributing modern sites and structures.
- Promote innovative, contemporary, new construction that is the best of its era on those sites designated neither landmark nor contributing modern.
- Preserve Chandigarh's architectural, historic, and cultural heritage.
- Encourage the stabilization and increase of property values within the Historic Core.
- Promote educational opportunities regarding Chandigarh's heritage to residents and visitors alike.
- Strengthen the city's economic growth and tourism potential.

By preserving the city's unique, modern, urban fabric while allowing the city to change to suit the needs of the future, Chandigarh will retain its distinct visual character that is tied closely to its modern past. As the former Mayor of Tel Aviv once said, "a city which preserves its architectural fabric is a city that finds beauty to be a priority, attracting visitors while creating a fine urban feeling for the people living in it," (Tel Aviv 2002).

A Chandigarh Heritage Commission would be set up by the Chandigarh Administration and housed in a municipal building. The municipality would pay a staff (5 person minimum) to support the Commissioners in the early stages in order to effectively evaluate, identify and designate contributing modern and landmark sites/structures. The Commission would likely meet to discuss agenda items (as determined by staff and Commission Chair) at least twice a month.

Commission Selection

There is no set number as to makes up an effective preservation commission, though odd numbers seem to make the best decision making bodies when rules of procedure dictate the importance of a "majority." For Chandigarh, perhaps 11 commissioners should make up the Chandigarh Heritage Commission (supported by a small, perhaps 5 person city-paid staff). Usually, preservation commissioners are unpaid, though it is not uncommon to see one commissioner, the director or chair, with a city salary.

It is important for the commission to be citizen-inclusive. As is the case in cities worldwide, this practice balances governmental interests and allows for decisions to be made by a less-biased body. Commissions that represent non-governmental perspectives will garner wider public support and interest. That written, it is proposed that commissioners be appointed by the city's Chief Administrator or Home Secretary (as determined by municipality) so long as the following criteria are met:

1. All eleven commissioners are residents of Chandigarh.
2. At least two Commissioners are architects.
3. At least two Commissioners are urban planners.
4. At least one Commissioner is a historian.
5. At least one Commissioner is a landscape architect or designer.
6. At least one Commissioner is a realtor or developer.
7. At least 4 Commissioners reside in Zone B (outside the historic core).
8. The full commission votes to appoint: (1) Chair and (1) Vice-Chair.

Identification of Goals and Objectives

A significant duty of the Chandigarh Heritage Commission and its staff will be to foster a preservation ethic while actively looking at the city's development and growth in a way that best preserves the city. Though a suggested heritage

preservation process was briefly explained earlier, specific goals of the Chandigarh Heritage Commission should include:

1. Create a comprehensive, flexible preservation plan for Chandigarh.
2. Facilitate coordination among various municipal agencies to ensure holistic and cohesive implementation of the Chandigarh Heritage Master Plan.
3. Identify and subsequently designate Chandigarh's historically, culturally and architecturally significant sites and structures.
4. Facilitate public outreach and education regarding the preservation process, benefits and challenges.
5. Promote preservation-related initiatives that provide economic development, rehabilitation, tourism and/or educational programs to citizens.
6. Ensure adequate preservation efforts, both financial and technical, by facilitating the link between preservation professionals, educators, students and property owners.
7. Enforce the implementation of the Chandigarh Heritage Master Plan through appropriate governmental channels.
8. Strengthen preservation and cultural heritage bonds with local, state, national and international agencies.

- 9. Promote desirable development and growth within the city core to allow contemporary contributions, which ensure the legacy of the modern city, to enhance the living nature of the heritage city.
- 10. Facilitate a public forum for the ongoing documentation, discussion, and education regarding exemplary contemporary development and growth that continue the traditions and process of the modern mode.

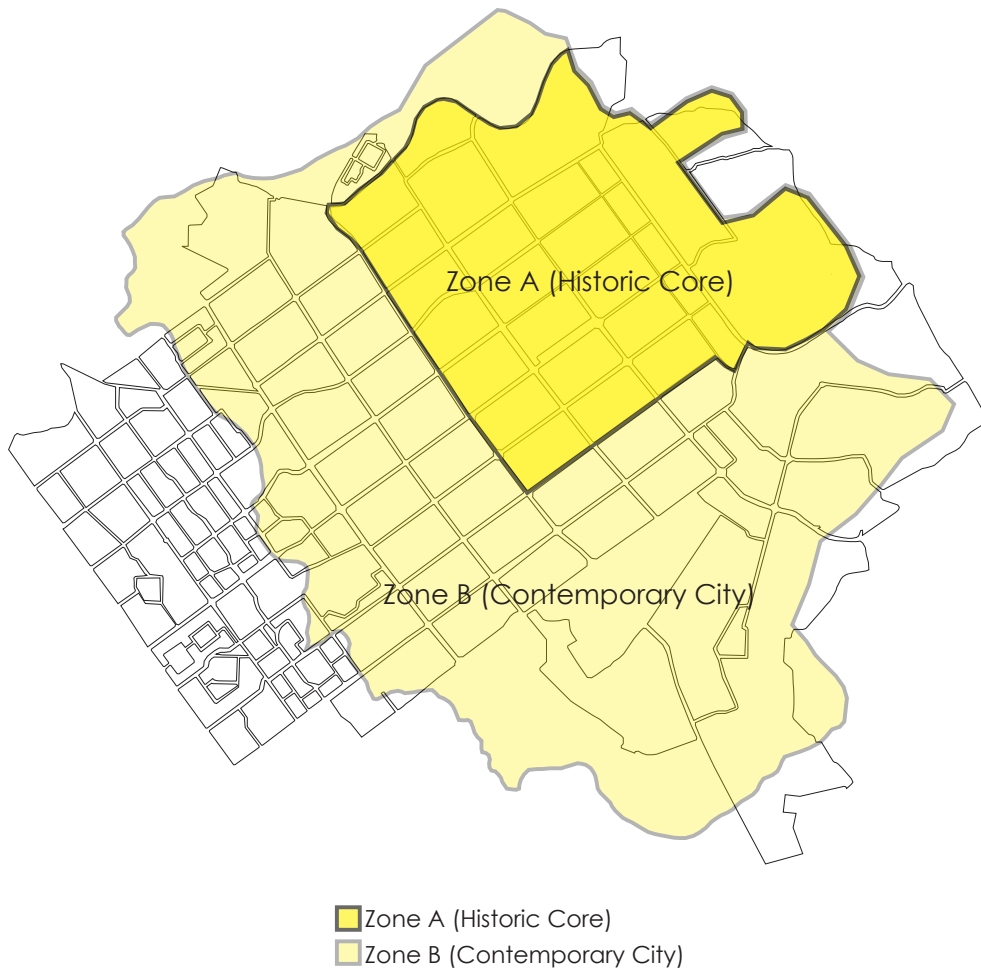


Figure 20: Proposed Chandigarh Heritage Zones

Establishment of Larger Heritage Zones

Generally, a historic district is an area of a city that “represents at least one period or style of architecture typical of one or more areas in the city's history; as a result, the district has a distinct sense of place,” (LPC 2012). In order to create a very distinct, historic, urban unit there should be two different zones within the city limits of Chandigarh. Preservation and attention to development of sites and structures in Zone A will ensure the urban and architectural character of historic, modern Chandigarh well into the future. Within this district there are three types of sites and structures: landmark, contributing and noncontributing. Outside of Zone A, in Zone B, development and growth will be less restricted but will ensure the proliferation of Chandigarh's urban growth ideology.

Zone A (Historic Core)

Because the entire historic core is important as an architectural and planning unit, representative of the modern era, it is crucial to identify a larger, historic zone that is closely monitored and regulated. The mission of the Zone A designation will be to maintain the integrity of the modern urban fabric. There are to be three classes of sites and structures within this Zone: landmark, contributing modern, and contributing contemporary (to be further explained in the next section). Within Zone A, careful attention to development along V2, V3

and V4 roadways is crucial and regulation for infill and/or demolition must be highly regulated to protect the modern urban character and its aesthetic.

Development and growth within Zone A will be managed by the Chandigarh Heritage Commission in order to ensure continued historic integrity well into the future.

There are distinct landmark sites and structures that have historic, cultural and architectural significance to Chandigarh. These landmark sites and structures should be protected by very strict, well-thought out regulations that preserve the sites and structures in their original form and allow no room for alterations, additions or demolition.

For additions and/or renovations that affect the exterior of a contributing modern structure to be approved, the original outline of the building must be kept, there must be no negative affect on the street section and the modern architectural character must be maintained. Preservation of the architectural language in all areas of the historic core are important as they relate directly to the urban character of the city as a historic, urban unit.

Zone B (Within City Limits, Outside Historic Core)

Maintain the basic principles of the Chandigarh plan, no changes/ alterations to the street grid or sector plan may occur but development regulations are less strict and described in more detail in the zonal matrix.

Types of Local Designation

Because Chandigarh is a very unique case with no relative comparison, an innovative approach to historic preservation planning must be taken. In order to both (1) preserve important architectural, historical and cultural sites and structures and (2) allow the once modern city to foster its foundational ideology, there is flexibility in the structure of the proposed preservation plan. After establish a historic preservation zoning overlay for Chandigarh's historic core a historic district (Zone A) and those areas outside the historic core as a separate district (Zone B) the matter of designating specific sites and structures becomes important. In this proposal, there are three types of sites and structures: landmark, contributing modern and contributing contemporary.

Because specific design principles have inspired the aesthetic development of the modern and contemporary city, attention to these controls and standards has been paid. Additionally, because the road hierarchy has specific historic vistas that are characteristic of the city's initial design, character descriptions and key elements of each class of roadway have been used to determine the guidelines and preservation plan. The character and key elements of each of the 7Vs has been described in the appendix for those unfamiliar with Chandigarh.

The act of identifying important sites and structures that represent Chandigarh's unique, modern heritage is of crucial significance in preserving the city's modern character. As previously noted, upon evaluation, structures may either be: landmark, contributing modern or contributing contemporary. Because there are many guidelines, processes, techniques and obviously, circumstances, those identified here are specific to Chandigarh and inspired by the many different standards that currently prevail in the global preservation community.

Criteria for Landmark Designation

The New York City Landmarks Preservation Commission (LPC) suggests that a landmark can be a site, structure or an object that “has a special character or special historical or aesthetic interest or value as part of the development, heritage, or cultural characteristics of the city, state, or nation” (LPC 2012). A landmark within the Historic Core of Chandigarh may be a site, structure or object. A new body, the Chandigarh Heritage Commission, shall keep a maintained list of designated landmarks. Landmarked buildings will be unable to alter their exterior unless granted a permit for restoration and/or rehabilitation by the CHC. In order to qualify as a Chandigarh landmark a site, structure or object must demonstrate at least one of the following criteria:

1. Value as Part of Chandigarh, Punjab, Haryana or Indian History
2. Site of a Significant Historic Event
3. Identification with a Significant Person or People
4. Display of Exemplary, Unique or Distinctive Architecture
5. Work of a Significant Architect or Designer



Figure 21: The Capitol Complex, Landmark Site

Controls and Incentives

Landmark sites and structures are subject to very strict regulations and should be restored to their original form. Landmarked designated structures will be eligible for grants and/or tax incentives when restoring and/or rehabilitating the structure. Regardless of where the landmark site or structure is located, preservation is required; no exterior alteration or additions are to be allowed; in some cases no interior alterations. All changes to site and exterior must be evaluated by the CHC. Demolition of a landmark is forbidden

Criteria for Contributing Modern Designation

A contributing building within the Historic Core of Chandigarh is likely a privately owned property whose character contributes to the historic nature of Chandigarh's modern aesthetic legacy. A contributing modern building *contributes* to the historic, aesthetic, historic character of Chandigarh, particularly in the historic core, Zone A. Structures identified as contributing modern are responsible for maintaining a modern aesthetic. The Chandigarh Heritage Commission shall keep a maintained list of contributing modern buildings. A comprehensive list of contributing modern buildings within the historic core will be determined upon the establishment of the Zone A historic district. Property and building surveys will be completed and a member of the CHC staff will note the integrity and contributing nature of the structure. In order to qualify as a contributing modern site or structure, it must meet at least one of the following criteria:

1. Displays urban or architectural characteristics of the modern era
2. Contributes to the historic, aesthetic character of Chandigarh's Historic Core
3. Sited in a distinctive location that makes it a key feature of the sector or city



Figure 22: Contributing Modern Structure

Controls

Designation of contributing modern sites and structures is intended to apply only to those sites and structures within Zone A, the historic core.

Contributing modern buildings should be compatible and of appropriate "size, scale, color, material" while maintaining consistency with the modern urban and architectural character of Chandigarh (Department of the Interior 1995).

Contributing buildings and properties will have to work with the CHC when altering, adding and/or restoring any structural exterior to ensure compatibility in the Zone A. Interior work of a contributing building should not require a special permit from the CHC. Demolition of a contributing building will not be allowed unless a permit from the CHC has been approved. Buildings designated as contributing shall adhere to controls specified at the time of designation. A contextual design approach should be taken in the event of alteration or

renovation and scale, height, setback and detailing of surrounding, historic structures should be considered during the design process.

The development of controls for alterations, additions and any other changes to contributing modern sites and structures would encourage the maintenance of the historic architectural character of the historic core. Because neighborhood and architectural character are closely tied to the class of road which bounds these sites and structures, a series of suggested controls (in addition to any municipal building bylaws, etc.) for contributing modern sites has been developed.

Roadway Class	Suggested Controls
V1	n/a
V2	façade required to maintain modern aesthetic; façade signage must be appropriate
V3	vegetative buffer must remain; façade visible from roadway must be maintained
V4	exteriors must be maintained; greenery/fencing cannot interfere w/ roadway vista
V5	exteriors to be maintained; additions/alterations as permitted by CHC
V6	exteriors to be maintained; additions/alterations as permitted by CHC
V7	exteriors to be maintained; additions/alterations as permitted by CHC

Table 1: Controls Zone A Contributing Modern Sites + Structures

Controls for Contributing Contemporary Designation

Sites that are not designated as landmarks or contributing modern should be encouraged to develop in the spirit of the time representing the relevant concepts of the era. These “contributing contemporary” sites are important in maintaining the city in a flexible, mutable way that accommodates urban residents of the present and the future. In other words, these sites are responsible for developing in such a way that carries forth the ideology of the modern city, a city that was built to change and morph to cater to the needs of the future. These sites should be developed in a way that exhibits a contemporary modern form, and should reflect the spirit of the time in which it was constructed. It should display the best architecture and design of its own, contemporary era.



Figure 23: Example of a Contributing Contemporary Site

Controls for Sites + Structures in Zone A

The development of controls for new construction on contributing contemporary sites would encourage the maintenance of the historic, urban character of the Historic Core. Because the historic core's urban character is closely tied to the class of road which structures it, a series of suggested controls (in addition to any municipal building bylaws, etc.) for contributing contemporary sites in Zone A has been developed.

Roadway Class	Suggested Controls
V1	n/a
V2 V3	develop sites in such a way that maintains and contributes to the character of the roadway while ensuring structure is in and of its time
V4	new structures maintain a relationship with the roadway and abutting structures
V5 V6 V7	structures share historic building orientation but its materials, form and building technologies are contemporary and the best of their time

Table 2: Controls Zone A Contributing Contemporary Sites + Structures

Controls for Sites + Structures in Zone B

The development of controls for new construction on contributing contemporary sites outside the historic core would allow for the expression of

the urban character of Chandigarh. Because Zone B is the area which should represent the Contemporary Chandigarh, it is important to have less restriction and more flexibility. These controls are intended to foster continuity and a connection between the two zones, so that there is some uniformity in the totality of the urban fabric. The series of suggested controls (in addition to any municipal building bylaws, etc.) will apply to contributing contemporary sites in Zone B.

Roadway Class	Suggested Controls
V1	use sites as necessary as req'd by industrial and commercial uses; minimize surface parking along roadside
V2 V3	develop sites in such a way that contributes to the character of the roadway and reflects attention to the needs of the city of the present and future by utilizing technologies and materials contemporary to the time of construction
V4	structures maintain a relationship with the roadway but are of their time
V5 V6 V7	structures share similar orientation to those around it but its materials, form and building technologies are contemporary and the best of their time

Table 3: Controls Zone B Contributing Contemporary Sites + Structures

Establishment of Design Guidelines

Though the brief suggested controls listed above help preserve the appropriate aesthetic, design guidelines that help dispel visually what subjective assessments like “appropriate” or “contemporary” might mean to builders in the city. Design guidelines should be developed to ensure adequate coverage of new construction on contributing contemporary sites and/or alterations to contributing modern structures. Because there are vacant lots and contributing contemporary sites within and outside the historic core it is important for the city to determine basic guidelines that shape will the historic, modern fabric of the city.

Though the development of design guidelines does not insure quality, it does focus on specific, important issues that contribute to the aesthetic nature of the larger district, or in this proposal, each designated Zone. The issues that these guidelines might touch upon deal with the visual and spatial character of the zone that deal with: building heights, scale, orientation, building footprint, proportions (windows, doors, porches), materials, colors, details, directional expression of the façade (horizontal emphasis in the case of the modern aesthetic), walls, fences and/or landscaping. Though some of these elements are discussed in existing building bylaws, a visual dictionary and synthesis of

these elements would definitely contribute to a more aesthetically pleasing urban character.

Procedural Points for Landmark or Contributing Modern Designation

1. Request for Evaluation

Any interested party, citizen, public official, city administrator, property owner can suggest a site or structure for landmark or contributing modern building evaluation to the Chandigarh Heritage Commission. An official request should include supportive items like: photographs, property information and history.

2. Evaluation

Once an official request for evaluation has been submitted to the Chandigarh Heritage Commission, staff can review the preliminary materials and discuss whether or not the site or structure meets any of the criteria for designation. If so, the site/structure moves on for further consideration.

3. Commission Review

Staff must prepare a statement of significance and integrity, and collect any more necessary information on the site/structure so that a proposed designation packet can be distributed to the Chandigarh Heritage

Commission so that members of the commission can comment on whether or not the site/structure merits preservation protection.

4. Public Comment

It is important that each property being considered for landmark or contributing modern site/structure status be given a public hearing. Involving the public, property owners and concerned parties is an important part of the preservation process. At the hearing, the full Chandigarh Heritage Commission must be present to hear and respond to issues and concerns of the public in the designation of a particular site/structure. When verbal testimony is not possible, any interested party may also submit written testimony to the committee for consideration.

5. Discussion and Designation Report

Throughout this process, staff should document key comments while preparing a detailed report about the site/structure. An examination of the architectural, historical and/or cultural significance is an important part of this report as is documentation regarding the site/structural integrity. Commissioners should review this report following the public hearing before they vote on whether or not to designate the site/structure as a landmark or contributing building.

6. Commission Vote

At a public meeting, the commission should vote to designate or deny. Specifics (majority or particular number of votes to designate) should be decided upon committee inception along with other commission rules of procedure. Predetermined controls should be in place to ensure that corruption of any kind does not influence this vote.

7. Heritage Commission Report

For each designation, staff should prepare a report to the UT Chandigarh Architecture and Planning department (and other related agencies to be determined) with notes on the specific designation remarks (zoning or aesthetic qualities of the designation) so that master planning and other efforts are in line and consistent with decisions made by the Chandigarh Heritage Commission.

8. UT Chandigarh Administration Comment

Specifics for this step would have to be determined by the Chandigarh Heritage Committee but it should include an option for city administrators to comment and modify any designation.

Suggested Implementation Measures

In order for this proposed course of action to take root and actively preserve the unique elements of Chandigarh discussed and explored in this paper, implementation measures and methods must be a crucial part of the discussion. Actively engaging the public, city officials and administrators is a good way to start the conversation. Developing benchmarks and specific goals may guide and jump-start the process once adequate policies, designations and jurisdictional issues have been solidified.

The Chandigarh Heritage Commission, if established, would be responsible for developing benchmarks to measure progress and advancement towards those goals as set forth in the Chandigarh Heritage Master Plan. It is important to monitor, evaluate, revisit and continue the conversation at the end of each element of the preservation planning process. This ensures the continued discussion and education of everyone involved in the process.

The most important part, and an efficient way to start the process, is to actively engage citizens and find out what kind of Chandigarh they envision 200 years from now. While engaging the public, the establishment of a responsible body, the Chandigarh Heritage Commission, is important on an administrative level. The legal protection of any heritage provision is important in terms of implementation of this program.

Chapter 6: Final Thoughts

In the quest to foster both a historic and evolving Chandigarh there is no one-size-fits-all approach, nor can a solution be solely based on a flexible and unique preservation plan. The ideas explored and proposed in this paper suggest only one contribution to the many and necessary conversations urban dwellers of Chandigarh today and tomorrow must participate in. At this point in time, Chandigarh has the opportunity to intentionally guide its urban identity for the future, whether that is rooted in haphazard development and redevelopment of the city, or a deep freeze in a modernist past is up to the planning efforts. Though this paper has recommended a possible course of action, the decision should be one made by the local government and community in tandem.

As the notion of the future and the city evolve, the legacy left by the historic, modern Chandigarh should be clear. Chandigarh's modern legacy can be attributed to no single stitch in its urban fabric, but the evolution and combination of its order, organization and clarity in its overall urban character. In this sense, flexibility was built into the proposed preservation plan and should not be forgotten, as the urban fabric of the modern era was intended to evolve. The aesthetic legacy of the modern architectural Chandigarh comes in the identification and preservation of important sites and structures integral to the

city's past and those sites and structures that contribute to the modern aesthetic context. Not only the aesthetic legacy is important for the preservation of Chandigarh, the legacy of modern urbanism should also be present in a preservation plan of Chandigarh, allowing the city to evolve and accommodate the natural expressions of the contemporary era. Urban growth and dynamism should be anticipated and planned for as the city makes these decisions. In the case of the modern city as an urban unit (both Zones A and B together) preservation can only occur through evolution and change in tandem with the maintenance of the urban organization at its inception. Preservation and modernity are, as Jukka Jokilehto might suggest, "the dialectics of our contemporary culture," (van Oers 2001).

The exploration of issues relating to the preservation of Chandigarh in the context of its modernist principles and historic importance was intended to support and describe case for the preservation of the city. It was also intended to shed light on the different reactions other cities of the modern era had when preparing for a future identity.

I have suggested that in order to effectively manage the city's future growth while maintaining elements of the historic urban and architectural past one must be flexible and creative, looking beyond the typical preservation planning approaches seen thus far. I have proposed a basic structure and the possible course the preservation movement might take in order to preserve

elements that I believe should be preserved. This proposal, decidedly different than any other preservation plan, focuses on issues relevant to today's generation while watching out for the best interests of Chandigarh's future generations. The suggested method for managing preservation, development and growth represents an attempt to provide a truly flexible and distinctive path that ensures Chandigarh's viability as an urban hub of Northern India for centuries to come.

Though this proposal does not outline specific means to achieve each and every element, it identifies some of the players and stakeholders that should be involved when the time comes to construct policy documents. It is also stressed that it is important to ensure that citizen participation, education, and outreach be a key component of the preservation process as a whole, the city's identity and image will develop alongside a unified community. The recommendations in this proposal outline a framework that Chandigarh's administration and residents should use to navigate the preservation of their historic, modern city well into the future.

Glossary

Appropriate

In this paper and subsequent proposal, appropriate was intended to mean compatibility in terms of urban and architectural character. If design guidelines were to be created, appropriateness would be given a standard, this is recommended. This term must be clearly defined by the agency in charge.

Chandigarh Heritage Master Plan

The culmination of efforts to organize historic resources, objectives, goals, incentives and visions into a comprehensive and logical plan to preserve Chandigarh's cultural, historical and architectural resources.

Contributing Modern

Describes a site or structure that contributes to the modern historic and aesthetic past of Chandigarh. These sites and/or structures exhibit characteristics that emphasize modern use of: materials, forms, textures, colors, directional expression and/or landscaping. These sites and structures are important in preserving the urban and architectural character of the historic, modern city.

Contributing Contemporary

Describes a site or structure that has the potential/already does contribute to the contemporary urban fabric of Chandigarh. These sites are to represent the time in which they were built and to meet the needs of Chandigarh's urban future. These sites and/or structures exhibit characteristics that emphasize the contemporary use of: materials, technologies, styles, textures, colors and/or landscaping. These sites and structures are important in preserving Chandigarh's desire to be modern (of the time) and a city for the future.

Contemporary

In this paper/proposal, the term is used to describe developments (architectural or urban in form) of the time during which they were conceived. Contemporary now refers to something that belongs in the present, and contemporary in 20 years refers to something that belongs 20 years from now.

Historic Character

In Chandigarh, historic character refers to the modern, historic elements and forms of the city at its inception. The historic, modern character is a culmination of its aesthetic elements (forms, materials, spaces, technologies) from the modern era.

Integrity

The integrity of a site or structure relates to its historic character. Integrity can be assessed by examining sites/structures physical elements (materials, structure, form).

Landmark

Describes a site or structure that is officially designated as a landmark by the Chandigarh Heritage Commission. The criteria for designation are described above but each landmark is important and crucial in the preservation of the city for very specific purposes. Landmark sites and structures are not to be altered or demolished, they are to be rehabilitated and preserved for the future while representing a key moment in Chandigarh's historic, modern past.

Modern

In this paper/proposal the term is meant to describe architecture and planning of the modern era in Chandigarh from 1950 to around 1965 (though no strict end date applies). Modern characterizes the principles and ideologies behind the forms found in the city's architecture and urban form. Modern, in the urban context, refers to the mode of time.

Preservation

"Defined as the act or process of applying measures necessary to sustain the existing form, integrity and materials of a historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction," (National Park Service 1995).

Preservation Ethic

Deals with the underlying tone and feeling towards preservation and preservation planning.

Rehabilitation

"Defined as the act or process of making possible a compatible use for a property through repair, alterations and additions while preserving those portions or features which convey its historical, cultural, or architectural values," (National Park Service 1995).

Restoration

“Defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project,” (National Park Service 1995).

Roadway Character

The view from/of the road. Each roadway character is determined by which type of road it is. A complete roadway character matrix of Chandigarh's 7Vs can be found in the appendix.

Site

Any piece of land on which a structure, landscaped area or monument stands.

Structure

Any constructed building or object home to a specific site.

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Appendix A: Street Network; Character Along the 7Vs

Street Network: Character Along the 7Vs			
A major part of Chandigarh's urban and architectural character is determined based upon what kind of street the front, rear and side faces. When trying to determine the urban and architectural character and significance of Chandigarh's built environment it is clear that the significance and character is related directly to the kind of street the site faces.			
Road Type	Description	Importance	Key Elements
V1	fast moving roads that connect Chandigarh to other cities	Commercial and Industrial Land Uses front the main highway leading into the city. Urban and architectural character is insignificant to the historic preservation of the city.	high speed traffic, commercial and industrial land uses lining roadways
V2	arterial roadways within the city	Commercial activity front these streets. Large vegetative buffers exist in some areas in preparation for increased roadway space, but are available for alteration to accommodate mass transit, pedestrian and cycling amenities. The urban character of the commercial buildings fronting these major thoroughfares is important and distinctively modern structures that contribute to both the urban and architectural character of the city.	commercial land use, color/size/style of commercial structures, roundabouts/stoplights, 2-3 lanes of traffic per direction, access roads flanking in commercial zones, large vegetative buffer
V3	fast moving vehicular roadways within the city	These roadways are fast moving arterials with medians and vegetative buffers. Few land uses front these roadways but they provide access to each sector at midway points of the sector.	2 lanes of traffic per direction, roundabouts, arterial medians, vegetative buffers along backsides of inward-facing structures
V4	winding roads that give internal access to the sector	These roadways are slightly different in each sector but always serve as the access point into the sector. These streets form the urban character specific to the sector and are very important in determining a sector's identity. The speed on these roads is slightly slower than V2s and V3s. Usually flanked by commercial properties and serves the neighborhoods public realm. Local access and cross sector traffic.	1-2 lanes of traffic per direction, residential, institutional and commercial frontage, sidewalks, green/public spaces, streetwall formed by private fences
V5	circulation roads within the sector	These roads are generally more narrow and accommodate only local traffic flow at a reduced speed.	one lane of traffic per direction, residential and green space fronting roadway, sidewalks, streetwall formed by private fences, planting along sidewalk
V6	roads for access to residential properties	Residential frontage along streets and only local usage at a reduced speed.	depends on private property owners, fencing, security
V7	pedestrian and cycle paths	These paths are not well connected from sector to sector but do have potential to be revived and become a usable, well-connected network that can accommodate increased pedestrian and cycling traffic.	no vehicle access, lined by green spaces, for leisure and recreation purposes in addition to a place for transport

Appendix B: Sites + Structures Heritage Controls Matrix

Sites + Structures Heritage Controls Matrix									
Zone A	At the city's historic core, development and growth in this zone should be closely monitored by the Chandigarh Heritage Commission to ensure the continued presence of Chandigarh's modern aesthetic heritage.								
	V1	V2	V3	V4	V5	V6	V7		
Landmark	preservation required; no exterior alteration or addition allowed; all changes to site and exterior must go through Chandigarh Heritage Commission; no demolition permitted; economic incentives available to all structures for restoration and preservation efforts.								
Contributing Modern	N/A	facade required to maintain modern aesthetic; facade signage must be appropriate	vegetative buffer must remain; facade visible from roadway must be maintained	exteriors must be maintained; greenery/fencing cannot interfere w/ roadway vista	exteriors to be maintained; additions/alterations as permitted by CHC	exteriors to be maintained; additions/alterations as permitted by CHC	exteriors to be maintained; additions/alterations as permitted by CHC	exteriors to be maintained; additions/alterations as permitted by CHC	
Contributing Contemporary	N/A	develop sites in such a way that maintains and contributes to the character of the roadway, while ensuring structure is in and of its time		new structures maintain a relationship with the roadway and adjoining structures	structures share historic building orientation but its materials, form and building technologies are contemporary and the best of their time				
Zone B	Designed to accommodate development and growth, changes in this zone are encouraged to ensure the continued presence of Chandigarh's fundamental ideology. Developments should be of the best design and technology of their time.								
	V1	V2	V3	V4	V5	V6	V7		Other
Landmark	preservation required; no exterior alteration, addition allowed; all changes to site and exterior must go through Chandigarh Heritage Commission; no demolition permitted; economic incentives available to all structures for restoration and preservation efforts.								
Contributing Contemporary	use sites as necessary as required by modern and commercial users; maintain facade parking along roadside	develop sites in such a way that contributes to the character of the roadway and building materials contemporary to the time of construction	structures maintain a relationship with the roadway but are of their time	structures share similar orientation to those around it but its materials, form and building technologies are contemporary and the best of their time					

**all guidelines are intended to supplement and work in tandem with existing zoning and building bylaws (including frame control, build-to lines, height limits, etc.)

Appendix C: Chandigarh Heritage Discussion

Though there is no “official” report available to members of the public, there is ongoing discussion in various forums about the preservation of the city. During a three month visit, though there is no “official” verification, the discussion is centered around a zone-based preservation strategy that protects areas as large as a sector and small as a site (Ghai 2012). The historic resources are said to be divided by Grade and from what we can put together follow a division that looks something like this:

Agency in Charge: Ministry of Home Affairs

Main Heritage Resources

Grade 1

- Sector 1, Capitol Complex (Secretariat, High Court, Open Hand, High Court)
- Sector 19, Le Corbusier Center
- Sector 18, Government Press Building
- Sector 12, Chandigarh College of Architecture

Grade 2

- Sector 5, 3 private homes
- Sector 4, 1 private home

Unspecified Grade

- Sector 14, Gandhi Bhawan (and 3 other buildings on PU campus)
- Sector 22, Kiran Cinema
- Sector 20, Mosque
- Sector 10, Gvt. Museum and Art Gallery
- Sector 17, Plaza
- Sector 1, Rock Garden
- Sukhna Lake
- Sector 23, Temple
- Sector 22, Gurdwara
- Government Schools (Sec 10, 11, 15, 16, 18, 19, 21, 22)
- Nursery Schools (Sec 7, 16, 22, 23)
- Sector 18, Church
- Sector 16, Rose Garden
- Sector 16, Shanti Kuni
- Sector 11, Gvt College for Boys and Girls