DESIGNING FORMS WHICH REACT TO A PATTERN OF PUBLIC AND PRIVATE USES:

Transforming a Convent for an Arts Community in Tepoztlan, Morelos, Mexico

by

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B.A. Wellesley College, June, 1984

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I dedicate this work to the people and spirit of Tepoztlan.

With appreciation to the Department of Architecture at MIT for awarding me a travel grant in 1987 which first brought me to Tepoztlan.
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Abstract

This thesis involves the observation and analysis of built relationships in the village of Tepoztlán, Morelos, Mexico. The result of this study is a design proposal for an arts community which will transform a sixteenth century convent and its adjacent land.

The process is context oriented. Following a discussion of the town, built relationships are approached by the process of observation. After establishing the pattern of public paths and places by observing the existing pattern, a series of form parameters are explored through examples: the relationship between public and private, semi-enclosed space, light and markers.

These criteria are then applied to the convent building and, finally, to the proposal. In addition, the site required establishing a dialogue between the old and the new.

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INTRODUCTION

When it is successful, architecture facilitates life in an intimate way. This relationship between architecture and daily life must be carefully considered in any context within which one builds. Although it is difficult to design in a culture which is not one's own, it gives one a more objective view. This thesis is about that view.

The design is a proposal to be submitted to the town of Tepoztlan.
Map of Tepoztlan
CHAPTER 1: LIFE AND HISTORY

Tepoztlan is located about sixty miles south of Mexico City in the state of Morelos. The village is nestled in the mountains overlooking a valley. This strategic position and, some say, spiritual energy of the mountains, has attracted a variety of peoples throughout its long history. At different points in time the Olmec, Toltec and Aztec cultures had centers here. Their prehispanic past is still part of their cultural memory. It is known for being the site of a special cult of Ometochtli ("Two Rabbits"), the god of pulque.

Being close to major routes and near Mexico City, Tepoztlan attracted the Spanish in the fifteenth century. The Spanish were also driven by religion and the calling to convert the Tepoztecos to Catholicism.

As in other arenas of life, their religion became a mixture of the Spanish ways and more ancient forms of worship. For many, the conversion meant simply applying different names to their own diities.

"Foreigners from as far away as the kingdoms of Chiapas and Guatemala made pilgrimages there, and in certain seasons of the year, the cult of Ometochtli had all the characteristics of a collective orgy."

1Lewis, Tepoztlan, Village in Mexico.
"In Tepoztlan, as in other simple societies, the pulse of life is measured more directly than it is with us by the great clocks of the sky. Life everywhere is not a sustained adjustment, but a series of crises and lyses, an alternation of tension and release. The movement of this rhythm is set in the first instance by astronomical recurrences. The rotation of the earth, the revolution of the earth around the sun, even the waxing and waning of the moon, constitute the metronome of human interests. Upon these cadences of nature the simpler people are more directly dependent.

Elsewhere artificial heat and light, and the interchange of products of different climates, go far toward making one hour, or day, or month, like another. But, while in Tepoztlan the clock in the tower of the Palacio Municipal strikes the hours, the sound of its bell reaches the ears of a small number of the inhabitants, and all are far more attentive to the chronometers of sunset and sunrise, and of wet season and dry."²

²Redfield, p. 83.
Redfield was writing this in the 1930's. Although Tepoztlan has changed and grown drastically since then, this essence to the rhythm of life in the town has not changed.

Between 1970 and 1980 the population of Tepoztlan grew from 12,000 to 19,000. Many outsiders come to Tepoztlan either to visit or settle. Just as the imported Spanish religion and culture were imbrued by the Tepoztecan ways, so are the ways of the newcomer.

There is an undeniable attraction to the tempo and meanings in the Tepoztecan way of life. There is a healthy continuity which is perceived in daily life which includes everything from their attitude towards death to the rhythm of the market in the center of town.
Plan of the Town Center
CHAPTER 2: PHYSICAL DESCRIPTION

In its physical form the Spanish left the greatest mark on the Village. Here again, we see a situation where an outside influence in Tepoztlan becomes transposed. When the Spanish came, they had the church built and brought everyone toward the center of town in order to have better control. The people settled in distinct barrios, each with its own name and animal symbol. It has been suggested that this settlement pattern reflects the location of earlier prehispanic settlements.

While each barrio has its own church and festivals, the central church yard and market are the site for all larger village festivals and celebrations. This central plaza was laid out according to laws sent from Spain; the Laws of Indias. The grid iron plan is a direct result of these laws, which prescribed to the settlers the process of laying out the new cities. In addition to providing for easy layout, its geometrical design was seen by the Spanish as demonstrating their power to the natives.3

"The plaza shall be of an oblong form, which shall have at the least a length equal to one and a half times the width."

"They shall arrange the building lots and edifices places thereon in such a manner that the rooms of the latter may enjoy the air of the south and north as these are the best."

"The temple in inland towns shall not be places on the plaza but distant from it" and "Building lots shall not be assigned to individual persons in the plaza where are placed the buildlings of the church and royal houses."

Although these laws were not always rigidly adhered to, they controlled how the town grew.

3Frontado, pp. 14-55
The architecture around the town center is very different than the more residential areas just a block away. The Spanish influence, however, can be seen in both examples shown here. The sloped roof and clay tile were introduced here by the Spanish.

The building materials used today are concrete, stone, brick and adobe. These materials are appropriate for the climate. The midday heat is absorbed by these materials. During the night, which can be quite cold, this stored heat is released into the home.
Shadows of transformations due to the nature of the materials and the need for change over time.

The beauty in architecture comes out of its ability to change and grow.
PART II: OBSERVATIONS AND ANALYSIS

CHAPTER 3: PATH AND PLACE

CHAPTER 4: FORM PARAMETERS
A Main street leading to the valley

B The market

C Municipal Palace
Rather than simply a path passing between two rows of buildings, the main street becomes a place enclosed by entrances on either side. This is made possible partly by the stone laid road which inhibits fast traffic. In addition, vendors who sell in the street define it as a place to stop.

Entering the market does not simply involve passing through a door into a sea of rows of products. One can enter from any side into the central space which is filled by semi-enclosed spaces. Forming a border to this central space are entrances to smaller places.

The municipal palace, which consists of a post office, a telegraph office and government offices, provides a similar series of passage and entrance.

\[\text{CHAPTER 3: PATH AND PLACE}\]

Accepting that a pattern in the public realm reflects the pattern in the memory and movement of the population, a useful approach is to look at public places. Considering these three examples defines a pattern in the relationship between path and place. Paths lead to central 'cores' off of which are entrances. The experience becomes one of going through a series of entrances.
CHAPTER 4: FORM PARAMETERS

Within this pattern of path and place one can look at form parameters. This chapter involves the analysis of three different homes looking at the following:

- Public and Private Relationship
- Semi-covered Space
- Light
- Markers
A recent caravan of retired north American trailer campers were travelling through Mexico. They were consistently having a problem with privacy. The children would come to the park where they were camping and peer through the trailer windows and into the doors. This problem arose because of differing senses of boundary definition between public and private.

The campers from the States felt their private zone as consisting of the area surrounding the whole door side of the trailer.

The Mexican children felt that the public zone ended only at the actual physical door of the trailer, and the walls forming its enclosure.

Finally a few of the travellers had the idea of pounding stakes into the ground and tying string between them. Although the string was only about one foot above the ground it was enough for the children to feel they should not pass.
This dilemma and its solution point out an important fact. In Mexico the boundary between public and private spaces has a strong physical definition. This boundary definition can have many forms. It can be defined by a level change, a door, or passageway, thus providing a physical transition in the movement into the space. In addition, the separation between private and public space can be a visual barrier such as plantings and trees or a high wall.
most private living space
In example A the street wall, which also provides support for the house, serves as a barrier between the street and the private yard. This condition is very simple and common in Tepoztlan.

Example B is actually the site of two very small homes. Not only does there exist the street wall providing privacy from the street, but there also exists another level of barrier between the two homes. If one looks at the common yard as the second level of public space (the street being the first) we can see a second level of barrier. The house on the west side is separated from the yard by a level change. The house on the east side does not have an entrance directly onto the yard, but is separated from the common yard by a low wall.

Example C involves a private space behind commercial space having access to the street. In this example, again, there are two levels of barrier or public-private transition. The garden in the back is shared by the commercial space and the house beyond. This garden is separated from the street by a long corridor.
Semi-enclosed spaces provide an intermediate level of protection or privacy. These spaces may be only partially closed by walls, have partial cover, or are not built structures at all. A tree which provides cover can also form this type of space.

Often being on the edge, bordering the built and unbuilt space, they become a focal point for activity. In this climate, semi-enclosed spaces can support an almost limitless variety of activity. When providing shade, they are attractive places to be in the middle of the day.
In Example A the semi-enclosed space occurs between the house and the yard. It makes the edge a hub of activity for the household.

Example B has two types of semi-enclosed space. The tree in the yard provides a sheltering canopy. This space is used throughout the day. There is often a table put there to work at. The other semi-enclosed space is the area between the bathroom and the door to the house on the east side. This space is used for cooking and eating.

In example C there are two semi-enclosed spaces. One is the corridor which connects the public street to the more private back garden. The other is the walled space in front of the private home bordering the garden.

In all three examples the semi-enclosed space defines an area of transition.
Light brings life to form. One is attracted into the light when there exists the darkness to contrast with it.

Because it has such a power, light should be analyzed just as space defining forms are analyzed. Natural light has many forms which have different effects. A reflected light can have a soft calming glow. Direct sunlight can also create a calm when it hits silent and still on a surface. When the sun shines through rustling leaves, however, the light brings an energy to the space around it, casting shadows which move unpredictably.

The location and type of light can have a strong impact on the person who experiences a space. One of the strongest characteristics of natural light is its nature of marking cycles of time. This larger issue relates back to the theme of rhythms upon which the life in Tepoztlan is very dependent.
To enter the house in example A, one never enters the light. Walking in the street along the wall it is dark and cool. Upon opening the door one is drawn in by the light beyond. The place of light separates the private toilet from the house, both of which are places of darkness.

When entering these homes, one always moves towards the light.

Example B provides experiences of different kinds of light. After passing through the wall, one walks in its shadow into the shade of the tree. The light under the tree is filtered, creating patterns over the ground which make this place dance. Direct, quiet sunlight falls in front of the entrances to the homes. From this light one passes into the interior darkness.

In Example C one sees the strong sunlight at the end of the corridor. It is a release to arrive at this open garden of light.
In Tepoztlan, the mountains are the most obvious landmarks. Having unique forms these ridges become fixed in one’s mind as a visual ‘name’ or symbol of Tepoztlan. In a similar way the large tree and bell towers mark the space of the churchyard. In addition to landmarks, however, there is another level of marker. These are often smaller and more personal. Perhaps we ought to call them path markers, or time markers. For they don’t so much mark the land as they mark a point or moment in a person’s movement. Rarely does a person use street names and numbers. One relies on his or her memory of a particular path, task or place.

The scale and character of these markers depend upon the mode of movement. Most people primarily walk in Tepoztlan. The daily trip to the market becomes a pattern of textures as well as inclines, walls and shadows.

One retains an image, or memory of a place. When walking down the street one absorbs a sense of the spaces which exist behind the walls. What is communicated about this space, and how, becomes critical in streets lined by walls.
In examples A and B, the space behind the wall is clearly perceived as private by the height of the windows and the shape of the roofs. In Tepoztlan, this combination; sloped roof and high windows, almost always means house.

In example C, the only direct connection to the street is a small door. This door is clearly understood as a private entrance. The art gallery, which shares this entrance, struggles to get people inside.
CHAPTER 5: PROGRAM AND SITE

One could define the newcomers in Tepoztlan as two groups: the settlers and the visitors.

The settlers are fairly new to the town, some are Mexican and many are foreigners. Most of these people have bought land down in the valley. Some are artists who live there. A good number of them actually work in other parts and spend weekends, vacations or summers here. These people seem to have a great respect for the mountains and land in Tepoztlan. They also honor the traditions of the Tepoztecos.

The visitors are for the most part students and artists. Some pass through, spending only a few days. Others settle there for a few months. Presently they either know someone who they stay with, or rent a room or small place from the Tepoztecos.

Having lived in Tepoztlan over a year, what I felt so much lacking was a place where all these people with so much in common could interact and work together. There is a kind of 'separation' between the Tepoztecos, the settlers, and the visitors. I claim that the separation results most from the physical situation than from anything else.

Although these groups have different life styles, they share a love for craft, nature and the village life. They would benefit greatly if there were opportunities to organize programs focusing on the interests and activities they have in common. It would also be good for visitors to have a place to link up with the people who share their types of interests and to become involved.
PROGRAM

This place will provide:

- Studio space 10 x 400 sq. ft. light, cool
- Apartments and rooms for teachers and rent 10 x 200, 5 x 400 private, related to semi-public
- Garden outside, near water, wash, sun
- Kitchen and eating place to sit, write, talk, meet and watch. Edge.
- Indoor outdoor gathering
- Bathe and wash outdoors edge,
- Common workshop sturdy, more public yet secure.
- Large indoor hall, dance etc. open space
- Display and sell 800+
- Class space 4x400 write, work, talk, store things,

The artisans will be engaged in: woodworking, clay, painting, cooking, yoga, healing, instruments, music, leatherworking, and jewelry.
The site for the arts community is part of the convent which connects to the north side of the church, and the adjoining land. Because of the role of the church yard in the community and its location next to the market, this unused site offers the potential to become a center for all three populations.

The church and convent were completed in the late sixteenth century. The entire structure is built of stone with barrel vaults and bearing walls.

A schoolyard borders the convent on the north side, and a museum on the east. The museum and school will expand into the convent building.
View of Church facing east from market
Porterías

The church yard has at each of its four corners a 'portería'. Originally these were used in processions. Today two of them are reduced to ruins and the path connecting them, which is bordered by the high stone walls of the church yard and the low wall inside, has lost its original use and meaning.
convent windows
Relationship between Old and New

When building next to an historic structure, an attitude must be had about the intervention and its relationship to the existing building. The church and convent were completed sometime in the late sixteenth century. All of it is built of solid stone with barrel vaults and load bearing walls.

The new construction shall address the original structural identity of the convent. For making interventions within the convent building itself, three levels of sacredness were determined: very sacred and untouchable, semi-touchable, and most touchable.
CHAPTER 6: SITE ANALYSIS

In this chapter the site will be analyzed in terms of the following:

Relationship of public and private spaces
Semi-enclosed space
Light
Markers
PUBLIC AND PRIVATE

The site is separated from the churchyard by a high stone wall, making it quite private. The courtyard has a level of privacy to it as well, due to the series of entrances one must pass through before arriving.
SEMI-ENCLOSED

The transition from outside to inside is experienced by passing through a semi-enclosed space. In each case this space is entirely roofed, but is open on one or more sides. With large stone vaults overhead, these spaces feel heavy, thus making the transition into the open space rather sharp.
The most powerful light in the convent is that of the courtyard. In contrast to the cool, dark passageways, the courtyard is warm and bright. The light from the courtyard draws one towards it. It is not so much the courtyard itself as it is the light of the courtyard which serves as a reference within the building.
MARKERS

The two large bell towers clearly call people to the church entrance. The access to the convent from the churchyard, however, is through an arch tucked in a corner against the wall. What gives this archway meaning as a connection to where it leads is the end of the large barrel vault of the north wing, which can be seen from the churchyard.
CHAPTER 7: PROCESS AND DESIGN INTENTION

The design must be accommodating to all the user groups. For this reason the project will represent a synthesis of the existing patterns of form and space which exist in the lives of these people. In addition it must respond to the site conditions. This latter issue requires that the forms and spaces form a dialogue with the existing convent and churchyard.
The process of design began by considering the pattern of public paths and places that exist in the town and how this might apply to the site analysis presented earlier which examined the relationships between:

Public and private places
Semi-enclosed spaces
Light
and Marker
These initial models were used to explore the location of the places on the site. In addition to responding to the convent building, these moves begin a dialogue with the bell towers and the wall path, which leads one to the entrance.
First floor plan showing churchyard
CHAPTER 8: THE PROPOSAL

This chapter will present the proposal in the context of the form parameters explored earlier.
The plan consists of three common courtyards which are linked, one through another, to the central convent courtyard.
The most public courtyard, the water garden, is marked by the water tower. A few steps down, in the shade of trees and with the sound of water, this is a place for all to gather. It forms an 'edge' or meeting point between the arts community and the general public coming through the convent.

The water tower provides a filtration system in addition to cooling the air around. The runoff from the tank above, falls over a roof into a catch. From there it pours over the edge onto the concrete stepped curve which leads down to a small pool at the lowest point of the plaza.

The location of this juncture at the heart of the site, rather than at the edge reflects the pattern of paths and places in Tepoztlán, which we discussed earlier.

The next courtyard is intermediate between the public water garden and the private living space. Connecting the studios at both levels, it is a place for the artists to work together.

Supporting the living spaces is the most private courtyard. It is located in the far northwest corner of the site. It is a calm, quiet place for resting and visiting. The living spaces are rooms connected to each other by the courtyard.
first floor plan
PUBLIC-PRIVATE BORDERS DEMARCATED

section C-C
The borders between public and private spaces vary throughout the site. The public churchyard is separated from the site by a stone wall. Within the site the three courtyards are separated by level changes. The living spaces, which are most private, are the highest. The lowest point in the site is in the water garden. Plants and trees provide barrier for the toilets and the second level. Within these courtyards the level of privacy provided by the front walls of the studios and living spaces will be determined by the users.
SEMI-ENCLOSED SPACES AT POINTS OF TRANSITION

section D-D
Semi-enclosed spaces are formed by overhangs, trees, and colonnades. In addition, there are some which are formed by walls. This type of space occurs at points of transition.

Entering from the convent courtyard, one passes under the second floor balcony and proceeds along the large stone structure of the north wing of the convent. After passing through these different levels of enclosure, one arrives at the open space of the water garden.

The spaces which connect the different courtyards are covered, shaded places.
LIGHT DEFINING SPACES

section E-E
Walking through the site is a process of moving through towards the light. Both light and shadow are used in defining the spaces.
section A-A
The form of the large barrel vaults of the convent is echoed along the churchyard wall, forming a conceptual relationship. Similarly, once inside the site the sloped roofs will be read as private living.

Another use of memory is the process of transition when entering. To enter the convent courtyard, one moves along the churchyard wall. This solid wall breaks down and the path opens into the light, open space with a water pool. Similarly, one enters the public water garden by moving along the north wing of the convent. And again there is water and light.
CONCLUSION

The word 'convent' means coming together. Although this site has had a different meaning in another time, it is my hope that here the people of Tepoztlan will come together.

Just as all the barrios in Tepoztlan have names and animal symbols, so will this place of gathering. I propose that it be named after the god of pulque, Ometochtli (two rabbits), who was worshipped here before the Spaniards came. And its animal symbol will be the two rabbits.

Because the members of the arts community do not live out their lives here, this place will lack the type of continuity which the other barrios in Tepoztlan have. It will find its own sense of continuity and identity through the cycles of change which the users will bring.
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