Czech Squares: 10 Spatial Patterns

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INTRODUCTION

The study of the medieval Czech square is not a topic to be relegated to the books of history and brought back in a nostalgic moment. The medieval model has great relevance to the overhaul of today's urban structure: the dying inner city, the unfocused suburb and the loss of community.

This country was settled relatively quickly, by those whose concerns were not 'the art of making cities'. As we turn back and reflect on our situation, concerns about community and shaping urban spaces for people rather than for cars have become a major issue. The shape of the American town is generally determined by vehicular traffic engineering, rather than concerns for the human scale experience. We have been misled by the FHA housing ideals which have steered the American city towards suburbs, wide streets for fast-moving traffic, and cul du sac neighborhoods cut off from the town. (Easterling, 1993.)

A fundamental shift is taking place where people are realizing the immense price we have all paid for the heavy pursuit of the American Dream: loneliness, crime, dependence on the automobile, diminished community and dispersed families. Our suburban culture is one of transience. We travel to work, to school, to shop, to sleep, to see family. All of these activities are ones to which we most likely drive rather than walk or bike. We have designed community life out of our towns, neighborhoods and cities.

Curiously, our current economic behavior is similar to medieval times. The economic viability of the medieval town depended on commerce, on market trading and on the influx of people from the country to the royally licensed market. The specialization of professions became possible in this model, and today we are dependent on this way of being. We rely on the integration of services and on the availability of goods. However, we are faced with the spatial problem that our goods and services are inefficiently dispersed over large areas and as such, accessing themgenerally necessitates the use of the automobile. In contrast, the medieval community was well-defined physically by the market square and the limited size of the town. All goods and services were easily accessible by foot.

A contributing factor to the sense of community is size of population. The medieval city was limited first in physical size, which in turn imposed strict limits on the population size. American towns have not been based on such limits: strip malls and roadside shopping centers stretch for miles outside of a town nucleus. Suburbs glean onto the city edges and pretty soon it is called sprawl. Community life does not work if you are in your isolated car, and it is increasingly difficult to be out of your car in an American city. We have focused more money and resources on building comfortable and efficient car routes and relatively little resources to designing and building paths that people enjoy.

These spatial patterns are based on observations in a set of towns which are medieval in their urban spaces; meaning that the streets and the square have not changed in their spatial shape, orientation and relationship to the land. These towns are distinct in their appearance from towns close by in Austria or Germany mainly because they escaped major development in the 20th xcentury, thus the medieval forms of the city walls, street spaces, and shape of the square are easy to distinguish. Suburban growth has occurred well outside of the towns (as in Trebon and Tabor) in new housing blocks built by the Communists. for the most part, the towns of South Bohemia missed the Industrial Revolution, were bypassed by major rail lines, and were halted in their economic development (and subsequent architectural development) by the Communist regime. It was in this strange, and unintended way that the Communist agenda protected these towns.

Artifacts of evolution, medieval town squares are impossible to re-create. The intention of this work is not to be prescriptive, but to describe and illustrate the set of spatial properties common to town squares of medieval origin (900-1400 AD) in the region of Bohemia, Czech Republic. The spatial patterns are the essential common denominators which have assisted the squares in remaining coherent architectural entities over the centuries. They are useful either singularly or collectively in informing, rather than determining the investigative and design process.

(Due to space limitations, only selected patterns are discussed in this paper. Please contact me for more information: 805-756-1480 [ljoines@oboe.aix.calpoly.edu].)

10 SPATIAL PATTERNS

observed in the towns of Ceske Budejovice, Cesky Krumlov, Jaromes, Jindrichuv Hradec, Loket, Melnik, Nove Mesto nad Metuji, Prachatice, Prague, Slavonice, Tabor, Telc, Trebon, Zatec, Czech Republic

1 NON-EXCLUSIVITY
Squares are non-exclusive, available to all and held as community property.
2 OUTDOOR ROOM
The square functions as an outdoor room with a strong sense of spatial containment in the vertical and horizontal planes.
3 PROPORTIONAL RELATIONSHIPS
There is a human scale relationship between width, length and height with upper and lower limits of perceptual association.
4 ENTRIES LIMITED
Entries are limited in size and number. There is a sense of boundary about the square.
5 NON-AXIAL
Paths which lead to the square give the experience of a series of constantly changing views. There is emphasis on what one is about to see rather than what one is seeing.
6 VARIETY YET UNITY
The architectural impression is one of variety within a common set of unifying design elements.
7 RELATIONSHIP TO THE LAND
There is a relationship to the land and natural geographic features
8 SHALLOW BOWL
The slope of squares has the perceived effect of being in a shallow bowl
9 EDGES AND CENTERS
Activity at the edges of the square is more important than activity in the center. Arcades encourage edge activity in Czech squares.
10 INTIMACY GRADIENT
Movement between the most public and the most private spaces is gradual.

1 NON-EXCLUSIVITY

Squares are non-exclusive, available to all and held as community property.

2 OUTDOOR ROOM

The square functions as an outdoor room with a strong sense of spatial containment in the vertical and horizontal planes.

> *"The essential thing of both room and square is the quality of enclosed space."* Camillo Sitte

> *"The presence of buildings around a square is important in design. They enclose it. They make a definite shape out of the space, so that it appears as an important event in the city scene, a positive feature, rather than a no-account leftover."* (Jacobs, 1961)

3 PROPORTIONAL RELATIONSHIPS

There is a human scale relationship between width and length with limits of perceptual association.

Singular Spatial Unit The most important quality is that the proportional relationships within the square contribute to the perception of the square as a unified whole, or a singular spatial unit.

Width and the Singular Spatial Unit Squares have a limited range of widths and lengths which are able to create a feeling of enclosure and comfort. The square width is the one which has the least range of tolerance. If a square is narrow, then it can withstand being longer such as in Telc, Domazlice and Trebon. If a square is wide then the length cannot be too long, otherwise the sense of a singular spatial unit is lost. A square that is wide is matched by a similar length forming a square in shape. When two design elements, whether it be buildings or elements in a painting, need to be associated, proximity and how to maintain the sense of being in the same 'field' are important. Sides of a square are similar, they work off each other, and thus have a limit to their distance. If distance or time becomes too great, the sides become functionally and aesthetically disassociated.

This is consistent with a study of 60 significant town squares in the Czech Republic (Tunka, 1985) which revealed that 92% do not exceed 100 meters width. The study also reveals that 97% are over 80 meters in length and that 74% fall within 80-140 meters long *(264'-4627.*

An example of a sense of the whole being more important than a prescribed dimension is the square of Trebon. It is one of the narrowest and longest squares at 28m wide and 200 meters long *(92' x 6607.* Despite being outside the 'normal' range it is one of the most embracing outdoor 'rooms' due to its intimate width and the fact that the entire square in length is visible from any position within it, giving that important sense of being a singular spatial unit.

Length and singularity In terms of length, the town square of Telc, at a length of 200 meters *(660')* is on the edge of disassociation. When squares are this long it is hard to maintain visual and physical continuity, and a new district can begin inside of the square. However, Telc manages to retain its feeling of a singular spatial unit due to its 'shallow bowl' effect' of being lower in the middle which gives a central focus.

Heights The height of facades around a square doesn't significantly affect the formation of a singular spatial unity,

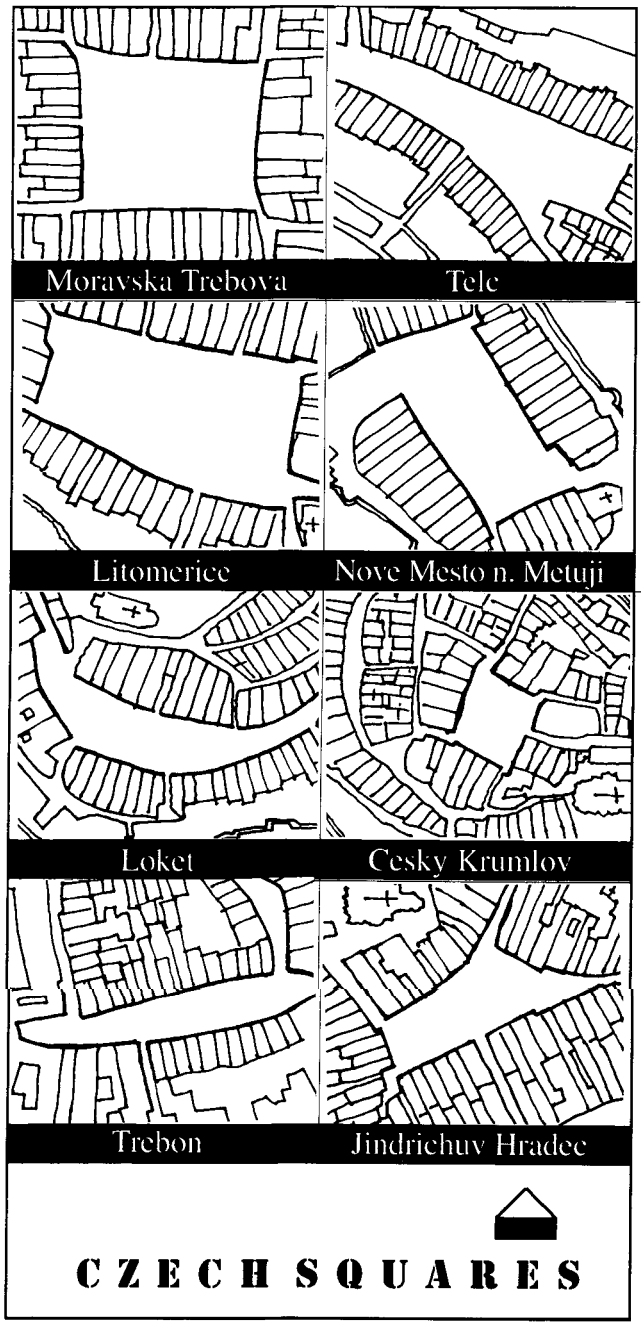

Fig. **3a:** *Plans of Czech Squares Drawn Consistent to Scale*

but the facades themselves influence the type or sense of enclosure that is formed. If building facades around a square are uniform in height with no articulation against the sky, the sense of boundary around a room, and the sense of intricacy or specialness of that room is diminished. In contrast, squares with a high level of articulation of the facades against the sky offer a greater sense of enclosure and significance to the outdoor room.

4 ENTRY WIDTH LIMITED

Entries are limited in width which gives a continuous, uninterrupted sense of boundary about the square.

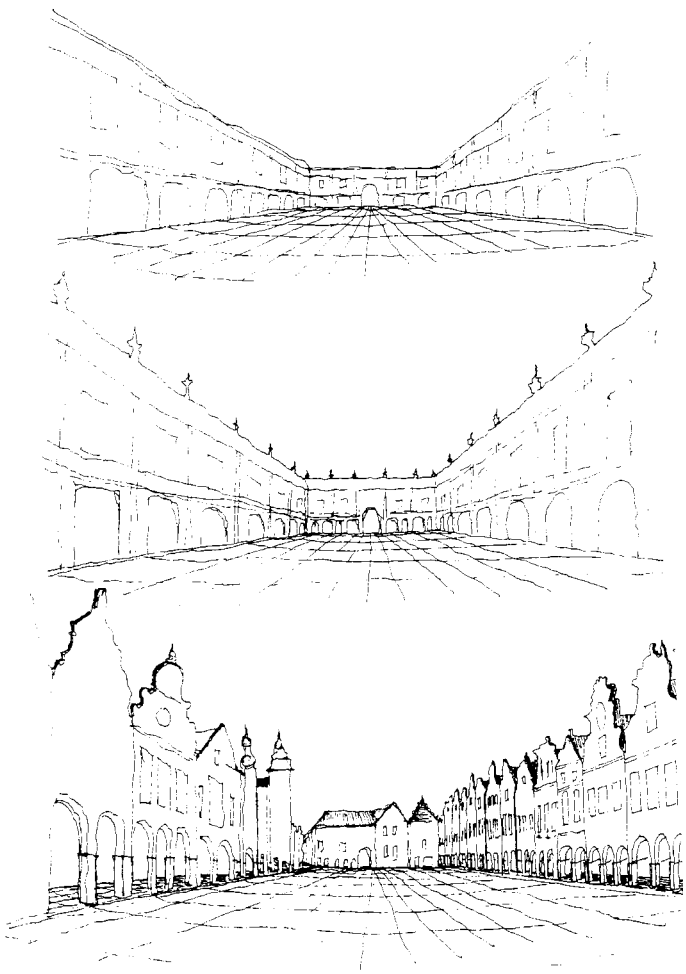

Fig. *3b: Articulation of facade edge affects the sense of enclosure*

Entries as thresholds As veritable rooms, squares have distinct thresholds which articulate the difference between being in and out of this outdoor room. These squares have narrow openings which compress the threshold, thus making it easier to distinguish when one is in or out of the square. Wide openings allow more interpenetrating of the street and the square, thus eroding the physical definition of the 'room' and the sense of a singular spatial unit.

Breaks in the continuous building wall around the square can be numerous, up to 5 or 6 vehicular entries and 2-4 pedestrian entries, however, they never make wide breaks in the building wall. Streets are typically one car wide, and accommodate two way traffic, thus cars move more slowly. Keeping the entry width small contributes to its reading as a threshold or an opening into something rather than as a gap or a space.

Boundary around the town The size of the town itself, through evolution, is in equilibrium, or in proportion to the size of the square. The town square is of a fixed physical size; there is a limit to the amount of people that it can support physically and economically. **A** balance exists between the size of the square and the number of people using it. Rather

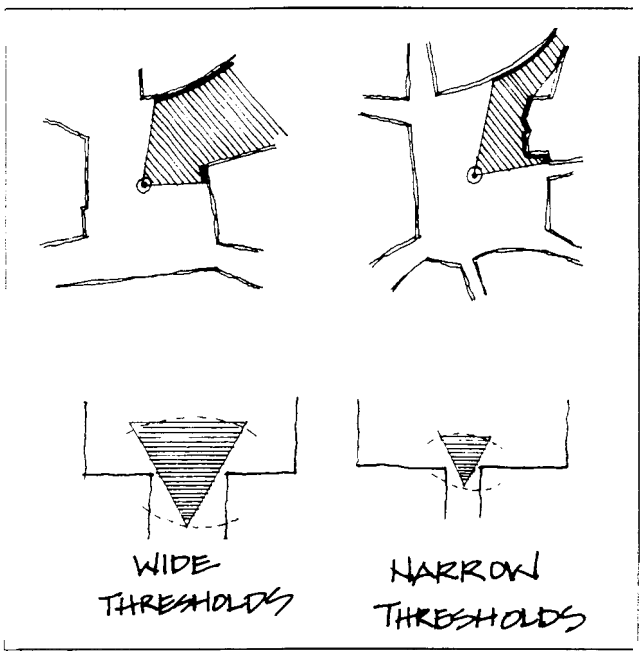

Fig. *4: When standing in the center of a square and looking to its edges, wide openings do not contain views, but allow the energy of the space to seep beyond. Numerous narrow openings increase fragmented views, but add to the sense of being in a singular outdoor space. Entry thresholds are ambiguous zones rather than specific points. Wide thresholds allow more interpenetrating of street and square space, thus giving a less distinct threshold. Narrow thresholds better articulate being 'in' or 'out' of the square.*

Fig. 5: Constantly changing views heighten interest in a space

than continually adjusting the size of a town to fit the quantity of people, the quantity of people fit the fixed size of the town and its square.

5 NON-AXIAL

The squares are not designed for axial vistas. Paths which lead to the square are a series of constantly changing views. There is emphasis on what one is about to see rather than what one is seeing.

Not knowing what is around the corner The square of Cesky Krumlov unfolds before you, gradually unveiled through walking the narrow, tight and spatially contained streets. Just as films are collaged points of view which can capture a sense of a place, so can we, as our physical movement through these spaces juxtaposes shifting frames of view. Entering or leaving a square becomes a rite of passage rather than just an entry or an exit.

No axial vistas It is intriguing what you can not see, or the anticipation of what you are about to see. Rarely is an axial vista of the square given from a distance. Paths into the square are a sequence of specific spatial events, which create a series of impressions rather than one overall image. Constantly changing views heighten interest in a space, involve the viewer in the urban environment and can evoke emotions such as mystery, suspense, and anticipation. (GLC, 1978) Changing views gives a memory of the movement through a space; so instead of just a visual picture, one has a more tangible, haptic memory.

No Setbacks Our sense of through a space is accentuated by the fact that buildings hug the street with barely a setback, creating a volumetric shape to the street. The rule of the medieval street was simple—they were as narrow as they possibly could be and still allow for transit of goods and people. Since wagons were the mode of transport, the street took on a shape most conducive for the flow of wagons to the square—a gradual curve.

6 VARIETY YET UNITY

The architectural impression is one of variety within a common set of unifying design elements.

Intricacy The paper plans of these squares are deceptively dull, no level changes, planters or fountains. The intricacy or variety occurs with their use, and at eye level. Eye level intricacy results from the medieval lot widths being long and narrow, which allows a greater chance for architectural variety due to the increased number of building owners. Also, an irregular shape of the town square results in slight perspectival juxtapositions which animates visual interest at eye level.

The plans of the squares are ones of imperfection, devia-

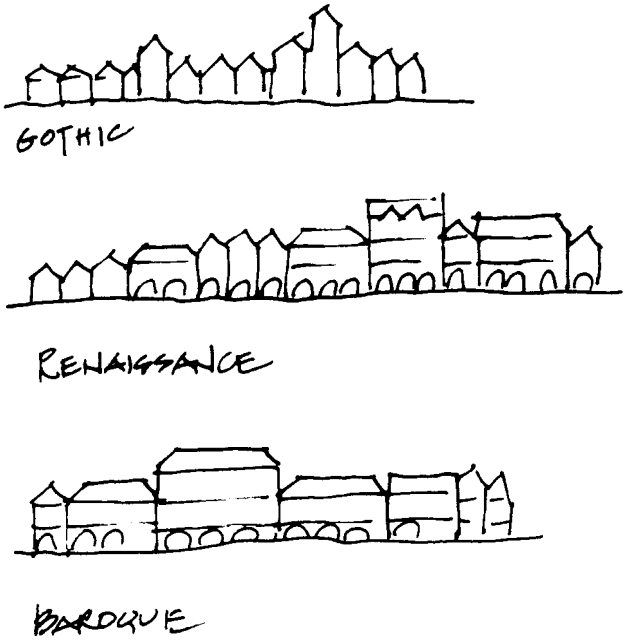

Fig. 6: Gothic (medieval) facades allow a greater chance for architectural variety due to lot widths being narrow

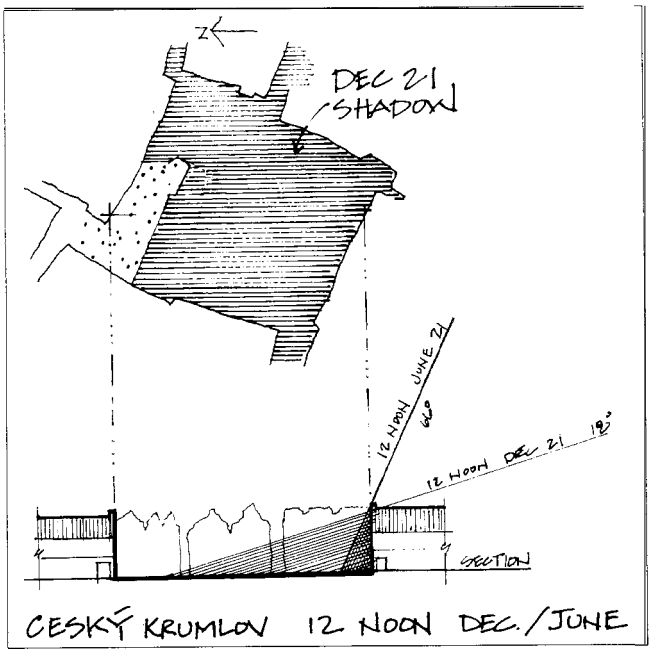

Fig. 7: Solar Altitude–Maximum solar exposure at 12 Noon December 21 and June 21 based on Latitude of 50%

tion, and irregularity. No one of the squares, except for Ceske Budejovice are regular geometric shapes. But it is this quality of following the existing slope of the land which we find engaging as inhabitants of the space.

Common set of design elements The architectural sense in the square is not one of unity by symmetry and formality, rather, unity is had by a large vocabulary of parts tied together by predictable patterns of composition. Each facade on the Telc square is like a person; from a similar set of parts a unique expression and character emanates.

7 RELATIONSHIP TO THE LAND

There is a relationship to the land and natural geographic features

Natural geographic features Cesky Krumlov exemplifies the pattern of being related to the land. It is a castle town entwined with the river Vltava in a well-defined valley in the undulating countryside that ascends to the mountains of the Austrian border. The streets are based on a loose radial circulation pattern organized in response to natural site contours, and the Vltava River. The Vltava takes the form of a triple bend creating 3 well-defined areas of land, the middle horseshoe curve becoming virtually an island, on which Cesky Krumlov is built. To the north, on a high cliff, is the castle of the Rozemberk family dating from the 13th century. Typical of these towns is a relationship to site features such as water, and significant buildings such as a castle or a monastery.

The natural floor Floors are firmly anchored to the slope and contour of the topography, not perched on top of its landscape. They truly grow out of the natural floor from which buildings spring forth. The stone floor of the squares, reflect the existing slope thus symbolically and literally joining the town to its geography.

Orientation In all of the squares except for Ceske Budejovice, the shape of squares evolved due to their relationship to pre-existing site features and the direction of existing trading paths. Despite these organic roots the squares tend to orient themselves East-West lengthwise. This is, course, the best orientation for maximum sun exposure, which in this climate is important. On December 21 at 12 noon the sun altitude reaches its maximum of 18 degrees. For a square with 12 meter building height this translates to a 36 meter shadow, wider than many of the squares.

8 SHALLOW BOWL

Slope determines sense of containment

Slope critical Slope is a critical factor in giving a sense of being contained within the square. Containment is greatest when the floor gradually slopes toward the center so that one is gently pulled into the square. The Telc floor slopes to the center like a shallow bowl.

> *"When faced with such a sunken floor, a basic reaction occurs, a mental state dictated by two types of previous experiences: one invokes motion conceptions governed by gravity, the other involves the encounter with underground phenomena....When faced with a downward slanting floor, we do not feel free to choose our*

Fig. 8a: *Shallow bowl of Telc*

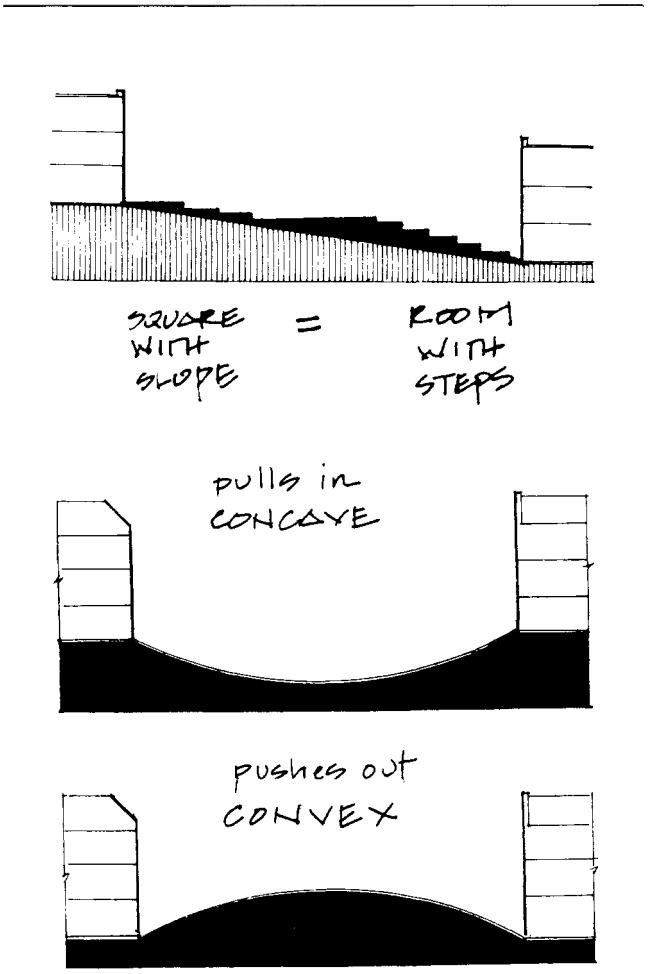

Fig. 8b: *Convex vs. Concave; Squares with slope are like rooms with steps*

own way. The sloping floor exerts it own pull in addition to that of the natural force ofgravity". (This-Evensen, 1989)

Conversely, a decreased sense of containment occurs in squares with a significant slope. This is evident in the square of Cesky Krumlov where the slope is such that one can perceive themselves walking uphill. If the slope is too great it is like being in a room with a level change, thus the sense of being in one room shifts to multiple rooms. The key distinction is that the square be perceived as one room.

Another factor is whether the form of the square is convex or concave. Convex curves aggressively push in on us, concave forms tend to give a sense of being contained within the form. another reason that we may find the concave squares more comfortable is that convex surfaces scatter sound, while concave surfaces focus the sound. (Goldsteen and Elliott, 1993)

9 EDGE AND CENTER

Activity at the edge of the square defines the figural space of the center.

"Margins imply closeness to limits and boundaries along which what is 'inside' becomes 'outside'....Margins are close to thresholds, but are themselves not the thresholds. Margins have an area, and adjoin and include the inside border of the border." (Benedikt, 1991)

Arcades as Edges Arcades form the edges of these town squares, and under them is a space where private and public activities merge. People gravitate towards the perimeter of town squares where objects such as benches, columns, and arcades define the figural open space. These arcaded edges are thresholds, which implies that they have a width certain area of distinction, and an adjacency to another space. An active edge can also define the figural importance of a center. These squares have edges which are like an active frame for a simple interior.

Thick Columns Thick columns, typically 3 to 5 feet, create perforated vertical planes that allow people to draw together, rather than deflecting them as a thin column does. The

columns establish a human scale by their spring line, which is typically 1.4 - 1.8 meters in height (*4'-8" to 6'-0"*), and often marks a change in material from stone, below the spring line, to plaster above it.

The Sense of a Center The sense of a center is critical to a town square. A center is allowed to be a pausing point by leaving it free of obstacles. It is the Japanese concept of 'ma' that the space between, the 'leftover', is allowed to be free. There is no compulsion to fill it up. Retaining a sense of the center is a sophisticated gesture. When the middle is dominated by planters, fountains, statues, and cars, the sense of a stage-set or a centering place to go to is missed. The simplicity of openness allows one to be free to choose direction and activity in a square, not competing with an excessive cluster of objects. It is hard for designers to resist filling up what is perceived as 'empty space', unless we redefine that space as a figural shape, with room-like volume, having presence of its own.

10 INTIMACY GRADIENT

Transitions between the most public and the most private spaces are gradual.

CONCLUSION

The qualities described in this project pertain to these particular town squares of medieval Czech origin. There is no recipe for good design, however there are ways to describe a set of synergistic qualities. These spatial qualities are ones which may be used in thinking about the design of new spaces, or analyzing why existing outdoor public spaces do, or do not work.

These Bohemian squares, spatially, are doing something right. The spaces feel conducive to people using them, they feel safe, they are engaging, and they allow one to make a temporary dwelling place. Because of our mastery of technology and convenience, cities have become increasingly less related to people, to pedestrians, and to human needs outside of the automobile.

As the public boundaries of our trust for each other become smaller and smaller, the scale and quality of experience of the medieval town square becomes more intriguing.

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