

Perforated, Bent & Folded Pedestrian Geometries

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San Antonio, Texas

CNU XVI

Austin, Texas – April 5th,
2008

The Urban Geometries of two very different places:



San Antonio & Houston

San Antonio developed along a mission trail i.e. a series of Spanish missions which sprung up along the river in the 1700's. In the years that followed people began to construct their homes and businesses along and around the foot paths and irrigation channels that radiated from these sources. Over time the city evolved along the connective patterns that had been established by the confluence of the mission trail and the San Antonio river.



adaptive processes of pre-modern cities.



Houston on the other hand was conceived as a new town set on a grid away from its river and devoid of any existing connections. A planned or composed (visually ordered)

San Antonio - sponsors a greater degree of pedestrian activity. Keeping urban mobility in scale with the pedestrian body thereby rarifying the density of the experience through its connectivity.

Houston - offers a greater degree of vehicular activity, changing the scale of the urban fabric i.e. realigning its density, thereby breaking down the degree of connectivity.



Smooth-

"A city made for speed is a city made for success"

Le Corbusier

CITIES



- Industrial Revolution
- Loss of domestic economy
- Separation of live/ work
- Proliferation of the Automobile
- Modernist Tenets
- Visual Order

Visual Order:

To unravel the traditional city, 19th and 20th century planners sought to create a plan with a high degree of geometrical regularity.

Concentrating on visual simplicity they began to smooth out the geometries of the traditional urban fabric

While accommodating the free flow, and linear disposition of the automobile, such efforts to simplify, did not always allow urban functions to generate their own coherent and connected form.

Cities planned in visual terms often fail to provide sufficient connectivity to engender a healthy urban environment.

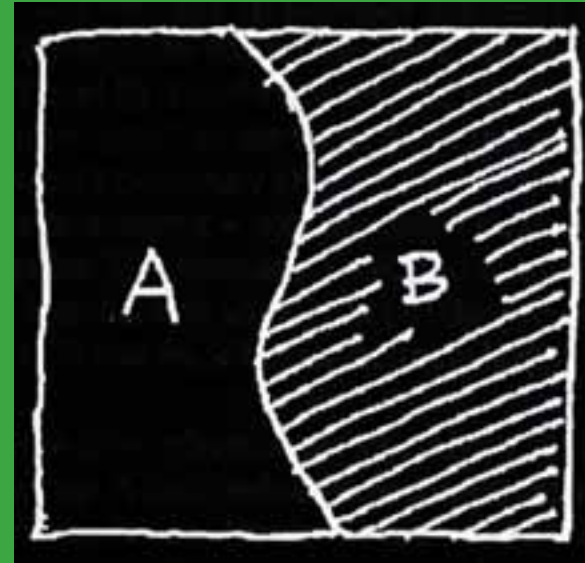


“The simple alignment of buildings that do not interact in any way effectively decomposes a complex system reducing it to a simplistic aggregate.” Thus, despite their orderly and coherent appearance “most modern cities are simply a collection of disconnected parts.”

Principles underlying what we observe as phenomena

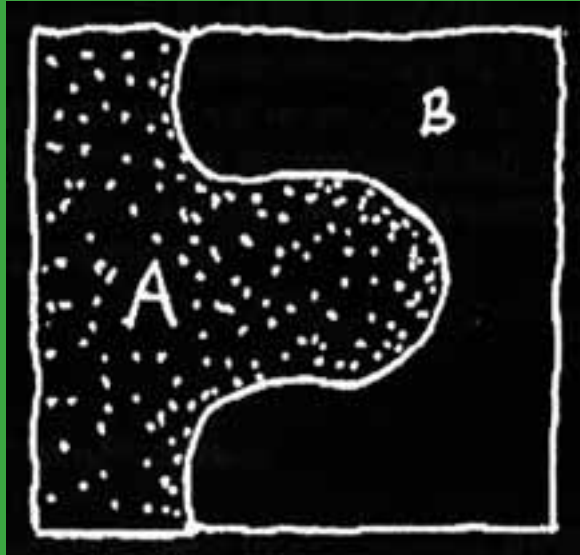


Coupling through
contrast in texture

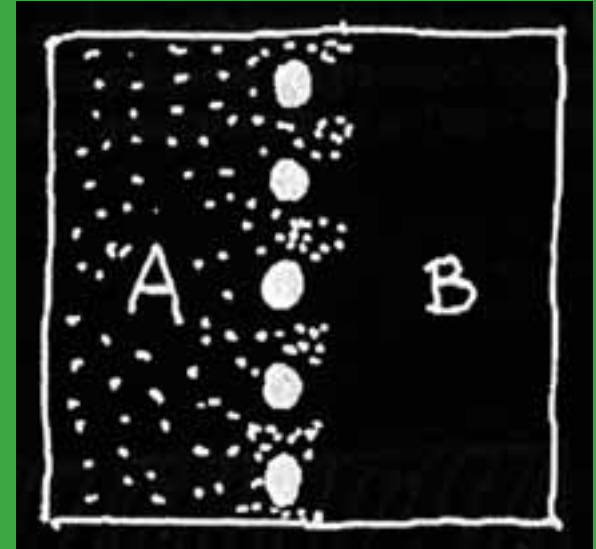


Coupling through
contrast in color

- Coherence in a city requires intense local coupling at multiple scales
- Complex geometries are necessary for effective coupling
- Organic & inanimate matter operate within the physical construct of coupling. From sub-atomic particles to biological systems



Coupling through
interpenetration



Coupling through
permeability

The outward thrust of the post-industrial revolution city coupled with modernists' tenets, and the proliferation of the automobile, effectively smoothed out the geometries of traditional urban fabric.



Uncomplicated and unadorned space

The straight line of a Cartesian Grid provides the fewest connections possible, in effect, limiting human engagement and interaction.

Straight Lines



Mathematically we know that, two points can be connected by a straight line in only one way, but they can be connected by curved lines in an infinite number of ways.



“**Straightness** is known to have only one scale, which suppresses urban cohesion. A **complex relaxed curve**, having an infinite number of subscales i.e. points of inflections, fosters greater connectivity and engagement. ”

Whereas, *“architectural elements can connect to each other visually through symmetry, similarity, and intermediate forms, etc. there is a basic difference between architectural and human connections. Functional connections between human activities are not amenable to a treatment in formal terms because their patterns are more highly complex.”*

“The human mind seeks to establish a deep connection with the environment, this is done by processing geometrical information.”

“We build structures so that we may connect to them; this extends our consciousness to our immediate surroundings. If we cannot connect to surrounding surfaces then we find ourselves in what feels like an alien environment and our most basic instincts drive us to leave it.”



“Under stress from our environment, our baser instinct narrows our perceptual field and thus our degree of engagement or connection with our surroundings”

“a successful urban interface resembles either a permeable membrane with holes to allow for interchange, or a folded curtain with an edge that looks like a meandering river on a plan.”

Fractal Cities by Michael Batty and Paul Longley, explains “the first type of interface corresponds to a colander or sieve, while the second type of interface represents a crinkly, convoluted surface that fills up volume in contrast to a flat plane which defines a minimal separation.”



"Folding in the urban fabric is a useful coupling on all scales."

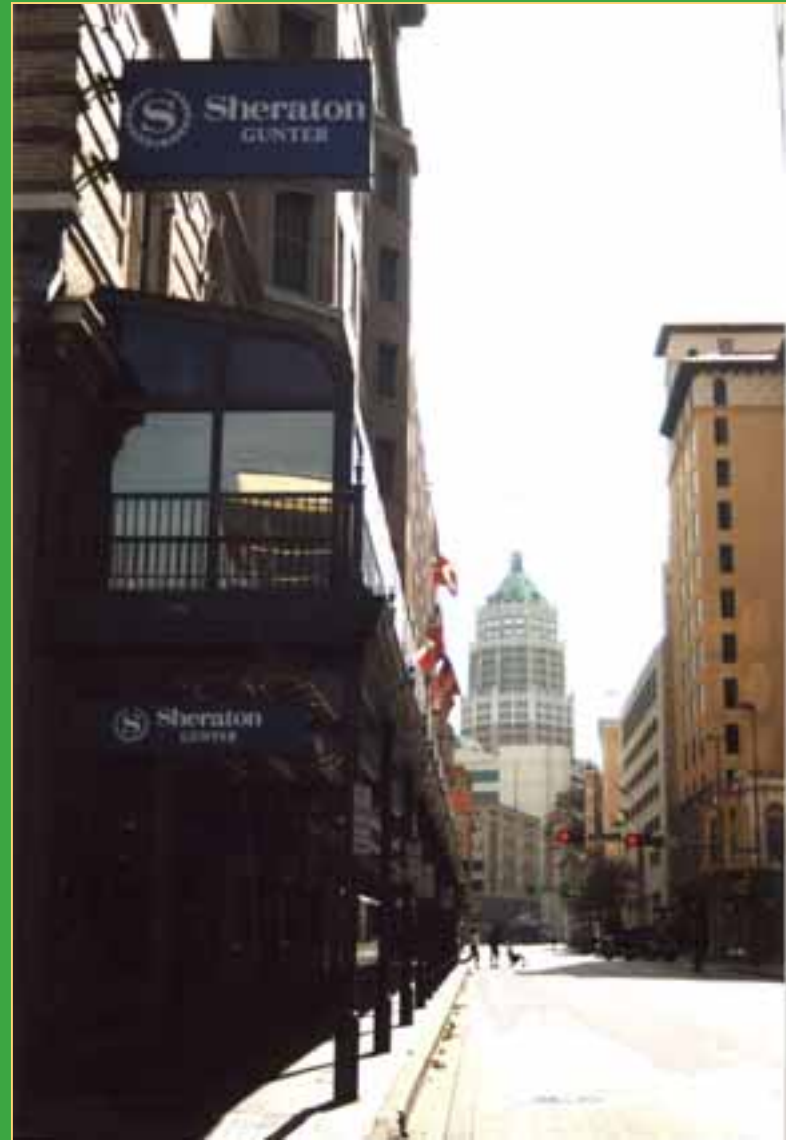


Folded



Not Folded





Bent



Not Bent





Perforate



Not Perfora

The perforated, bent and folded, provide the necessary urban couplings to engender the kind of spaces that are human and alive. They are intended to be applied on multiple levels, from the urban scale to the detail of a building façade. If we look closer at those areas of our cities that seem the most healthy, we can begin to see these operations at work.

Conclusion

In the day to day routine that is urban design and city planning, we sometimes have to limit the complexity of our task to be able to negotiate a solution, but in so doing, we often nullify that which keeps a city healthy and alive i.e. its **perforations, bends and folds.**

