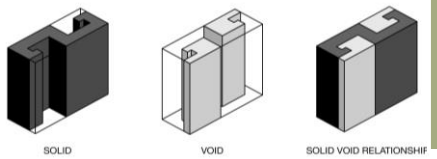
Introduction to Sustainable Urban Design (Level 2)

THEORIES OF URBAN SPATIAL DESIGN

Based on
Roger Trancik: *Finding Lost Space*
Peter Bosselmann: *Representation of Places*

Introduction



Three theories of urban spatial design are:

1. **Figure - Ground theory**
2. **Linkage theory**
3. **Place theory**



Figure - Ground Theory



FIGURE - GROUND THEORY is based on the study of the relative land coverage of buildings as **solid mass** (figure) to **open voids** (ground).

Each urban environment has an **existing pattern** of solid and voids. The figure and ground approach to spatial design is an **attempt to manipulate these relationships** by adding to, subtracting from, or changing the physical geometry of the pattern.

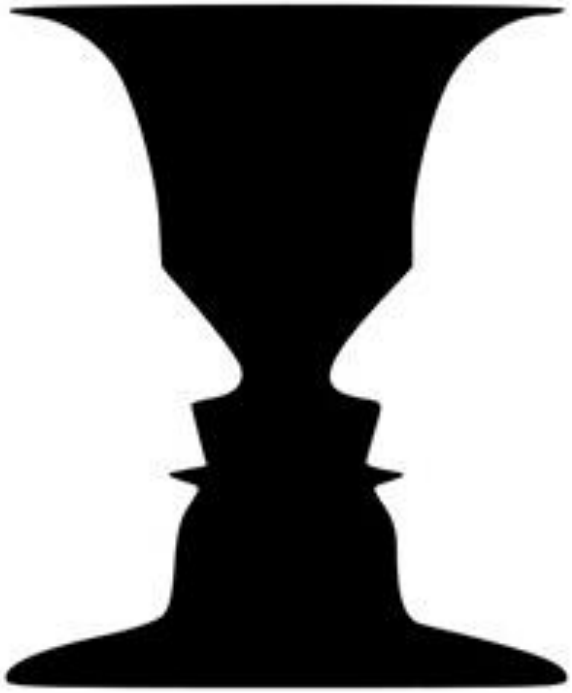
The objective of these manipulations is to **classify the structure of urban space** in a city or district by **establishing a hierarchy of spaces** of different sizes that are individually enclosed but ordered directionally in relation to each other (Roger Trancik 1986:97)

GESTALT THEORY
- PSYCHOLOGY

Figure-ground refers to the **relationship** between an **object** and its **surrounding**

GESTALT: also known as the **"Law of Simplicity"** or the **"Law of Pragnanz"** (the entire figure or configuration), which states that every stimulus is perceived in its most simple form

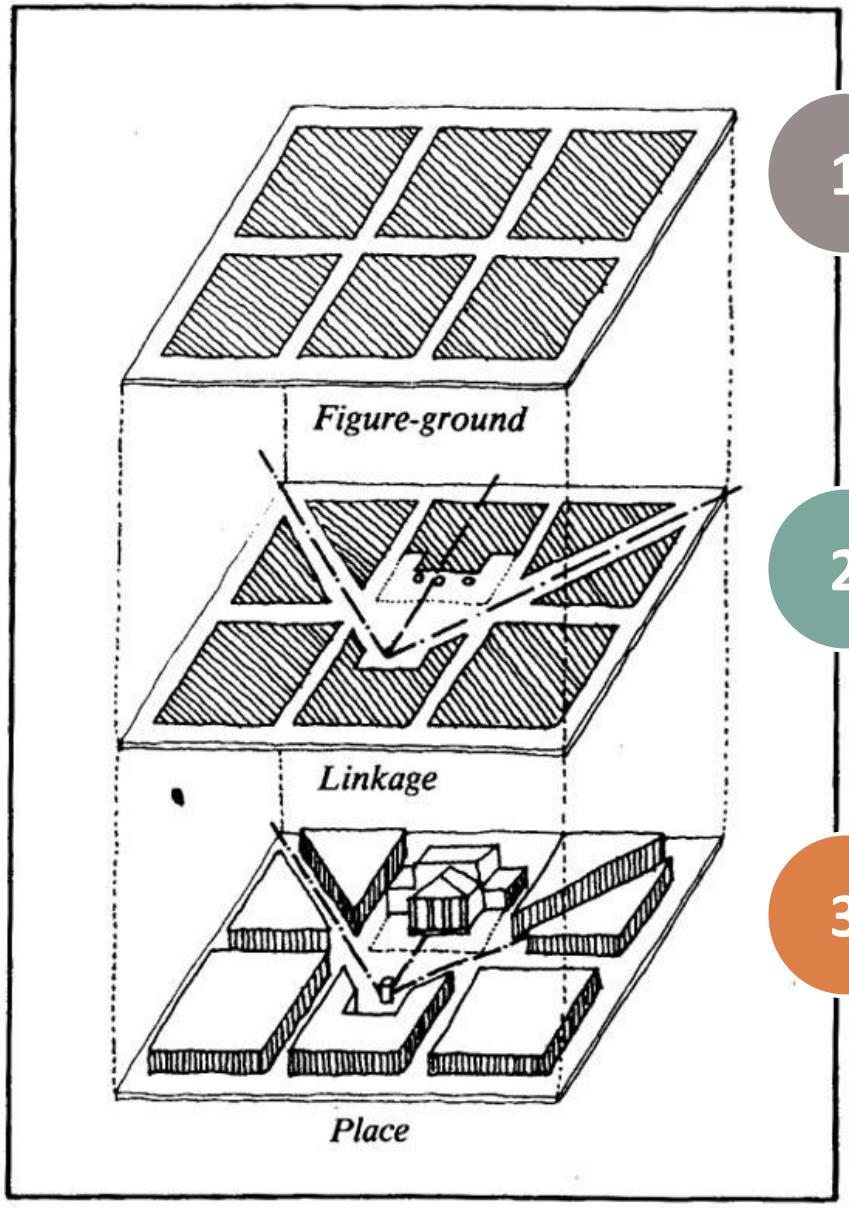
People **perceive the environment as a total unit** the whole is greater than the sum of its parts



Referred to as **positive and negative space**, the **positive being the object** and the **negative referring to the space** around it.

Existing pattern of solid and voids (plan view) that **clarifies the structure** and order of urban spaces.

Design – **manipulate the pattern** (hierarchy of spaces) using buildings and other objects.



1

Figure-ground theory

In this approach, the starting point for an understanding of urban form is the analysis of relationships between building mass and open space. Figure-ground analyses are powerful tools for identifying the textures and patterns of the urban fabric as well as problems in its spatial order, but can lead to a static and two-dimensional conception of space.

2

Linkage theory

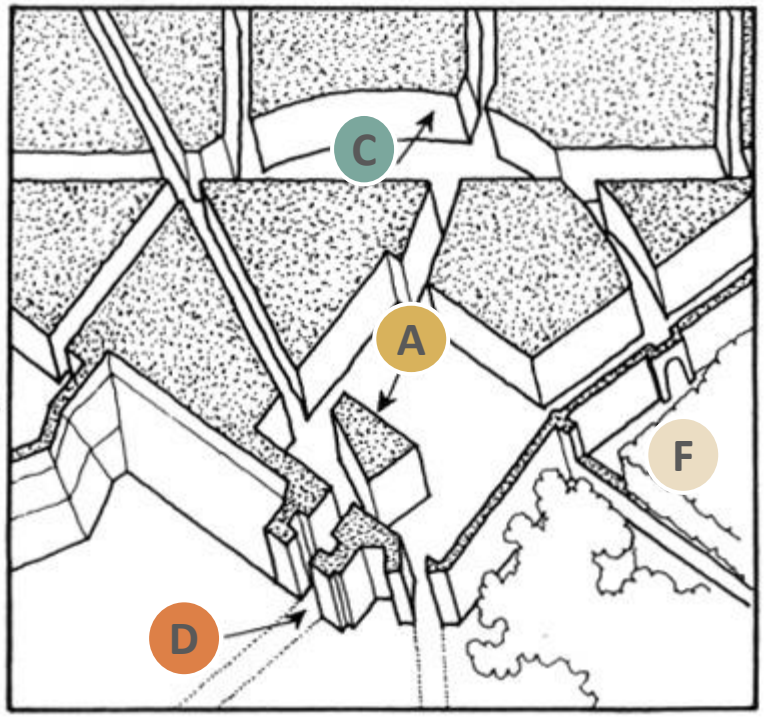
In this approach dynamics of circulation become the generators of urban form. The emphasis on connection and movement is a significant contribution, but the need for spatial definition is sometimes undervalued.

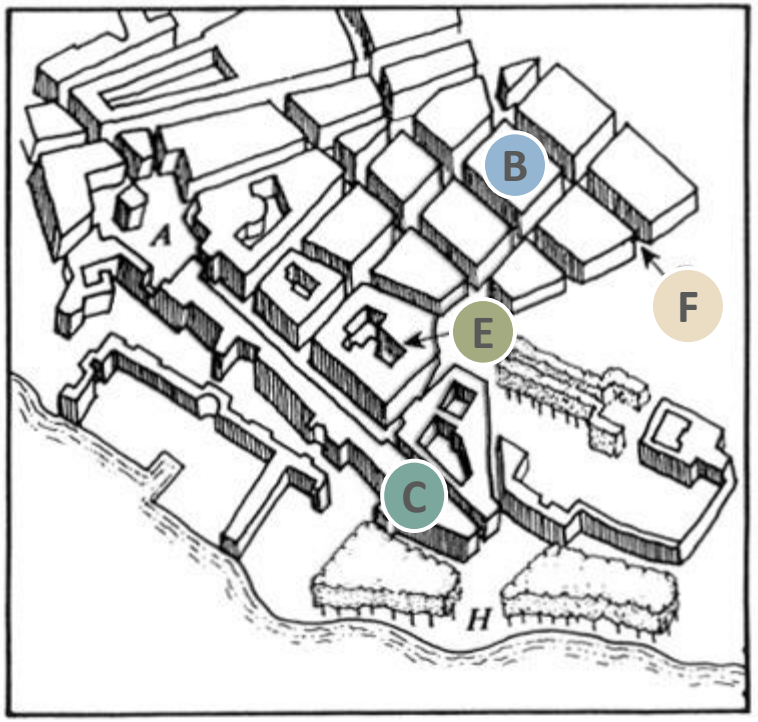
3

Place theory

Designers have increasingly become aware of the importance of historic, cultural, and social values in urban open space. Contextualists have argued strongly against the tendency of Functionalists to impose abstract designs from the outside.

Roger Trancik, *Finding Lost Space*
Chapter 4 Summary





URBAN SOLIDS

A Public monuments & institutions

B Urban blocks

C Edge-defining buildings

URBAN VOIDS

D Entry foyers
- passage between public / private

E Inner block voids

F Streets & squares

Provides a clear understanding for the **morphological characteristics** of the urban fabric.

Firstly used by **Giambattista Nolli's survey of Rome** (1736-1748) emphasize the relationship between solids (or masses) and voids by representing white for publicly accessible space and black for coverage of the buildings.

Exposes the pattern of the components which forms the urban fabric.

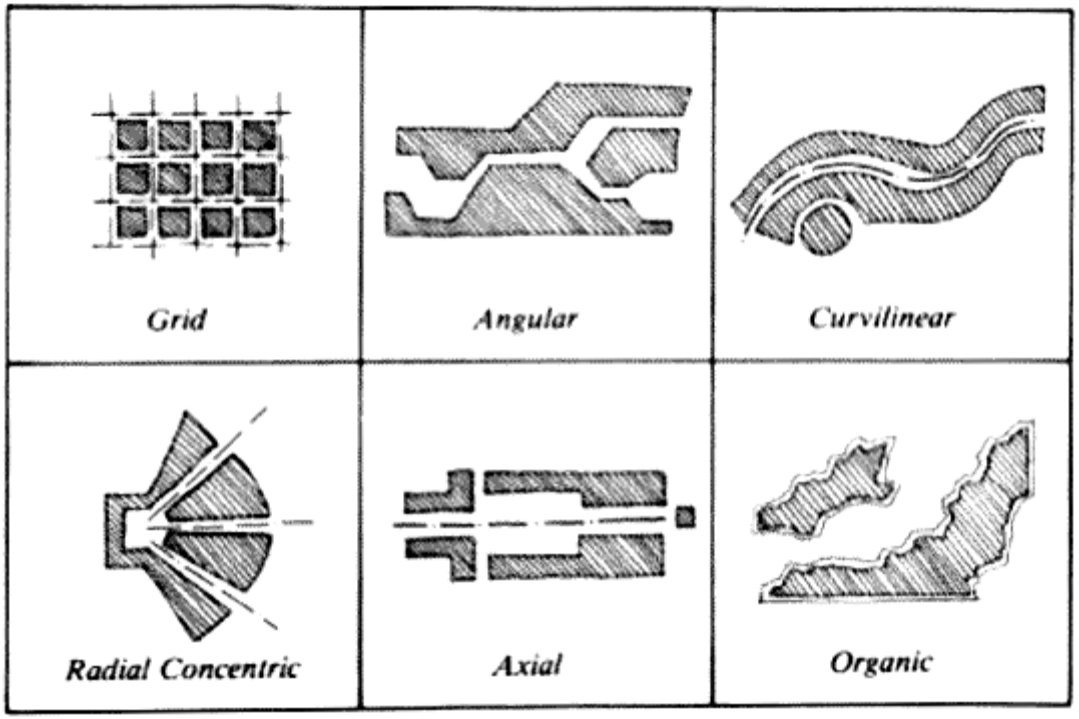
Highlights the differences of the new developments and existing fabric.

Better understanding of relationships and patterns in urban areas.

"Space is the medium of the urban experience, providing the sequence between public, semi-public, and private domains."

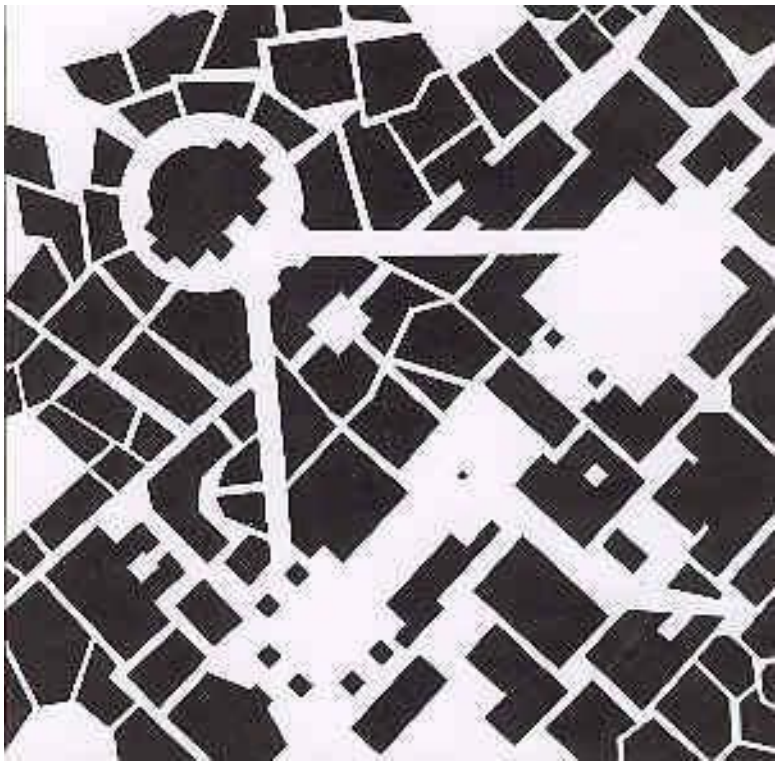
– Trancik, 1986

TYPOLOGICAL PATTERNS OF SOLIDS AND VOIDS



The solid-void relationships formed by the shape and location of buildings, the design of site elements (plantings, walls), and the channeling of movement result in six typological patterns: **GRID**, **ANGULAR**, **CURVILINEAR**, **RADIAL/CONCENTRIC**, **AXIAL**, **and ORGANIC//**

SOLID & VOID




SOLID & VOID



Linkage Theory



LINKAGE THEORY is derived from the **"lines"** connecting one element to another. These lines are formed by **street, pedestrian ways, linear open spaces** or **other linking elements** physically connect the parts of the city.

Design – apply the theory to organise a system of connections (networks) for linking places

TRANCIK CATEGORIES

- **V1** Gateways & entry foyers
- **V2** Inner voids & courtyards
- **V3a** Hierarchy of streets
  1.Boulevard 2.Street
  3.Alley
- **V3b** Hierarchy of squares
  1.Plaza 2.Square
  3.Courtyard
- **V4** Public parks & gardens
- **V5** Linear open space
- **S1** Public monuments/institution
- **S2** Edge-defining, directional buildings
- **S3** Urban blocks

CHING CATEGORIES

SPATIAL RELATIONSHIPS

1. Space within space
2. Interlocking spaces
3. Adjacent spaces
4. Spaces linked by a common space

PATH-SPACE RELATIONSHIPS

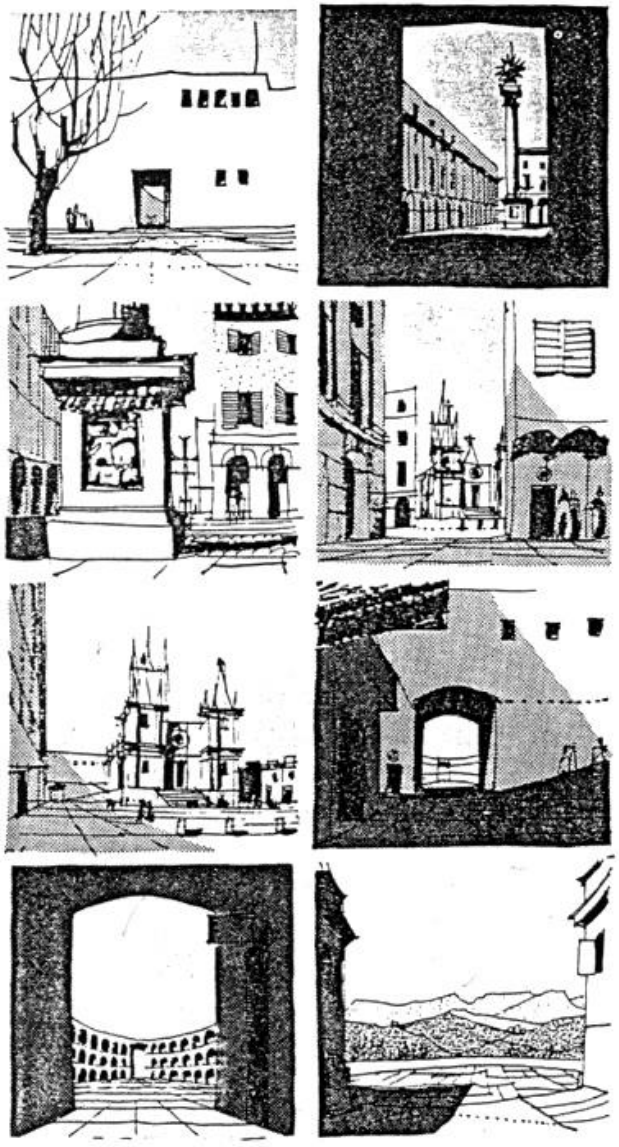
A. Paths that pass by spaces

B. Paths that pass thru spaces

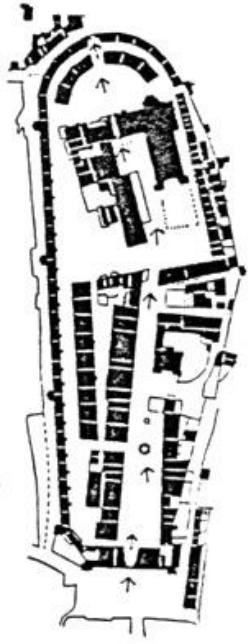
C. Paths that terminate in spaces



CASEBOOK: SERIAL VISION



To walk from one end of the plan to another, at a uniform pace, will provide a sequence of revelations which are suggested in the serial drawings opposite, reading from left to right. Each arrow on the plan represents a drawing. The even progress of travel is illuminated by a series of sudden contrasts and so an impact is made on the eye, bringing the plan to life (like nudging a man who is going to sleep in church). My drawings bear no relation to the place itself; I chose it because it seemed an evocative plan. Note that the slightest deviation in alignment and quite small variations in projections or setbacks on plan have a disproportionally powerful effect in the third dimension.



LINKAGE THEORY

- The ideal street must **form a completely enclosed unit** to **avoid** the impression of **being a thoroughfare** and provide a better setting for architecture.

- Emphasis is placed on **circulation diagram** rather than the spatial diagram of the figure-ground theory.

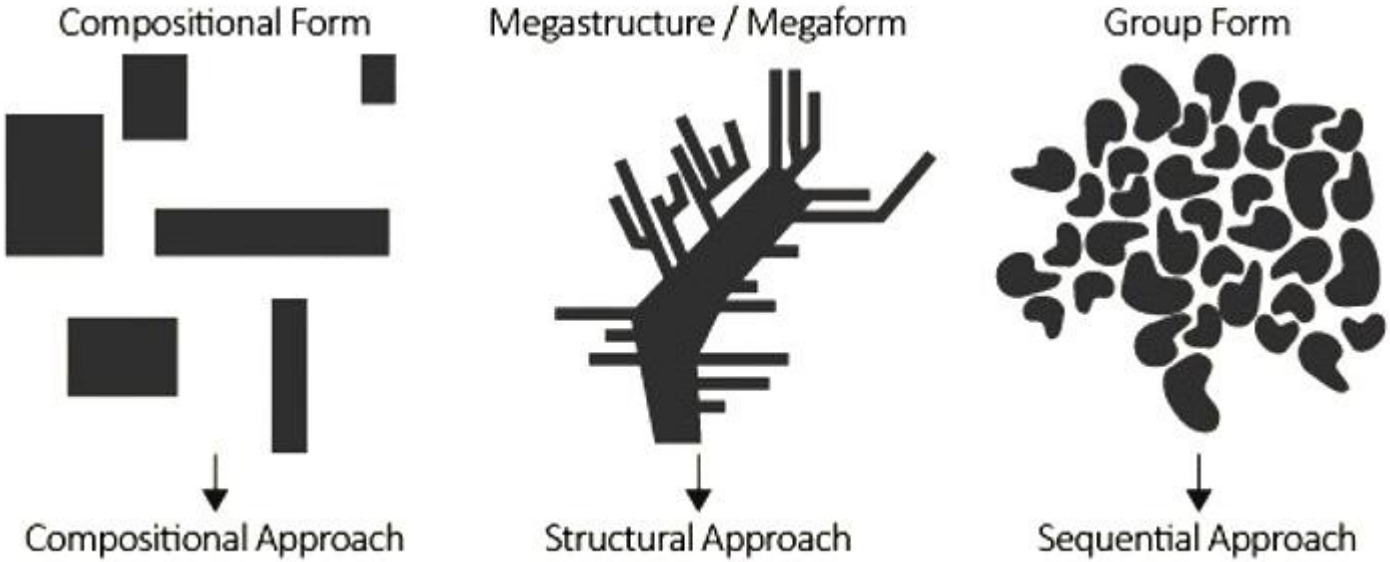
- **Movement systems** and the **efficiency of infrastructure** take precedence over patterns of defined outdoor space.

- All about **streets, pedestrian ways, linear open spaces** and elements **connected** to each other.

METABOPOLIS
MINT WALLACE

INVESTIGATION IN COLLECTIVE FORM

"The first of these, the compositional approach, is a historical one. The second two are new efforts towards finding master forms which satisfy the demands of contemporary urban growth and change." (Maki & Mulligan, 2008)



"Linkage is simply the **glue of the city**. It is the act by which we **unite all the layers of activity** and resulting the form in the city…..urban design is concerned with the question of making comprehensible links between discrete things. As a corollary, it is concerned with making extremely large entity **comprehensible by articulating its parts.**"

(Trancik, 1986 : 106)



Place Theory



PLACE THEORY The essence of place theory lies in understanding the **cultural** and **human characteristics** of physical space.

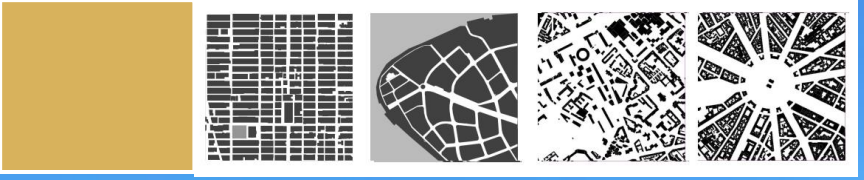
"Space is a bounded or purposely void with potential of physically linking object, AND only becomes a place when it is **given contextual meaning** derived from cultural or regional content."

- Trancik, 1986

SENSE OF UNITY

Places will be clearly **identifiable** when its architecture has a **sense of unity** (see Moughtin and Ahmad Bashri)

Complex phenomenon: How an ensemble has to feel as a whole like a musical composition ?? – theme, notes, rhythm etc.



SIMPLE UNITY

Usually free standing objects / buildings e.g. obelisk, rural mosques, individual buildings.

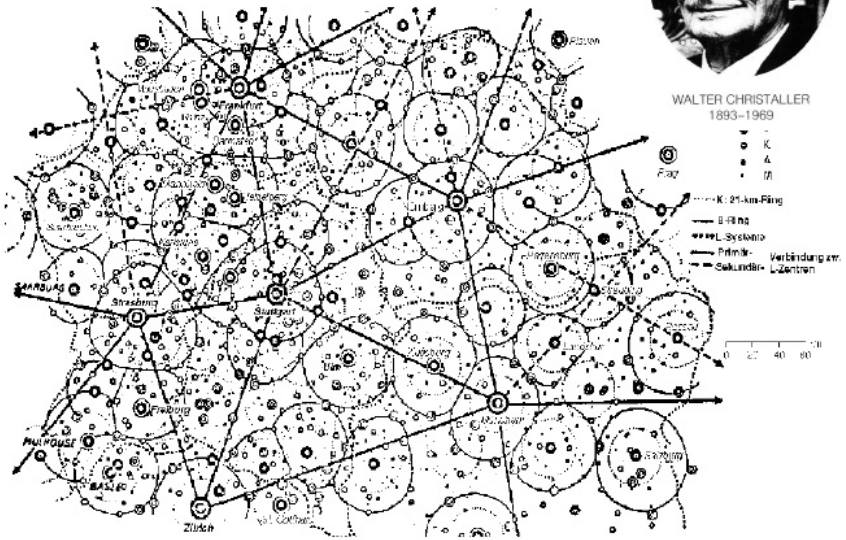
COMPLEX UNITY

Most cities, towns, villages and context fall into this category due to many different parts.

PLACE THEORY states that a central place is a settlement which **provides** one or more **services** for the population living around it.

Central Place theory

WALTER CHRISTALLER
1893–1969



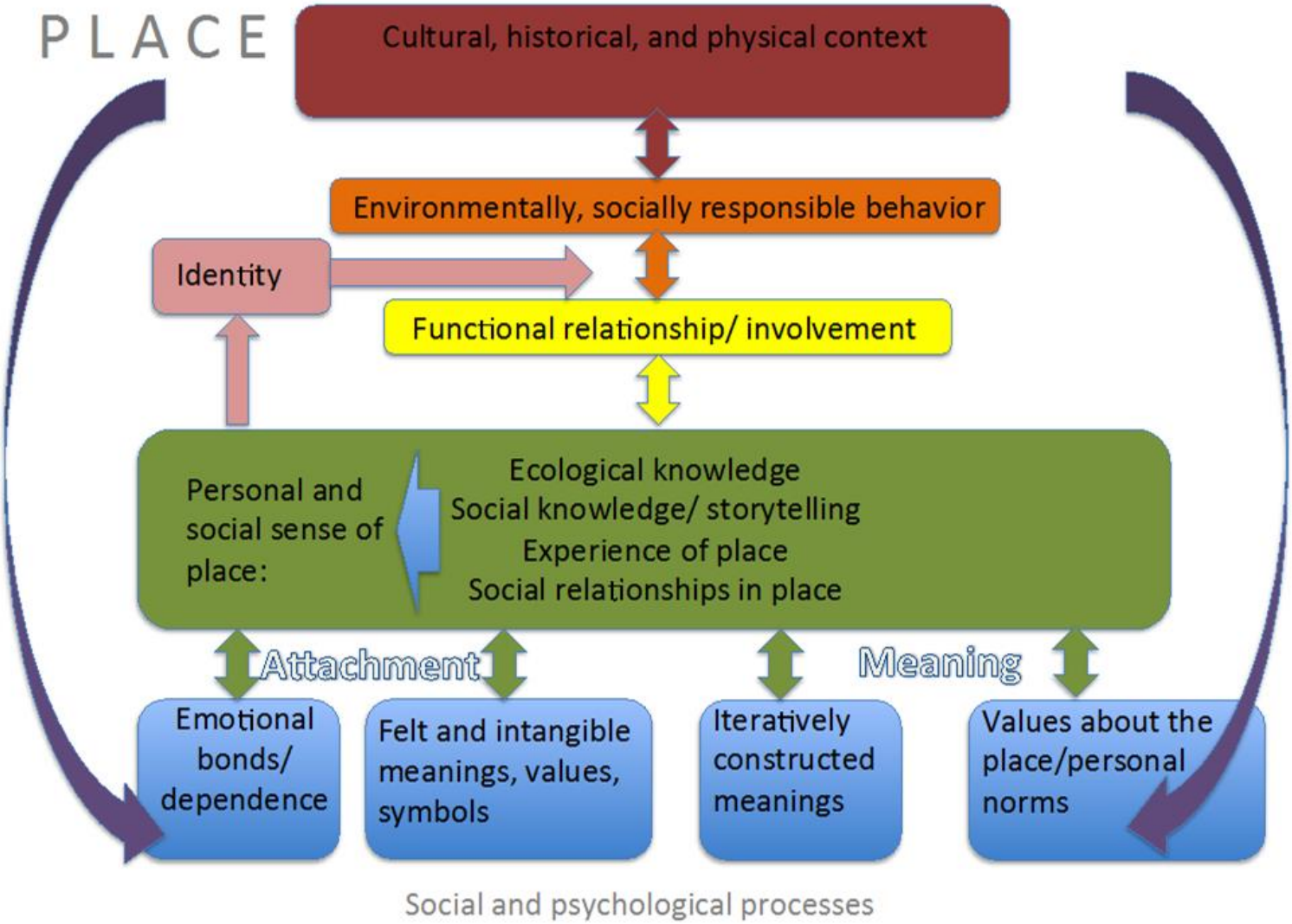
SENSE OF PLACE

Attribution of meanings to the physical forms (physical, behavioural, socio-cultural & psychological component)

Interaction (not response) with a place – Place is affected by people and people affected by places.

Time is a major component of place – longer existence more meanings.

Lack of sense of **continuity** – uncomfortable environments



Source : Clare Hintz, 2015 Journal of Sustainability Education

VISUAL APPROPRIATENESS

Visual cues – noticeable features which people used to recognise an environment & making associations with places.

Contextually responsive in term of details, scale, proportion, rhythm, style, materials etc.

VISUAL APPROPRIATENESS

More relationship with existing design – better reinforcement with existing character.

The façade treatment should **reflect the uses** inside – help people to read the pattern of use.

VISUAL APPROPRIATENESS

Appearance should be **appropriate** for the setting.

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THANK YOU

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