Architectural Research: Overview of Methodologies
(part-1)

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Perspectives on Reality: Philosophical Triad

- **Positivism**
  - “Only observable phenomenon exist” (Comte)
  - Establishing “law” of relationships between observable phenomena by careful accumulation of facts
  - Reality is present in appearances, and object exist independently of observers
  - Logical, quantitative, concreteness, scientific, universal processes, broad generalization, statistical explanation, formalized methodology

- **Humanism**
  - Man as Subject
  - Man is the determining factor, and society is the dependent product of human interaction
  - Existentialism, Phenomenology, & Idealism
  - “Verstehen” method: empathic understanding from the subject’s own perspective
  - Hermeneutic, interpretative, empathetic, contextual, atomistic, organismic
Structuralism

- Man as Object in determined existence
- Positivist/Instrumentalist structuralism: observable social relations and patterns of social consciousness are accounted by a structure consists of system of relations.
- Structural Marxism: reality exists independently of the observer; observable phenomena are outcome of the workings of hidden political, social and economic forces (hidden realities).
- Dialectical methods: transformation process by conflicts and changes
- Holistic, mechanistic, deterministic, subjective

S.A.R.  – John Habraken
- Urban Dwelling Environment - MIT
- Image of the City – Kevin Lynch
- Pattern Language – Christopher Alexander

Decision Making

- “individual” >< “community”
- “dwelling unit” >< “dwelling environment”
- “detachable unit” >< “support”

“agreement”
the Method

- Dwelling environment is composed of a number of elements.
- These elements once given a position and a dimension remain constant for a long period of time.
- Spatial theme is a set of rules which underlie the dwelling environment.
- If the parties concerned reach the same opinion about these rules then they can be called agreements.
- This sort of environment from which we can formulate agreements we call a “tissue.”

dwelling environment themes

- Canal-belt:
  - merchants housing
  - most houses facing canals
  - perpendicular canals
  - better quality housing

- Jordaan:
  - working class housing
  - most houses not facing canals
  - angular canals
  - low quality housing

case study: Jordaan (Amsterdam)

the grid

actual situation
schematic representation
the zoning
- E-W = canal, N-S = cross-street
- space 04 = interior spaces
- line 04 = lot boundary

zones & margins
- dimensions of spaces & buildings
- relations between buildings & spaces

thematic & non-thematic spaces
thematic spaces:
- the canal
- the street
- the cross-street
non-thematic spaces:
- open space (market)
- church (at the market)

thematic & non-thematic buildings
thematic buildings
(residential tissue):
- along the canals
- along the streets
- along the cross-street
non-thematic buildings
(non-residential tissue):
- school
- church
- other social-cultural functions
functions
- mixture of living and working
- low proportion of public space

position of functions
- offices
- business premises & warehouses
- shops & catering
- social & cultural institutions

Urban Dwelling Environments
- Elementary survey of settlements for the study of design determinants
- Horacio Caminos, John F.C. Turner, John A. Steffian
- MIT

- Urban analysis
- Selection method of a representative set of urban dwelling environments (full housing spectrums: public-private, low-high density, low-high income, centre-periphery)
- Comparative study of different existing cases
- Emphasis on morphology of the actual layout and the elementary functioning within this layout.
• Clear model for comparing “layout efficiency” of different environments:
  – Quantitative data concerning population
  – Types of utilities, services, and facilities
  – Types of dwellings
  – Information on land utilization
• Principles of interrelated scales within the existing urban context: city, locality, segment, block, dwelling
• Concept of “time-process perspective”: origin, evolution, transformation

Problems
• Treats qualitative & symbolically meaningful data in a quantitative way
• Restricted scope of morphology
• Lack of a real structural dimension (like the SAR systematic interweaving of tissue components)
• Typology is reduced to the level of separate dwellings – and seen in terms of quantitative socio-economic and physical data
• Limited historical evaluation

The Image of the City
• Kevin Lynch

• “Public image” of a city: the overlap of many “individual images” of the city’s users
• Limited to physical perceptable objects
• Concentrates on the visual quality of a city, in terms of its “legibility” for the citizens

• The city should be organized according to recognizable and coherent images, composed by a set of perceptible elements, which can be recognized, described, and eventually re-used when rebuilding a part of the city
Approach

- To study existing cities in order to develop and test the concept of images
- To define by means of observation, inquiry, comparisons, etc.
- To sort “clearly defined images” versus “confusing images”

Principles for urban design

- “A systematic field reconnaissance of the area has to be made by a trained observer who mapped the elements, their visibility, the image of strength or weakness and their connections, disconnections and other interrelations. As part of this field reconnaissance is interview of a small sample of city residents to evoke their own image of their physical environment forms.”

Comments

- Observer’s subjectivity (own background) strongly influences the interpretation of the field data
- Too focus on physical objects, while non-physical properties (social meaning, function, history, name ..) are not taken into account
- Identifying physical form using mainly 5 major types of elements is too general an approach to apply for a such a complex city
- The “image” is something in between an underlying spatial organization and the outward phenomenal appearance of the city. In reality the meaning of the totality exceeds the meaning of its composing parts.

Pattern Language

- Christopher Alexander (1977)
- Qualitative approach
- Rational approach
- Integrated approach
Qualitative

- An attempt to identify a link between formal architectural configurations and environmental qualities
- Definition of a pattern = formal architectural solutions + social or psychological needs
- “Each pattern defines an arrangement of parts in the environment, which is needed to solve a recurrent social, psychological or technical problem.”

Rational

- Patterns are said to be based on literature, observation of existing situations and on experiments
- Oriented by literature, observations of daily housing realities have to provide a sound basis for the definition of unambiguous patterns which can be described, communicated, designed, tested, controlled and re-used.

Integrated

- The patterns form a so-called “pattern language” which can be described as a network moving from larger patterns to smaller ones.
- The language integrates patterns of different scale levels.

Restrictions

- Functionalistic:
  - Tries to identify unambiguous correlations between parts of a built environment and the qualitative needs solved by these parts
  - Believes in environmental determination
- Universally valid:
  - Architectural, cultural, and historical particularities only intervene as modifying factors
- Fragmental:
  - Each pattern is an “atom of the man-made universe”
  - Each pattern is a complete entity of itself, autonomous from the surrounding patterns.
  - “Pattern language” is a network of autonomous entities on different scale levels, not a structure of elements which define each other and create meaning through their interrelationships.
Typo-Morphological Approach in Architectural Research and Design

- Architectural Anthropology
- Typological-Morphological Analysis

Architectural Anthropology

- Jan Pieper, 1980
- A new domain (in the discovery process) – either in Anthropology and Architecture disciplines
- Anthropology: diverse, not homogenous, fragmented, sub-divided domain
- Architecture: broadest sense of the spatial and functioning of the built environment (a semantic field: relatively autonomous domain of human cultural expression and action).

- Cultural fields
- Structural analogies between fields
- Analogies are organized by fundamental structuring principles in relation to time & space

- Architecture is one of anthropological fields
- Different level of meanings in the built environment
- Super-imposition of spatial types and structures through a settlement history
- The city = a field of cultural archaeology & at the same time, an actual living environment
Architecture of the city as an anthropological object

- Culture & History
- Synchronic & Diachronic perspectives
- Past & Present
- Growth, Change, & Transformation

Three field model

- The field of the built environment (a micro-cosmos, part of the overall symbolic cosmological organization)
- The field of social structuring and belonging
- The field of physical individuality (man in his individual and social bodiliness)

Fundamental temporal & spatial structuring principles:

- Linearity
- Circularity
- Centrality
- Periphery
- Horizontality
- Verticality
- Etc.
Architectural SIGN

- It is NOT attributing particular meanings to particular forms
- It receives and creates meaning through “structural signification”: each component is in a meaningful way related to the other components that constitute the morphological structures of the built environment

Suchindram – Southern India
Problems

- Conceptual complexity
- Theoretical simplification
- Strong synchronic and fixed bias
- **In reality:** ambiguity, contradiction, fragmentation, inconsistency are phenomena that may be as meaningful and significant as the symbolic order in itself
Typological-Morphological Analysis

- Aldo Rossi (Italy)
- J. Castex, J. Ch. Depaule, Ph. Panerai (France, 1980)
- Andre Loeckx (Belgium, 1984)

Architecture of the City

- City as a “collective urban artifact”, a collective work of art, constructed through time and rooted in a dwelling and building culture, manifestations of social life (Aldo Rossi)

“Collective unconsciousness”

- Memory of the multiple aspirations, themes, and events
- Each individual (architect, urban planner, builder, dweller) to add his own valuable contribution to the architecture of the city
- Individual contribution: new, enrichment, continuation of a fundamental tradition
- The City expresses the link between the individual builder and dweller and the collectivity

History & Memory

- The city grows with time → course of its realization
- Some original themes persisted, or modified
- Durable material keeps the traces of previous conditions and changes
- The city → rich archives of a complex settlement history
Collective memory ↔ individual contribution

- Investigation of “technique” (or modes of design that lead to concrete city forms)
- Technique = typology and analogy (Rossi)

Analytical tasks:

- To discover the stable (slowly changing) underlying features that constitute a type
- To define the typological belonging of major urban artifacts (streets, buildings, squares, etc.)
- To identify the structural interrelationships between those parts (morphology)
- To study the formation and dynamism of urban types and structures

Critical remarks

- Too strong emphasis on the materiality or formal aspect of the city’s architecture
- Superficial cultural and historical interpretations
- Reductionism: architecture as an isolated field without major social or symbolical relevance
- Positive contribution towards the restitution of the formal complexity of the built environment
- Heavy and labor-intensive task