

Chapter 4 : Precedent Studies



Illus: 58 The Ubuntu Centre - An example of a building that is questionably contextual and responsive (Author, 2010)

4.0.1 DESIGNING FOR VULNERABILITY

The first wave of buildings to be constructed in the post-apartheid South Africa were remarkable for their ground breaking attempts to harmonize the differences between previously segregated population groups.

In reference to Red Location, by Neoro Wolff Architects, Murray refers to them as positive 'showcasing', which reveal the bizarre realities that are made material by actions and agency. A strong forerunner of overlapping positive programming in architecture. (Deckler et Al[Murray], 2006;8)

Although, the current creation of buildings and urban spaces in contemporary South Africa persists in a manner that is largely without sustained critical reflection or self consciousness. (Deckler et Al[Murray], 2006;2)

While these interventions serve to uplift their immediate context and put these previously unknown areas 'on the map' they appear to sometimes lack the ground-up base to allow them to prosper holistically beyond opening day.

Often the nature of Architectural projects in these areas aim to only address cultural and heritage issues. In today's climate one cannot ignore the social and economic opportunities that are required and that cannot be wasted with available resources.

These processes of spatial design within a developing context are seen in a positive manner, and should take into account the needs of social reform on one hand and the consumer based economy on the other. (Deckler et Al[Murray], 2006;9)

4.0.2 RESPONSIVE INTERVENTION

It is the role of the next wave of designers in South Africa to critically evaluate the positive aspects of these ground breaking designs and add the next level of understanding, and appreciation for the inhabitants of these vulnerable areas and aid in building resilience.

While these projects are seminal in the process of establishing an appropriate set of design principles, one cannot ignore the 'white elephant' status attributed to some of the current projects found in vulnerable areas.

To gain a better understanding of this question, the author completed a research trip to gain first hand experience of how these building functioned in their context. (see Appendix Illus: 27 , on page 174)

4.0.3 OVERVIEW OF CASE STUDIES

SELECTED WORK OF CEDRIC PRICE

Cedric Price's work inspired such revolutionary work as Archigram's Plug In City, and Renzo Piano's Pompiduo Centre.

His revolutionary theories on flexible and adaptable architecture are essential to lay the foundation to explore these concepts further.

BARAGWANATH JUNCTION - URBAN SOLUTIONS

The Baragwanath Transport Interchange is the one of the first positive steps taken by development agencies to begin the process of re-writing previous planning wrong.

Its redefinition of the transport interchange model, employing elements of informality into its planning and structural, is key.

QUINTA MONROY HOUSING SCHEME - ELEMENTAL ARCHITECTS

Progressive and Incremental development cannot be discussed without looking at the Elemental Multi Disciplinary team's work in South America. This highly published and acclaimed project demonstrates the key principles of design through negotiated response while respecting vulnerability.



4.1 SELECTED WORK OF CEDRIC PRICE

THE FUN PALACE

The Fun Palace is considered the most famous creation of Cedric Price. Although never built, it is described as a giant toy or a machine process the size of a building. The interest of this project lies in its radical dependence on structure and technology. (Matthews, 2007:34)

With the Fun Palace, Price responds to social and political issues that go beyond the traditional boundaries of architecture with the ultimate goal to try create a building that changed according to the desires of its users.

The only fixed component within the Fun Palace was to be the structural lattice grid of columns and steel beams. All other elements of the programme - suspended theaters, activity spaces, cinema screens and speakers - were to be made mobile or prefabricated modular units that can be quickly assembled and disassembled as needed. (Matthews, 2007:42) The columns, towers or mounting in addition to serving as anchor, also contained the stairs release and relief, elevators, plumbing and electrical connections.

POTTERIES THINKBELT

Potteries Thinkbelt, also un-built, reuses an existing railway infrastructure to support a university for 20 000 students. By addressing not only the programmatic needs, but also the needs of the surrounding community, Price designs for inherent sustainability and flexibility into the Potteries Thinkbelt. (S. Hardingham and K Rattenbury, 2007:67)

The project aimed to regenerate the brownfield site of the Potteries in North Staffordshire, which has a span of over 160km, embrace new technology, and to revitalize the economy of the area by infusing the industries with intellectual power and experimentation.

Flexibility was also achieved through the use of mobile classrooms, which were integrated into railbuses” moving from site to site along the Thinkbelt.

Equipment and goods were transported along the same rail network; since education was linked with industry, the classrooms had to be moved from factory to factory in order to support ongoing research.

THE KENT INTERACTION CENTRE

One of the few built Price projects, the Kent Interaction Centre was designed in order to explore the possibilities of dynamism in architecture: Cedric Price noted that if the components remained static for a certain amount of time, a computer system would take over and programme the cranes to reconfigure their locations. (Kronenburg, 2007: 59) He seemed to foresee that the motion might be unfamiliar or uncomfortable for the users.

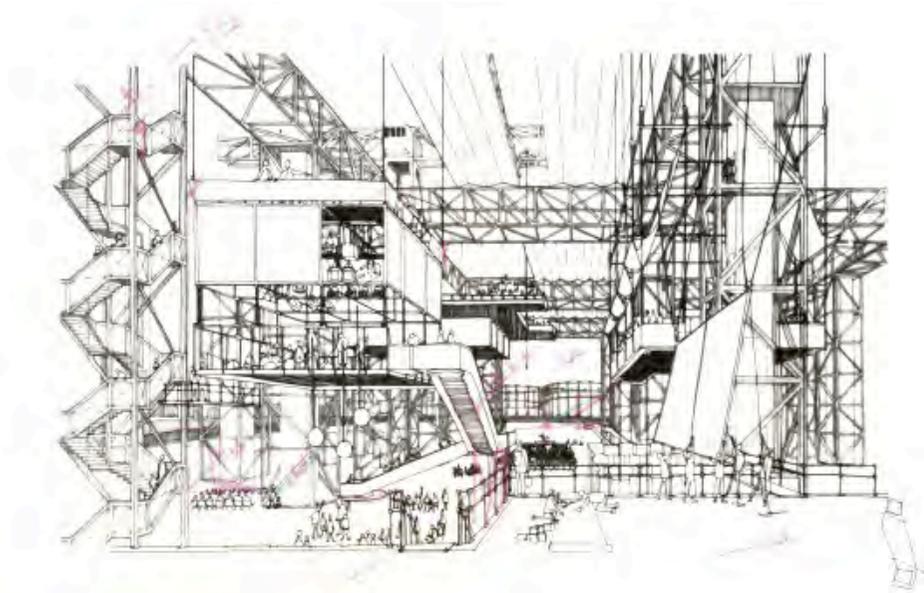
The Kent Interaction Centre employs a system of specialized modules united under one envelope. However, the flexibility of this project is further enhanced by its capacity for physical movement. (Kronenburg, 2007: 59)

The construction is comprised of a steel frame, prefabricated components such as walls, stairs, and service modules, and traveling cranes that use the steel frame as rails. Based on the users’ input, the cranes relocate the components within the frame. This concept allows for complete adaptation and new uses within a time period of minutes. (Kronenburg, 2007: 61)



Illus: 63 Interaction Centre - Mobile elements within ordered structural system (Kronenburg, 2007)

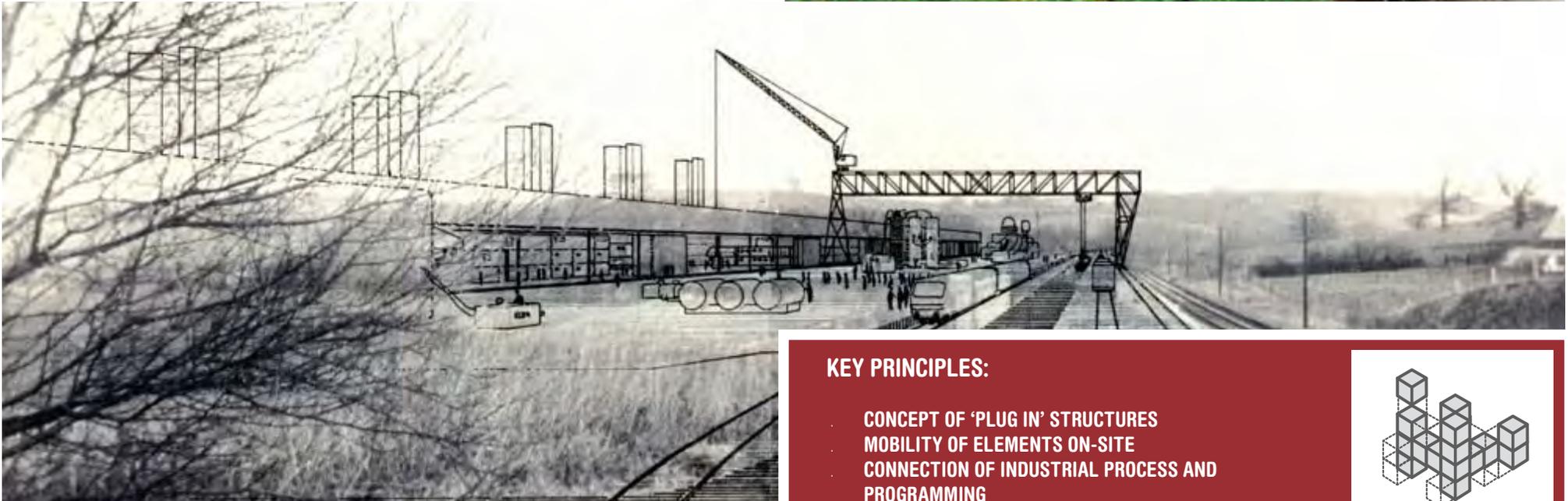
CEDRIC PRICE- *a building is not necessarily the best solution to a spatial problem.*



Illus: 65 **The Fun Palace** - depicting the industrial but human feel of the building (Kroenberg, 2007)



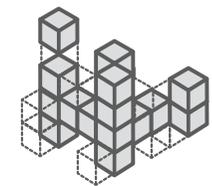
Illus: 66 **Interaction Centre** - Industrial Structure in balance with organic material (Kroenberg, 2007)



Illus: 64 **Potteries ThinkBelt** (<http://www.arch.cuhk.edu.hk/server2/m08/wlng/potteries%20thinkbelt>, 2011)

KEY PRINCIPLES:

- CONCEPT OF 'PLUG IN' STRUCTURES
- MOBILITY OF ELEMENTS ON-SITE
- CONNECTION OF INDUSTRIAL PROCESS AND PROGRAMMING



4.2 ELEMENTAL DO TANK- QUINTA MONROY HOUSING PROJECT

In 2002 the Chile Barrio programme, which works to upgrade Chile's illegal settlements, changed its housing policy. Rather than giving families loans and subsidies worth \$10,000 the policy makers decided to offer them mostly subsidies worth \$7500. (Stohr & Sinclair, 2006:164)

The new programme, a 'Dynamic Social Housing without Debt' was intended to increase the number of beneficiaries without increasing the financial burden on families. The programme involved re-settling 93 families from Quinta Monroy, to the port city of Iquique. (Stohr & Sinclair, 2006:165)

The design was constrained in several ways:

- The new housing had to be built on the site of the old settlements where land is more expensive, leaving less money for construction.
- They had to build a structurally safe home for less than \$7500, including the cost of the land, without pushing families into cheaper lots on the edge of the city, where they would be far from jobs and support networks.
- It had to provide each family with the largest home for the subsidy provided.
- It had to be able to allow occupants to easily build additions as they could afford them.
- And all this had to happen within a site plan that would allow new development to grow in an orderly way.

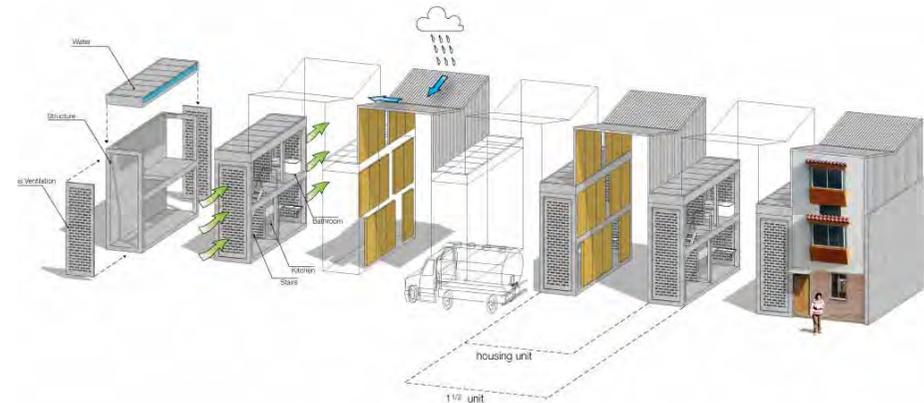
Most importantly, in order to ensure that the project could be replicated the housing scheme had to be feasible within the existing policy framework - despite the limitations.

Collaborating with families in a series of workshops, the design team explored several alternatives before settling on this duplex solution. By building alternating single storey and double storey units, the scheme allows families to expand vertically rather than horizontally, thereby allowing for greater density without overcrowding.

In an effort to ensure 'orderly' growth, the team chose a U-shaped site plan that clearly demarcated common spaces and allowed for parking, roads and walkways between residential clusters. (Stohr & Sinclair, 2006:165)



Illus: 69 Depiction of Incremental Growth through time (<http://www.elementalchile.cl/viviendas/quinta-monroy/quinta-monroy>, 2011)



Illus: 68 Diagram depicting the systems that support structural growth (<http://www.elementalchile.cl/viviendas/quinta-monroy/quinta-monroy>, 2011)



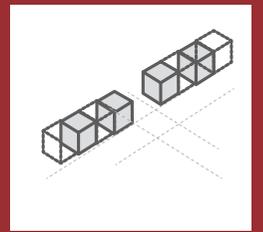
Illus: 67 The families were asked to illustrate their ideas of 'Home' (<http://www.elementalchile.cl/viviendas/quinta-monroy/quinta-monroy>, 2011)



Illus: 71 The Support Provided (<http://www.elementalchile.cl/viviendas/quinta-monroy/quinta-monroy,2011>)

KEY PRINCIPLES:

- VOLUMES OF APPROPRIATION OFFERED
- SUPPORT ADDS HORIZONTAL AND VERTICAL GRID
- PARTICIPATORY NATURE OF PROCESS



Illus: 70 Images Depicting the appropriation of support and Infill (<http://www.elementalchile.cl/viviendas/quinta-monroy/quinta-monroy,2011>)

4.3 BARAGWANATH TRANSPORT INTER. - URBAN SOLUTIONS

The Baragwanath Transport Interchange was one of the earliest steps by the city of Johannesburg to reverse apartheid planning and is the key component of the Baralink Development Framework.

The site is on average 50 meters wide but stretches for 1300 meters along the old Potch Road, the most important access route to Soweto.

The project addresses the needs of one of the busiest transport nodes in South Africa, and required six years of community workshops, negotiations between bus and taxi associations with city officials. (Deckler et al, 2006:65)

It is planned so as to accommodate 500 street traders, with associated storage facilities, management offices and support infrastructure. Transport planning includes 22 bus ranking bays to serve the long and short distance operations and 650 minibus taxi holding and ranking bays representing 12 different taxi operators serving the routes between Johannesburg and Soweto. (Deckler et al, 2006:66)

The primary planning device was an arcade structural spine that runs the full length of the site. This arcade, constructed of concrete elements, is the binding element that the various spatial elements are formed from, and attached to.

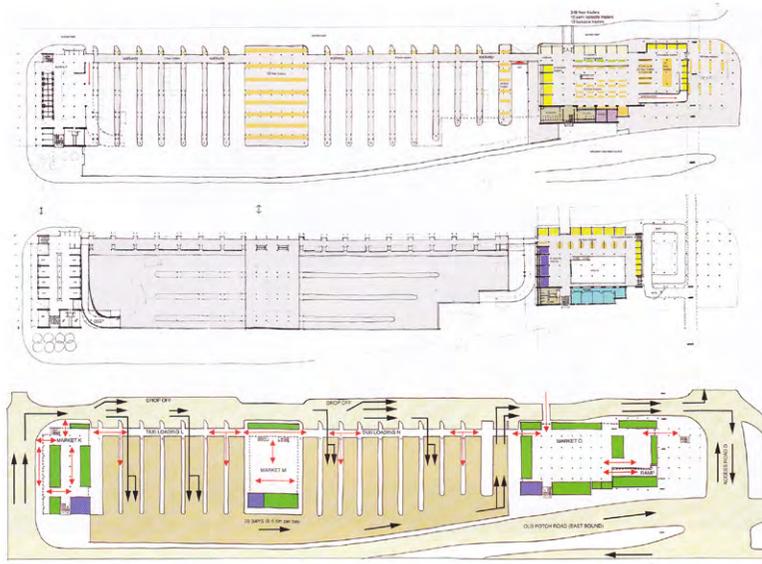
The spine connects commuters from one public facility point of the development to the transport facilities while hosting the majority of the traders and public amenities within it. Intentionally landmarked tower structures are positioned at key public entry points to ensure a strong sense of orientation.

Concrete construction is used to provide a more robust, permanent structure, an acknowledgement of the permanence of this public building type. The material is sculpted to break the monotony of the lengthy, and sometimes harsh, scale of the building.

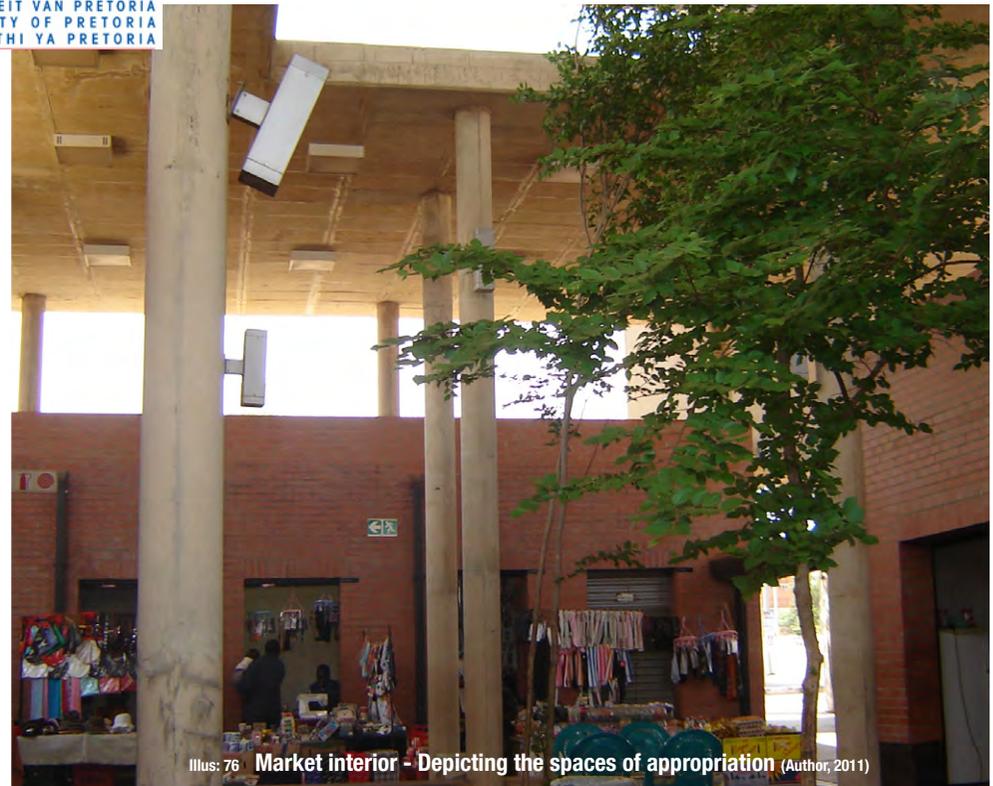
The Baragwanath Transport Interchange and Market is a strong example of a public catalyst for the development of new urban spaces and fabric in a formerly underdeveloped and marginalized context. (Deckler et al, 2006:66)



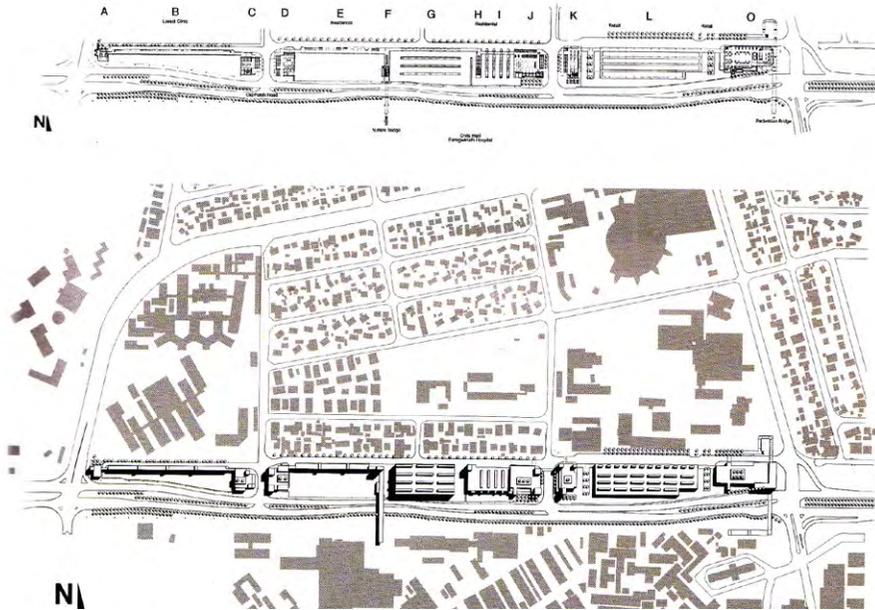
Illus: 72 Focal points in the Baragwanath Transport Interchange (Author, 2011)



Illus: 74 Plans of Interchange - Programing dependant on function with space for appropriation (Digest SA, 2006)



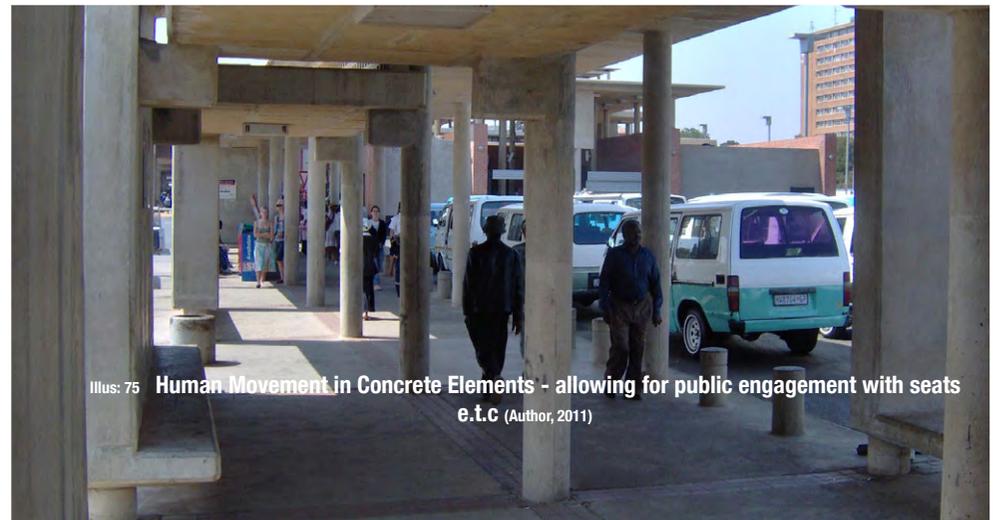
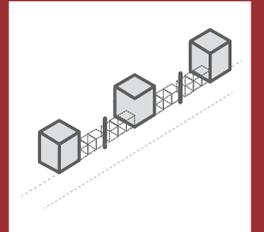
Illus: 76 Market interior - Depicting the spaces of appropriation (Author, 2011)



Illus: 73 Site Plan of Interchange - Long thin plan in fluid context (Digest SA, 2006)

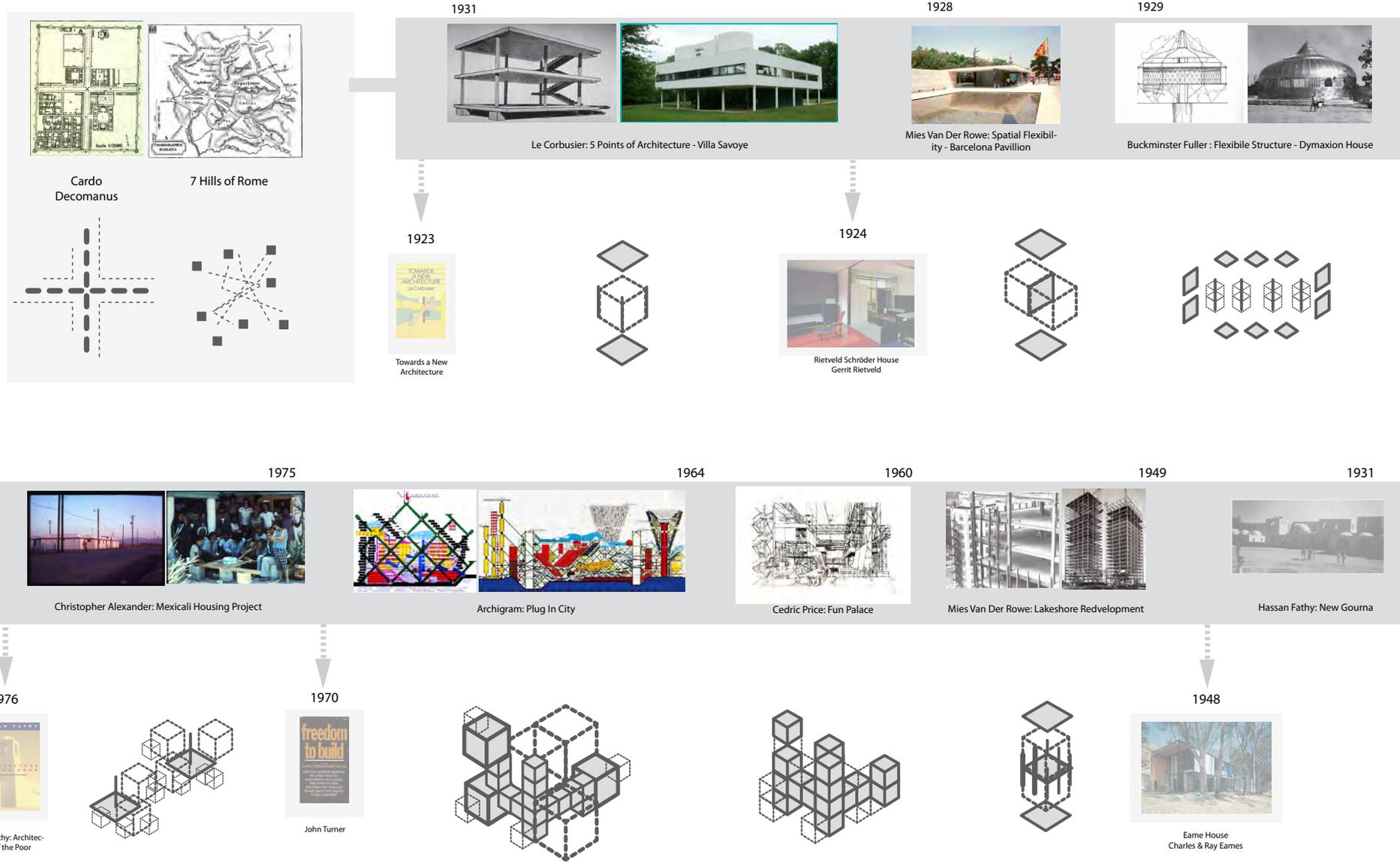
KEY PRINCIPLES:

- LOOSE, CONTEXTUALLY APPROPRIATE STRUCTURE
- STRONG PROGRAMME FOR APPROPRIATION
- SITE FACTORS AROUND MOBILITY OF PROGRAMME



Illus: 75 Human Movement in Concrete Elements - allowing for public engagement with seats e.t.c (Author, 2011)

4.4 CASE STUDIES OF FRAME AND INFILL STRUCTURAL ORDERS



Illus: 77 A Historic timeline of point, line, plane and volumetric support and infill including South African examples. (Author, 2011)

AN IN DEPTH STUDY OF SUPPORT AND INFILL STRATEGIES THROUGH OUT HISTORY WAS UNDERTAKEN. INTERNATIONAL EXAMPLES WERE THEN COMPARED TO LOCAL, EXTRACTING THE ESSENCE OF EACH EXAMPLE INTO ITS BASIC ELEMENTS. (SEE APPENDIX ILLUS: 28 , ON PAGE 174)

