How to Recognize and Read Mat Housing: 2010

Carabanchel 11 Public Housing
Madrid, Espana
Morphosis, 2007

Nexus World Housing
Fukuoka, Japan
OMA, 1991

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Illustration 1: Carabanchel 11 Conceptual massing
Morphosis

Illustration 2: Nexus World Housing Section
OMA
“Today mats are everywhere. We call them fields, grounds, carpets, matrices. Whether seen as counterpoint to the preoccupation with sculptural form or as what happens to architecture when it has to cover really large areas, no building type, it could be stated without exaggeration, captures the predicaments but also the imagination of contemporary architecture more fully. The mat answers the recurring calls for indeterminacy in size and shape, flexibility in use, and mixture in program. It expresses architecture’s increasing encroachment on both city and landscape and as the open exchange between structure (building) and infrastructure (context) that this encroachment professes.”

- Hashim Sarkis
Introduction

The implementation of Mat Housing strategies is an active response to traditional design methodologies of “objects in space” that preoccupied most of the design and construction of housing stock in the modern era. Mat Housing inverts typical relationships of object and space, through its direct correlation with the field theory of architecture. Mat Housing is not concerned with any particular formal outcome, but rather with spatial relationships and connections. In Stan Allen’s important essay *From Object to Field*, the author theoretically defines the architectural field condition as “any formal or spatial matrix capable of unifying diverse elements while respecting the identity of each. Field configurations are loosely bundled aggregates characterized by porosity and local inter connectivity. The internal regulations of the parts are decisive; overall shape and extent are highly fluid. Field conditions are bottom-up phenomena: defined not by over arching geometrical schema but by intricate local connections. Form matters, but not so much the forms of things as the forms between things.” Mat Housing in the contemporary era can be seen as a categorization of projects that find their organization based on the relationships between the individual and collective, between the public and private, between the city and the home, and between the natural and the urban.

Mat buildings are not a modern phenomenon. While generally viewed as a mid twentieth century development, described by Alison Smithson in the seminal 1974 essay, *How to recognize and read Mat Buildings*, and attributed to conceptualizations of Team 10 and other contemporaneous European thinkers, the true history of mat buildings draws on the influence of centuries of vernacular housing tradition.

With ease one can locate a multitude of historic urban developments throughout the Mediterranean region that correlate with the principles and characteristics of Mat Housing. In the mature housing stock of the Old City of Jerusalem we find a tangle of living spaces that can be understood as Mat Housing. The units occupy the entirety of the site, acting as thickened field of program. The singular mass is hierarchically punctured and carved, forming larger public spaces, fostering circulatory access, admitting light and air, and creating private outdoor spaces for the individual units. Differentiation is sought through the placement and detailing of apertures, in addition to a sometimes distinct material finish. The tangle of life in the Old City is bound by sixteenth century walls where the complex mesh of units abruptly ends.

The Old City of Jerusalem was not built in a day. The living quarters of the Old City reflect centuries of traditional ad hoc design and construction. Housing in the Old City aimed to establish privacy and comfort in a dense urban condition. The same characteristics formed by centuries of permutations in Jerusalem are evident in contemporary mat housing. In this document we will define the principles and conditions that coalesce to formulate the modern idiom of Mat Housing. Utilizing Nexus World Housing by OMA, and Carabanchel 11 by Morphosis as case studies this document aims to distill the parameters that define Mat Housing in 2010.
Our attempt to distill the characteristics of contemporary Mat Housing schemes began with the study of cannonical midcentury institutional and residential Mats. The first characteristic of Mat Housing is the inherently extendable blanketing of an entire site with a system of repetitious unit types. The entire site acts a thickened field of program. The second characteristic of mat housing is the puncturing of the thickened mat of program. The puncturing of the thickened form is ordered in relation to strategies of circulation, ventilation, individual differentiation, and natural lighting. Punctures of different scales and types systematize the introduction of these strategies. Due to potential monotony and homogenetiy of units in a repetitious field, well articulated Mat buildings must include strategies for differentiation, the third characteristics of contemporary mat housing.
Differentiation is accomplished through various techniques including, the introduction of discrete unit typologies, entry strategies, outdoor spaces, and expressive materiality. The punctured and differentiated mat, though conceptually infinitely extendable, in reality must have defined edge conditions. This bound condition of mat housing responds to individual and explicit urban contextual realities. The binding characteristic of mat housing can be expressed through traditional slab building edges, solid external walls, or exposed party walls that reference inherent extendability of the design. Utilizing these four characteristics of Mat Housing, this document presents comparative analysis of recent intriguing mat housing schemes from OMA and Morphosis.
Characteristics of Mat Housing

1. Thickened_Field

3. Differentiated_Field
2. Punctured_Field

4. Bound_Field
Carabanchel 11

Project Data

Name: Carabanchel 11 Public Housing
Date: Design 2002, Completed 2006
Architect: Morphosis, Thom Mayne
Client: City of Madrid
Description: Market Mat Housing
Unit Count: 141
Population: ~550
Construction: Precast Concrete
Size: 18,980.65m²

Project Overview

Carabanchel 11 is a public housing project designed by Morphosis for a suburban neighborhood on the outskirts of Madrid. Design of the 141 unit complex commenced in 2002 and construction was completed in 2006. Situated in a sea of homogenous housing blocks Carabanchel 11 utilizes the conventions of Mat Housing in a convincing attempt at dissolution of scale and as a critical response to the monotonous external treatment of vernacular housing typologies. Morphosis describes the strategy as a “typology of porosity.”

The design parti seeks to replace the staid tower typology of public housing, where public space is owned by no one; with a “rhythmic structure” that better reflects the social relationships that are fostered in traditional neighborhoods. Outdoor spaces of various scales connect the units and serve as locations of spontaneous social interaction. The dense organization of units around the public spaces convey overtones of communal ownership over the public spaces.

An organically planted lattice flows throughout the project, operating simultaneously as elements of association and disassociation. The repetition of these elements sprinkles soft green moments throughout the project. The De Stijl influenced shifting in location of the lattice generates a multiplicity of unique moments and operates as the primary agent of external differentiation. The proposal reinforces a new paradigm for public housing with deliberate focus on landscape integration and the regeneration of the traditional nodes of communal social interaction.
Nexus World Housing

Project Data

Name: Nexus World Housing
Date: Completed 1991
Architect: OMA, Rem Koolhaas
Client: Fukuoka Jisho Co. Ltd
Description: Luxury Mat Housing
Unit Count: 24 apartments 4 shops
Population: ~ 65
Construction: Reinforced Concrete and Steel
Size: 13,315m²

Project Overview

Nexus World Housing is a series of private apartment homes designed by Rem Koolhaas and OMA for a new master planned neighborhood in Fukuoka, Japan. Design of the 24 unit complex was completed in 1991 and won numerous awards. Situated on the edge of the city in a new development Nexus World Housing utilizes the principles of Mat Housing to create luxury apartments with an acute sense of privacy and generous access to fresh air and light.

According to Rem Koolhaas, Nexus World Housing “explores a fusion of the Roman city - sections of Pompeii, for instance, form continuous tapestries where houses never become objects.” The units of Nexus World Housing are organized around four story voids that pierce through the thickness of the mat. The punctures serve as ventilation for the submerged parking level, contain the roof gardens that provide visual access to green space from within the units, and contain the major apertures of the living units. The development contains no communal spaces and minimal views from unit to unit. Communal social interaction is reserved to retail space that bounds the project on the street side. Nexus World Housing reflects traditional Japanese sentiments of privacy.

The three level division of living space is well articulated through internal and external organization and fenestration strategies. A tripartite division on the exterior facade leaves a glazed storefront street level, a solid textured concrete wall on the second level, and a glazed curving form, “released” from the walls and meant to emulate contextual mountains on the upper level. Internal organization is accessed from a concourse on the lower level that enters directly into a pebbled garden space. A continuous staircase from the garden area leads to sleeping quarters on the second level and living and traditional Japanese spaces on the third level.
Carabanchel 11 blankets the entire site with a two layer thick volume of program. The thickened mass contains a tangle of repeated three and four bedroom units, and all of its related infrastructures.

Nexus World Housing covers its entire site with a four layer thick volume of program. A submerged basement level contains parking facilities capped with a repetitious system of three story courtyard apartments packed in a snug party wall arrangement.
1. Thickened Field
Carabanchel 11 is organized through a hierarchical system of punctures. Small punctures introduce a courtyard into every unit, serve as the organizing focus of the unit’s apertures, and accommodate passive ventilation and lighting strategies. Medium scale courtyards puncture the field and are connected by axial circulation paths. These outdoor spaces generate zones of coincidental interaction amongst the residents of the complex, and through their visual relationships to the individual units foster a sense of ownership of the public zone. The largest public space, “The Paseo” replaces the traditional lobby with a large landscaped public space”, cuts through the entire project, gives order to the crossing circulatory axes, and acts as the primary sphere of social interaction.

Nexus World Housing uses a system of four story punctures to dissolve the thickened field. These punctures introduce light and ventilation to the individual units, in addition to ventilating the submerged parking level. The voids also contain landscaped green space. A horizontal void on the ground plane introduces an axial circulatory path leading to individual unit entries.
2. Punctured_Field
The seemingly random placement, and De Stijl influenced disjunction, of an organically planted lattice system generates numerous differentiated moments within Carabanchel 11. The introduction of this secondary system striates and splits the previously thickened and punctured mass, galvanizing identity in discrete moments throughout the project.

An undulating roof pattern breaks previously monotonous patterns of puncture and division in Nexus World Housing. The roof, disconnected from the heavy exterior wall seemingly floats and echoes the mountains that ring Fukuoka.
3. Differentiated Field
Carabanchel 11 uses two different strategies to bound its thickened field of program. On two edges the project is bound by tower slab buildings that mimic the internal organization of the mat and reference the scale of contextual construction. The other two facades expose the blank party walls of the repeating courtyard units. This bound condition displays an almost Corbusien notion of the potential for the infinite spread of this housing prototype.

The thickened, punctured, and differentiated fields of Nexus World Housing are completely bound with a heavily rusticated concrete wall. This “cyclopic” wall creates finite edges to the development and was intended to reference a podium for a forthcoming residential tower development concurrent with the sites master plan.
4. **Bound Field**
Bibliography


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