

Density - Porosity

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LWPAC - Lang Wilson Practice in Architecture Culture in association with Hotson Baker Boniface Haden; Project Location: 4387 West 10th Avenue, Vancouver B.C., Canada; Project Size: 21,000 SF; 10 Residential stacked units (6 live/work artist studios, 4 penthouses) and Commercial Retail Unit(s); Construction type: Non combustible: Cast-in-place concrete (parking and level 1), Reinforced CMU walls and Comflor (levels 2 to 4), Structural steel and steel studs (level 4M); Completion December 2005. Client: ROAR_Ventures Inc.



Front Elevation with Sliding Screens

AMBITION - The ambition for the ROAR_one project was to create a paradigm shift for dense urban living and live / work culture and to position the project through design innovation with regards to livability, flexibility and spatial qualities. Being value driven, the project attempts to merge typical opposites into a new set of relationships where culturally engaged design becomes mutually beneficial with development interest. Following we were retained both as architects and strategic project and marketing consultants.

CONTEXT - One of Vancouver's greatest assets is its cultural and ethnic diversity (the highest in the world). The city is growing at a rapid pace, mostly through immigration. As such buyers come from many different cultures, with different lifestyles associated. This condition, which can be witnessed in many Metropolitan areas, in addition to other substantial changes in the city's socio, economic and cultural life, requires innovative new housing models. For example the typical 2BR condo is neither any longer suitable for the professional and entrepreneurial couple, nor does it meet the demands for multigenerational immigrant families.



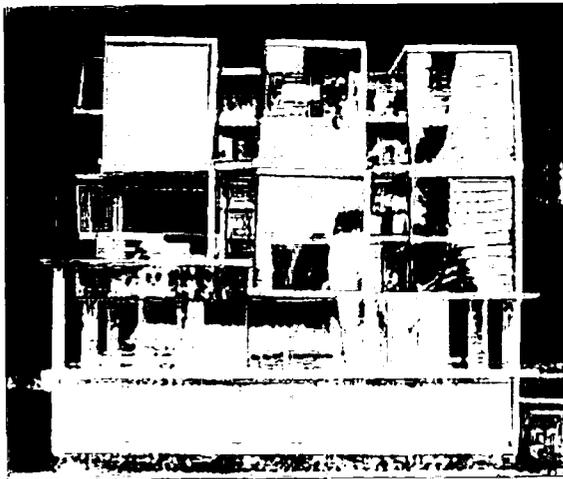
Section Model

For the dense and sustainable metropolis, it seems imperative to develop housing models that address urban sprawl, allow for a multitude of live and live work scenarios, curbing unnecessary commuting while catalyzing entrepreneurial activities, cultural and social inventiveness. Yet, it is obvious that the current housing market is still primarily driven by standardized solutions, packaged in ever more elaborate marketing schemes. Effectively this simplistic vision in

housing projects has reduced the debate of urban live/work culture to a spec set for sophisticated kitchens and bathroom features. More problematic is the endless repetition of highly standardized layouts with their pre-established and confining ideas about living, and the complete lack of choice.

METHODOLOGY, ISSUES AND DESIGN

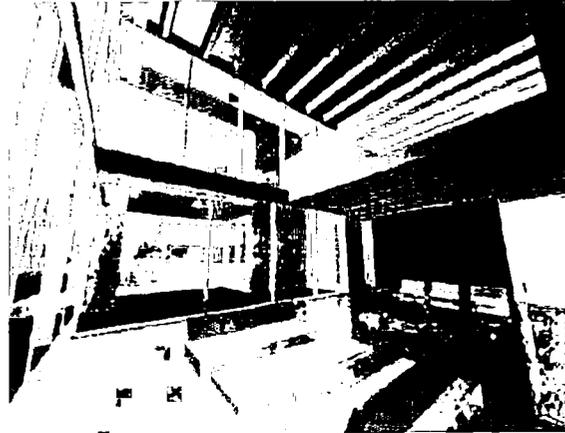
In response the following approach and solutions were developed:



Initiation

A. Method: We designed a project that offers choice for many different lifestyles, offering a range of units and give each unit many possibilities for occupation. Basically we decided to design a project that is strategic (and incomplete) in itself, and therefore welcomes the individuality and creativity of future occupants. This was accomplished through research driven scenario planning. We call this process Design Intelligence Management. The result is that each unit can

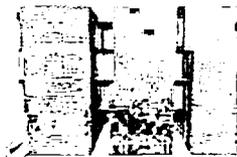
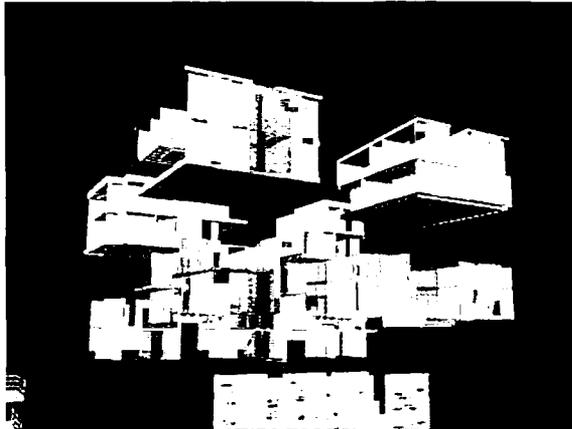
now accommodate a significant array of programmatic and spatial adaptations. The primary focus was shifted towards spatial qualities that offer new and interpretative opportunities for everyday culture. Each unit suggests various layouts for live, live-work and studio conditions.



B. Design Features: Insideout: First, based on the scenario studies we developed the units from the inside-out. All homes have three distinct features: Each unit is basically a compact 'sky-house', each unit has a patio, linking indoor and outdoors seamlessly; each unit has two stories with an open double story area. Units range from 800 to 2000 sf.

Porosity: Secondly, we generated the absolute maximum volume/envelope permissible with all possible relaxations. From this we began a process of subtraction, perforating the volume with striations or "slots" that create continuous open spaces from front to back and create private live around patios that seamlessly link interior and exterior spaces. Interestingly the patio-slots allow for a re-

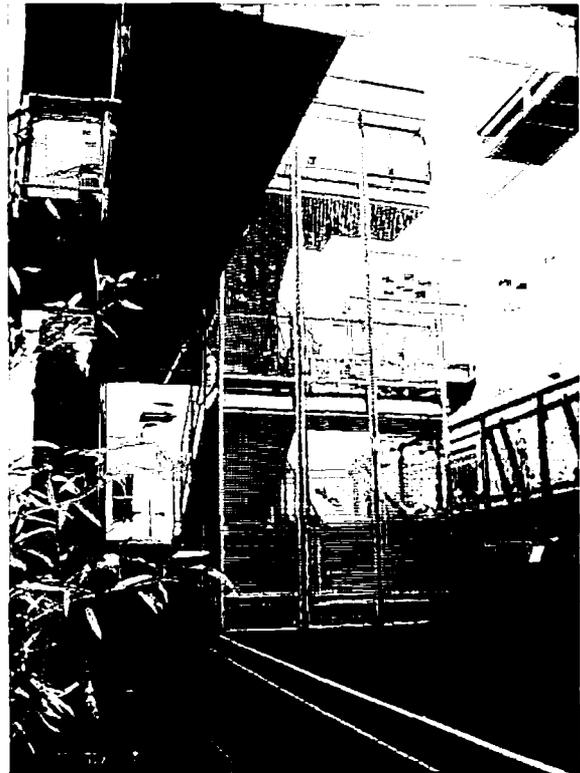
organization of the future unit layout. The slots address a significant dilemma that most housing units face today: Very narrow deep units, with inflexible layouts and poor conditions for lighting and ventilation. Instead, natural daylight is abundant and natural cross-ventilation is ensured for all units.



Combining both approaches, the resulting double story stacked patio houses are highly adaptable, yet allow for compactness through the superimposition of multiple scenarios. The comment of the Vancouver Design Panel: "An excellent design, with the best livability seen in a decade", and as such we could negotiate relaxations from the city that made the project possible. Effectively design strategies became tools for negotiation. Rules that seemed solid became pliable.

C. Shift Construction: Construction methodologies were invented that can be executed without compromises in qualities, but at low cost. Despite significant architectural features, the

project is currently under construction for significantly less than typical construction cost for conventional developments, which was made possible due to the innovative adaptation of commercial construction techniques.



D. Environment: Primary attention was given to strategic translations that would limit environmental impact at its roots cause and not to spend significant funds in order to 'retrofit' mechanical systems as a cure for flawed design. 1. The building was conceived and zoned to encourage live work environments reducing the necessity for the tenants to commute. 2. The building deploys user operable systems to control seasonal solar gain in the summer (block) and winter (allow), effectively eliminating the need for AC systems, while maintaining a very natural and comfortable environment. 3. The slotting of the building and achieved porosity generate superb airflow and natural cooling. 4. The units are so bright that virtually no artificial light is needed during daytime. 5. Passive solar technology, in the form of sliding screens with inset aluminum grating (spaced to match seasonal sun angles in Vancouver) and extensive landscaping (bamboo screens) are

used to regulate seasonal heat gain and to control privacy issues.

As cities continue to increase their densities, the project proposes a porous body, incomplete by design, awaiting adaptation and invention by future tenants.

