

Digital Places: Rethinking Urban Elements
THE CASE OF THE TOWER

by
Christopher M. Gichuhi

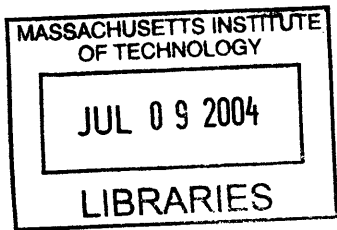
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ROTCH

Digital Places: Rethinking Urban Elements

The Case of the Tower

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environment at every scale

We are concerned, not with 'architecture' or 'town planning', but with the creation of environment at every scale... The problems which we face in making our world are entirely new, for our society is entirely new. The concept of society towards which we strive: that of a completely open, non-hierarchical co-operative in which we all share on a basis of total participation and complete confidence. The realization, for instance, that the scene of action of reality is not a three-dimensional Euclidean space but rather a four-dimensional world^λ, in which space and time are linked together indissolubly, sets our civilization apart from any others.

Shadrach Woods INTO SPACE-TIME

^λ string theory projects that our universe has 11 dimensions

Digital Places: Rethinking Urban Elements

The Case of the Tower

by

Christopher M. Gichuhi

Submitted to the Department of Architecture on May 19, 2004
in Partial Fulfillment of the requirement for the degree of
Master of Science in Architecture Studies

Abstract

Problem - How can we make working, living and all aspects of our life in the urban tower more palatable? How can we create environment at the urban tower scale. With technology as one of the biggest drivers of social and environmental change what new design opportunities does it present?

Presented in this thesis is a new approach to the urban tower, where its design and planning are perceived as a form of urban design. This study reviews developing trends in:

" Space / Place making - A vertical theory of urban design

" Technology and people - Focusing on the impact of technology and social trends on design of tower components (retail ,office & housing)

This study will argue that these developments and the new juxtapositions of activities (live - work, point of sale - marketing, 'public space' - offices, digital interfaces - physical interfaces) will facilitate new design opportunities.

Concept - recombining space, technology and people to achieve innovative and productive work & live spaces

The outcome of this approach is a built milieu that is more physically and socially comprehensible. A high - rise built environment that is more humane and habitable; a built environment that emulates the ideal life on the ground plane. This study does not propose towers as a better environment than the ground plane, it argues for a better design of towers because, as shall be seen in later sections of this study, towers shall continue to be built as viable solution to cities' land use intensification.

Another outcome of this approach is a new architecture which will be less about responding to a rigid architecture program and more about creating diverse, flexible, humane environments for electronically supported nomadic occupation. This new architecture will also be about integrating inhabited space with its associated technologies - making technological devices standard architectural features.

Ultimately, this study will attempt to capture through design experiments the new trends and design opportunities brought about by the interplay of these new technological and social factors.

Thesis Supervisor : Michael Dennis

Title : Professor of Architecture

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Vertical Space

THE VERTICAL THEORY OF URBAN DESIGN

This section of the study examines emerging urban design ideas on urban towers as put forth by proponents of *A vertical theory of urban design* and in particular, Ken Yeang's work. The issues covered in this proposition include premises for a vertical theory, tower typology and cities, de-compartmentalizing the skyscraper built form, urban design framework and vertical land-use mapping, public realms and place-making in the sky, creating neighborhoods in the sky, movement and streets in the sky and artificial land flexibility and change.

The premise here is to re-examine the existing concepts of conventional (horizontal) urban design and planning, and then to reapply these – now reinvented – to new vertical contexts; vertical superimposition of preferred urban design ideals from the ground up. This will lead to a new approach to tower design and consequently a new tower form. As an urban design endeavor at the onset, towers can become more humane, more communally focused and more salubriously acceptable and habitable environments for the denser urban communities within our cities. Habitable towers must possess similar ideals and favorable conditions similar to those enjoyed by people on the ground plane.

Basis for a Vertical Theory

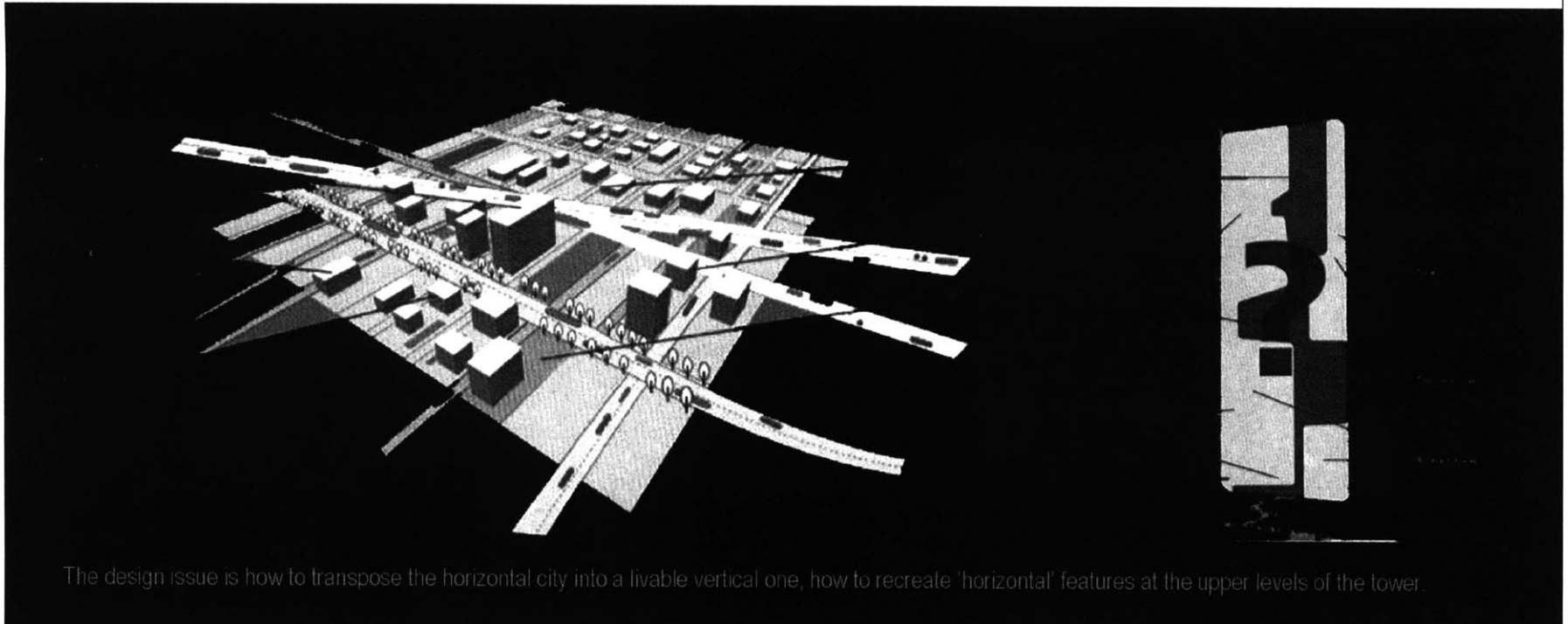
Current lifestyles and the increasing pressures of urbanization and population growth on our cities demand a redefining of conventional perceptions of working and living in towers in the city. Today, many of the world's predominantly low and medium rise cities such as London are in the process transforming into high-density, high-rise living and working environments. The question now confronting designers is whether the current approach to tower design provides the inhabitants of these buildings with an acceptable quality of urban life. Despite changes in technology and engineering the architecture of tall buildings remains fundamentally unchanged since their invention in 1890. Most consist of a series of homogeneous plates piled in a stack seeking to optimize net to gross area spatial efficiencies. The consequence is an alienating form of existence for its inhabitants that mainly favors the financial developers.

Tall buildings timeline from 1890 to 2003



Basis for a Vertical Theory

Towers huge built-up content of internal spaces and the subsequently high density of user population are unlike those of other building types. A typical tower of 20 floors with a typical floor plate area of 1400 square meters has a concentration of built up area equivalent to a gross area of 2.8 hectares of surface area and a commensurate population. Such scales demand much more urban interpretation than just the simplistic shaping and planning of a standard extruded plan. Urban issues such as provision of public realms, greenery, linkages, place making and neighborhoods should be addressed in this new interpretation of tower design.

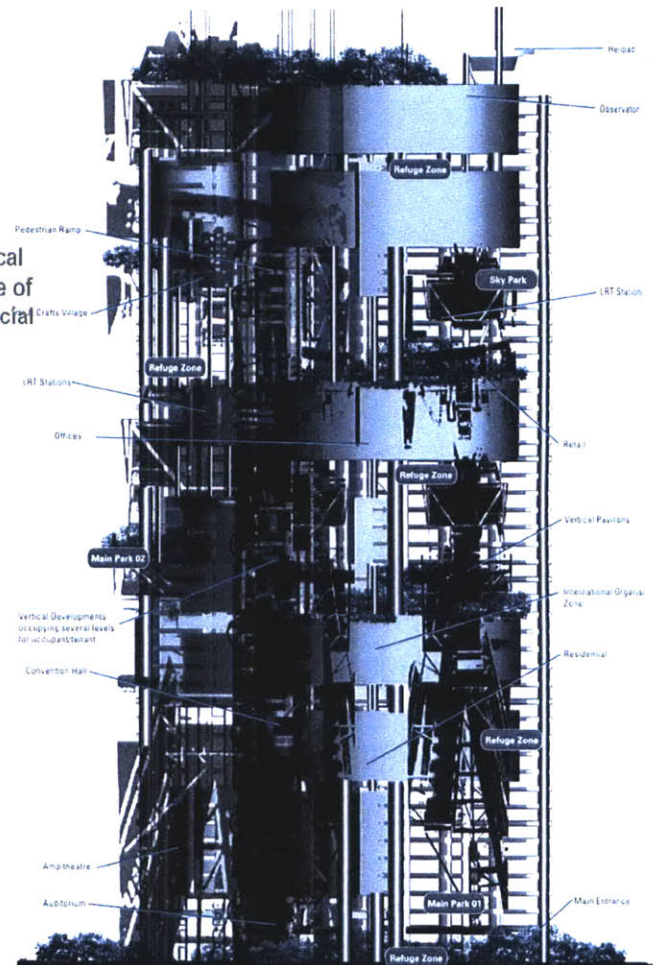
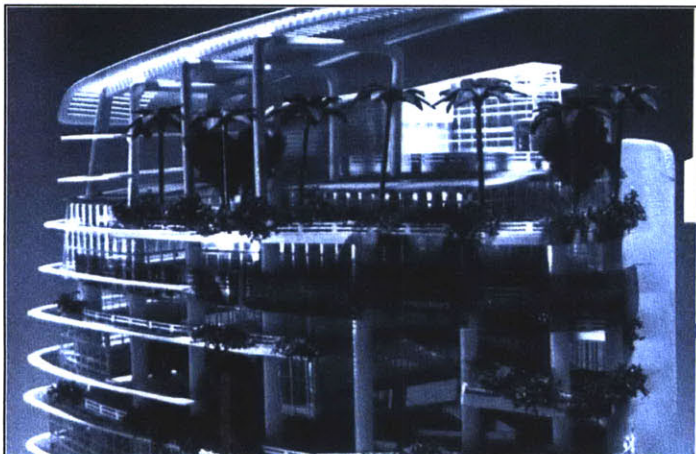


Basis for a Vertical Theory

For the real estate investor, a vertical urban design scheme for the tower increases the range of marketing features and enhances the building rent-ability and long-term asset value. A vertical urban theory provides investors with the basis for the design of a more humane, more socially and physically acceptable tower. The perception of the tower as precinct in the sky as opposed to a mere building will not only enhance its urban but also commercial value.

Precinct in the sky: For the real estate investor, a vertical urban design scheme for the tower increases the range of marketing features and enhances the building commercial value.

Penthouse articulated as a tropical garden

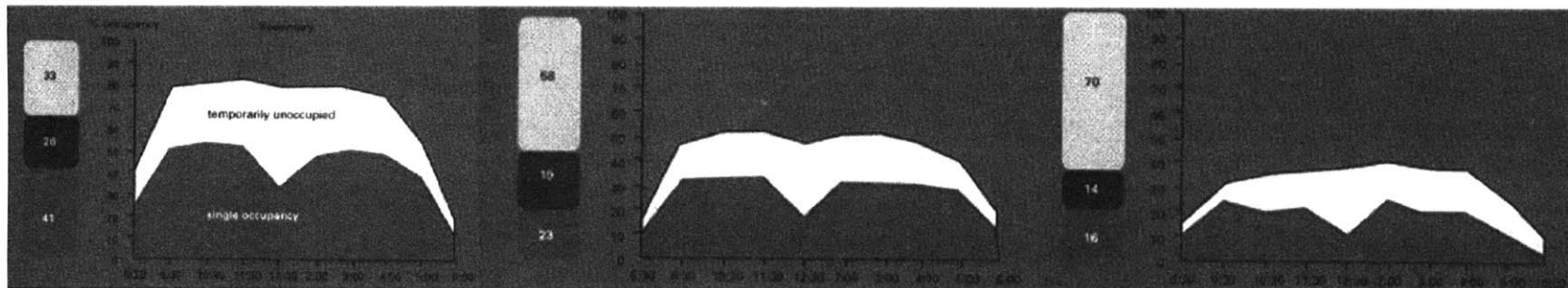


Basis for a Vertical Theory

Making tower design an urban design exercise involves a multidisciplinary approach that integrates socio-economic, political, environmental and physical concerns with architectural concerns of building design.

The objectives of urban design, now applied to tower design are to:

- Design and create a place with its own identity and character
- Provide diversity by creating places with variety and choice
- Provide ease of movement within places
- Provide quality public realms ,places with attractive, successful and accessible outdoor areas
- Design for legibility, places that are easy to understand
- Design flexible spaces that adapt easily to varied uses
- Ensure urban continuity and enclosure ,places where public and private spaces are clearly distinguished



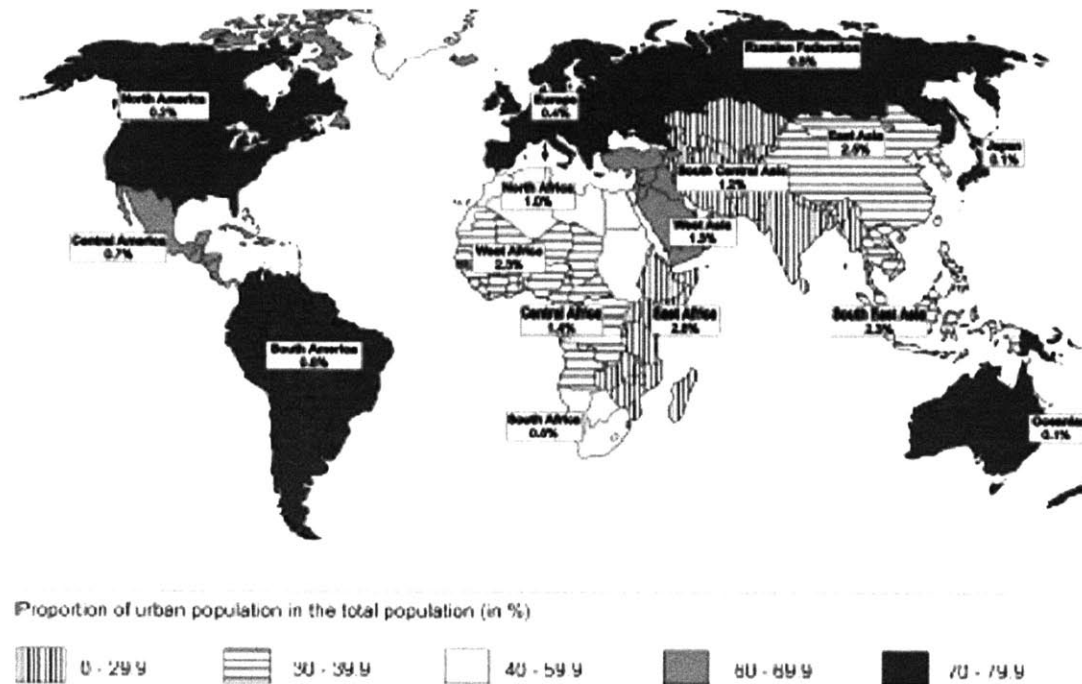
People do not remain stationary in one place in a tower. They move about within spaces over the working day and require a diversity of internal environments

Space –occupancy studies for various organizations by Alexi Marmot Associates

The Tower and the City

Urbanization is increasing worldwide. Whereas roughly a third of the world's population lived in cities in 1975, at least half of them do now. According to World Bank statistics, the global percentage of city dwellers in the next 25 years will be about 60%. (World Bank, 9/2000)

Geographical distribution of urban population and growth rates *Source: GTZ, Kirsche, 1998*



The Tower and the City

Some cities accommodate population growth by expanding the city boundaries to increase the metropolitan area; others (London, Cologne, Frankfurt, Stuttgart etc) regard the expansion of their cities upwards in order to optimize the city's metropolitan land area as the most viable economic and ecological option. This intensification process involves utilizing left over spaces, brown field sites and any other under developed land. Economically, despite foreboding that decentralization due to the digital economy would affect cities' economies, it is instructive to note that, towards the turn of the millennium, New York and Los Angeles, two of the largest metropolitan regions, led the United States in aggregate payroll and job creation respectively. Ecologically, the countryside can only retain its intrinsic qualities if the city adheres to a more compact form to contain urban sprawl.

Ranking of the world's ten largest metropolitan areas, 1950 – 2015
Population in millions

1950			1995			2015		
Rank	Agglomeration	Inhabitants	Rank	Agglomeration	Inhabitants	Rank	Agglomeration	Inhabitants
1	New York	12.3	1	Tokyo	27.0	1	Tokyo	28.9
2	London	8.7	2	Mexico City	16.6	2	Bombay	26.2
3	Tokyo	6.9	3	São Paulo	16.5	3	Lagos	24.6
4	Paris	6.4	4	New York	16.3	4	São Paulo	20.3
5	Moscow	6.4	5	Bombay	15.1	5	Dhaka	19.5
6	Shanghai	5.3	6	Shanghai	13.6	6	Karachi	19.4
7	Essen	5.3	7	Los Angeles	12.4	7	Mexico City	19.2
8	Buenos Aires	5.0	8	Calcutta	11.9	8	Shanghai	18.0
9	Chicago	4.9	9	Buenos Aires	11.8	9	New York	17.6
10	Calcutta	4.4	10	Seoul	11.6	10	Calcutta	17.3

Source: U.N. World Urbanization Prospects, 1998

The Tower and the City

Towers exist as a consequence of high land prices and economically optimized land use. These commercial considerations engender in the tower other roles, such as its symbolic role in signaling the city's technological superiority and its economic control over its hinterland.

While "there may be a pause" in skyscraper construction in the wake of the World Trade Center disaster, scholars believe tall buildings will continue to be built but with more stringent and security features.⁶



Most Active: Continents

Skyscrapers in Regions					
#	Continent		Buildings	Percent	More statistics on this continent
1	Asia		24,302	33.16 %	Asia: [countries cities]
2	North America		22,864	31.20 %	North America: [countries cities]
3	Europe		13,114	17.89 %	Europe: [countries cities]
4	South America		9,904	13.51 %	South America: [countries cities]
5	Oceania		2,244	3.06 %	Oceania: [countries cities]
6	Africa		859	1.17 %	Africa: [countries cities]

Most Active: Cities Worldwide

Most Skyscrapers		
#	City	Buildings
1.	Hong Kong	7,254
2.	New York City	5,317
3.	Singapore	3,489
4.	Istanbul	2,090
5.	São Paulo	2,043
6.	Rio de Janeiro	1,855
7.	Toronto	1,582
8.	Tokyo	1,466
9.	Buenos Aires	1,410

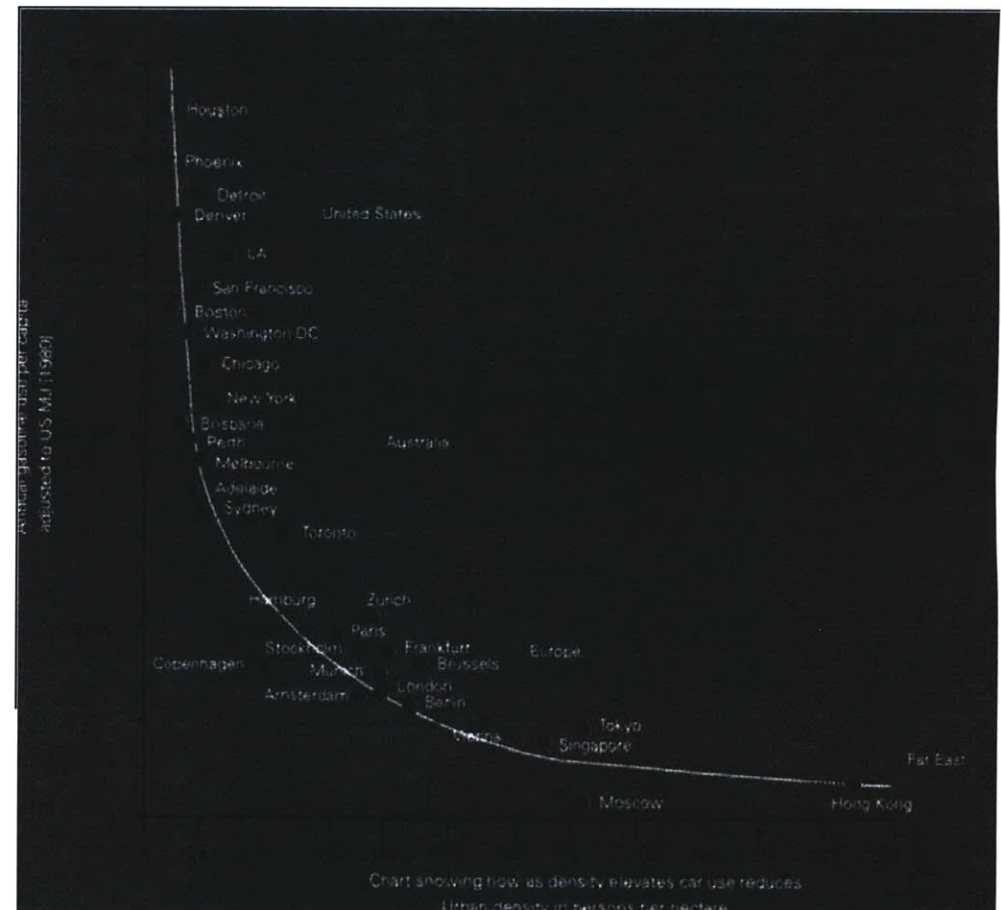
The world's most active continents in terms of building activity on completed high-rise buildings over the last five decades.

© Emporis Corporation March 2004

⁶ The Art of the Skyscraper: the Genius of Fazlur Khan

The Tower and the City

Studies have shown that the greater the intensification of urban population, the lower the energy consumption per inhabitant for travel by car. Indeed, there appears to be a geometric relationship between the reduction of energy consumption through transportation and the increase in building density. However, there are obvious thresholds to the continued intensification of cities beyond which the cities' infrastructures (physical, economic, social and administrative) become inadequate and overly stressed.

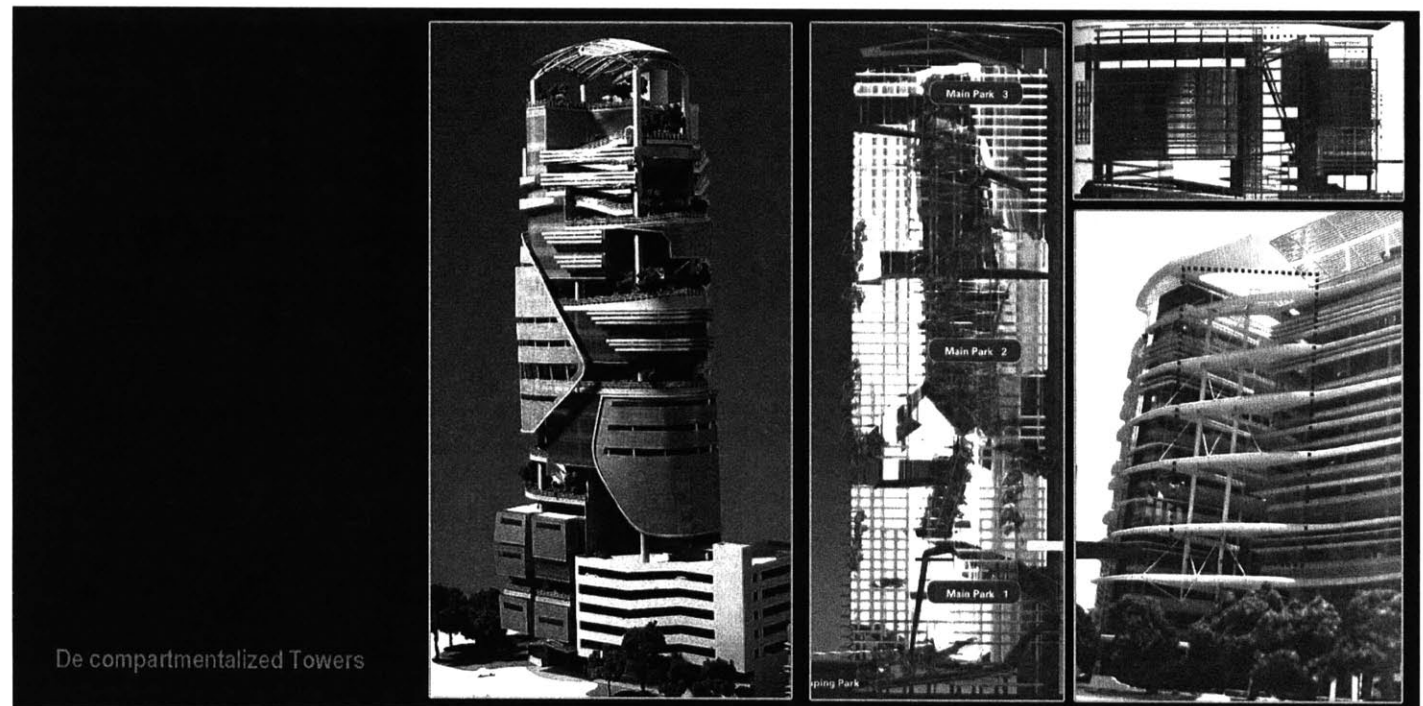


City intensification study

Transportation energy consumption for a city decreases as the city intensifies; this is one of the main justifications for intensification

De-compartmentalizing the Tower

Existing towers are instant compartments of floor plates segmented vertically, most floor plates are spatially non contiguous and are physically segmented-off one from the other. There is little or no spatial interaction between different floors, tower spaces are generally isolated homogeneous enclaves devoid of diversity. This isolation exacerbates feelings of social alienation in its inhabitants. The desire for engineering expediency in the tower's design and construction has undermined the potential for the diversity and richness of urban life in the building. It is this compartmentalization and confinement of spaces that make the tower such an unsatisfactory built form and unpleasant environment for its users.



De-compartmentalizing the Tower



Fluidity of space on the ground plane

These floor spaces become zones of containment, spaces without any physical context other than through views from the windows. The classic claustrophobic space is the windowless room found in many towers, many office workers live in this artificial environment with no interaction with the outside world. On the ground plane, spaces are not rigidly compartmentalized, in most cases there is a physical and visual contiguity of space from one area to another, generally multidirectional and in the case of a well design urban precinct flowing in a systematic fashion. It is these conditions and others that the vertical urban design theory aims to design into the tower.

Movement between spaces in low rise buildings and on the ground plane is, in most cases, by visually evident routes; streets, passageways, bridges, ramps and stairs. This multiplicity of accessibility which allows for visual coherence and easier way finding is heavily undermined by noncontiguous floor spaces.

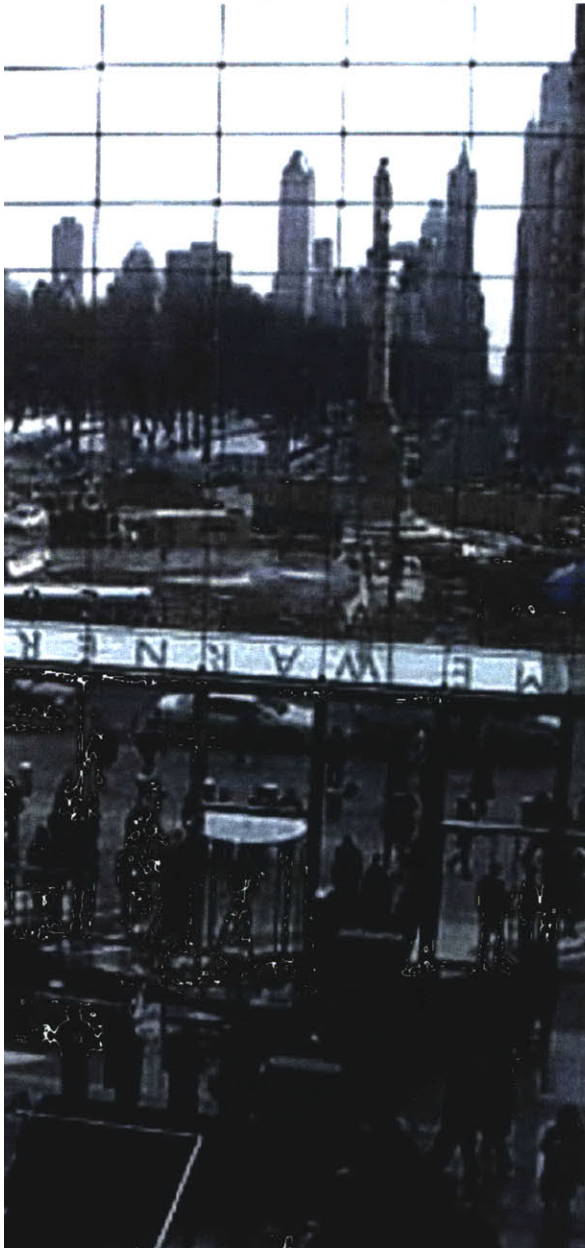
Windowless zones of containment



Atrium: traditional de compartmentalization solution



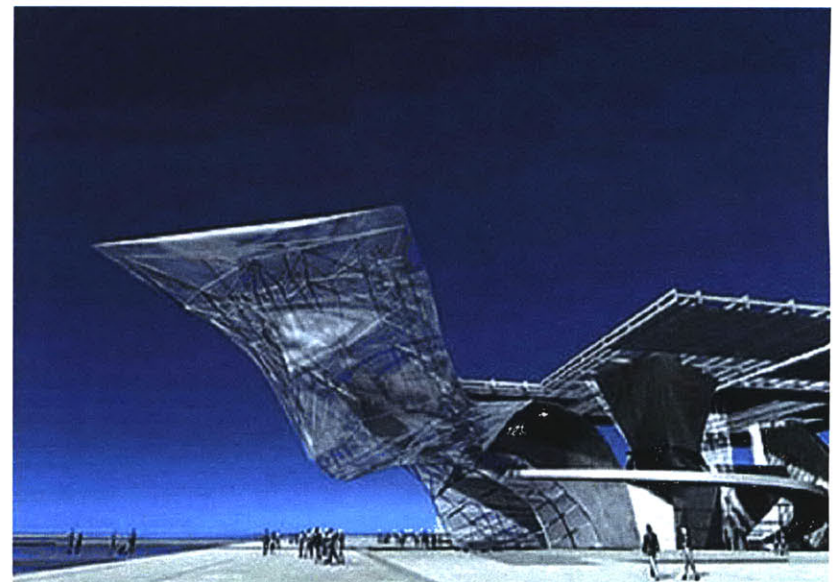
De-compartmentalizing the Tower



Within the tower built form we need to rethink its internal and external spaces and its borders and edges. By blurring and dissecting the borders and edges between spaces, we can create pleasurable crossings across the spatial borders and effectively de-compartmentalize the tower. This is particularly important in redefining the tower's spatial relationship with the city; at the ground plane this intense building type ought to have an interaction with the city comparative to its build and activity level.

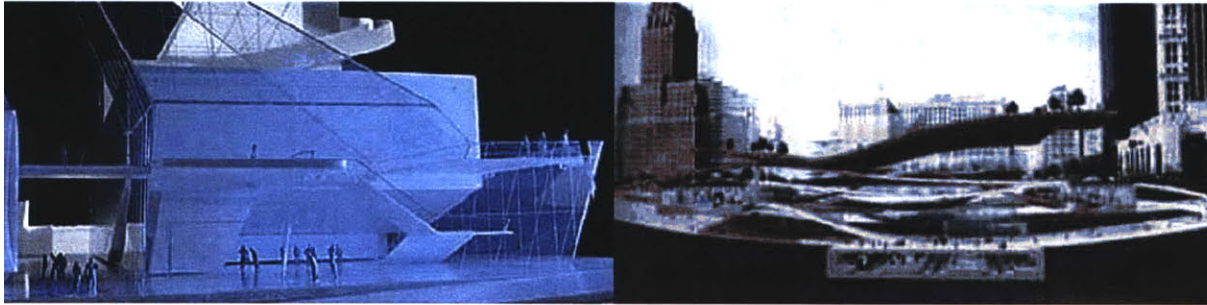


Blurring the threshold between the building and the city

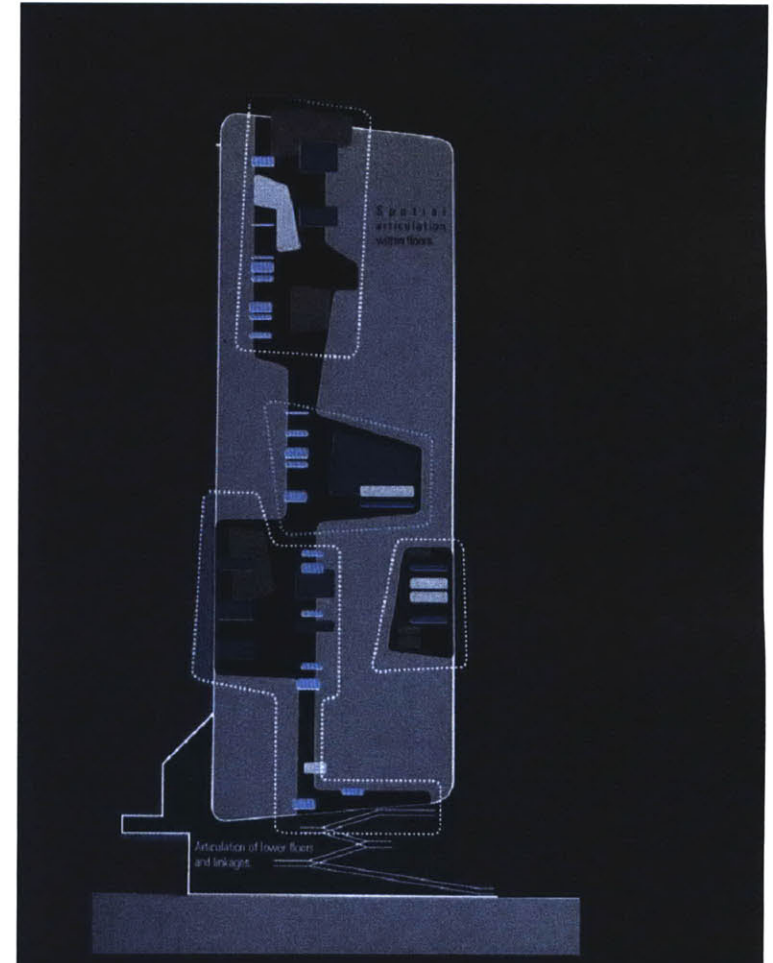


De-compartmentalizing the Tower

Some of the strategies for linking spaces include, split-level floors, half floors, transitional spatial volumes (atriums) and spaces that are detached and connected by bridges and ramps. These help break the homogeneous stratification and enable new concepts for internal environments. We need a high-rise design with greater spatial and environmental diversity for its occupants.



Various strategies for de compartmentalizing space



Urban Design Framework

Some of the major cities in the world have plot ratios of 10 + and population densities in excess of 400 persons per acre. With such high intensities, the planning area is not just the land area for development but the entire built up area which includes the vertical built space. Under such conditions urban design should be regarded as an exercise within a three dimensional matrix.

With this framework urban design is no longer on the horizontal plane with extruded high rises liked at the ground plane, but the volumetric spatial zone. This zone has a network of potentially linkable “places-in – the-sky” that have their own complex set of planning and urban design rules.



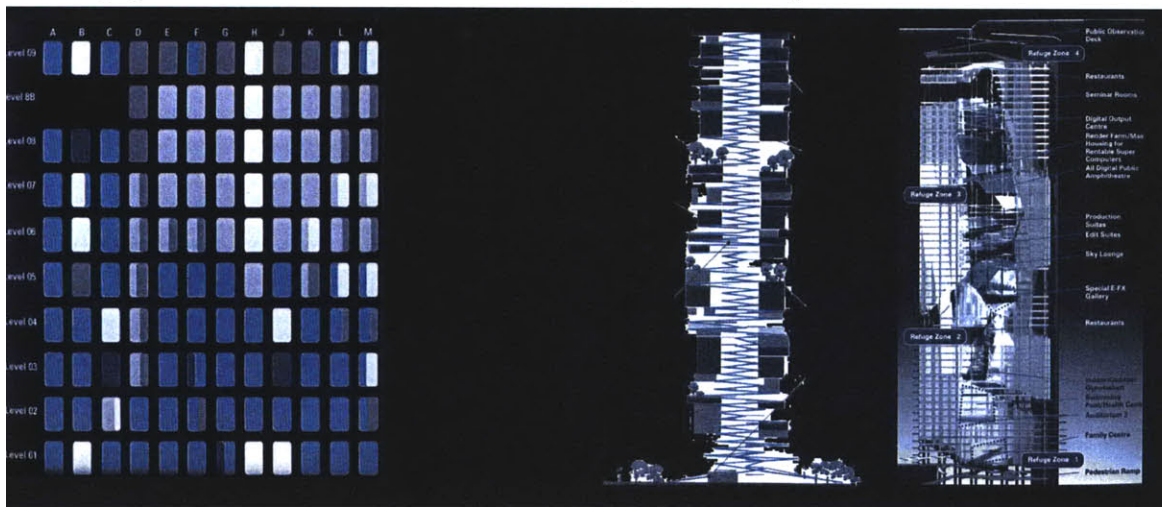
New York 3D Matrix

Urban Design Framework

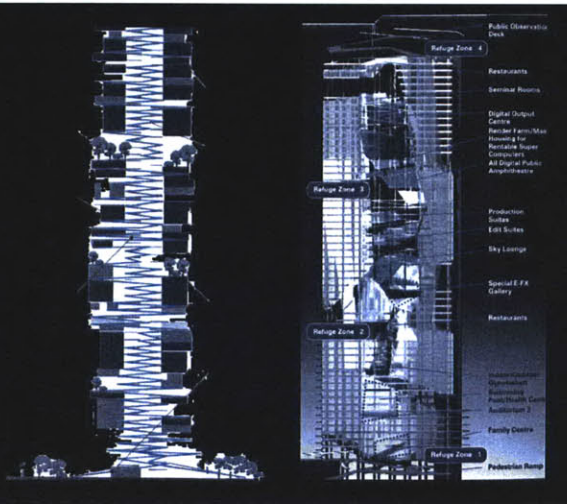
This approach demands critical multilevel spatial differentiation. The consequent multilayered vertical land use scheme must retain a close connection between the new densities of life within the built forms and at the same time , be involved with activity in the streets as one integrated whole. This oft calls for doing away with discrete zones and introducing seamless continuity of land uses from the ground up. This attempts to solve a significant problem in the traditional tower; current towers have often been accused of being removed from street life and their internalized malls have further undermined traditional social functions of the street.

Traditional towers have had little success in creating viable communities, in this regard, the new proposed towers proposes a system of continuous spaces and relationships from the ground up, integrating buildings and linking spaces and places in the sky into a new vertical equivalent of an urban fabric and social relationships.

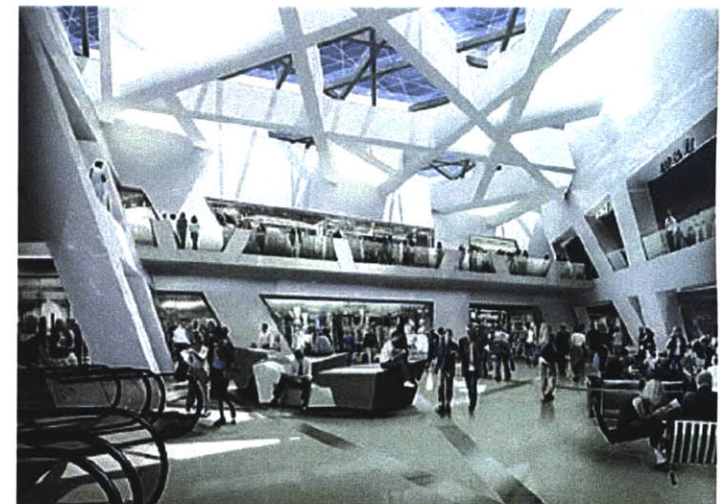
Building Spaces as lots



Spatial relationships in the tower



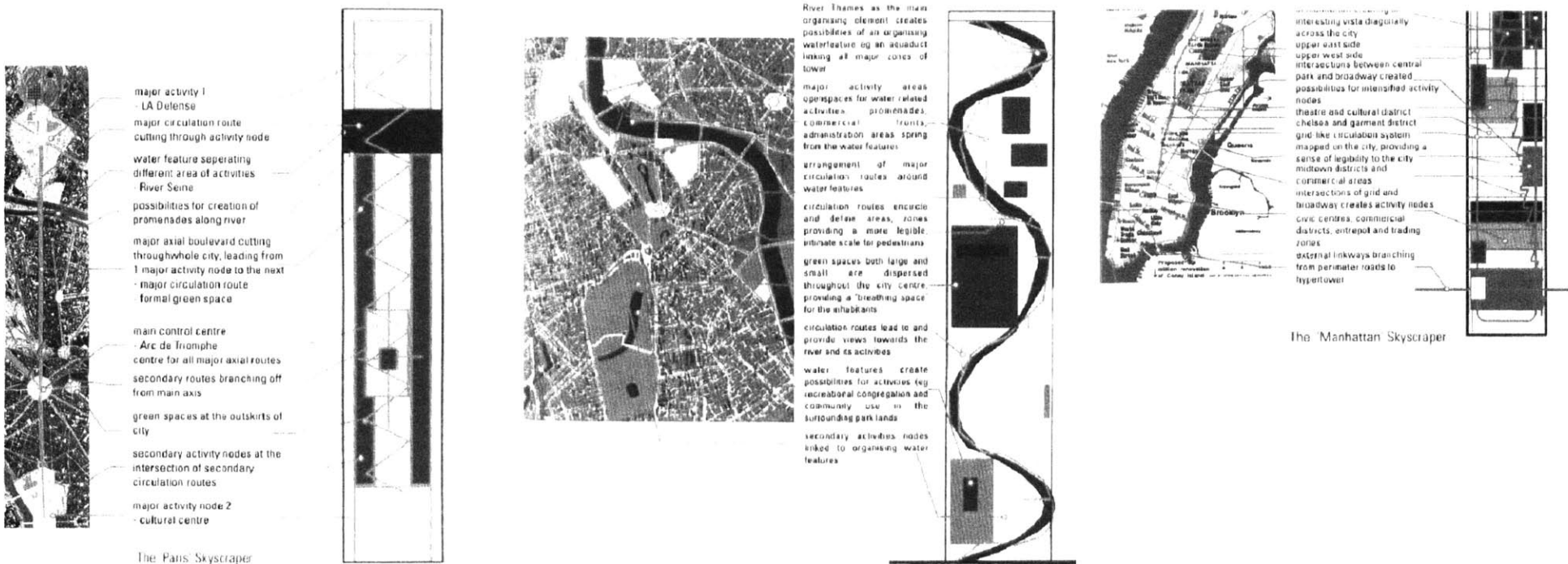
Internalized malls



Urban Design Framework

To effectively regard the tower as a part of the three dimensional urban design matrix we should be able to map its features, characteristics and systems in the same way we map similar considerations in conventional urban design and planning for purposes of urban analysis. We should be able to map vertical land-use in terms of open space, green space (sky courts), commercial and office use and also be able to map other aspects like infrastructure and population density. These facilitates urban analysis helps identify design strength and weaknesses.

Mapping Land use



Vertical Land Use

The mixing of different activities within the high – rise serves to strengthen social integration, civic life and is key to making the tower attractive. The diversity of uses within the high-rise must be spatially distributed over the upper levels of the built form and not be concentrated on the lower floors of the built configuration.

The city is first and foremost a meeting place for people... with this comes the traditional proposition of 'place -making' as creating meeting and event spaces for livable civic environment.... **KEN YEANG 2002**

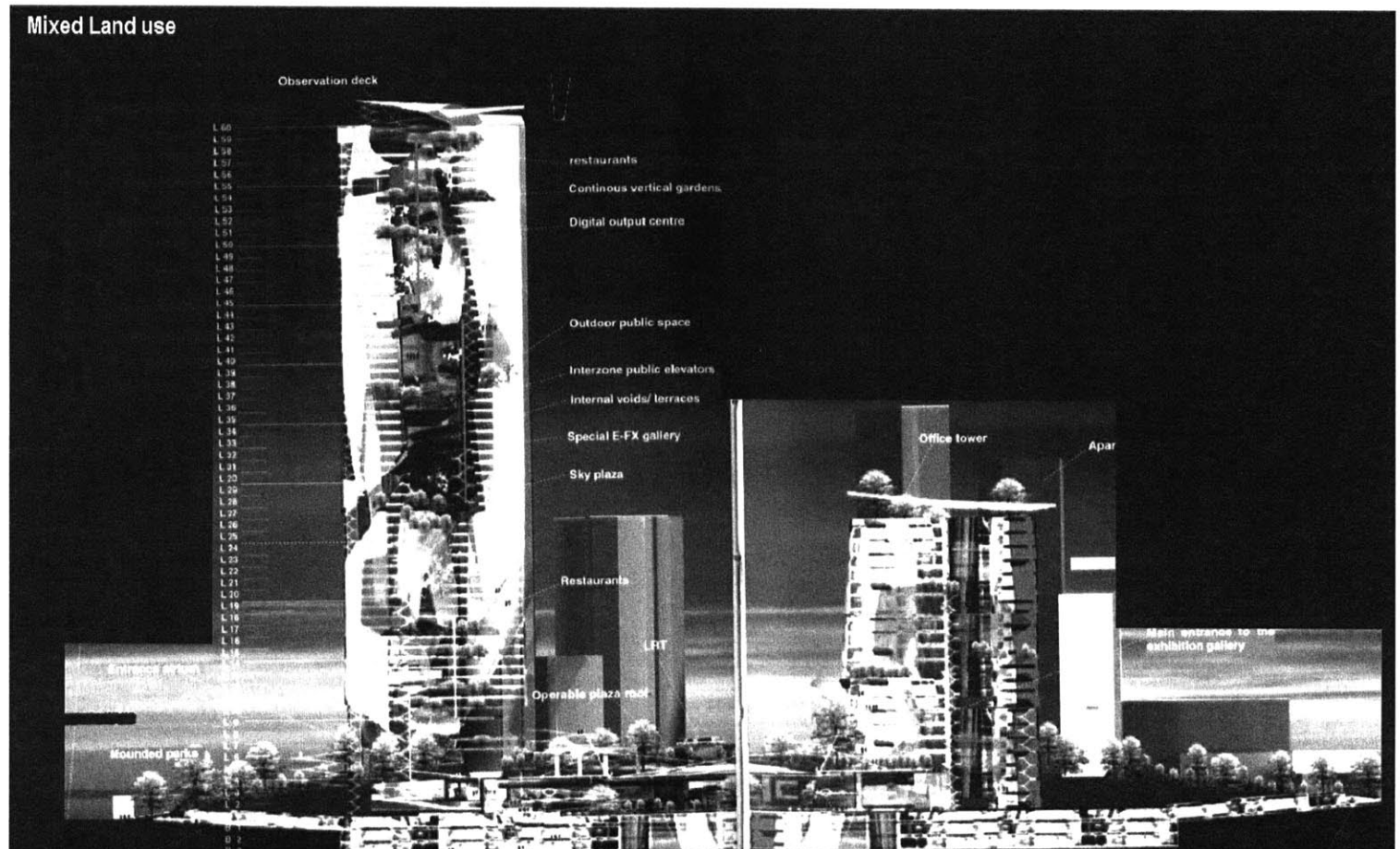


Typical urban land use



Vertical Land Use

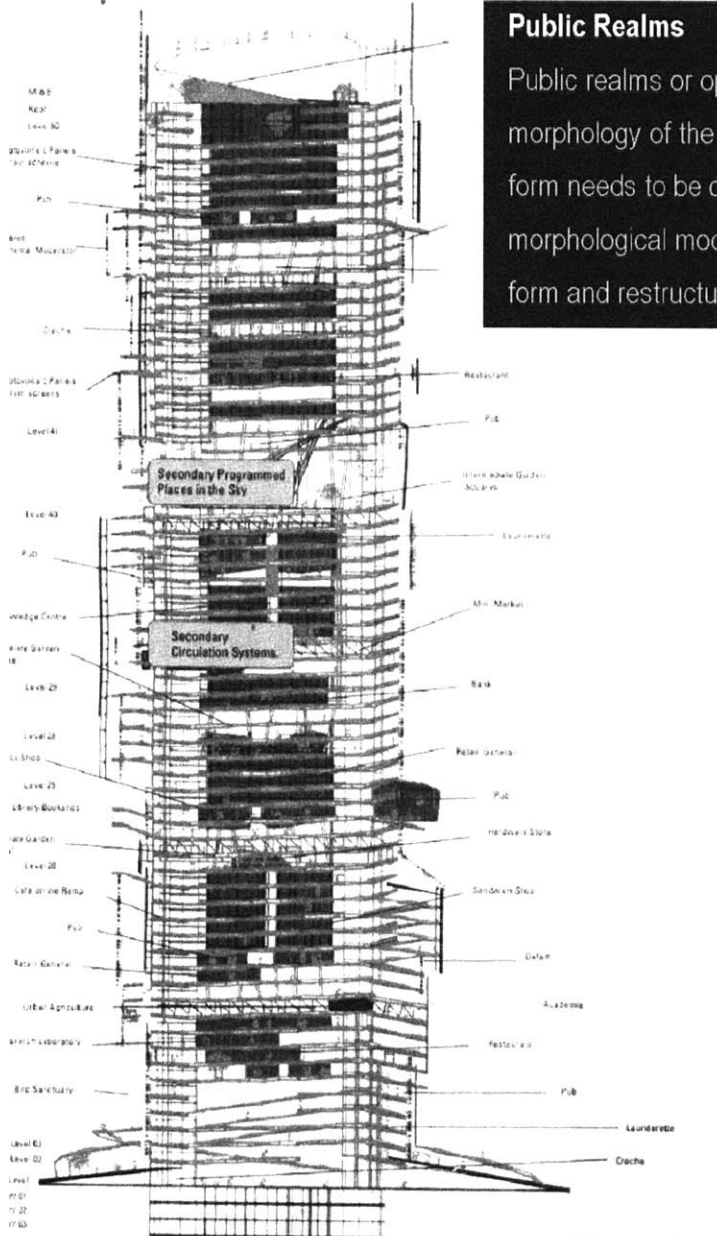
This is the underlying premise that holds together the many institutions, schools, hospitals and work places that form part of our everyday lives. With this comes the traditional proposition of place making as creating meeting and event spaces for a livable civic environment. Urban design involves provision of neighborhoods and public realms such as plazas, parks and streets, spaces in the city for socialization and social discourse. These essential spaces need to be recreated in the new tower. Creating the equivalent of these elements within the tower provides new means for the articulation, humanizing and deconstruction of its homogeneity.



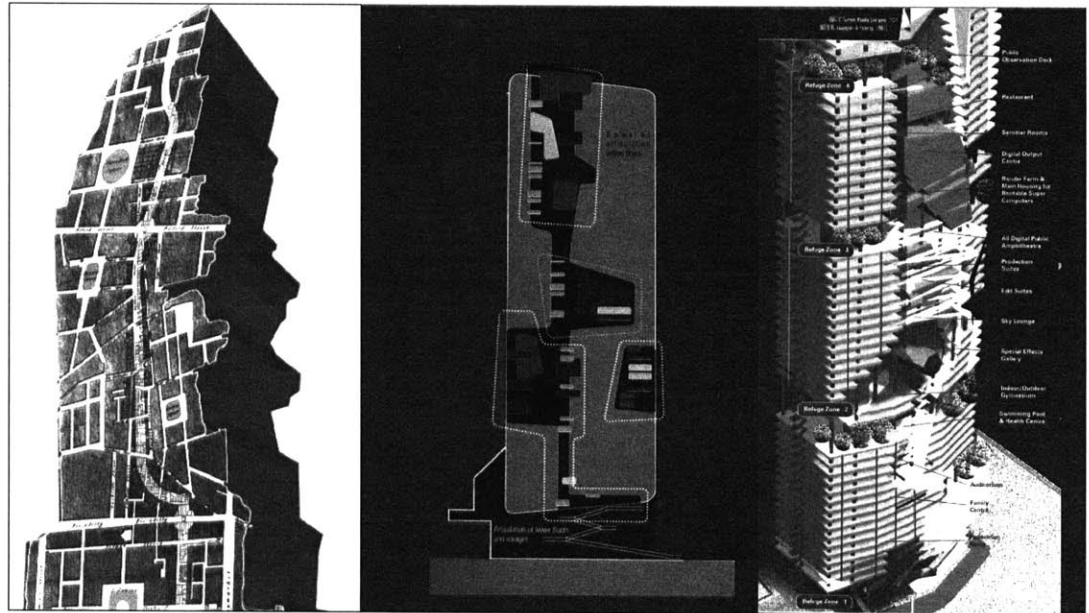
Vertical Land Use

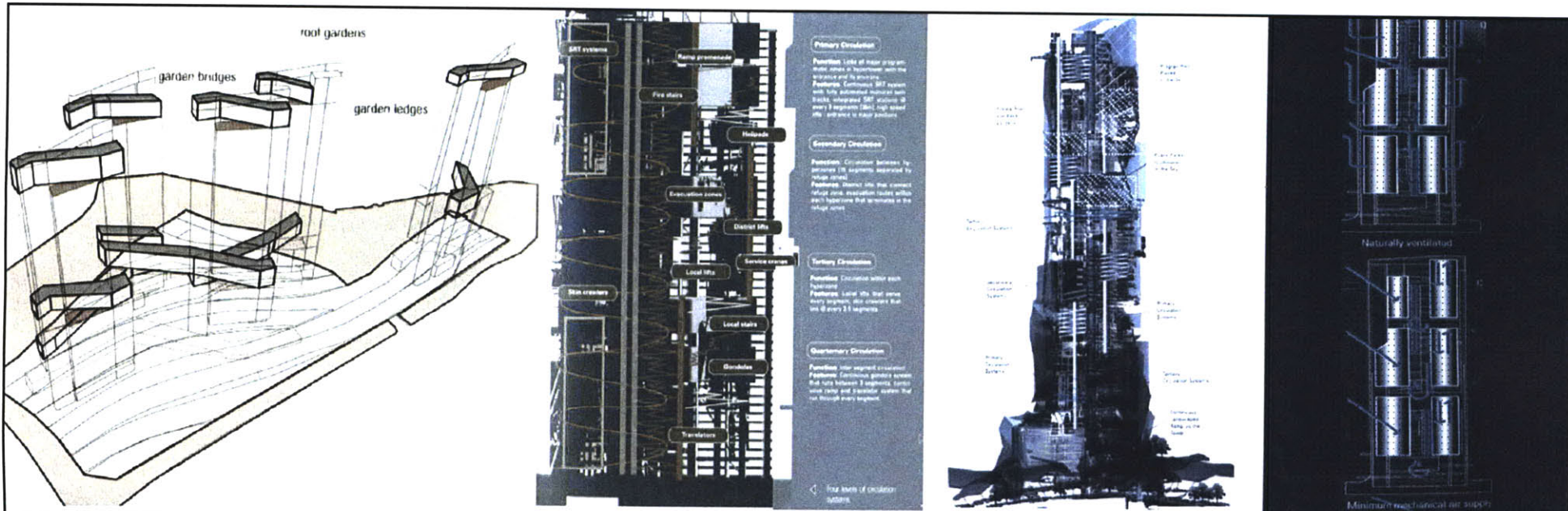
Public Realms

Public realms or open urban spaces in the high-rise should be the primary organizing factor for the urban morphology of the new tower. To inspire a new internal life in the tower a new spatial configuration within its built form needs to be created, this new architecture should perhaps seek to reinterpret successful typological and morphological models from existing cities. These models can provide the basis for reconstructing the tower built form and restructuring it with new urban scales.

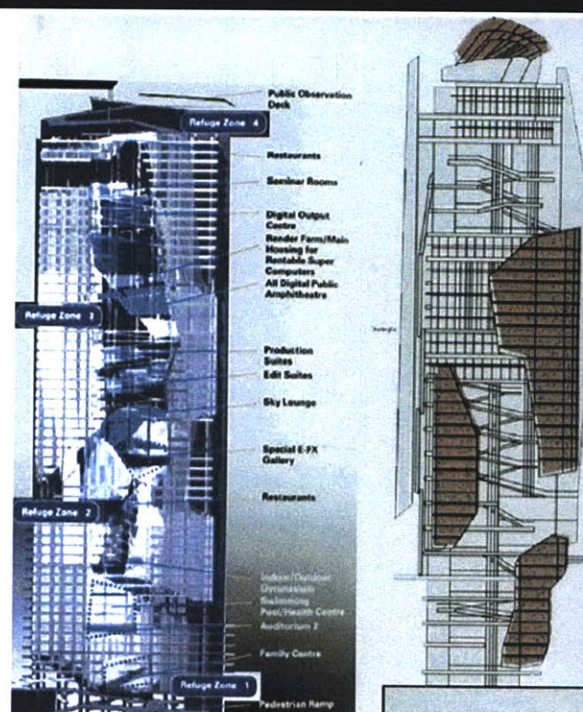
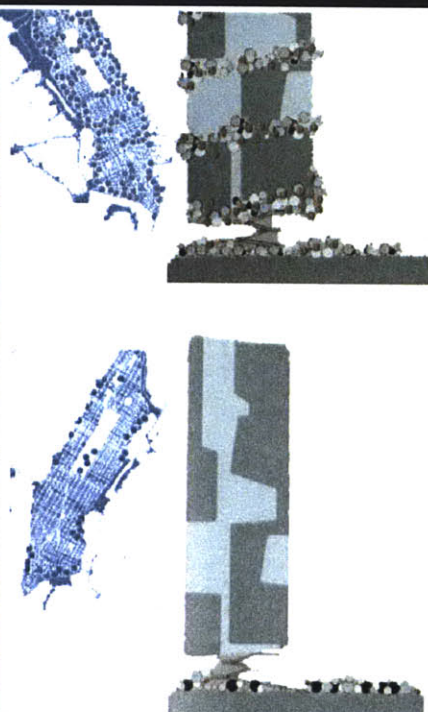


Public realm studies





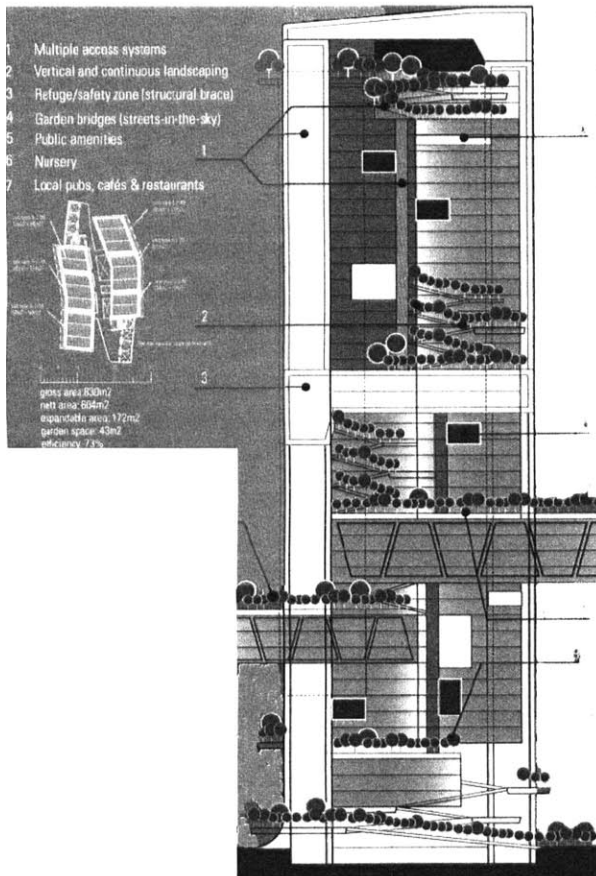
Circulation and Public Realm Studies



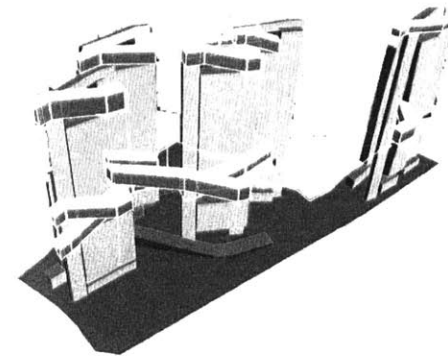
Public realm design provides a means of articulating the new tower

Neighborhoods

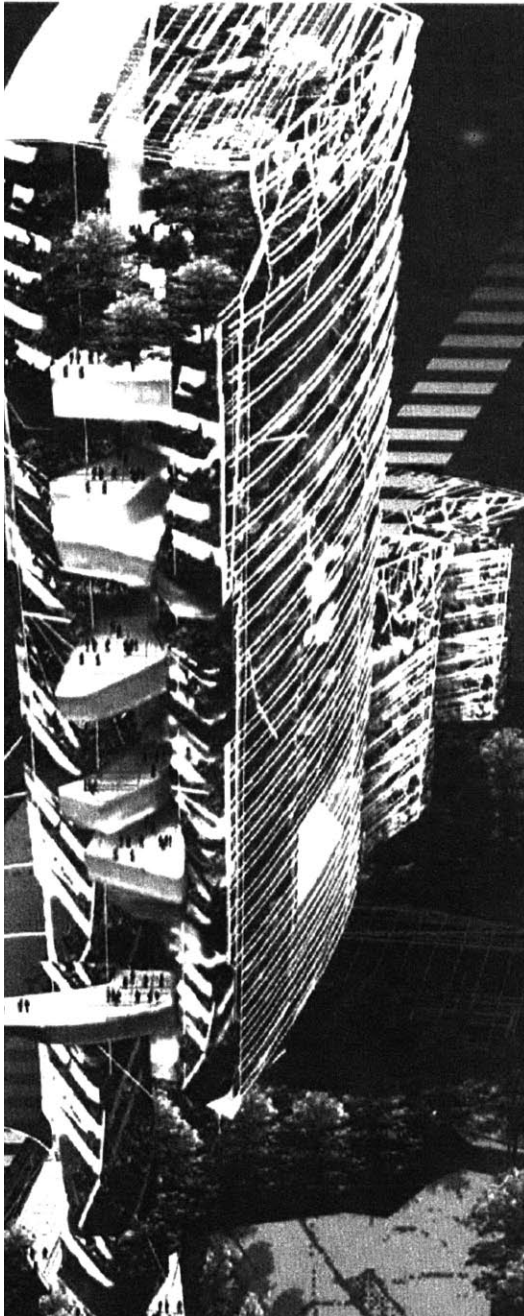
Two prevalent social problems in the case of the tower are isolation and the increasing alienation of inhabitants from each other. The layout of the individual floors and the relationship between floors should facilitate interaction between inhabitants. As with the traditional urban design, vertical urban design seeks to create communities as neighborhoods in the towers. As in the traditional communities, communities in the towers would be focused around a communal amenity or activity- a local institution, a shop, pub or park. The design effort must involve the creation of a total environment in the tower, integrating live, work and play in one vertical neighborhood. As with conditions on the ground plane, the form of public spaces in the tower and the way they link are essential to the cohesion of urban neighborhoods and communities.



Neighborhood character and aerial link ways



Neighborhoods should be walk-able; the new tower should have a multiplicity of circulation systems, with secondary and tertiary systems that include stairs, ramps, elevators and bridges linking neighborhoods. The quality of a neighborhood is affected significantly by its circulation layout. The design of routes should aim to reinforce the character of a precinct. Pedestrian routes should be safe, direct, accessible and barrier-free. Establishing the optimum variety of paths means creating open-ended, well connected layouts.

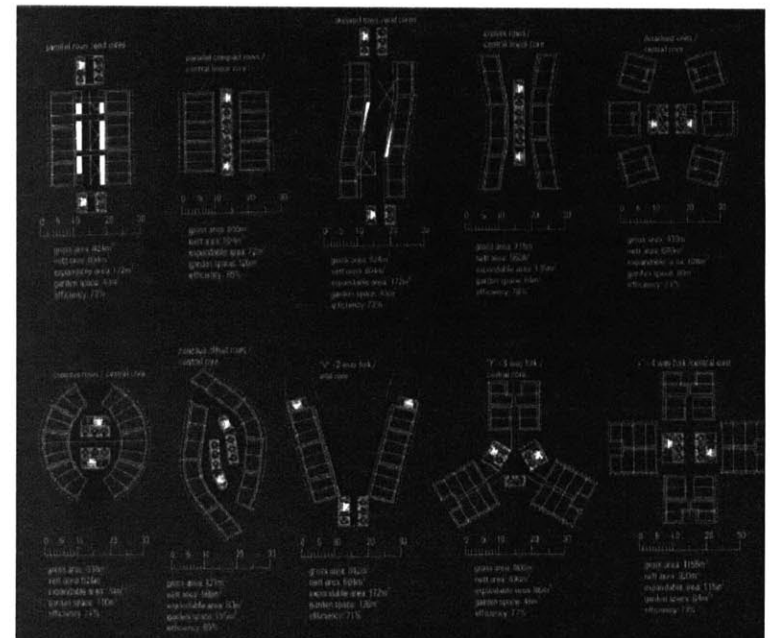


The new tower design should also allow for a variety of housing types and tenures, a good mix of housing types and sizes is important in creating the basis for a balanced community in the new tower. Community benefits derived from having mixed neighborhoods in the tower with people of different ages and lifestyles include:

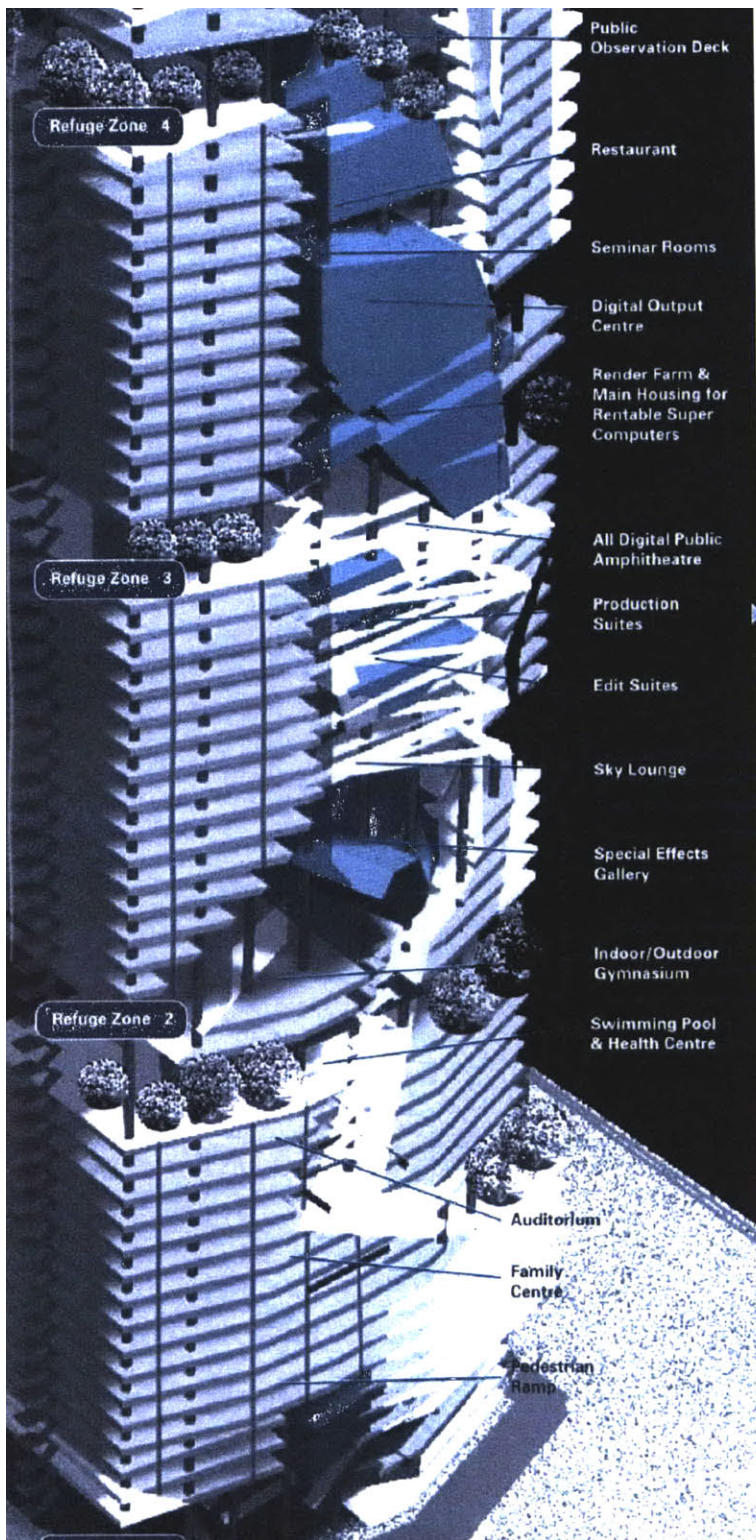
- A better balance of demand for community services and facilities
- Encourages opportunities for lifetime communities where people can change dwellings without leaving a neighborhood
- Enables community surveillance with people coming and going throughout the day and evening

These factors are important in creating the framework within which communities can grow

Elephant and Castle T.R. Hamzah & Yeang



Floor plate configurations for different house types



Summary

The new tower is a vertical superimposition of preferred urban design ideals from the ground up, some of its distinctive characteristics are:

- It exhibits spatial de-compartmentalization to allow spatial interaction between floors
- It has diverse land uses – open public realms, live, work and play spaces
- Its spaces are organized as precincts and neighborhoods with optimal links
- It is designed and planned in a three dimensional urban design framework that aims to draw a closer tie between life on the ground and in the tower

Part 2

Digital Places: technology and people

ICT¹ impact on tower components

¹ Information Communication Technology

This section examines how digital technology has impacted major tower constituents – retail, office and housing.

Digital Places

Building our city
of bits

Thomas Horan

The Recombinant Design

For several decades, drive-in theatres embodied the widespread enjoyment of two technology driven products – cars and movies. Now abandoned drive-ins litter the landscape, often creating desolate places of concrete, metal and broken glass. The demise of the drive in theatre provides a metaphor for the fact that, at any given point, our social and physical landscape embodies but a moment in ever-changing technological circumstances; a technology comes into being, enables a set of economic and social activities, and then gives way to a new technological platform with its own set of behaviors and consequences.

Drive ins give way to home theaters, banks give way to ATM's, and local factories give way to world wide supply chains In fact, a constant stream of technological advances has profoundly affected the urban landscape, including breakthroughs such as the railroad and car, highway and skyscraper. These technologies have stretched the boundaries of cities both vertically and horizontally. While technological development is, in part, undertaken for societal advancement, there is often a cost for such progress. Indeed, concern over technology's potential to overtake human desire has been a constant theme among many cultures.

And now, into our already technology-infused cityscape comes the digital revolution: seemingly unconstrained by temporal or spatial limits, the rapid and continuing emergence of internet based technologies, networks and services brings with it entirely new dimensions of electronically mediated experience and communication.* How will traditional cities elements like the tower change. Will they be taken over by new typologies stemming from this digital revolution? This section looks at new trends and design opportunities brought about by this revolution.

Digital Places

Technology is increasingly driving changes in key constituents of the urban tower (retail, live and work spaces).

Live and work spaces – More and more people are increasingly working from home in some form or other (live-work). As people spend more and more time at work or in work environments, increasingly high demands are made of architectural intervention. Physical workplace ranked second only to "compensation" as a factor important to employees accepting or leaving a job. *American Society of Interior Designers (ASID)*.

Retail space is increasingly becoming an interspaced activity which includes both physical and electronic browsing and buying. Transformative digital place designs have coupled retail space with a marketing function to create an overall buying and branding experience

This study posits that these developments will lead to new juxtapositions of activities (live and work, point of sale and marketing, 'public space' and offices, digital interfaces and physical interfaces) that will facilitate new design opportunities. This new architecture will be less about responding to a rigid architecture program and more about creating diverse, flexible, humane environments for electronically supported nomadic occupation. This new architecture will also be about integrating inhabited space with its associated technologies – making technological devices standard architectural features.

Live/work configurations

Specific configuration(s) function of different business parameters
- shared resources, business type etc

Tower constituents

housing
corporate business
retail & public place

Technology

I/O devices
integrated into
bld...made
standard
architectural
features

- wireless beacons
- advert signs
- solar panels

Rethinking traditional workspaces

Reestablish the value of face to face activities, encouraging small groups and informal collaborations
Making the most of the "in-between" spaces to promote spontaneous conversations and brainstorming

Introduce 3rd place - street, public spaces, nature
Case study – Nortel , NBBJ'S future office- Norwegian fjord


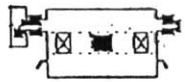

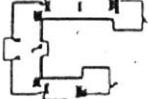
Rethinking retail

Retail space is becoming an interspaced activity. A space with physical and electronic browsing and buying

3rd place-Marketing function increasingly in stores, multifaceted experience
Case studies – Gap NY, Nike store, Levi store in SoMa

Work place Trends

Dynamic companies (IBM and Nortel –computers, AT & T and Sprint - Telecommunication, Ernst & Young and Citibank – Financial services ,GE and Xerox- diversified manufacturers, and start ups like Verifone and Chiat Day) are rethinking how and where they convene their workforce. They are creating physical, electronic workplaces with the flexibility to accommodate changing business conditions, product focus and patterns of work. This transformation reflects a growing understanding among corporate leadership that smart workplace strategies improve the way in which work is accomplished.[∞]

Four types of European buildings	
<p>Use value</p> <p>Hooftzeter SZW, Den Haag, Holland</p>  <p>Ministerie van Sociale Zaken en Werkgelegenheid, Government</p>	<p>Exchange value</p> <p>Exchange House, Broadgate, London, UK</p>  <p>Societe Generale, Trading House (Bond and Securities) Herbert Smith, Solicitors</p>
<p>Image value</p> <p>Messeeturm, Frankfurt, Germany</p> 	<p>Business value</p> <p>Les Templiers, Sophia Antipolis, Paris, France</p>  <p>Digital Equipment Corporation, Software Telecommunication</p>

The building as use, exchange, image and business value. Source DEGW - Teknibank

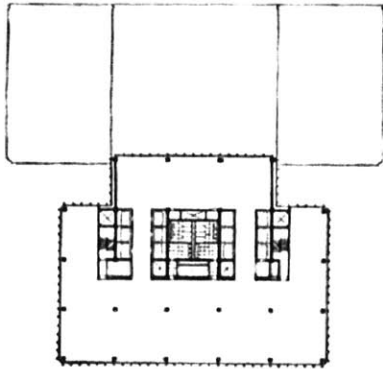
The intelligent building in Europe study by DEGW and Teknibank identified three distinct approaches to office building design:

- The custom designed building conceived to maximize the *use value* for individual organizations
- The developer' speculative building conceived to maximize *exchange value*
- The technologically driven solution which aims to maximize *image value*

Increasingly the discerning corporation is searching for new real estate solutions that reflect all three approaches and exploit technology to provide an accommodating solution which expands the range of options for the user and maximizes *business value*.

[∞] M. Joroff ,F Becker, Reinventing the workplace

Work place Trends



The Seagram Building 1954

Office Typology timeline

A sense of history is an essential ingredient in speculating on how we move forward. Presented here is a brief timeline identifying the major changes which have occurred in the last fifty years to the way businesses are organized.

1950- 1960s: From Paper Factory to Burolandschaft and the Action Office

Paper Factory Offices

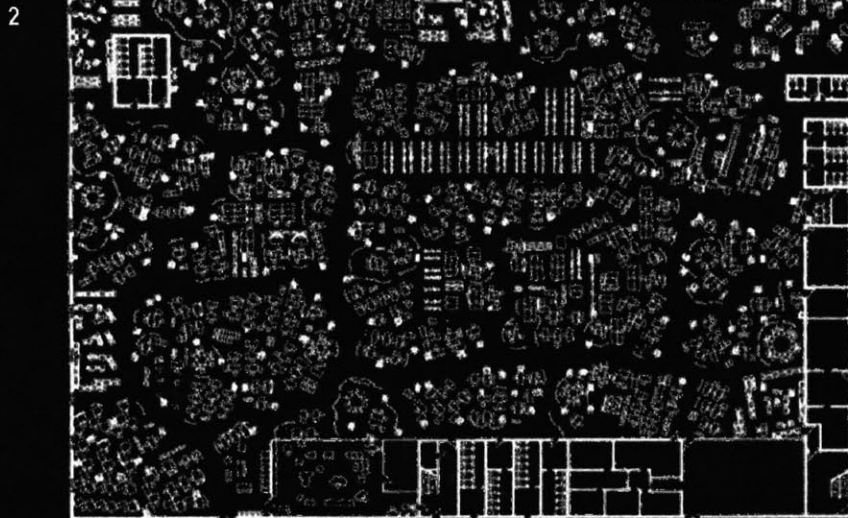
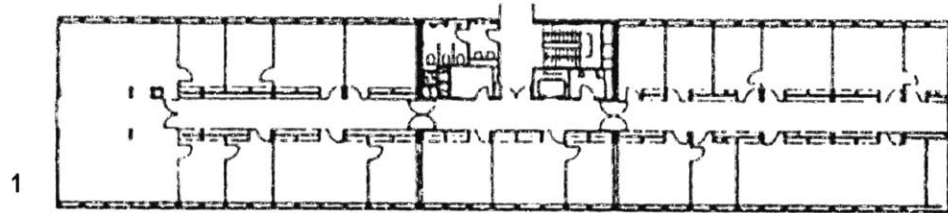
In the early fifties offices were places for the collection and routine processing of paper based information. The organization approach and overall plan layout was based on factory design, hence the name. In Europe two office types existed – the narrow depth cellular office and the Burolandschaft open office in Germany. The narrow cellular was partly a result of saving on higher energy cost (Air-conditioning and lighting) and also about cultural differences and expectations about the workplace. In the USA the office building type evolved from the narrow slab tower (SOM's Lever House) towards deep planned space, mainly open plan for clerical use with executives in perimeter offices (Seagram Building). Air conditioning and fluorescent lighting further encouraged the development of the open planned office.'

In 1959 in West Germany the Quickborner team pointed to the need for better communication supported by the design of the office. The new office layout was based on the flow of paper and visual communication, the physical manifestation was open plan layouts.

The deep space was used to accommodate concentric rings of lines of communication between groups. In 1967 the concept was introduced to the USA as office landscaping.

Herman miller Action office-in 1964 Miller's approach focused on the sets of components designed to permit individual discretion in office design. The concept of the furniture was not conceived with any one over arching organization concept. The modular furniture began to take some of the subdivision function functions of the building shell.

1. Typical 1950 European cellular office
2. The Burolandschaft Office: 1960 Versand Kamen building
3. Herman Miller Action Office





1970s Developing cultural diversity

During this period there was a growing reaction against open planned offices because they did not provide for individual concerns of privacy and personal identity. Herman Hertzberger, designed the building as an archetypal office seeking to balance corporate and individual aspirations. The plan provides for open spaces for ease of communication, yet also defined personal zone spaces for individuals and groups. In the late seventies furniture was used more and more to define spaces in open plan layouts.

The Centraal Beheer building



1980's The PC revolution

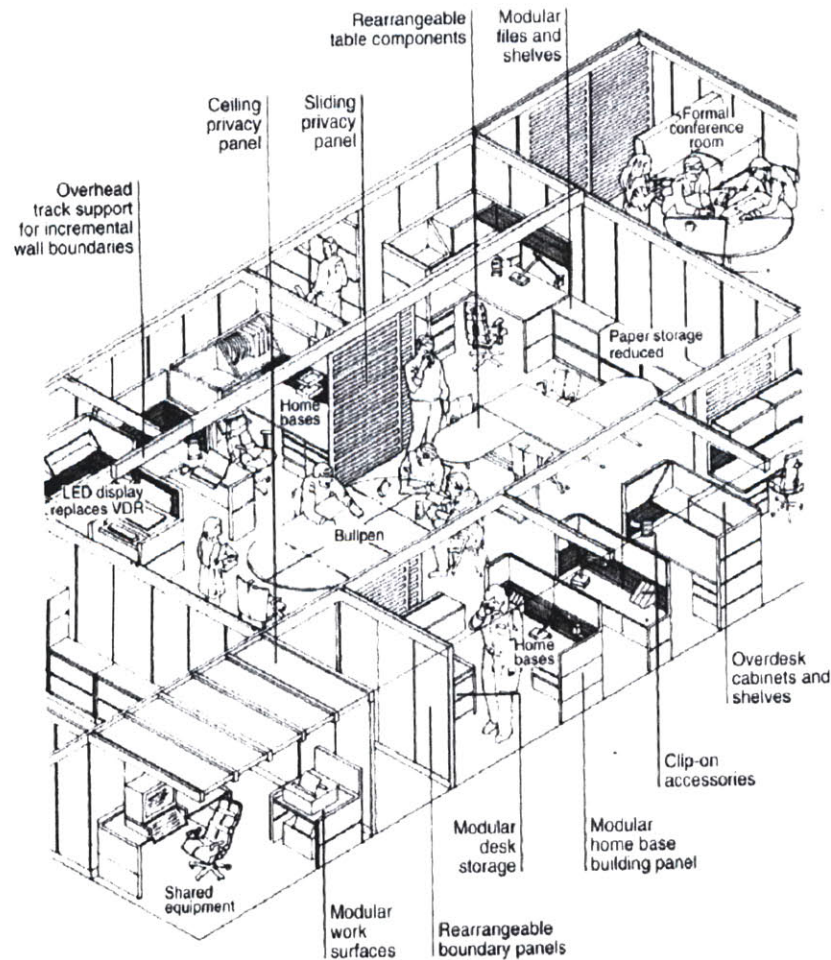
IBM introduced the PC in 1980 and the world of office work experienced dramatic changes. The shift towards the greater importance of managerial and professional work in offices was recognized. The workforce often demanded higher standards, greater personal identity and more privacy. The rise of 'knowledge work' and more creative forms of office work led some to question the traditional design concepts of the office. In the remarkable work of Stone and Luchetti, *The Office is Where You Are* (1985), they pose the fundamental question that would drive innovative thinking about the office for the next ten years: with ubiquitous information technology the space and time of the office could be used in new ways. The idea of one individual work place within the office, or of one seat per person, was challenged.

In Northern Europe, the combi concept emerged to provide high levels of personal enclosure at the building perimeter as well as shared spaces for interaction and group work in the internal space.

This partly due to high environmental standards demanded and legislation. Another factor was the system of procurement; this favored owner occupied development and therefore highly customized buildings.

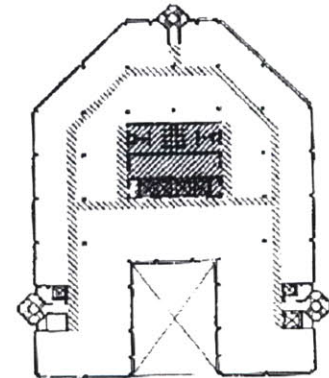
A further innovation was the introduction of the internal street and atrium to serve as a social center and circulation space for the building (SAS Building). overall three types of office layouts were in use:

- Highly cellular
- Combi office
- Group rooms



Stone and Luchetti, *The Office is Where You Are* (1985)

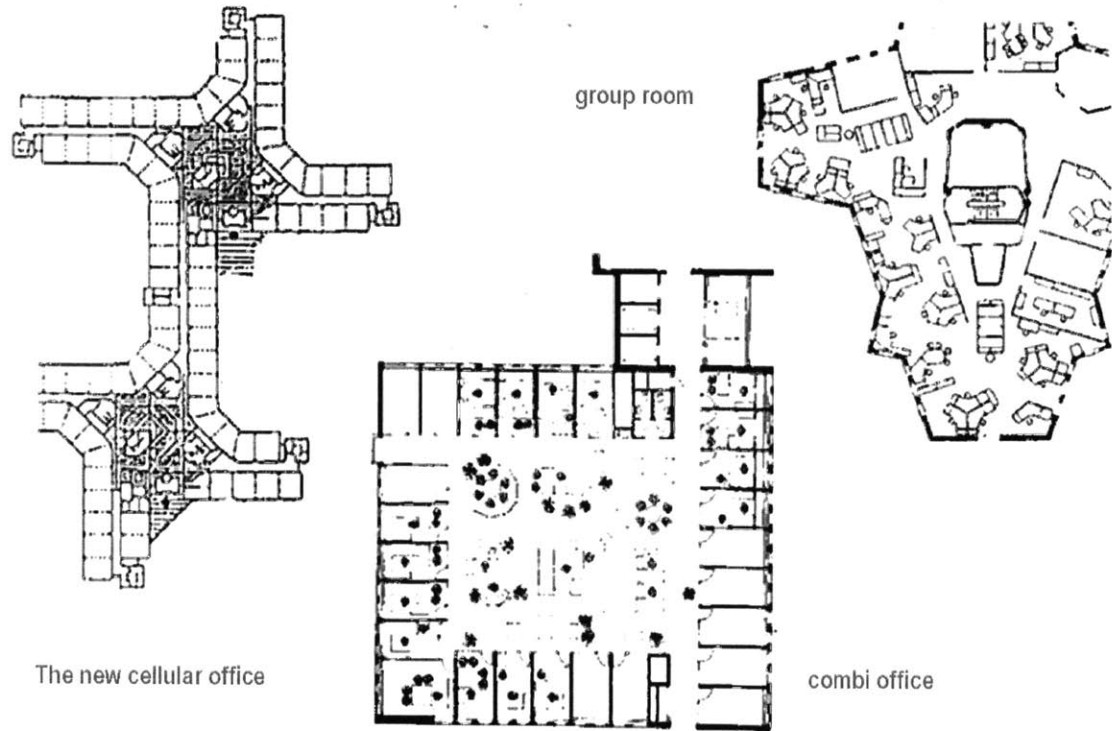
In the USA and UK the typical building was the deep floor plan central core skyscraper that was made possible by cost effective construction methods. These buildings were highly standardized and were suitable for highly routinized office work. From the mid 80's in the UK, however, the central core office tower was replaced by innovation of a new building type represented by the low rise 'high tech' buildings developed for suburban business parks and the ground scraper' atrium buildings developed at Broadgate in London.



'Broadgate' type building

	Bürolandschaft offices	Traditional British speculative offices	New 'Broadgate' type of British speculative office	Traditional North American speculative office	The new North European office
No. of storeys	5	10	10	80	5
Typical floor size	2,000sqm	1,000sqm	3,000sqm	3,000sqm	Multiples of 2,000sqm
Typical office depth	40m	13.5m	18m and 12m	18m	10m
Furthest distance from perimeter aspect	20m	7m	9-12m	18m	5m
Efficiency: net to gross		80%	85%	90%	70% (lots of public circulation)
Maximum cellularization (% of usable)	20%	70%	40%	20%	80%
Type of core	Semi-dispersed	Semi-dispersed	Concentrated: extremely compact	Concentrated: extremely compact	Dispersed: stairs more prominent than lifts
Type of HVAC services	Centralized	Minimal	Floor by floor	Centralized	Decentralized: minimal use of HVAC

Figure 2.13: North American, UK, North European building types.
Source: Duffy, Laing and Crisp. *The Responsible Workplace*, Butterworth-Heinemann, 1993.



1990's

The recession of the late 80s, the associated collapse of the real estate boom and the need for corporate organizations to reinvent what they were doing in order to survive, threw the world of office work into a tail spin. All the certainties disappeared. A new world of office organization with ways of working both in and out of offices emerged. The emphasis is on adding value by improved productivity through the effective application of IT and greater flexibility of use.

technology

On-Site Office

Huddle Spaces: Areas for informal meetings.
Learning Spaces: Interactive learning areas.
Team Spaces: Large, open-plan group work areas.
Permanent Assigned: Group workspace.
Conference Room: Traditional designated group workspace.
Videoconference Rm: Non-traditional designated group workspace.
Cave and Commons: Designed to accommodate need for individual concentration (small, enclosed workspaces are assigned) and team communication (one or more shared common areas are designated).
Universal Standard: All employees are assigned the same size workstation

Client Site

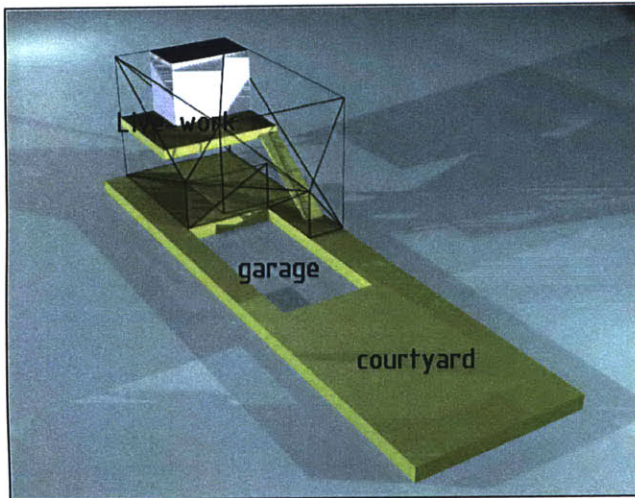
Employee workspace at their client's site

Home Office

Employee workspace at home

Virtual Office

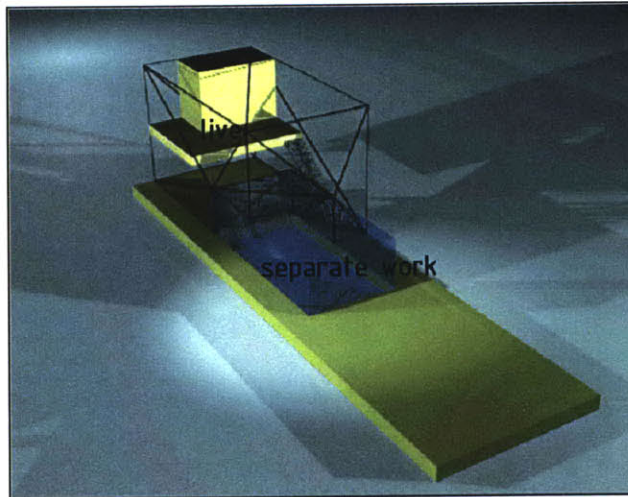
Employee workspace is anywhere they are



1. Live-With

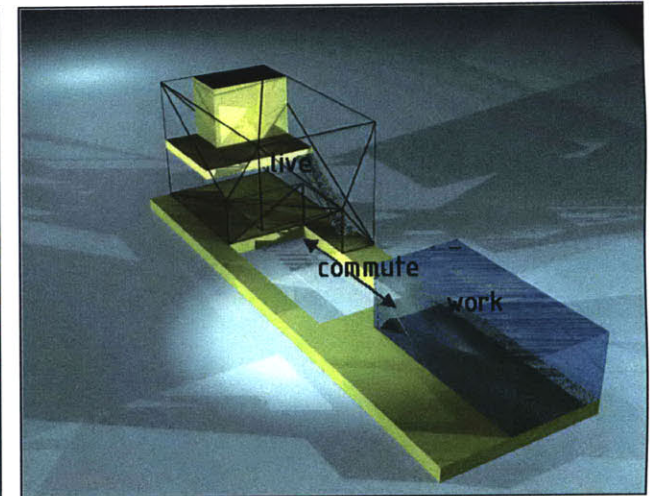
More people are increasingly working from home in some form or other (live/work). Traditional settings are being altered by digital technologies which are fundamentally affecting the longstanding rationale for distinct locations and conventional buildings

A live/with™ unit is typically a living space, which looks out over a large contiguous working space. This arrangement offers the greatest flexibility and the fewest interior partitions, allowing the user to adapt it to many different configurations.



2. Live-Near

Live-Near™ meets the needs of those who feel that the proximity afforded by live/work is important, but who would nevertheless would like some separation between living and working spaces. This can be to minimize exposure to hazardous materials or high-impact work activity, out of consideration for family or roommate, or simply to fill the need for the bit of distance created by a wall or floor



3. Live-Nearby

Live-Nearby™ meets the needs of those who feel that the proximity afforded by live/work is important, but who would nevertheless would like a larger separation between living and working spaces

2000s

In the new millennium, the new world of office organization with ways of working both in and out of offices that had emerged in the 1990's was further reinforced by the emergence of wireless technology. Wireless technology not only enabled efficiencies in communication but also it will enable a seamless world where information can be accessed anytime, from anywhere and from any device.

Flexibility is a higher priority than ever, in terms of both work schedules and organization of workspace. As shown in the case study below, creativity and interaction among workgroups are becoming more crucial considerations than absolute spatial efficiency. The manner in which employees work, their motivations and the quality of social relations is fast becoming the prime productivity consideration. Traffic areas and spaces for meeting and relaxation are increasing in numbers and are arranged in a complex network which must be thoughtfully structured to ensure legibility and facilitate contact without creating conflict. The office structure must now house new functions that are increasingly taking more space. The walls between the domestic environment, leisure and work are beginning to crumble. All these changes in spatial organization and social set ups are enabled by the invisible wireless network.

Case Study: NBBJ's office of the future

This case study covers the design of a one-building 'city' on the Norwegian fjord. A concept dubbed office of the future was devised to bring the massive scale of the project to a personal level. Offices are organized into working units of 30 people, arranged individually or in modules of two or three units, depending on the configuration that maximizes natural lighting, views of Oslofjord, and workplace flexibility.

The spaces are connected vertically via their local atrium. The spaces are comprised of activities that suggest a city center street, such as tea and coffee bars, cafeterias and shops that encourage chance meetings between workers, as well as among visitors. In this way, knowledge is shared, relationships are developed and ideas are generated. Valuable, intimate, face-to-face meetings provide intensely rich contrast to the technology inherent in most of today's offices.

Making the most of the "in-between" spaces to encourage peoples' need to connect on levels other than just the five senses, the architects use techniques like slowing down the elevators to promote spontaneous conversations and brainstorming. Patterns of human behavior give architects predictable paths then architects define areas where flexibility is built in, including pathways to slow circulation so that overlaps occur, enabling serendipitous encounters that "feed the brain".



NBBJ's Office of the future
Floor plans reflect a community with centrally located gathering places, much like a town hall. Work areas are arranged in neighborhoods. Visiting employees - those who work from home have touchdown offices

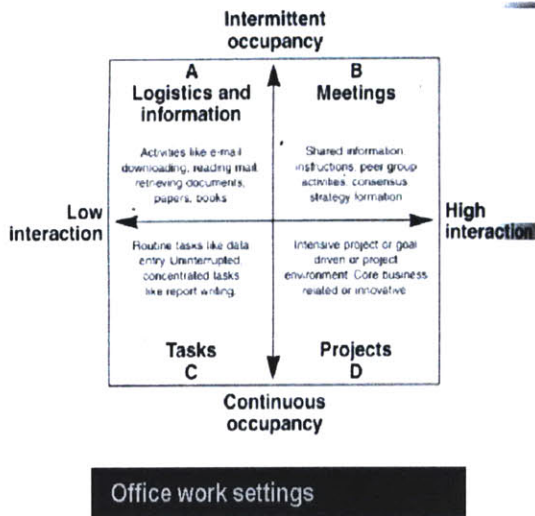


Conclusion

Whether overlapping community and private spaces or designing cul-de-sacs for increased contrast in interactivity levels the key to office design remains the interactions within the built environment.

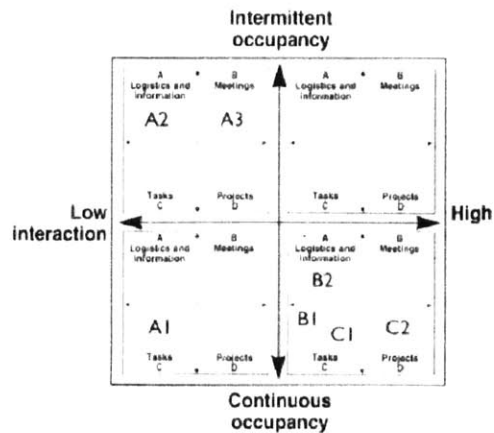
The direction of change is away from routine non interactive routine work towards both collaborative and more highly autonomous styles. Routine work is increasingly becoming automated or outsourced to lower economies. Creative knowledge work demands a combination of highly concentrated individual work alongside interactive team work. The key concepts emerging in office design include:

- Introduction of 'public environments' in the offices
- Promoting intimate, face-to-face meetings
- Allocating space according to the type of work a person does and not the rank
- Office floor plans modeled after cities/towns , reflecting a community with centrally located areas acting as gathering places



In the design of the workplace four organization types have been identified corresponding to distinctive patterns of space occupancy. The den, club, hive, cell mode are the four different workplace settings characterized by relative positions with respect to the axes.

Logistics and information is low interaction/ intermittent occupancy. People come in for short periods to check their mail synchronize diaries, log in and download/ upload information, make calls and so on.



Tasks nested within settings

Meetings are high interaction, intermittent occupancy, with intensive peer group or one-or many training activities, often time-constrained and goal oriented

Tasks are low interactions/continuous occupancy, again goal – oriented, but more individual in character such as report- writing.

Projects are high interaction/ continuous occupancy, but of variable duration and intensities

Most organization will have different requirements, depending on their size, structure and work task mix.

The challenge for design is creating work settings which are sufficiently adaptable to meet changes in work tasks.

Companies like IBM and rank Xerox have been through the pain barrier of reconstructing, discarding inappropriate space, re-planning that which continues to be appropriate, and acquiring new premises to provide for new requirements .the essence of the new workplace is:

- A collection of working spaces (home, car, hotel, client’s office and the ‘corporate hearth’), networked by technology.
- The corporation owning a small number of key buildings that reflect corporate values, and provide a set of spaces to enhance faster informed communications, team spirit and a sense of trust.
- Convenience and amenity to support the busy professional. many professionals speculate that their fantasy office would transfer ‘the best of hotel service culture – reliability, consistency, responsiveness, and personal attention – to the modern office environment
- Appropriate technology well integrate with the business operation to support and enhance performance

The changing workplace requires a reappraisal of the way we work, the space we occupy, the technology required and the work group settings. The quality of the working environment is now considered a prime factor in productivity. The need to save energy and increasing concern for employees' well-being are also factors in the new approach to office architecture. The artificial environment of hyper conditioned buildings has begun to seem aberrant giving way to a conception that strives to integrate natural light and ventilation.

Spatial diversity and socialization spaces are major physical considerations .The use of office space for longer periods each day is changing the concept of an individual office while live-work or working from home or varied locations is becoming more common .moreover , work is being harmoniously being combined with leisure offering greater flexibility in time management. The importance of a firm's image and the new spatial philosophies give the role of architecture renewed importance and encourage diversity in configuration. The emergence of new modes of communication, the emphasis on individual needs and working conditions and the openness to the environment are initiating a new generation of office buildings.

“Hamal and Prahalad in **Competing for the future** (Harvard Business School Press 1994) suggests that the success of organizations in the twenty first century will be dependent on competing for the “acquisition of industry foresight”. They recognize that, in the future, the ability to organize the logistics of space and time will be as important as the design of the buildings. It presents the role of real estate in the twenty first century as achieving value through its ability to add to business performance and support organizational change.

^oJohn Worthington ,The changing workplace

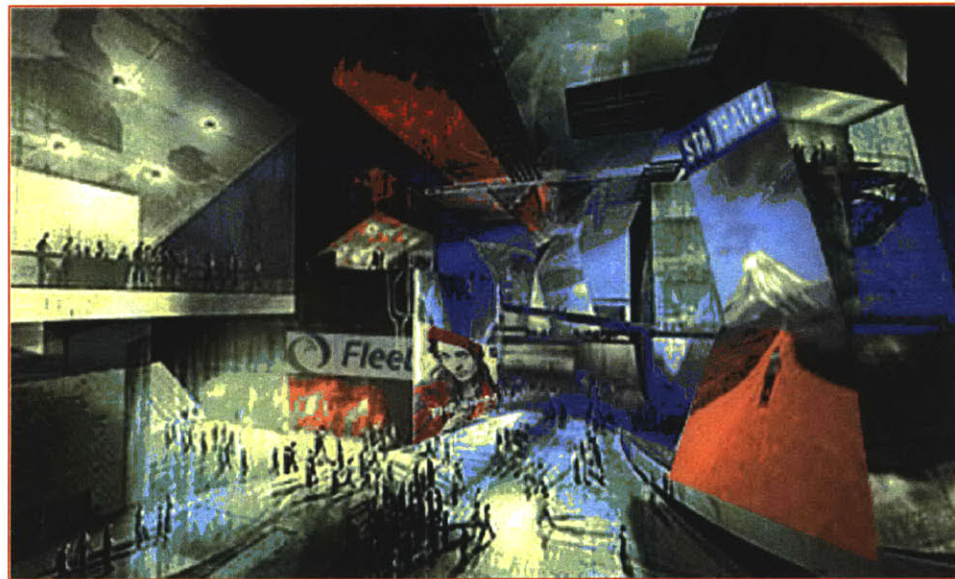
Trends in Retail

•Digital media marketing channel point of sale

•Physical Retail marketing channel point of sale

Retail space is increasingly becoming an interspaced activity which includes both physical and electronic browsing and buying. Digital technologies are dramatically reconfiguring the physical and electronic relationships between points - of - sale, distribution, and production locations. These developments suggest that the value of physical place is not going away but is evolving in its nature and purpose. Transformative digital place designs have coupled retail space with a marketing function to create an overall buying and branding experience.

The tremendous success of companies such as Borders and Starbucks is due, in part, to their commoditization of Ray Oldenburg's "third place," where informal social exchange can occur. (Digital places: building our city of bits)



JVC center montage – retail/public space

Interspaced Activity Value Proposition

In September, McDonald's opened a 17,000 square-foot outlet in Times Square, featuring Wi-Fi access and donut-making displays. In November, Victoria's Secret followed with a 20,000 square-foot eye-candy palazzo on New York's Herald Square. This is the brave new world of retail entertainment where stores are turned into destinations. Not surprisingly, UK (the capital of trendsetting department stores)⁹ department store sales were up 5% in 2002, while U.S. sales slumped 2.1%. To improve sales and its image, Levi is undergoing a retail transformation (part theater, art gallery, museum, cinema, rave, customization kiosks) in North America to attract a younger audience. The Seattle, Chicago and Boston stores were the first to be remodeled, and the result was gains in sales of between 10 - 30 %. **Business Times San Francisco**

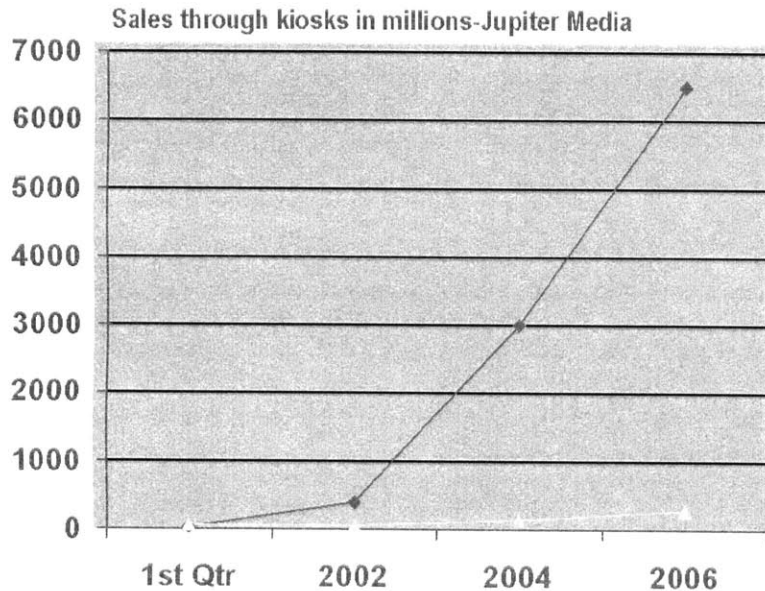


Transformative digital place: Levi Store designs couple retail space with a marketing function to create an overall buying and branding experience. The idea is to juxtapose various activities to create a multifaceted experience for users

⁹ Selfridges Retail Paper 2003

Kiosks: Bridging the Gap between Traditional & Electronic Retail Marketing

Kiosks, electronic self service and information terminals are a means for retailers to converge their various sales channels: brick-and-mortar, online and print. Recent reports indicate that the average dollars per sale increase significantly when the customer utilizes more than one sales channel. In fact, in a recent article, Dave Towe, the vice president of merchandising at Recreational Equipment Inc., noted that the dollar value per sales increased 22 percent when the customer used their Website as well as visited their store.



“Fundamentally, the failure in the initial implementations of kiosks were in and around the technology and the deployment of the technology,” says Nelson Gomez, general manager for kiosks at Dayton, Ohio-based NCR. “Initially the connotations of kiosks in the industry were, ‘Temporarily out of order’ or ‘Please see clerk’. These bad connotations have changed with the implementation of robust kiosk technology. Three million consumers are projected to purchase nearly \$200 million in goods and services via kiosks during 2001, an average of \$57 per buyer. By 2006, and in large part due to the ever-increasing number of retailers launching kiosks, those figures are projected to increase to 23 million users, \$6.5 billion in purchases and an average of \$289 per buyer, according to a Jupiter Media Metrix report, “Kiosks, Empowering Customers to Close the Sale.”

According to Gomez, one of the areas where retailers could do a better job of implementing retail technology is in understanding how the consumer shops the store and tailoring the kiosk applications to the stage of the purchase.

“I truly believe that kiosk technology will be, from a retailer’s perspective, one of the major points of differentiation in the shopping experience. It will be a competitive advantage,” **Nelson Gomez**

Kiosk Information Systems president Rick Malone calls internet based kiosks the three tail glue that ties catalogs, the web and bricks-and-mortar. Malone foresees a time when retail kiosks will be store fixtures.



Mercedes sales kiosk



Borders title sleuth kiosk



McDonald's order kiosk



Virginia DMV kiosk



Quick photo kiosk

The Empowered Store This is a new retail business concept introduced by Syntegra and Aberdeen group. The empowered stores leverage technology such as instant voice communications, service mobility, and managed services for RFID systems to give more control to the customer at the purchase point of decision, resulting in a more satisfying shopping experience, increased customer loyalty and lower service costs.

Syntegra, the \$1 billion business transformation and change management subsidiary of BT Group, is joining forces with key retail industry firms such as Aberdeen Group, Microsoft, Vocera and VI Agents to create and deliver new solutions and services that are designed specifically to maximize store performance for retailers

Aberdeen Group, an IT market research leader, is leading the Empowered Store methodology and pulling together a group of market leading retail companies to form a consortium to drive the new retail business model. The Empowered Store concept is predicated on the fact that growth for retailers accelerates when they maximize the performance of existing stores. This acceleration in growth requires the entire retail ecosystem to leverage and integrate evolving store technology and processes to better serve the Empowered Customer. One example of the Empowered Store occurs when sales associates use in-store wireless technology to be more responsive to customer requests -- quickly contacting product experts to answer merchandise questions and suppliers to check inventory levels, right from the sales floor during the sales transaction. This results in better customer service, more efficient stores operations, and improved inventory control.

Stan Elbaum, Aberdeen's VP of Strategic Research, notes: "Today's demanding customer is increasingly fickle, fast-moving and more and more difficult to retain. Via the Internet and other resources, the customer can quickly explore and value product alternatives, and become better informed than virtually all of the employees attempting to service them. Retailers will have to evolve toward Empowered Stores that leverage technology and process in order to create an environment where the customer keeps coming back."

"Retailers will give more and more control to the customer at the purchase point of decision - through self-service opportunities, empowered sales associates and suppliers and easily accessible back office systems," said Chris Turnquist, Retail and Manufacturing VP, Syntegra. "This will lead to more loyal customers and ultimately will lower the cost to serve them."

Customer Empowerment extends the value from the retailer to the customer by providing additional access, content, education and commerce to wherever the customer is located. "The Empowered Store concept acknowledges that one of the retailer's keys to success is to leverage the familiar technologies—such as cellular phones, personal digital assistants and other wireless devices—already in the consumer's hands in order to create a compelling and fulfilling shopping experience."

"In-store wireless communications systems instantly connect staff, managers, and customers to quickly provide the information needed," said Brent Lang, vice president of Marketing, Vocera Communications. "Being able to instantly locate product information or speak to a subject specialist will increase the value a retail employee brings to the in-store selling process."

RFID Technologies

Metro" Future Store" in Rheinberg, Germany

European retailer Metro has opened what it calls the "Future Store" in Germany: this showcases the benefits of radio frequency identification technology (RFID) to consumers and suppliers.



RFID -- microchip technology that can be attached to just about anything, including humans, and tracked by readers in certain proximity -- is, in fact, the foundation of the Future Store. Metro will chip and scan products at the distribution center, enabling the Rheinberg store to track what's in the shipments, and when they're scheduled to arrive, in real time and with a degree of precision previously unavailable. When items arrive at the Future Store, Metro can do another scan to see if cases are missing, doing in seconds what once might have taken hours: the checking of individual pallets and manual recounting. After such a scan, items go straight to the selves, where Metro's RFID system will interact with the company's SAP back-office system to trigger automatic restocking when stocks hit a certain low. By doing so, Metro hopes to avoid the retail bane of empty shelves and also to learn quickly about which of its stocked items are popular and not popular, thereby having a basis to make future stocking decisions.

RFID extends beyond delivery and stocking uses at the Future Store. Since shopping carts themselves are chipped, the Future Store can "tell" how busy it is and trigger the activation of additional checkout counters as needed. There's theft protection. There are also non-RFID technologies aimed at consumers -- for example, mobile personal shopping assistants that guide shoppers through the store. And consumers also have the choice of checking out their own items via kiosks

Kiosks can also play clips from CDs and DVDs after a quick scan initiated by the shopper. These features can also be accessed through the mobile assistant.

Metro worked with SAP (enterprise applications), IBM (RFID, systems integration, and automated kiosks), Intel (readers, infrastructure), and others in order to make the Future Store a reality.

Analyst Gene Alvarez of META Group says that, for any deployment of RFID, it will be typical to have many technology providers working together. "It's a coordinated symphony rather than a simple technology buy," he says, explaining that there can be different vendors to provide tags, readers, application capabilities, and in-store networks. RFID only works at an item level for some products at the Future Store -- for example, Gillette, Procter & Gamble, Kraft, and some other companies are providing item tagging for their goods, but other Metro suppliers are not. However, Metro is scanning cases and pallets: a recourse which, while perhaps not as granular and desirable as item-level, still allows improved tracking and inventory management processes. What Metro might not be able to do, for now, is to locate individual items on so-called mixed pallets, which contain both tagged and non-tagged items.

META's Alvarez says that we might not see universal item-level RFID tagging for a sometime, but that this lag has no implications for the technology's adoption and benefits. "Item-level is of value when the price tag is significant, like with high-end apparel, or when there are mandates -- for example, in pharmaceuticals, there are DEA requirements for controlled substances." Thus, pallet- and rack-level RFID complemented by selective item-level RFID is good enough for the time being, and there are no reasons to push until the technology matures, counsels Alvarez. "It's still not at a price point where it's worth [chipping] candy bars,"

he says. Passive RFID chips sell for less than 50 cents each whereas the more functional and powerful active kind are still not below a dollar, he adds. The RFID game may soon become a basic matter of survival for retailers. "This is a competitive pressure situation," concludes Alvarez. "Wal-Mart has been collaborating on RFID. Margins are so thin that inventory control, supply chain execution, fulfillment, and keeping products on shelves will contribute to success or failure."

Christian Koch, marketing director for SAP's consumer industries practice, is project manager for the Future Store. From his perspective, the evolution of RFID will create new opportunities for enterprise applications providers like SAP. "You have to add a business process level, and this is where SAP comes in." While Koch is proud of SAP's role in the Future Store -- "We connect the reader interfaces to applications, do inventory management on the smart shelves, and are involved whenever logistics come into play" -- he acknowledges that RFID in practice is in its early days. For example, he says that there are only three smart shelves in the store to date; but he says that each shelf demonstrates an interesting use of RFID. "Gillette is interested in theft protection, Procter & Gamble wants visibility into fast-moving products, and Kraft is interested in shelf life." Koch agrees with Alvarez that many technology vendors need to work under the same roof to make RFID a reality. He reveals that 35 partner companies and 100 dedicated employees worked on the Future Store, for example. The end result of all that labor has been not just a coup for Metro but also an opportunity to bring RFID into the limelight, he concludes. "There has been a laboratory phase for RFID. It's now ready for reality." [∞]

[∞] Demir Barlas, RFID Goes Live 2003

Third Place

"Social condensers" -- the place where citizens of a community or neighborhood meet to develop friendships, discuss issues, and interact with others -- have always been an important way in which the community developed and retained cohesion and a sense of identity.

Ray Oldenburg (1989), in **The Great Good Place**, calls these locations "third places." (The first being the home and the second being work.) These third places are crucial to a community for a number of reasons, according to Oldenburg. They are distinctive informal gathering places, they make the citizen feel at home, they nourish relationships and a diversity of human contact, they help create a sense of place and community, they invoke a sense of civic pride, they provide numerous opportunities for serendipity, they promote companionship, they allow people to relax and unwind after a long day at work, they are socially binding, they encourage sociability instead of isolation, they make life more colorful, and they enrich public life and democracy.

There are essential ingredients to a well-functioning third place. They must be free or quite inexpensive to enter and purchase food and drink within. They must be highly accessible to neighborhoods so that people find it easy to make the place a regular part of their routine -- in other words, a lot of people should be able to comfortably walk to the place from their home. They should be a place where a number of people regularly go on a daily basis. It should be a place where the person feels welcome and comfortable, and where it is easy to enter into conversation. And a person who goes there should be able to expect to find both old and new friends each time she or he goes there.

According to Oldenburg, World War II marks the historical juncture after which informal public life began to decline in the U.S. Old neighborhoods and their cafes, taverns, and corner stores have fallen to urban renewal, freeway expansion, and planning that discounts the importance of congenial, unified and vital neighborhoods. The newer neighborhoods have developed under the single-use zoning imperative -- which makes these critical, informal social gathering places illegal.

Oldenburg points out that segregation, isolation, compartmentalization and sterilization seem to be the guiding principles of urban growth and urban renewal. In the final analysis, desirable experiences occur in places conducive to them, or they do not occur at all. When certain kinds of places disappear, certain experiences also disappear.



The tremendous success of companies such as Borders and Starbucks is due, in part, to their commoditization of Ray Oldenburg's "third place," where informal social exchange can occur. **Digital places: building our city of bits**

The general trend in retail is to juxtapose various activities to create a multifaceted experience for users. Retail space is coupled with marketing function to create an overall buying and branding experience. Again, technology is the main enabler of these new and renewed physical and social organizations.

Third place - a place of refuge, escape, safety and free expression. A place where all the cultures can come and conversation can take place on level ground.

Part 3

Manhattan Tower

Prototypical Tower Design in Upper Westside

This section presents a prototypical tower design that is informed by the studies discussed in this dissertation.

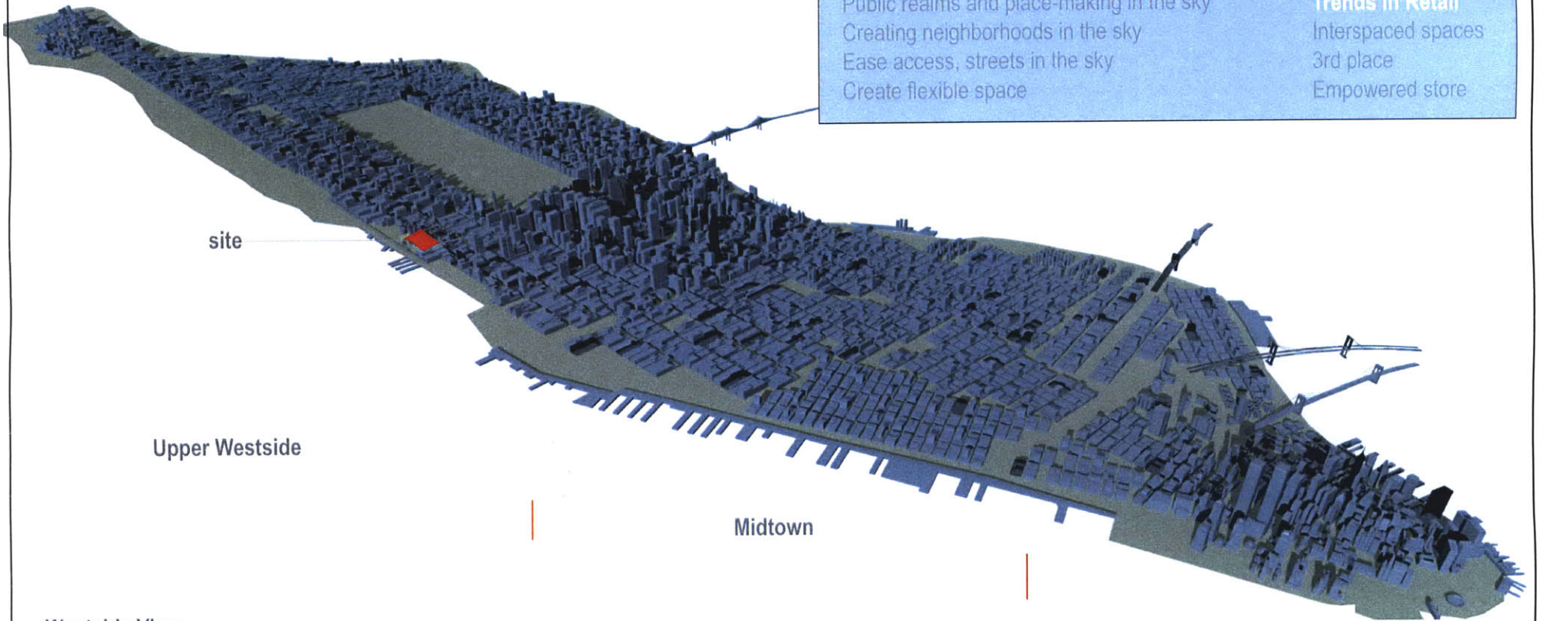
New York Site



Eastside View

The key trends that will inform the design are:

- Vertical Urban design Trends**
 - De-compartmentalizing tower built form
 - Diversification of vertical land-use
 - Public realms and place-making in the sky
 - Creating neighborhoods in the sky
 - Ease access, streets in the sky
 - Create flexible space
- Trends in workplaces**
 - Quality workspaces
 - Live-work
 - Wired
 - Flexibility
- Trends in Retail**
 - Interspaced spaces
 - 3rd place
 - Empowered store



site

Upper Westside

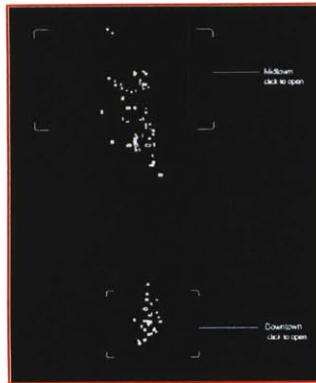
Midtown

Westside View

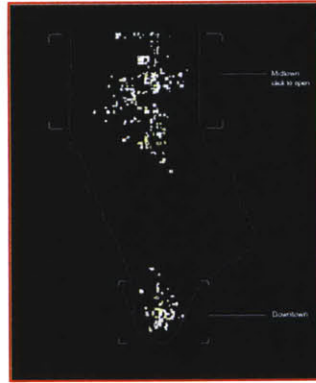


Downtown Manhattan

New York Office building timeline



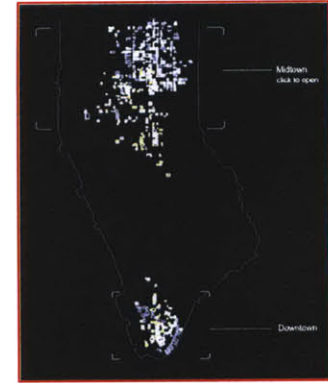
1893 - 1916



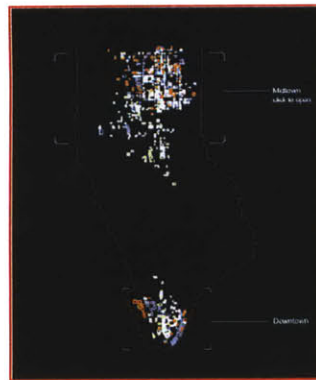
1917 - 1940



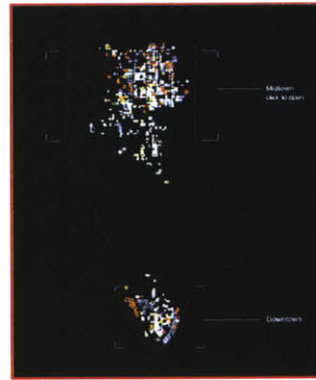
1945 - 1964



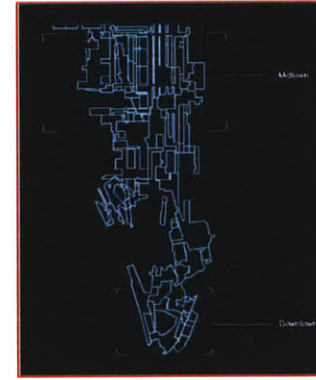
1965 - 1975



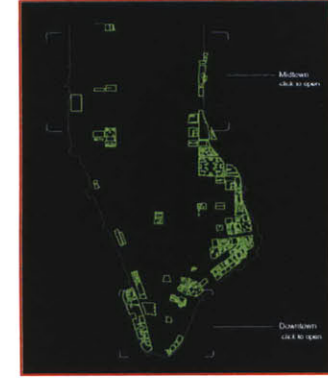
1980 - 1989



1990 - 1995



commercial



urban renewal

Zones

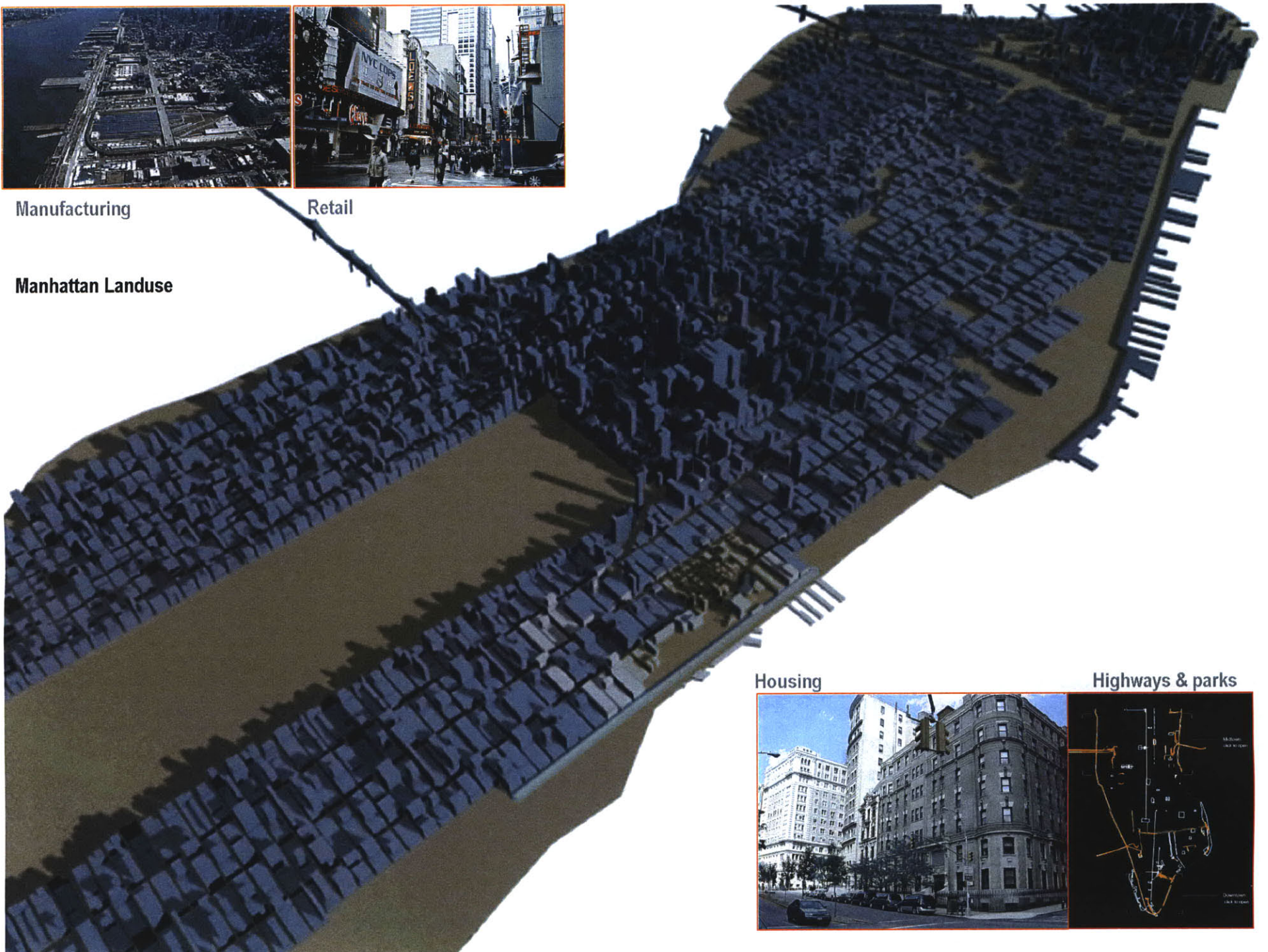


Manufacturing



Retail

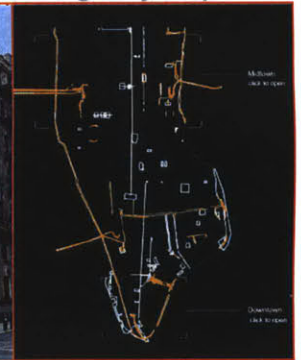
Manhattan Landuse



Housing



Highways & parks



Site

Area 52437m sq.

FAR 10 -12

Plot Ratio 100%

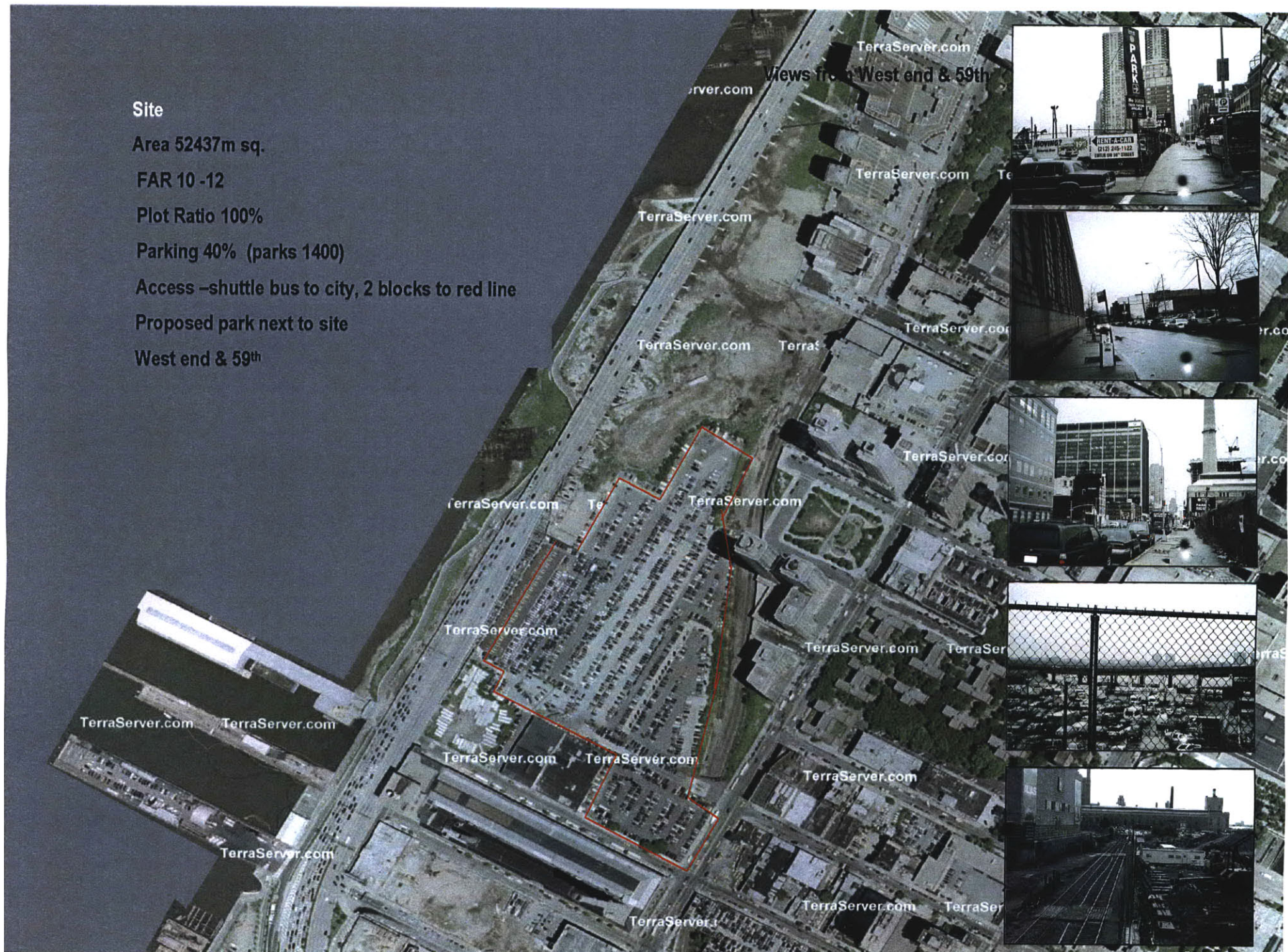
Parking 40% (parks 1400)

Access –shuttle bus to city, 2 blocks to red line

Proposed park next to site

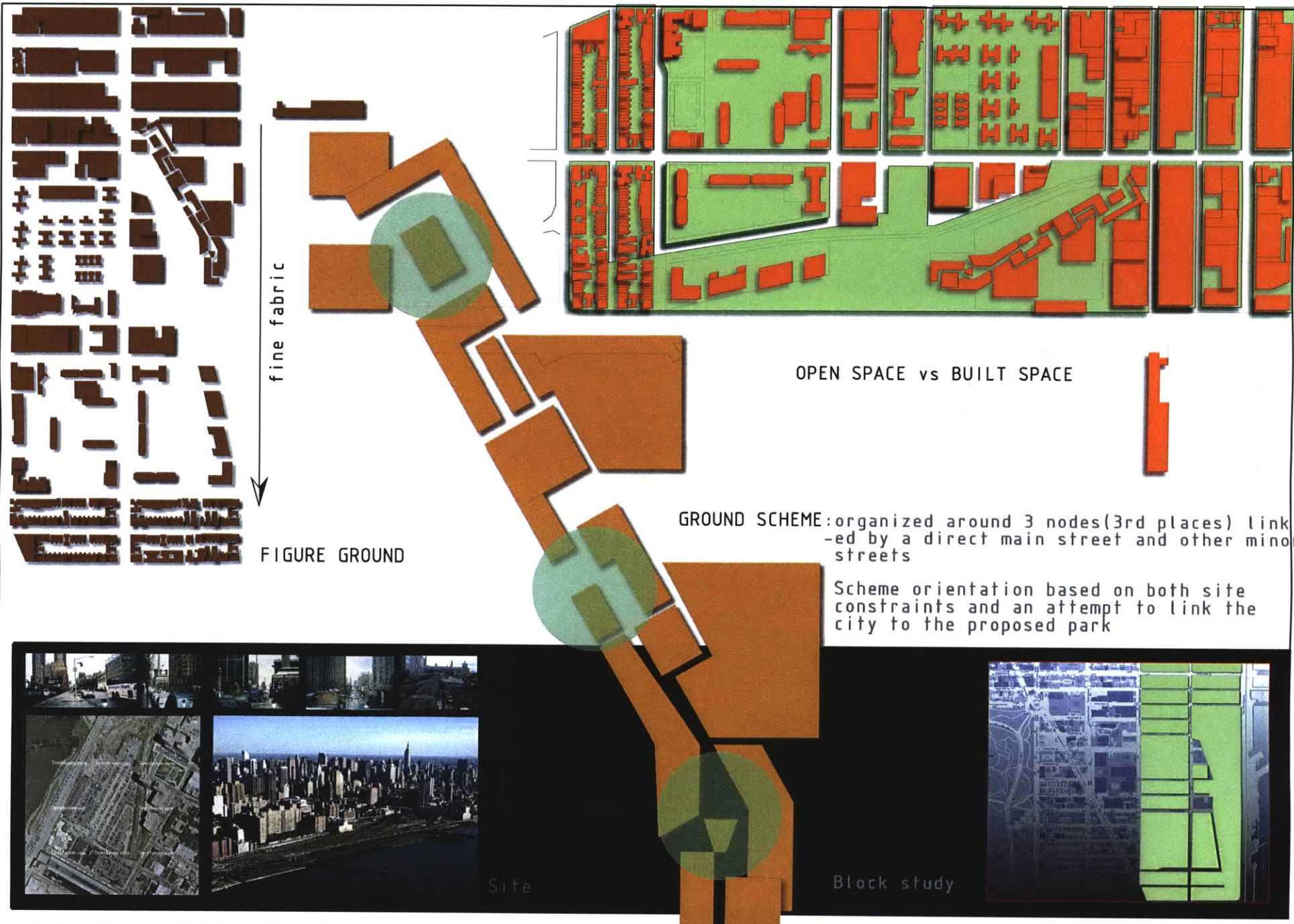
West end & 59th

Views from West end & 59th



View from the Hudson





fine fabric

FIGURE GROUND

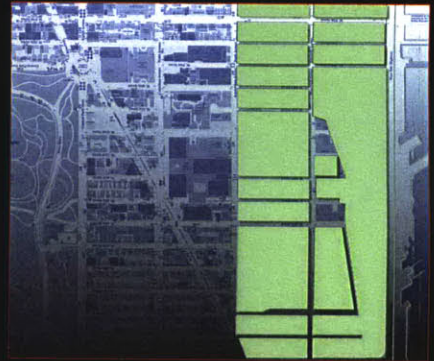
OPEN SPACE vs BUILT SPACE

GROUND SCHEME: organized around 3 nodes (3rd places) linked by a direct main street and other minor streets

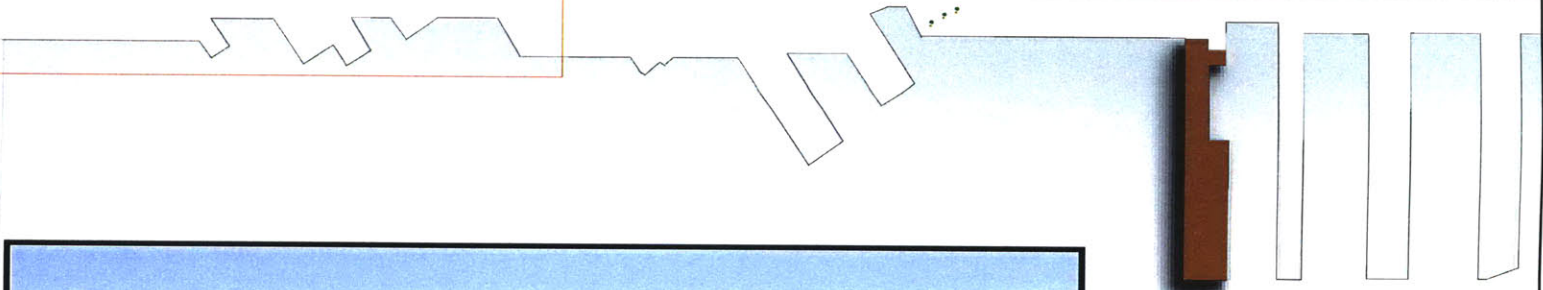
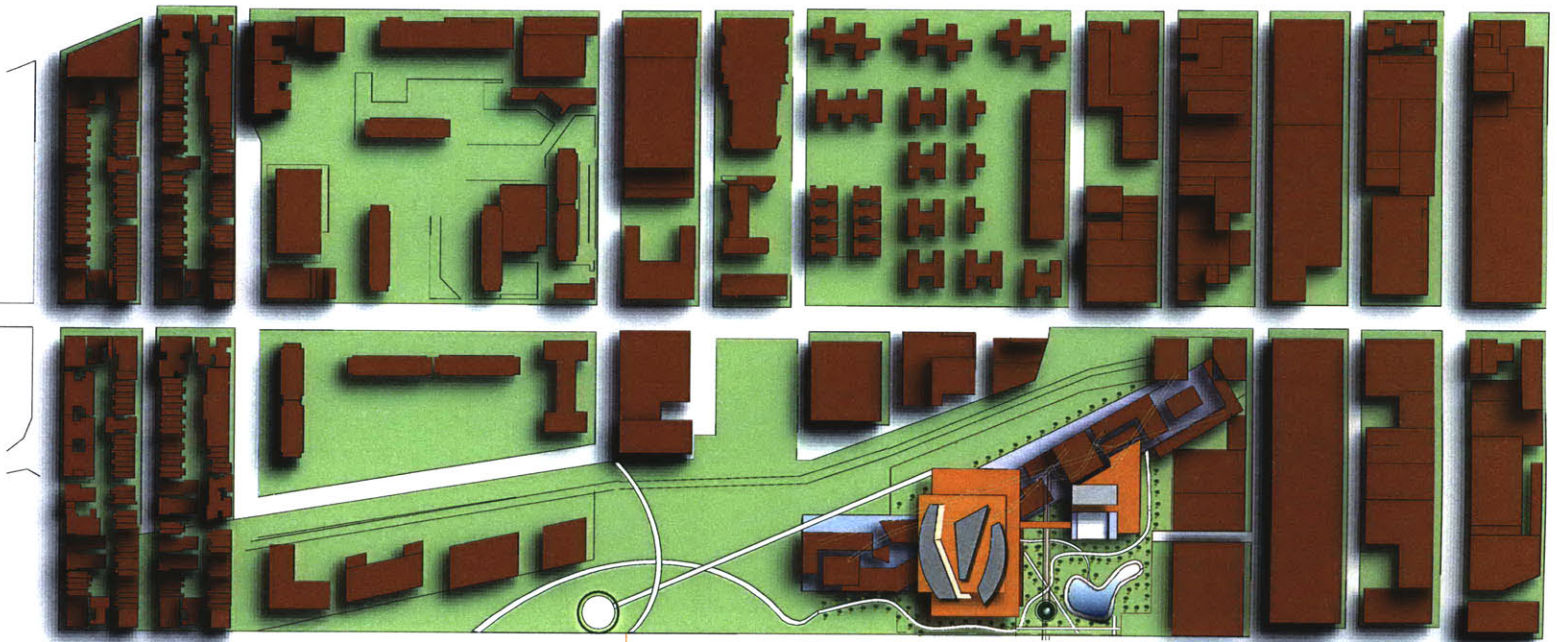
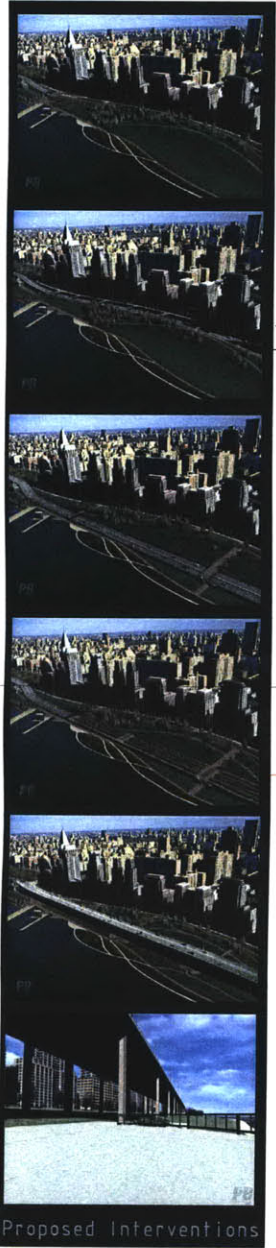
Scheme orientation based on both site constraints and an attempt to link the city to the proposed park

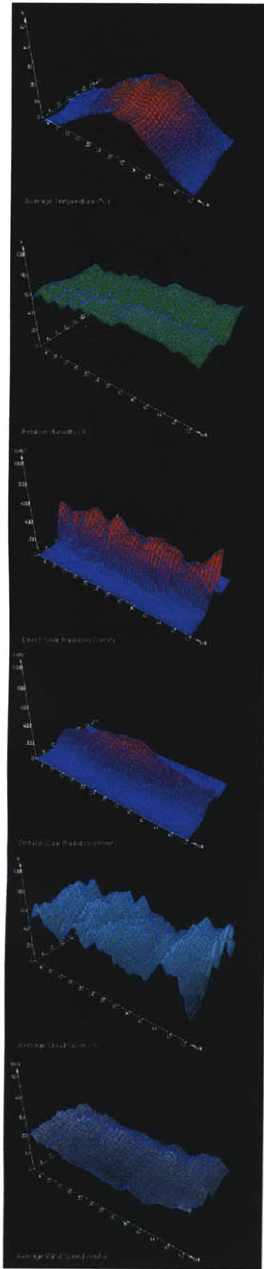


Site



Block study





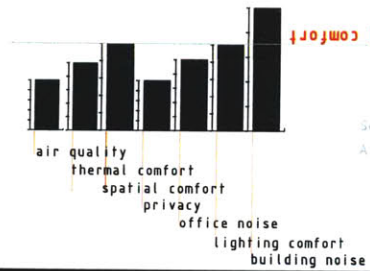
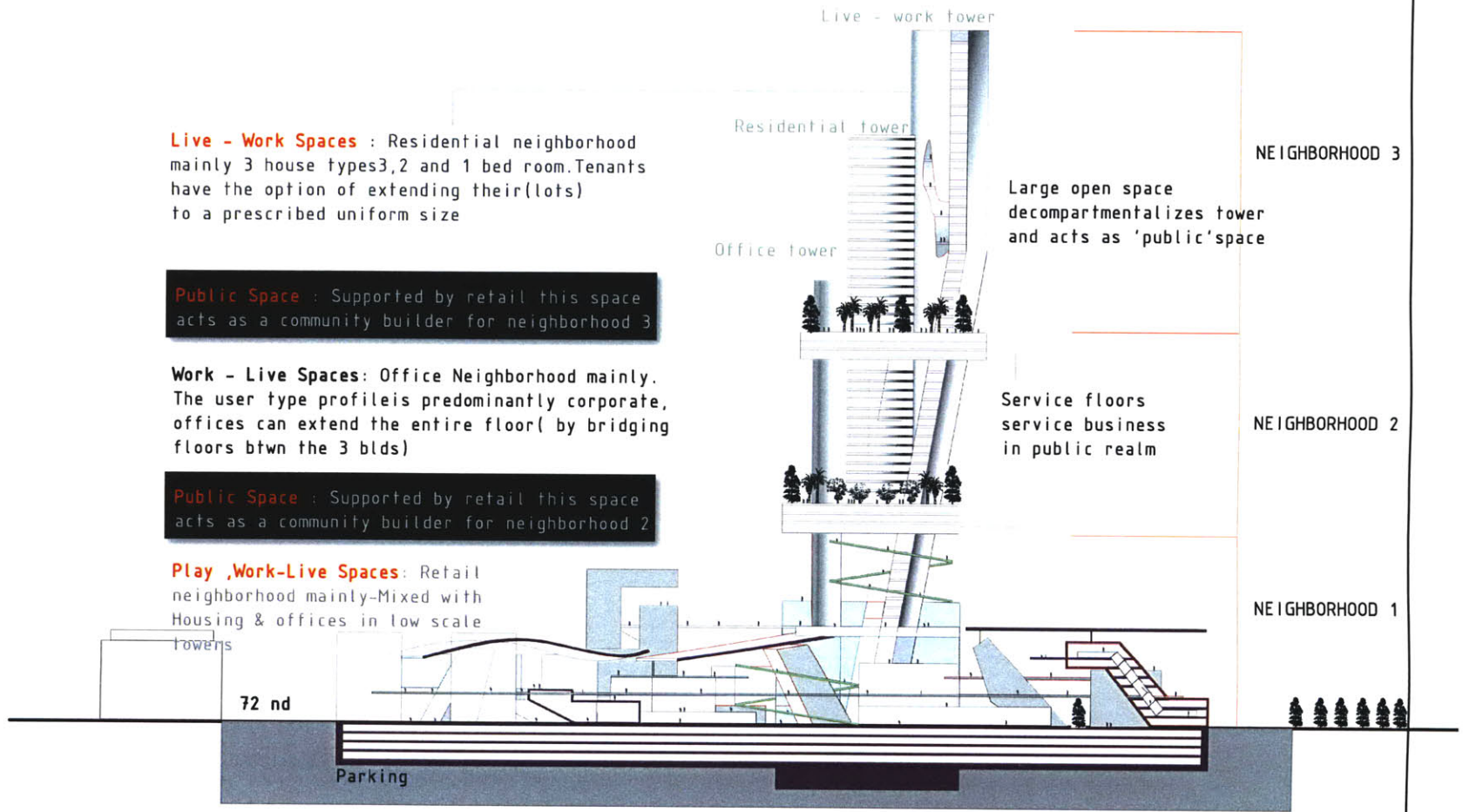
Live - Work Spaces : Residential neighborhood mainly 3 house types 3,2 and 1 bed room. Tenants have the option of extending their (lots) to a prescribed uniform size

Public Space : Supported by retail this space acts as a community builder for neighborhood 3

Work - Live Spaces: Office Neighborhood mainly. The user type profile is predominantly corporate, offices can extend the entire floor (by bridging floors btwn the 3 blds)

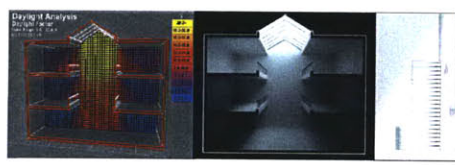
Public Space : Supported by retail this space acts as a community builder for neighborhood 2

Play ,Work-Live Spaces: Retail neighborhood mainly-Mixed with Housing & offices in low scale

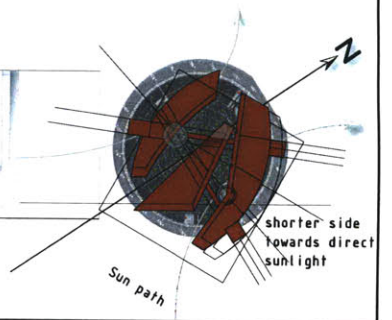


Space and light 2nd in defining comfort

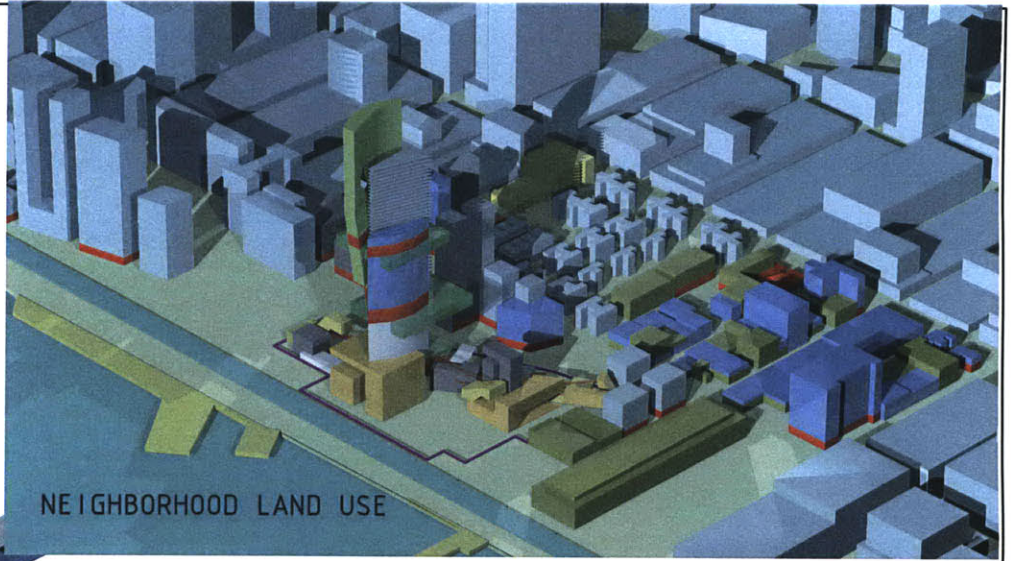
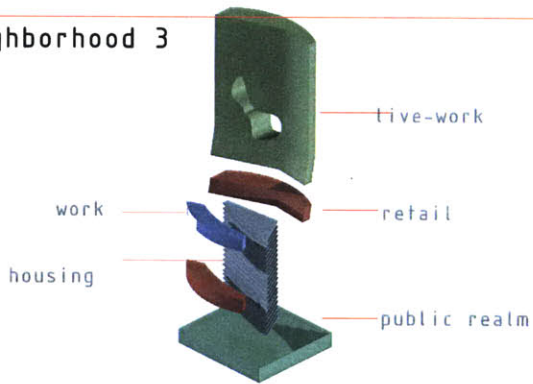
Source: Workspace Strategies Environment
A Tool for Work (Jacqueline C. Vischer 1996)



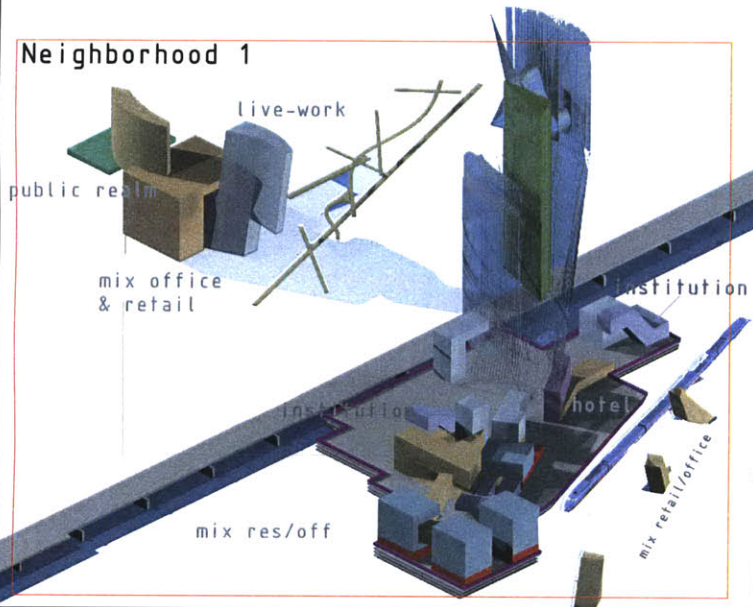
Traditional Lighting Strategies vs New plan



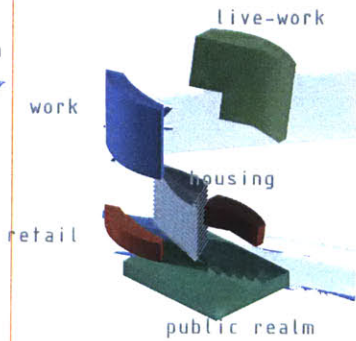
Neighborhood 3



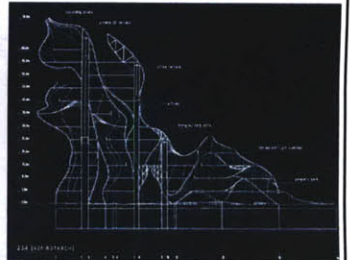
Neighborhood 1



Neighborhood 2



LAND USE: NEW TOWERS



New Land Use Scheme vs. Trad. Land Use Scheme



Vertical Land Use



RETAIL

Growth - retail stores 3rd places share the 'parcelized' street, akin to the restaurants - food court model.

RFID and wireless technology facilitate nomadic occupation of spaces and ensure security for retail items without the benefit of walls

RFID sensors - demarcate 3rd places

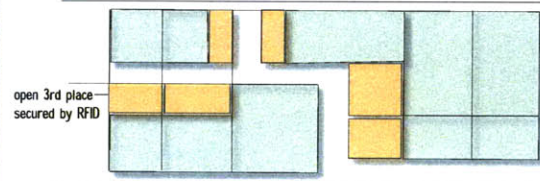
3rd place activities - eating, hanging-out, shopping- kiosks, advertising

This new idea will govern parcelization of 'lots' and landuse in the tower

GROWTH STRATEGIES

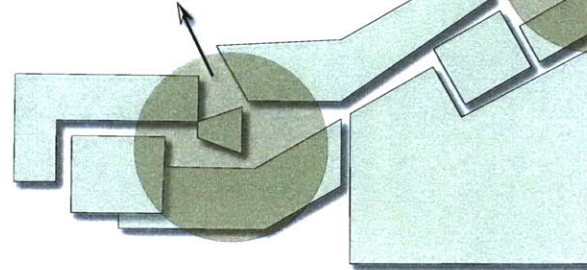
1. **Empowered store** RFID tagged shelves will be point of sale + manage tracking and inventory
2. **Self Checking** usually cumbersome, now painless thru RFID tech.
3. **Trad. 3rd Place** still not 'public' enough keeps clients already in store doesn't draw new people into store.
4. **Interspaced Place** made public, large porous spaces
5. **Interior Street** mainly naturally lit, spaces range from open-outdoor to 'indoor' enclosed space

'Parcelization' of lots informed by 3rd place location



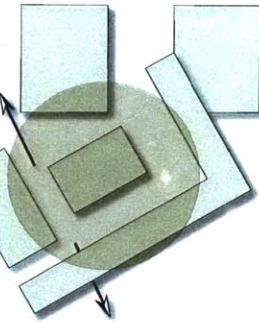
Third places from different stores share the public realm seamlessly without the need for physical demarcation. Boundaries defined by RFID sensors.

node 3 - activities can spill outdoors

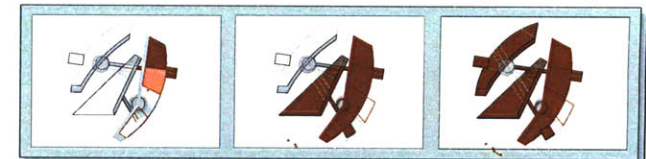


buildings' form and layout organized around a series of 3rd (public spaces) places

node 1



node 2



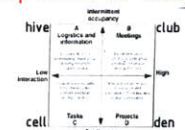
small scale outfit-start-ups, live work

mid - scale business

corporate offices

In individual design of workplaces 4 space types (the den, club, hive, cell) have been identified, they corresponding to distinctive patterns of space occupancy, they are characterized by relative positions with respect to the axes. Interior layouts are best determined on case by case basis, but most organizations layouts will exhibit various forms of the 4 space types.

The important thing is the envelop allows for change

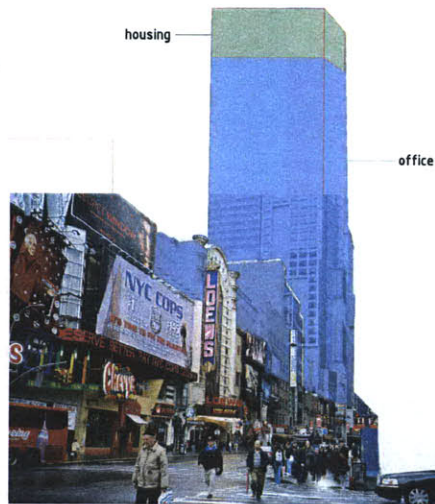
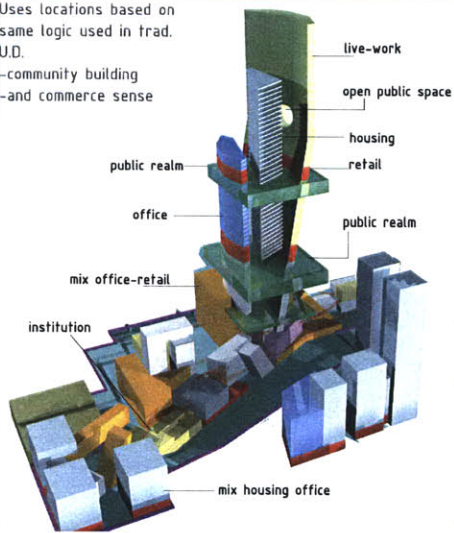


1. Free plan
supports any kind of floor layout

2. Bridging
proximate spaces bridged to make larger spaces. Because they are separate entities- these spaces are easy to dispose/resale. they also have a larger market because they can be sold/leased as offices, houses etc

Shared extensible space
lots can be extended (40sq m, 8 m cantilever). adjacent tenants can buy upto 4 plug in spaces from each other

Uses locations based on same logic used in trad. U.D.
-community building
-and commerce sense



ambient



integrated built form

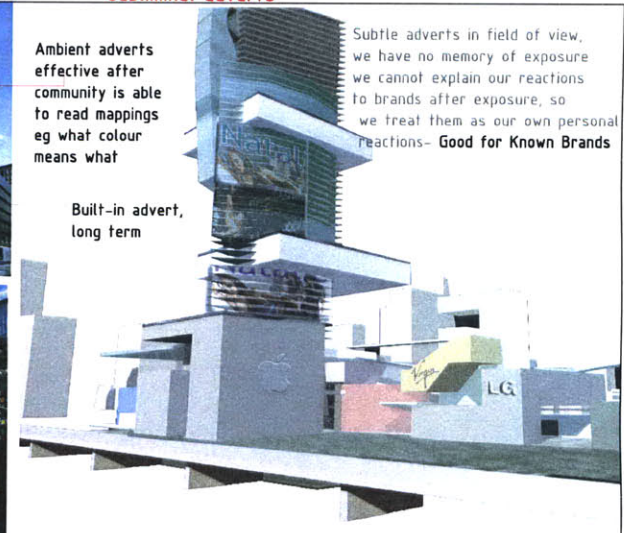


subliminal adverts

Ambient adverts effective after community is able to read mappings eg what colour means what

Built-in advert, long term

Subtle adverts in field of view, we have no memory of exposure we cannot explain our reactions to brands after exposure, so we treat them as our own personal reactions- Good for Known Brands



current state



MIX-LANDUSE ACROSS ENTIRE BLD

CURRENT - ZONED LANDUSE

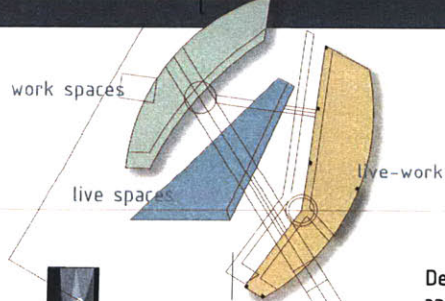
SIGNAGE - 3 STRATEGIES : ambient media , integrated built form, subliminal advertisement

DECOMPARTMENTALIZATION

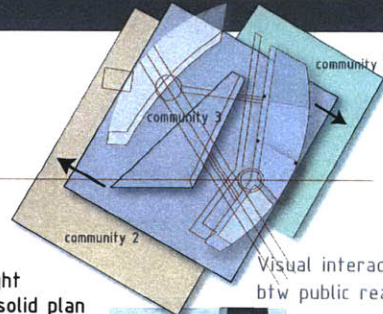
COMPARTMENTALIZED FLOORS

MULTIPLE PUBLIC REALMS & COMMUNITIES

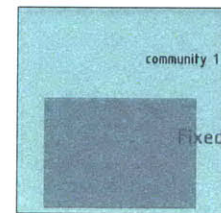
GROWTH & FLEXIBILITY



typical uniform use

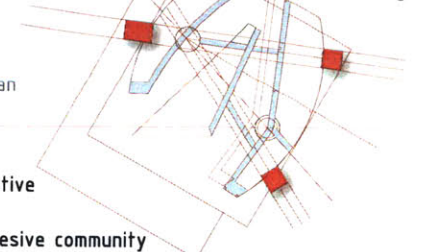


Visual interaction btw public realms



Glue- hardly interactive (not public enough) leading to less cohesive community

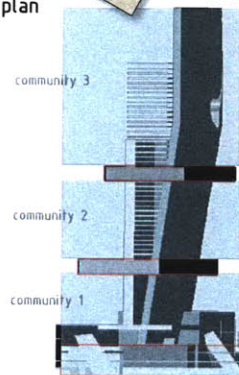
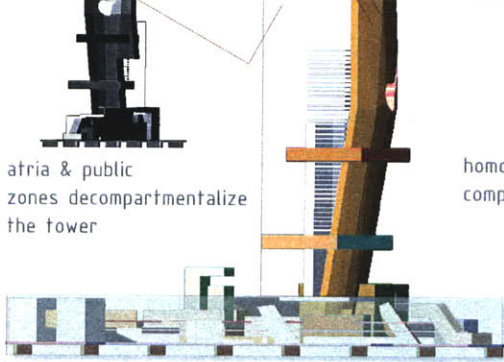
Shared extensible spaces, bridging btw autonomos blds and free plan, 3 strategies



Decompart. plan allows for natural light and ventilation, contrast with typical solid plan

homogenous floors, compartments

atria & public zones decompartmentalize the tower



Glue-large public spaces and retail form the basis for community



Developer's Angle: vertical urban design scheme for the tower increases the range of marketing features - & enhances the building rent-ability and long-term asset value.

The perception of the tower as precinct in the sky as opposed to a mere building will enhance it urban and commercial value.

A good mix of housing types and sizes is the basis for a balanced community in the new tower. It also encourages opportunities for lifetime communities where people can change dwellings without leaving a neighborhood

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Acknowledgements

I would like to thank my Thesis Committee and especially my advisor, Michael Dennis for all the advice throughout this study. Dean Colbert thanks a million for making this possible.

To my Mum and Family, Thank you for everything and for making this possible, this is for you.

To all those friends who have contributed to this incredible experience "asante sana": Allan, Lydia, Paul, Monski, Tiffany, Ouko and Dau thank you.

"For everyone to whom much is given, of him shall much be required." -- Luke 12:48
