Fig. 1. Cartoon of high-rise buildings in Colombo (SLA review)

Tall Buildings in Asia:
A Critique on the High-Rise Building in Colombo, Shri Lanka

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Submitted to the Department of Architecture
in partial fulfillment of the requirements for
the degree of
Master of Architecture
at the
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May, 1993

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Signature of author
Anoma D. Pieris
May 7, 1993

Certified by
Maurice K. Smith
Professor of Architecture

Accepted by
Roy Strickland
Chairperson, Departmental Committee on Graduate Students
There is a kind of spatial appreciation that makes us envy birds in flight; there is also a kind which makes us recall the sheltered enclosure of our origin.

Architecture will fail if it neglects either the one or the other. (to be Ariel means being Caliban also)....

- Aldo Van Eyck 1963

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ABSTRACT:

The recent generation of tall buildings in Asia have been appropriated from the West with little adaptation. With no understanding of the forces that have generated this building form, Asia embraces the high-rise as an expression of modernity. The intention of this theses is to examine the instrumental potential for designing vertical and incremental built space, free from the rhetoric of political and economic identities.

This thesis proposes a design as a critique of the Asian high rise and as a means to investigate the following:

- the conditions that promote or limit accessibility in the high rise;
- the continuity of public access in urban territory,
- the mitigation of exclusive programs and the design for a range of activities;
- the use of structural systems as intrinsic to the organization of the design;
- the design for potential changeability within this building type.

Fig. 2. Aerial view of the city of Colombo showing the grouping of high-rise buildings (Serendib Magazine June 1992)

Thesis Supervisor: Maurice Smith
Title: Professor of Architecture
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My parents, who have given me an understanding of Colombo and its history and instilled in me a deep sense of belonging.

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1.0 INTRODUCTION: CIRCUMSTANCES AND BELIEFS THAT PROVOKE THE HIGH-RISE BUILDING FORM

"The heart of all the world am I!
A city, great, and grim and grand!
Man's monument to mighty man.
Superb! Incomparable! Alone!
Greater than ancient Babylon...
Greater than Paris, city fay!
Greater than London, fog enmeshed!
Greater than Venice! Vienna!
Or Petrograd! Greater than these!
That I am! Mark my high towers!"

("New York", Arthur Crew Inman)

1.1 Tall Buildings in Asia

"Most contemporary architecture is therefore the product of stark economic forces rather than the work of a designer; it represents the logical product of a society which sees the environment in terms of profit" (Richard Rogers, Architecture a Modern View)

In many Asian cities of the developing world the cost of erecting a high rise building and the advanced technology involved create the condition of an imported building paid for and constructed by a first world financier. Such buildings are few, and are quick to influence the new generations of architects. The novelty of the form gives them the stature of public buildings although the programs remain exclusive. The architecture which the West identifies as International style and appropriate for the common identity of universal architecture is by definition a uniform style, not responding to contextual identities. Asia recognizes the International style as western and therefore synonymous with her economic aspirations to become part of the first world.

1.2 Scepticism versus Criticism

There is a strong tendency within the architectural practice in Shri Lanka to be sceptical about the role of the skyscraper. It is partly triggered by the novelty of the form and the accompanying technology. But still more pertinently the extent of land still available in the city does not necessitate the move skyward. The local architects and industry are ill-equipped to support this building form and take refuge either in the ideologic attitudes of regionalism and traditionalism, or are content to build smaller imitations of western style architecture. The result is a rapid decline in the public territory of the city and in the contextual identity of its architecture.

Assuming that the physical growth and its manner of manifestating itself is beyond the control of the architectural profession, the question is whether we can begin to understand the nature of the problem and suggest a better alternative. What we need is not scepticism but criticism. If we cannot stop the universalization of our cities, the least we can do is to prevent it from becoming a local precedent.

In addressing the question of tall buildings in an Asian context and focussing on the architectural potential of a type, it is hoped that a better awareness of the generative principles may lead to a more appropriate generation of modern buildings.
1.3 The myths behind the Skyscraper

While reading the introduction to the *Skyward Trend of Thought*, a collection of essays and lectures on the American Skyscraper, I was struck by the nature of the generative discourse stated as follows: "The object of the following essays is to demonstrate the mythical structure of what has generally been known as 'The History of the American Skyscraper.'" The discourse is an exercise in what I believe to be the implied deconstruction of the dual myth of a romantic and materialistic rhetoric that curiously co-exists in the perception of this particular building form. The writer further quoted a passage from Sartre's commentary on Jean Genet's autobiographical *Thief's Journal*, described as a sacred cosmogony where the myth is unveiled only to reveal the myth that lies within it and so on. (My interpretation) Thus the apt theme of the first chapter, "The Skyscraper - innovation or tradition?", exposes the image-making mechanisms of an architecture that has captivated the modern world.

1.31 The Myth of Tradition

When introducing the subject of skyscrapers, many architectural historians attempt to validate the building form by referring to historical examples of towers. Whether it be the mythical tower of Babel or the leaning tower of Pisa, such examples have been exploited with little discussion of the qualities and behaviors expressed by them. They have been reduced to visual images of verticality and have helped to promote a generation of buildings to which they can hardly claim relationship. It is important to realize that traditionally towers were generated by particular uses and related spatially to the smaller scale urban fabric of their context. Often, as in the fortified cities of Europe and Asia, towers existed as a continuity of the built form but maintained particular functions.

"Only in our time are towers built for profit and usury. In the past their significance was mainly symbolic. Apart from the functional defensive towers, they usually expressed religious sentiments - faith, hope grief, and the like. Spires, minarets, pagodas were, or are, essential parts of buildings intended for launching prayers; only the notorious tower of Babel spelled unaccountably, blasphemy." (Bernard Rudofsky, *Architecture Without Architects*.)

1.32 The myth of Natural Growth

The most frequently used argument for the functional validation of building skyward is "the myth of natural growth". The skyscraper carries with it the image of a building type generated through the need to save space. However, it is generally accepted that this form of building was first designed in Chicago where space was always abundant. H.W. Corbett wrote in his book, *America as Americans see it*, "Cities of all sizes throughout America are erecting skyscrapers, cities with all the land horizontal expansion could require." His own perception was that the building type answered a demand for maximum efficiency rather than a demand for space. The main reason for this condition according to Charles Whitaker was due to speculation and land to debt. Blaming the condition on speculators such as William Penn, Whitaker explains, "Penn marked the city off in squares. He made the streets as narrow as he dared, for to him streets were hardly more than land that could not be sold." As lots were bought, the price of adjacent lots would rise. This condition accompanied by the medievial tendency to live in close groups promoted a vertical building form.

1.33 The Myth of Novelty

"The Cathedral of Commerce - the chosen habitation of that spirit in man which, through means of change and barter, binds alien people into unity and peace." (*The Cathedral of Commerce, New York* 1916 - Dr. S. Parkes Cadman.)

Accompanying these attitudes supporting the form of the skyscraper, were the architectural attitudes that embraced the formalistic and stylistic aspects of this type. "The myth of novelty", supported by images of glittering fountains and commercial cathedrals were responsible for effectively reversing the established perceptions of public size and representation in architecture. Richard Sennet in his article, *Plate Glass*, describes the role new materials such as steel frames and plate glass played in the perception of architectural scale. "Moreover, glass created a more obvious drama, a drama of scale. A building sheathed in iron - framed glass radically reduced the cost of building big and also cut the time necessary for construction....Thus architects accomplished a division of the senses in buildings whose scale had before only been seen in cathedrals or the palaces of the kings."

Whereas the previous urban fabric had clearly defined continuous small scale structure with the occasional public building, the modern city was a collection of separate built objects in a vast environment. The function of the building no longer related to its scale or appearance. The values once projected by architecture no longer held credence.

1.4 The Borrowed Tradition

For Asia, where the skyscraper or the tall building carries over the glamour of many projected mythologies, the tendency is to imitate rather than to adapt, transform or indigenize western architecture. What then are the implications of the appropriation of this borrowed myth, which the orientalist tradition may term an 'invented tradition'? (See Hobswam, "The Invention of Tradition"). The struggle facing Asian architecture (or the apparent lack of it) stems from complex post-colonial identities, a large portion of which are monopolized by the forms, images and processes that create architecture. For a developing Asian nation hungry for 'Progress', the western high-rise is a quick blind step
Towards universalized international culture and legitimization on the terms of the First world. (See Ricoeur, "Universal Civilization and National Cultures").

"Tall buildings in Asia" addresses the implications of this irreversible step through a designed critique of just such a program. The issue at hand is the need to validate carefully each step in the process of introducing such a building type, so as to safeguard against the naive acceptance of traditions formed by the conventional politics of architecture. The design project that results from such an exercise hopes to raise some critical considerations which would contribute to the sensitive and selective introduction of tall buildings in Asian cities.

Fig. 4. Bologna: post card; Italian, early 20th century (The Skyward Trend of Thought, Thomas van Leeuwen, p.32)

Fig. 5. Sky Scrapers: Medieval and Modern Times Reversal of Sacred and Profane (from Claude Bragdon, the Frozen Fountain NY, 1932 in The Skyward Trend of Thought, Van Leeuwen, p. 57)

Fig. 6. The Cathedral of Commerce: The Woolworth building, New York, by Cass Gilbert, 1913 post card (The Cathedral of Commerce 1916, from The Skyward Trend of Thought, Van Leeuwen, p. 61)

Fig. 7. The Fountainhead: Gary Cooper as Howard Roark (from Andrew Saint, The Image of the Architect, New Haven, London, 1983, in The Skyward Trend of Thought, van Leeuwen)

Fig. 8. Hong Kong ten dollar bill: featuring the Hong Kong and Shanghai Banks, by Norman Poster
Fig. 9.
2.0 THE URBAN CONTEXT

"Architecture - planning in general - breathes with great difficulty today. Not because of the erroneous obstacles society casts in its way, but because architects and planners refuse to extend the truth that man breathes both in and out into built form." (Van Eyck)

2.1 Historical Context of the City of Colombo

Established by successive European Colonizers on the capital city of the island "Ceylon", Colombo evolved largely through its proximity to the ocean and its long-standing utility as a seaport for south-east Asian and Arabian trade. The arrival of western colonizers in the Sixteenth Century and their continuous presence for a period of four-hundred and forty-three years shaped the city of Colombo in a manner unlike and other parts of the country. The physical location at the base of a large natural harbor oriented the city streets and determined the extent of the fortifications. The Portuguese (1505-1656), Dutch (1656-1796) and British (1796-1948) fashioned and refashioned the city's urban form to suit their particular strategies for survival and defense of their territory. The architectural evidence of these strategies are still visible, and are instrumental in driving the urban built form today.

R.L. Brohier in his book, Changing Face of Colombo, describes the effects of colonialism on the city as follows:

"All these western powers made Colombo the principle distributing center of the Island's import and export trade, and recognized it as the capital city of Ceylon. Thus Colombo grew in the past five centuries by filling marsh land and cutting back jungle around a bleak coastal headland which was its nucleus. In a sense Colombo is a city forced on the peoples of Ceylon in spite of themselves. It was never a creation of their own choice or making."

2.2 The Physical Evolution of the City during the Colonial Era

If we were to trace the original boundaries of the city we would identify two distinct areas as representing the Colonial city. The first of these, "The Fort", the present commercial and financial center, is so named due to its containment within the boundaries of a previous fortification. Built by the Portuguese and re-fortified by the Dutch, the Fort comprised the administrative and military center of colonial government. The great stone wall that marked these boundaries was later torn down by the British, although the entrances to the area remain unchanged in their orientation. The Fort retains the most significant concentration of commercial activity due to its association with a working harbor. The architecture is largely British colonial with a few scattered Dutch-period institutions.

The second most important area of Colombo is the "Pettah", a name derived from the word "pita" in the Sinhalese language. This name implies "outside", as in outside the Fort. The area known as the Pettah is the earliest settlement in the vicinity, and was first established by Arabian and Asiatic traders. Primarily residential, it was later to become the residential quarter of the colonial city. The dense and additive building forms were controlled by a formal grid imposed by the Dutch, and the entire area was contained within a second fortification. Today it is the center for whole-sale commercial trade with pockets of poorer residential communities. The narrow streets, courtyards and alleyways are fashioned to accommodated a predominantly pedestrian public.

Brohier captures the spirit of the city in the following description:

"He that would explore and know the latent inscrutable and real Colombo, must escape from the pleasant ease of the cities ultramodern hosteties, or drowsing bungalows and nests of concrete flats to wander solitary - with a strong hold on caution, in those zones known as the fort and pettah."
The real Colombo scene, rooted into human continuity and formulated on old traditions, blending the culture of the Arab, the Portuguese, the Dutch and the British occupation lies in these two segments of the modern city. One senses it in the fantasy of jostling polyglot crowds and pestering hawkers, in the slow moving bullock, or the handcarts, which together with the lumbering lorries, clog the narrow thoroughfare. One hears it in the bargaining which goes on incessantly in a collective sibilant mutter of tongues. One sees it in the sidewalks like dingy dens, which if perceived closely in their architectural norms of plaster, brick, and other wood-work over the door, and gable, have been bequeathed by Holland, Portugal and Britain.

2.3 Physical Transformation through Space Syntax Studies

2.31 The Hierarchy of Access
The first analysis of the city is an attempt to document its transformation during the Colonial period. The intention is to identify the hierarchy of access and to understand how it is affected by the political location of individual buildings. The investigation is to discover whether these hierarchies are affected by the force of shifting residential areas in the city. (see fig. 12.)

The space syntax analysis documents the city of Colombo during three distinct historical periods, and studies the hierarchy of streets based on the following information:
- **The depth of space** according to linear visual accessibility is given a numerical value.
- **The number of intersections** along major streets are counted to determine relative accessibility.
- **The number of people** are counted over three minute periods at given times to determine comparative use of streets.

The method employs a computer-generated diagram that is based on the given information. This diagram indicates the hierarchy of streets according to pedestrian use, thus helping to determine the public accessibility of different areas within the city.

Fig. 12. Map of contemporary Colombo indicating street names
(Urban Development Authority Colombo)
Space Syntax Study: Chart showing values of integration.

<table>
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<tr>
<th>#</th>
<th>R value</th>
<th>R3 value</th>
<th>Street Name</th>
</tr>
</thead>
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<td>2.1165</td>
<td>Lotus road</td>
</tr>
<tr>
<td>2.</td>
<td>1.5010</td>
<td>2.0709</td>
<td>Queens street</td>
</tr>
<tr>
<td>3.</td>
<td>1.8883</td>
<td>2.1165</td>
<td>Chathom street</td>
</tr>
<tr>
<td>4.</td>
<td>1.9534</td>
<td>2.2100</td>
<td>York street</td>
</tr>
<tr>
<td>5.</td>
<td>1.4714</td>
<td>2.1429</td>
<td>Prince street</td>
</tr>
<tr>
<td>6.</td>
<td>1.8573</td>
<td>2.0184</td>
<td>Bankshall street</td>
</tr>
<tr>
<td>7.</td>
<td>1.9534</td>
<td>2.2100</td>
<td>Front street</td>
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<td>1.7308</td>
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<td>2.9169</td>
<td>Pettah</td>
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<td>1.3650</td>
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<tr>
<td>40.</td>
<td>1.0589</td>
<td>1.3593</td>
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</tbody>
</table>

The connections to the fort and Pettah are important because they are the only connectors between the Fort and the Pettah. The other important streets are Bankshall street, Queens street, and Olcott Mawatha.

2.32 The Integration Value

The following study was carried out by Channa Daswatte. The computerized method of analysis is one employed by the Bartlett School of Architecture and Planning, The University College London. (see figs. 13, 14.)

R: This stands for the Integration value. It is a value that indicates the depth of a space in relation to every other space that is depicted/considered in a configuration of spaces.

In the Fort – space #10 is the most integrated. With a value of 2.6348. This space along with #12, is important because they are the only connectors between the Fort and the Pettah.

In the Pettah – Main street, Bankshall street, Olcott Mawatha. The Pettah – York street is the most significant, followed by Prince street, Chathom street, Lotus road and Queens street.

If one considers the older maps - the basic pattern is visible. Queen street has a greater prominence in these maps than in the recent maps of the city. In the 19th Century Prince street has the greater commercial importance with many of the oldest business houses located there. The shift to York street may be due to the importance of the entrance to the harbor during British times.

R3: Integration value that indicates the depth of space in relation to spaces that are 3 visual steps away from it. This seems to reflect (in real research situations) the pedestrian use patterns of the system.

In the Pettah - Front street fares best. This street is also important in the 19th Century map. The next are Main street, the principle shopping street in Pettah, Bankshall street and Olcott Mawatha.

In the Fort - York street is the most significant followed by Chathom street, Lotus road and the connections to the Pettah.

In many instances of research these values of integration are shown to have a strong relationship to the pedestrian use pattern. The higher the value of integration the greater the number of pedestrians using the street. Under a free economic system this can have a strong bearing on the distribution of streets and on the land use. The greater the number of pedestrians the greater the potential for patrons or customers attracted to an activity dependent on their support. Activities themselves in turn generate more pedestrian movement and therefore potential for more activity.

2.33 Historical Spatial Development

In all three computer studies we find that other than the connectors to the Pettah, it is the north-south streets in the Fort that are spatially significant. In the development of land use over centuries it seems that the these north-south streets attracted public activities. Although you may think it is due to the length of the...
2.34 The Main Street- Fort

The main street in the Fort area developed primarily because of the connection to the harbor at its northern end and the link to the coastal road at the southern end. The early maps of the city show the entrance to this street coinciding with the entrance to the fortifications. The city blocks aligned themselves on either side of the street and a series of shorter intersecting streets developed at right angles to its linear form. The importance of the main street led to a later shift from a commercial to an administrative program, and the location of the Governors house at its northern end converted it into a processional route. This shift was instrumental in diminishing the potential for generating commercial activity along Main Street. The street immediately parallel on the eastern side, York Street, began to take over the commercial program and during British times became the more actively pedestrian of the two streets. In Colombo today, the Governor's house, used as the Presidential residence, is closely guarded and paralyzes the activity on the street front to a considerable degree.

2.35 The Main Street- Pettah

Since the "Pettah" was created around a uniform rectangular grid no particular street hierarchy is apparent. The main street emerges out of particular conditions. The connection to the Fort by bridge and continuation towards the residential areas on the North East provides a continuity of movement that gives it a function within the larger structure of the city. The number of intersections to the particular street allows more pedestrian activities to feed in along its length in the one direction.

2.36 Residential Areas

The pattern of main streets that develop in the changing city can be closely connected to the direction in which residential areas are located. These areas developed primarily within the Pettah walls, although soon it could no longer accommodate the growth of population growth. During late Colonial times, an area to the north-east named "Mutwal" (river's mouth) developed into a rich residential neighborhood. The main street in Pettah was continued along the main street in Mutwal and acted as the primary urban connector. The demise of this neighborhood coincided with the advent of the steam ship because coal dust blowing in from the harbor affected the health of the inhabitants. The newer residential neighborhoods began to grow to the south of the city and along the coastal route. A new road to the south of the Pettah was built to link these areas, and the railway to the south was installed.

2.37 Fort Today

In Fort today, the physical separation of the harbor, for reasons of security, destroys the potential dynamism of the city. York Street functions as the main commercial street with Chatham Street extending as the most important cross street. Large areas of the city are secured for naval use prohibiting public access. The resulting patterns of street use and hierarchy are peculiar to these circumstances.

2.38 The Person Count

This count was conducted in the area of the Fort during the lunch hour (12:30-1:30 p.m.). This time was chosen so as to discount the floating population created during peak traffic periods. The count was taken over three minute periods on particular streets.

- Main street............60
- York street..............70
- Canal Row..............19
- Chathom Street..........140
- Mudalige Mawatha.....58
- Prince street...........44
2.4 The Site

The specific site is located in the most recently developed area of the city. Historically it marks the outer wall of the Dutch fort built during the eighteenth century, and the British army barracks of the nineteenth century. Formerly known as Kaffirs Veldt, this site was first used by the Dutch to house up to four thousand African slaves. During British times, with the abolition of slavery, this area of the city was claimed for the military barracks and renamed Echelon square in reference to the formation adopted by the buildings. Although the name is still used to identify the site, the Echelon buildings have since given way to modern developments. The present occupants of Echelon square are the Bank of Ceylon and the Hilton and Galadari Hotels. These three buildings are familiar symbols of large scale investment.

Directly opposite the site on both its front and rear boundaries are two of Colombo’s most well preserved colonial buildings. They are the Dutch hospital (presently used as a police station), and the Presidential secretariat, dating from British times. Although these are both low rise buildings not exceeding four floors, their presence is strongly felt. The position of the site in terms of urban access is at the far end of the most active commercial street and adjacent to a connecting street which leads to the city’s main entrance. (see figs. 18, 19.)
Fig. 18. Aerial view of the site, seen between the two taller buildings.
- View across the site looking at the British colonial building (now the Presidential secretariat).
- View to the eastern boundary showing the Hilton hotel.
- View down the cross street looking towards York street. (Serendib magazine, June 1992)

Fig. 19. Map of the site (from UDA Colombo)

Fig. 20. Model showing the proposed development (brochure of the Overseas Realty Company)

Fig. 21. Figure ground analysis of built and unbuilt territory in Colombo Fort.
2.41 The Proposed Development
The Echelon square site has been selected by a financial corporation for a twin tower office complex. The corporation's proposal combines office space of a primarily administrative nature with limited and exclusive public activities. The program is for a twin thirty-seven-storey pair of office towers rising to a height of 137.7 meters. It also includes a low commercial base block, and a three-storey atrium with parking for 450 cars.

The proposed development results from the combined energy of a Singaporean financial corporation and the State Urban development Authority. The collaboration with a government organization assists in the realization of the project. (see fig. 20.)

2.5 Designing the Urban Context of the Site

2.51 Figure Ground Analysis
This analysis reveals the actual extent of open area around the site and provides an opportunity to redefine the site and its boundaries. (see fig. 21.)

2.52 Claiming Territory
An area adjacent to the Galadari Hotel may be claimed so as to create continuous public access for York Street. The low podium of the Galadari Hotel presents an opportunity for occupying the space above the lower part of the building. (see fig. 22.)

Fig. 20.
Fig. 22. Rear view of Galadari Hotel showing the low podium level (Serendib magazine, June 1992)

Fig. 23. The Dutch Hospital building (Architecture and Design, 1990)

Fig. 24. Diagram of York Street showing the possible connections

Fig. 25. Initial sketch design orienting the buildings on the site
2.53 Building Public Access
The building of public access by continuing York Street through the site and connecting it to Lotus road redefines the street by adding to its length and character. It can now be perceived as the length of street stretching between the harbor entrance and the Presidential secretariat. Its length, by exceeding that of Main Street, physically defines its role as the new main street. (see fig. 24.)

2.54 Orientation of Site
The site can now be oriented to address this new main street and to continue pedestrian movement further along its length. (see fig. 25.)

2.55 The Dutch Hospital Building
The Dutch hospital building presently being used as a police station is selected as part of the program. This helps to define the site along the cross street access between the two parallel main streets. It suggests the building of perpendicular streets and provokes a shift in the street direction creating the opportunity to extend the built form (see fig. 23.)

2.56 The Definition of Site
The redefined extent of the site maybe presented as occupying a bounded territory as well as extending along the periphery of the street in an attempt to build public access. (see fig. 25.)
3.0 THE CONDITIONS THAT PROMOTE OR LIMIT ACCESSIBILITY IN BUILDING TYPES

3.1. Public Accessibility and the Politics of Control in Successive Building Types

Due to the continuous occupation by foreign traders and European Colonists the urban organization and architectural form of the city of Colombo, was not representative of the indigenous population of the island. However the alien architectures were, indigenized to an extent by the forces of climate, material and construction technique appropriated by the colonialists. The resulting hybrids were representative of the homogeneous architectural values of a South Asian climate and context.

Colombo is thus a complex mix of cultures and their physical representations of themselves. The architectural hybrids that have emerged are often a statement of attitudes and intentions regarding the choice and degree of integration with another's culture. Concealed within the language of public and private domains and their defining elements, we may read the politics of the colonial experience and the roles it plays in formulating the architectural history of a place.

3.2 The Old City

The two examples of dwellings along the streets in the oldest part of the city show particular attitudes of privacy in the articulation of sidewalk space. In the example of a typical Pettah street, the space is built with steps and platforms. The doors are variations on the Dutch half door, and the attitude is of a more public street where the sidewalk is used for socializing. In the example of a street in the Moorish quarter, the emphasis on privacy is more obvious. The latticed screens are used to conceal the female members of the household, aided further by the raised plinth. (see figs. 27, 28.)
3.3 Public Accessibility in the Colonial Architecture

The colonial architecture adopts the attitude of the Pettah street example where long verandahs attached to the building front promote a sidewalk-size linear zone. In the Dutch examples, a central courtyard directly accessible from the verandah provides a second public space. The British developed the verandah into a continuous arcade. (see figs. 29, 30.)

Although architecturally we may analyze these several layers of accessibility as an articulated progression from public to private territory, the politics of colonialism imposes on them identities that transform their nature. The conventional reading of the verandah is as a more public extension of the private domain. This articulation of the threshold or edge is shared by what is both public and private. The arcade behaves in a similar manner while providing a secondary pedestrian street that is protected from the extremes of a tropical climate. The political interpretation of such a space, however, lies in the imposition of controls that maintain the levels of integration permitted by the colonials. Although the verandah and the arcade carry with them the connotation of what Hertzberger calls "mechanisms of accessibility.", they are often used as limiting conditions which demarcate the zones beyond which the general citizens of the colonized country may not venture.
3.4 The Dutch Colonial Building Type

In the analysis of a Dutch colonial building type with its multiple readings of public and private space, we can see multiple points of access. The street front access is more formal in its spatial organization where as access at the rear is informal and directed to a separated portion of the building. This may relate to the presence of slaves.

3.5 The British Colonial Building Type

The analysis of a British colonial building shows a more peripheral public arcade with a private courtyard unrelated to the formal access. The British building type is more singular in its occupation of a site and often uses the beaux-art plan. The verandah is then reduced to a formal porch entrance set some distance back from the street front. In this example the verandah is no longer building the public edge. (see fig. 31.)
3.6 The Representation of Public Space

The accessibility of a building type is seldom a true representation of architectural potential, and more often, space is manipulated through the politics of control.

In today's Asian cities, as in many Western counterparts, the reading of public and private space is not necessarily related to dimension, location or even representation of space. What appears to be a large public building with an appropriate public frontage often proves to be a private and exclusive development. Such a development, by the extent of its occupation, diminishes the public potential of a large piece of urban territory. The financial tower and the international hotel are two examples of an exclusive building type that behaves spatially according to the patterns of previous public buildings yet maintains its inaccessibility to the public. They are prototype buildings that seldom respond to the particularities of context, thus reducing the identity of the city in which they are located. (see figs. 32, 33.)
4.0 THE CONTINUITY OF PUBLIC ACCESS IN URBAN TERRITORY.

"...a city is not a city unless it is also a large house- a house is a house only if it is a tiny city." (Aldo Van Eyck)

4.1 Understanding the Spatial Potential of Public Space within a Given Context

If we were able to analyze architecture as an autonomous use of space free from political manipulation, we would be able to ascertain the true potential of a given spatial context. By focusing on the range of climatic and geographical considerations and reciprocity of social behavior it is possible to build a reasonable public territory.

Herman Hertzberger’s discussion of “The Public Realm”, published in A+U April 1991, is used here as a description of the aforementioned attitude. By critiquing his standpoint on a variety of issues and considering whether they are universal values, I hope to discover the range of factors that may affect a particular context. It is important to realize, the contrasting extremes of climate and peculiarities of social behavior that provoke the positions that are adopted throughout the discussion.

4.2 The translation of Concepts of Public and Private in terms of Differentiated Responsibilities

The point is to give public spaces form in such a way that the local community will feel personally responsible for them, so that each member of the community will contribute in his or her own way to an environment that he or she can relate to and can identify with. (Hertzberger, “The Public Realm” p 12.)

Here Hertzberger comments on the anonymity of singular public spaces which are often provided and maintained by the city. He argues that user participation in such spaces and its definition through the smaller private dimension creates the kind of social responsibility that builds a community and context. This personalization of space allows for such differentiated responsibilities, through creating further territorial claims on space. Hertzberger comments that when this sense of responsibility is lacking, there is generally a need to vandal-proof public space. This phenomenon, at a more pronounced level, leads to the prohibition of the public from certain buildings or spaces in the city, although the spaces themselves may be of a scale that appears to be public.

In Colombo two extremes of this alienating condition exist. The downtown Fort consists of many exclusive building types both of the colonial beaux -arts type and the more recent international style buildings. These building types, for reasons of economic or political security, are examples of large scale private territories. At the opposite end of the scale, where the built form is additive and personal, the sense of territory also acts as a public deterrent. In the area of the Pettah for example, many neighborhoods are thus inaccessible to the general public. (see figs. 35, 36.)

In Asian cities, it is necessary to maintain a middle ground, encompassing a range of sizes and activities that provoke public participation within more loosely defined territories.

4.3 Defining Public Space

“If the street as a collection of building blocks is basically the expression of the plurality of individual, mostly private, components, the sequence of streets and squares as a whole potentially constitutes the space where a dialogue between inhabitants can take place. The street was, originally, the space for actions, revolutions, celebrations, and throughout history you can follow from one period to the next how architect designed the public space on behalf of the community which they in fact served.” (Hertzberger “The Public Realm” p 14.)
In Colombo the extremes of tropical sun and monsoon rain provoke three types of public space. At the smallest personal scale is the verandah or arcade. At the neighborhood scale is the street. And at the city scale is the large open green. Noticeably absent from the urban context is the plaza or well defined and contained urban space. The indigenous cultural examples of public spaces are loosely defined collections of objects in an 'open field' distribution. If we are to compare public spaces of similar dimensions in Colombo and New York City, we may discover the contrasting characteristics of the two types. (see fig. 37.) In New York, the spaces are well defined containments, whereas in Colombo they are large enough to be perceived, even literally as open fields. (see figs. 38, 39.) As a collective gathering place, the large open space has the advantage of unlimited accessibility. Its lack of articulation by anything but its own natural form allows for utility by the entire cross section of the public. "With respect to every urban space we should ask ourselves how it functions: for whom, by whom and for what purpose." (Hertzberger, "The Public Realm" p14.)

The largest and most effective of the open space in Colombo city, the Galle Face Esplanade, is defined on one of its edges by a large building and on the other two by the city highway. Although linear in direction, its adjacency to the ocean orients its use. It is a common sight on any evening to see the Gall Face teeming with people enjoying the cool ocean breeze. Small carts and food trucks create temporary definitions on the vast expanse. Kite flying, soccer, cricket, singing, drinking, dancing and watching the sunset are a few of the activities that engage this space on a daily basis.
Fig. 38. Open spaces in New York city: Plans.
- 'The ladies mile', the relationship between Broadway and the grid at Union Square.
- Public Library and Plaza: plan and photo.
- The Woolworth building at City Square.
- Rockefeller Centre Plaza: plan and photo
- Flat Iron Building: plan and photo
The plaza type of public space that has been introduced in the beaux-arts building type or the modern high-rise has proved ineffective due to the exclusivity of its presence. Although the size and nature of the open space provided resembles public space, the lack of any attempt to build context and continuity inhibits the contribution that maybe made to the public sphere.

"The break away from the closed perimeter block sitting in twentieth-century urbanism, meant the disintegration of the clear-cut spatial definition given by the street pattern. As the autonomy of the buildings grew, their interrelationship diminished, so that they now stand devoid of alignment as it were, like an irregular scattering of megaliths far away from each other in an excessively large open space. " (Hertzberger "The Public Realm" p14.)

An illustrative example of such a condition may be seen in a comparison of the east and west side of 63rd Street in Manhattan where there is a sharp contrast between the older additive built fabric and the more recent types of housing. (see fig. 40.)

4.4 Reciprocation and Accessibility of Streets and Buildings

"We must consider the quality of street-space and of buildings in relation to each other. A mosaic of interrelationships - as we imagine urban life to be- calls for a spatial organization in which built form and exterior space (which we call street) are not only complementary in the spatial sense and therefore reciprocate in forming each other, but also and especially- for that is what we are primarily concerned with here- in which built form and exterior space offer maximal accessibility vis a vis each other."

(Hertzberger, "The Public Realm" p 16.)

4.41 Analysis of the Built Form
An analysis of the built form in the immediate context of the site and the role it plays in building the public edge of private territory reveals the internal structure of the city. It shows how particular building types promote or prevent public accessibility and become
instrumental in creating continuity or discontinuity in the context of the city.

The figure ground representation of public access studies an overall system of privacies, public edges and streets. Areas in which access is limited or exclusive are considered to be private territories. In this case, hotels and financial corporations adjacent to the site are treated as private (see fig. 41.).

4.42 Site Occupancy of Building Types

The inter-relationships between public and private territory can also be read through the site occupation of various building types. If we were to analyze the range of building types existing in the city of Colombo, we could classify them according to the extent of the area occupied and the formal nature of the built form.

At one extreme is the small, additive form of the old city where buildings of a residential scale simultaneously occupy and build the street edge. A formal rectangular grid arranges the urban structure in the form of several city blocks. At the interior of each block is a mass of private courtyards abutting each other but remaining separate. The buildings are arrayed rowhouse-fashion at a rooms width and share party walls along the length of the block. At a larger scale, the same organization of built form creates a more commercial scale of buildings. These buildings seldom exceed thirty feet in height and house the indigenous population. Typically this type is a store at the street edge and a residence behind or above the store. (see fig. 42.).

The middle range of site occupancy is from colonial examples. They remain within the definition of the city block, but occupy it as an autonomous element connected at the periphery by a continuous arcade. The interior of the block now functions as an accessible court which services the rear of each building. These
buildings are mostly commercial and do not exceed forty feet in height. (see fig. 43.).

At the largest size of site occupancy, are buildings that fall into three distinct programmatic categories. (see fig. 44.) The large, public, colonial-style building designed according to the beaux-arts plan occupies the entire length of the site. The examples here are the former parliament and the President's house, both of which are displaced from the street edge at a distance that prevents public accessibility. The verandah is reduced to a porch adjacent to the front entry. This building type displays a public image and dimension that is denied by physical inaccessibility.

The second category from the same period is the warehouse building. This building is found in the vicinity of the port and is used to store containerized cargo. The buildings are of a comparable dimension to the former category and are privately owned.

The third category of recent international style architecture, are buildings such as often corporate towers or international hotels. They display a singularity in their occupation of site both in plan and elevation. The accessibility is exclusive and therefore does little to enhance the public context of the city.

4.43 Size Study
A study of the range of buildings according to size allows us to contrast the previous residential/commercial scale with present examples of the same. Where the former is interdependent on a larger urban pattern, the latter seems to lead to a separate existence. The modern building type exercises a deterministic presence that negates the additive urban structure. (see fig. 45.)
4.5 Mechanisms of Accessibility - The Edge Condition

"The point is therefore to permit 'building' and 'street' as spaces with different degrees of public accessibility to penetrate each other in such a way that not only the border lines between outside and inside become less explicit, but also that the sharp division between public and private domain become softened."

(Hertzberger, "The Public Realm" p16)

4.51 Colombo Arcades

Although in many of the colonial examples the arcade was designed to limit accessibility, the city of Colombo functions today with a greater autonomy towards the same arcades. The arcades, acting as a peripheral edge to a private territory, build a continuity that has been lost by the strong independence of the buildings behind them. They provide a pleasant climate that is sheltered from tropical sun and rain while allowing for room size activities to be defined along a linear zone. Thus the arcade provides both a climatic and organizational function that is adjacent and parallel to the street while being reciprocated by buildings on the opposite edge (see figs. 47, 48).

The elevation shows the height of the arcade defined by a more personal and constant scale of dimensions, whereas the building heights themselves vary. The aggregation of these separate building forms, emphasized by the continuous section of arcade, makes peripheral claims towards building the larger urban context.

At a more private and personal scale, the edge between public and private territory is often defined by the individual buildings in a variety of ways. The definition of the entrance to a building by steps, awnings, plinth or street furniture creates a rhythm that is not as singular as a colonnaded arcade but functions similarly at a far more personal scale.

4.52 Lexington Avenue, Manhattan

A study along the length of Lexington Avenue in Manhattan shows the manner in which the private edge claims territory along the sidewalk. The studied portion of Lexington Avenue extends from Hunters College on 72nd Street to the Chrysler Building on 42nd Street. The overhead pedestrian walkways at Hunters College provide a unique opportunity to view the public street while spatially defining it from above. From there onwards, the definition is largely created from above in the form of awnings, sign boards and cast iron fire stairs. At the level of the sidewalk, definitions are made by raised stairs, trees, lamp posts or temporary kiosks and carts. (see fig. 49.) A comparison of the scale of Colombo city with the figure ground of Lexington Avenue gives us a sense of the dimensions of the city. (see fig. 46.)
Fig. 46. York Street, Colombo, shown at the same scale as Lexington Ave in fig. 49.
Fig. 47. **Arcaded buildings along York Street**: elevations with photographs of the following (from left to right):
- Harbour entrance building.
- Arcaded department store.
- Commercial bank building.
- Cargills department store.
- Old Parliament (Presidential Secretariat.)

Fig. 48. **Plan of York Street** showing continuous pedestrian arcades
Fig. 49. Edge Conditions: Plan and photos of Lexington Avenue, New York illustrating edge conditions such as overpasses, awnings, street furniture, and entrances.

- Edge conditions in Suchindram, South India
5.0 DESIGNING PUBLIC TERRITORY IN VERTICAL SPACE

5.1 Public Spaces as Archetypal Forms

The challenge in designing a public space is not only to provide a flexible range of dimensions for the occupancy of the space, but also to ensure that the space can remain public despite changes in its immediate context. In Hertzberger’s examples of the amphitheaters at Arles and Luca, he explains that the amphitheater at Arles was used as a fortress in medienial times, and then inhabited by the town until the nineteenth century. The amphitheater at Luca was absorbed by the town, but maintained as a public square. (see fig.51) "The same form could therefore temporarily assume a different appearance under changing circumstances, without the structure itself essentially changing." (Hertzberger, "The Public Realm" p.16)

5.2 The Changeability of Space

The potential for changeability needs to be considered when designing public territory in a given context, for only then can the public nature of a space continue to survive the forces of change. In designing this potential, a collective formal structure is more likely to provide the maximum possibilities for adaptation. "The correct structural theme does not restrict freedom but is actually conductive to freedom!" (Hertzberger, "The Public Realm" p.18)

This freedom of expression is largely dependent on the provision of a range of dimensions within an additive structural order. Unlike the functionalist order, it should be designed to satisfy more than one specific solution. At the same time, it should not provide an undefined flexibility that encourages the neutrality of space.

5.3 The Reciprocity of Structure

It is important to realize that the manner in which the structure is filled will determine the understanding of the structure. The reciprocity of a primary structural system with a secondary system of inhabitation is dependent on the extent to which the pattern of inhabitation may be provoked by the order created through design.

"So the way the structure is filled in is no more subservient to the structure than the other way round - I am still thinking in terms of warp and weft: the warp may well serve to keep the whole fabric together, but the appearance of the end product is still determined by the weft." (Hertzberger, "The Public Realm" p.18)

5.4 The Treatment of Vertical Space

The demise of the centralized service core in high-rise design has created a new potential for examining internal public space within a building. This public space often acts as atrium or gallery, and allows the verticality of the building to be experienced not only from the street but also from within. Unfortunately, the atrium space is often exclusive to the building and thus loses its true public potential. (see fig.52.)
Fig. 52. The treatment of vertical atrium space in three modern buildings:
- The Hong Kong and Shanghai Bank, Hong Kong - Norman Foster
- The Century towers, Japan - Norman Foster.

Fig. 53. The structural system used by Norman Foster in The Hong Kong and Shanghai Bank, Hong Kong (The Hong Kong Bank, Williams)
Fig 54. The Atrium Space in the Lloyds Bank, London
(Architecture: A Modern View, Rogers) and the plan, section and
elevation of the Century towers, Japan. (Brochure - Nikkei
Corporation, Japan.)
The architecture of Norman Foster and Richard Rogers show several methods of dealing with a similar space. The three examples diagrammed here share similar attitudes and styles. In the first example of the Hong Kong and Shanghai Bank, Foster uses a centralized atrium as the central component of three linear pieces of structure. It allows the atrium to become public for the users within the building. In the second example of the Lloyds Bank in London, Rogers treats the atrium space as a centralized courtyard with structure around it. Access, however, is less uniform and allows for multiple readings of accessibility. In the third example of the Century Tower of Japan, Foster designs the building in two separate components linked by glazed access at multiple levels. In all three of these buildings, it is possible for the public to walk beneath the belly of the structure. However, there is little exchange between the street and the built domain. (see figs. 53, 54.)

5.5 Designing the Structure as incremental space.

The primary structure of a high-rise building is most efficient for both economic and structural reasons when designed as large scale vertical components. The structure used in Norman Foster’s Hong Kong and Shanghai Bank consists of a series of towers carrying horizontal trusses in their long direction. The advantage of this system is its definition of the horizontal direction as dominant in the vertical system. The trusses are then able to suspend a number of floors on either side of an open atrium. This allows the verticality of the building to be read as an incremental horizontal system. The entire system is braced with large steel cross-bracing that recur at frequent intervals and span the distance between the trusses. Using this structural attitude as a basic formula for creating vertical space, it is possible to then design a secondary system of variations. The challenge thus becomes to examine the potential of a chosen primary structure and to design reciprocal secondary and tertiary systems. (see fig. 55.)
Fig. 55. Initial models: for the structural system of the proposed design. The structure is composed of towers of four columns each carrying horizontal trusses in one direction.

Fig. 56. Sketch designs: continuing the public access through the site, showing preliminary attempts at design.
5.6 The Design Process

The preliminary attempts at design were directed by the contextual definitions that had been previously determined and the primary structural components that had been selected. The main concern at this stage was to develop a system that continued the dimensional variations of the existing context through the area of the site at the smaller range of sizes. (see fig. 56.) The dimensions selected were those existing within the adjacent block pattern. The opportunity arose to continue public pedestrian access through the length of the site and parallel to the newly extended main street. By denying pedestrian access immediately adjacent to the vehicular street it was possible to induce pedestrians to walk through the site. The first formal attempts at design included the deconstruction of the plan of the Hong Kong and Shanghai Bank so as to create a formation of two building pieces flanking the pedestrian street. This street replaced the conventional atrium. (see figs. 57, 58.)

The act of claiming the ground level of the site for the pedestrian public is in resistance to the exclusivity of the typical atrium space. This street became the collective public center for the site. Unlike the previous examples of high rise buildings that have been sited, the intention was to claim three to four stories of ground-based territory for this public zone. Thus the contextual continuity of the city was built by a ground based system occupying the area beneath the primary structural system of the building.
Fig. 57. *Deconstruction of formal organization* used in the Hong Kong and Shanghai Bank.

Fig. 58. *Plan showing location of parking garage below grade.*

Fig. 59. *The first attempt at designing a wall system in reference to the wall system in the Hubertus House (Van Eyck's Hubertus House, by Hertzberger)*
5.7 The Ground System

The ground system was first conceived as being fairly independent of the primary structure. Since the dimensions of the spaces were borrowed from the adjacent context, an attempt was made to design a system of walls similar to the rowhouse-type divisions of the existing fabric. The walls were therefore arranged perpendicular to the direction of access. The next step was to allow the walls themselves to define a particular territory. This was first achieved by introducing variations into the dimension of the wall. An example of a similar attitude can be seen in Van Eyck’s Hubertus House. (see fig. 59.) There was initially no ordering structural grid. (see fig. 60, 61.)
Fig. 60. The wall system on the site: These walls will occupy a four-storey zone beneath the primary structure.
Fig. 61. Defining territory with the walls
5.8 The Section

The design in section was conceived as two separate masses defining the pedestrian street. The street itself was defined at various levels by walkways and pieces of structure that span the open-to-sky atrium space. The intention is to avoid the singularity of the vertical tower that occupies space in elevation as homogeneously as the beaux-art plan. In a vertical organization of space the opportunity arises to explore the potential for occupation of a layered structure. (see fig.62.) In a proposal for a high-rise building Landesgirokasse in Stuttgart Behnisch occupies the space selectively, allowing an area of the building to remain unoccupied (see fig.63). Since the perception of the building is dominated by its verticality, a second opportunity arose to design an understanding of how the building is organized through the treatment of the section.

5.9 Public Space Territories

The public territory of the building can be defined under three categories: First is territory that can be claimed as public to the urban context. This is the area that is public to the street and accessible by pedestrians who are in no way allied to the activities of the building. Such territory conventionally occurs on ground but has potential for recurring through the creation of new ground at an elevated level. Certain programs that engage public participation may be included at elevated levels. Thus, "public to the city" can thus be considered the first category. Reciprocating the function of the larger public territory, but retaining a degree of separation becomes the second category, "public to the building". These are a series of spaces that appear adjacent to the vertical atrium space just as the verandah appears adjacent to the street.
Fig. 62. Sketch design of section, and entrance to bus terminus showing details of section at ground.

Fig. 63. Landesgirokasse in Stuttgart by Behnisch (Behnisch and Partner, Hatje).

Fig. 64. Section showing the edge condition to the atrium and the vertical access systems.
The spaces were designed as collective areas serving a three-floor component that repeats itself throughout the building. It allowed for grouping within the floor systems while visually engaging the major public space. These spaces were connected to the mechanical access systems such as escalators and elevators. The mechanical access systems were, in turn, more public if located adjacent to the public street and functioned continuously throughout the vertical space. The third category of public space is the smallest dimension and was located within the building. These spaces fed the private areas on each floor, acting as private lounges, canteens or conference rooms. They were connected to secondary or tertiary systems of access and closure and act as public areas to private spaces.

5.10 The Edge Condition

The location of the most public territories in the zone of the atrium creates a reading of space from most public to most private in plan. Having established a more public zone at each floor level, the movement towards privacy becomes perpendicular to the direction of the street. In an attempt to create continuity between individual groups of floors, the zone between the public edge and the interior privacies remained open in the form of double or triple height spaces. (see figs. 64, 67, 69.)

An interesting typology for a similar condition is the row house organization in New York City. (see fig 66.) The edge of the street is defined by a narrow sidewalk off of which raised stairs extend perpendicular to the street to elevated entrance levels. This creates an opportunity for a depressed zone between sidewalk and house front, and often incorporates service stairs and access. The act of moving perpendicular to the direction of public access implies the move towards privacy.
Herman Hertzberger, in his design for the Ministry of Social Welfare and Employment, has also employed this method. (see fig. 65.) He creates interior open spaces that engage three to four floors, and the vertical access systems are located within these spaces.

Using these examples as precedents, the opportunity arose to locate mechanical access systems within this public zone. At the level of the truss, however, the public zone occupied an entire floor of the building. This created an opportunity for the public edge to occupy zones both in the horizontal and vertical section. Continuous public escalators were located on one side of the atrium space, allowing one building mass to be read as more public than the other. Escalators on the other side of the atrium were deployed infrequently as independent connectors between more public spaces.

One attitude of suspending escalators on the surface of the building borrowed from the precedent of the Center Pompidou in Paris, designed by Piano and Rogers. (see fig. 68, 70.) Each piece of escalator extends from the public floor of one truss zone to another. Within the zone of the truss, a covered walkway runs back along the length of the building connecting with interior and more local access systems. (see fig. 69.)

5.11 The Truss

At the level of the truss, the section became public for the street and the area was defined by the depth of the truss. This area created open space and light for each successive section of building supported by the truss. It was only partially occupied and houses public activities and open green areas. The structural components spanning the atrium space were located within this zone, allowing the entire section to be read as public territory.
Fig. 67. Sketches and model of edge conditions in the proposed design showing the three floor group.
Fig. 68. The Centre Pompidou, Paris showing the examples of escalators running outside the zone of closure of the building.

Fig. 69. Sketches for escalators in the proposed design.

Fig. 70. Escalator in the Centre Pompidou showing how the end extends beyond the point of access into the building.
6.0 The "Final" Design

"What the foregoing, and all the examples that have been cited, boil down to is a plea to design in such a way that buildings and cities possess the ability to adapt themselves to diversity and change while retaining their identity."

(Hertzberger, "The Public Realm")

6.1 Program

The proposal made for the site by the financial corporation included an exclusive program of activities that denied access to a large section of the public. Although the program included a four level podium for commercial activities, the mall-type design of the space made no attempt to address the context in which it was being built. The remaining thirty-five floors of the two vertical towers were to house offices for financial corporations. While recognizing that the program of this thesis design could not venture very far from this group of clientele, I attempted to present a program that was less exclusionary and open to transformation. The design attempted to provide for a variety of potential programs ranging from public to private uses. One scenario could be presented as follows:

Ground Level:
- Public pedestrian street with small scale commercial buildings
- Bus Terminal adjacent to extended vehicular street
- Dutch Colonial Building converted into public eating house
- Public Park
- Day Care Center for building employees

First Truss Level:
- Auditorium above atrium
- Small Public Park
- Library and Conference Rooms public to building users

Second Truss Level:
- Public Restaurant above atrium
- Small Park public to building residents
- Gymnasium and Community Center for building residents

Private Office Floors:
- Private Office Space
- Common Spaces such as Lounge, Canteen, TV and Conference Room located on individual floors
- Shared Common Areas at every third floor

Residential Floors:
- Private living quarters with shared facilities

Services:
- Public Elevators and Escalators
- Mechanical Floors located under each truss floor
- Toilets, Fire Stairs, Service Elevators located on all floors
Fig. 73. Maintaining the independence of the two built masses by shifting their directions to respond to the immediate urban context.

Fig. 74. Sketch book analysis of site conditions.

Fig. 75. Model at ground level showing the structural wall system.
Fig. 76. Site plan at grade

Fig. 77. Model of ground-based structural system
Fig. 78. Plan of ground system beneath the primary structural towers.

Fig. 79. Structural grid showing the combination of dimensions in primary and secondary structure.

Fig. 80. Bus terminus at first floor level showing the potential for occupying the wall system: white is the first floor level, light grey is at grade and dark grey shows closure that is 3 to 4 stories high.
Fig. 81. Plan view of the pedestrian underpass beneath the road at plus 10 feet.

Fig. 82. Model view through pedestrian underpass looking down the atrium/pedestrian street.

Fig. 83. Ground system at 3rd-story level showing elevated pedestrian walkways: plan and elevation
Fig. 84. Details at ground level showing the Dutch hospital which is converted into a eating house.

Fig. 85. Details at ground level showing day care facility for employees.

Fig. 86. Detail of public garden at plus 20 feet. This garden is above the parking garage.
Fig. 87. Plan indicating North-South and East-West section cuts
Fig. 88. **North-South section elevation**, through the atrium looking towards the more public face of the building. On this face escalators are continuous from truss to truss.

Fig. 89. **East-West section elevation**, facing the building from across the street. This section shows the public restaurant and auditorium that are suspended across the atrium at truss levels.
Fig. 90. **Structure**, showing the manner in which the floors are suspended from the trusses. The floors immediately below the truss is the mechanical flor. Each truss can suspend up to 6 floors. A suggestion of a secondary system of smaller towers supported by trusses appears at the left hand side of the picture, cantilevering over the rear of the Galadari Hotel.

Fig. 91. Richard Rogers use of a similar structural system in NAPP Laboratories (A+U, Richard Rogers)

Fig. 92, 93, and 94. Details of the section across the atrium showing the treatment of the outer edge of the building. The protruding stairs provide a small private territory that acts as a vertical connector. The cross-bracing inside the building acts as a bracing for the towers. The window mullions are vertical trusses that can occupy one, two or three floor heights. Refer to previous North-South section for detail. The atrium space houses all public activities.
Fig. 95 and 96. Model showing the massing of the two building components: views looking to the southwest and South

Fig. 97. Detail of the atrium, highlighting vertical access systems and public territories
Fig. 98. Plan at the level of the primary structure showing the orientation of buildings and the location of the four-story day care facility.

Fig. 99. Three alternatives for floor plans in a group of 3, showing the location of access, services and public zones. The double height spaces are located adjacent to the public edge (on the left side). The center is the most public floor.
Fig. 100. Options of occupying the office floors showing the occupation of a one, two or three offices.

Fig. 101. Options of occupying the office floors showing the division between the more public and more private areas on each floor (dark indicates greater privacy).

Fig. 102. Study of internal access and public space (no longer valid).
Fig. 103. Plan of the second public truss level showing restaurant, gymnasium and public garden. This study attempts to deploy a more flexible use of the space.

Fig. 104. Plan and section of residential units located above the second truss level. The units occupy the space within the 3-floor zone and remain independent of the larger structure for closure. The units include living quarters and common facilities.

Fig. 105. Detail sketch of public restaurant.

Fig. 106. Detail sketch of truss and offices below.
Conclusions

7.1 Design Attitude

"I have heard it said that an architect 'cannot be a prisoner of tradition in a time of change'. It seems to me that he cannot be a prisoner of any kind. And at no time can he be a prisoner of change." (Van Eyck 1966)

This thesis has attempted to explore the instrumental potential of vertical built space by freeing it from the rhetoric of economic or political manipulation. Since the tendency of the recent Asian high-rise is to deny public territory and urban context, this investigation has seized the opportunity to promote these very aspects of design. The intention has been to optimize the potential for public territory in a vertical space. The recognition of what public may mean in the context of a particular urban environment has helped to define a structure that contributes to continuity within the urban fabric. Having identified the values which were driving ideas behind the design process, I would like to discuss areas of the design that require further investigation.
7.2 Structural Systems

The generation of three or more reciprocal structural systems that create options within a range of dimensions is essential for maximizing the spatial potential of a building. While this design has dealt successfully with the largest and smallest range of dimensions, the middle range of spaces remains undefined. The investigations that follow should attempt to design the middle range of public and private spaces using a secondary system of definition.

Fig. 108. Options for the middle range of structural systems spanning the atrium.

Fig. 109. The space frame-option showing the singular occupations of the entire public zone with an additive structural element. The negative factor in this structure is that the horizontal trusses lose their directional definition.

Fig. 110. The occupation of the space-frame creating a tartan grid.
7.3 Options for Occupation

The points at which the floors are suspended allow for groupings of up to three offices per floor yet this option has not been fully investigated in the potential occupancy of the building. These studies suggested options for occupying single or double height areas within the floor system.

Fig. 111. A structural system using a smaller secondary set of trusses in the direction across the atrium. These trusses would be located within the zone of the primary trusses but would suspend floors into the atrium.

Fig. 112. Walkway: within the building, the truss would act as a walkway or edge condition.

Fig. 113. The options for occupying floors in the larger direction: By using groups of six where every third floor is continuous and suspended from the primary structure, it is possible to deploy a secondary system to create the remaining floors. This gives a greater degree of flexibility, and allows for double-height spaces within offices.

Fig. 114. Section exploring the depth of the floors illustrating the options presented by primary and secondary structural systems.

Fig. 115. Options for using the floors as office space shown with access systems, services and furniture.
Having established the potential options for occupying floors it is necessary to understand the manner in which these variations may be occupied. Organizations to a level that locate furniture options allow for a better understanding of space at a scale relating to actual occupancy. It also necessitates designing the degrees of flexibility within the provided environment.
7.5 The Public Zone of the Truss

Designing a middle range of structure to allow occupation of the floor space in the zone of the truss is necessary if we are to read the section as more public than others. Provision for public activities and green space demands a large range of dimensional variations and public accessibility. The investigation presents two possible structural options for designing this space.

Fig. 116. Details of the zone within the truss showing the use of the secondary system and the introduction of green space and vegetation. This could be recognized as the creation of new public ground.

Fig. 117.
7.6 The Spaces Spanning the Atrium

The structural components spanning the atrium were designed as separate from the primary structural system. As a result, they appeared as separate and unconnected to the building structure. The design now attempts to treat these spaces as extensions of the existing structure that allow the system to be exposed and experienced in a centralized space. The intention is to create a middle range of sizes that relate to the zoned of the truss and maintain the reading of these spaces as public. In conclusion, these designs attempt to develop a secondary system of spaces within which the dimensions required by a public program may be accommodated.
Fig. 117. The Public spaces spanning the atrium. Potentials for connection and occupation.
Fig. 118. The High-Rise as incremental built form.

Fig. 119. The Project in its context of tall buildings.
7.7 Why not Regionalism?

Recognizing the tendency in Asian countries to project regionalism in opposition to the international style, I would like to conclude by addressing this issue. Regionalism as an attitude recognizes the need to reinforce contextual identities that are particular to site, climate and culture. In practice, however, cultural agendas often take precedence and stylistic devices are applied without recognition of their architectural potentials. For Shri Lanka, regionalism is a combination of traditional and colonial styles adopted with no attempt to represent their contemporary context. The use of stylistic architectural devices such as colonnades, verandahs and pavilions in recent buildings are too literal and often do not undergo reinterpretation. I feel that there is little value in recreating a nostalgia for a colonial past. It is more important to understand the architectural values that generated these particular spatial relationships, and to translate them into a modern idiom. The spatial dimensions of an arcade, its climatic responses and its act of continuing the pedestrian edge are the values which are significant and do not depend on the particular form and shape of the individual arch or column. To understand the behavior of the arcade and translate it into the material and technology of today's Colombo is to extend the life of that spatial relationship beyond the life of a time-bound style and material form. This is only a simple example of the kind of thinking that will help to extend the life of the city without sacrificing it to either the international style or to the heritage industry.

"All significant architectural movements have been innovative and indeed revolutionary in their time, with the result that some of the most beautiful architectural compositions of the world emerge from the juxtaposition of great buildings of very different styles clearly and courageously related through time." (Richard Rogers, *Architecture a Modern View* p36)
My City

Vermillion sunset
Bleeds into a silver sea.
The air wet, salty,
tears as I drive down

and in the east
the rising of a silver moon.
So large it blocks that vision
of the sun.

I hear the laughter crash
against the sea in waves.
The kites drawn in,
the fires lit,
night won.

my battle in my heart,
lies bitter still.
Close on these ancient streets
that taught me pain,
Full circle to the clock tower
along Chathom street,
than lights and noise and
breathe salt air again.

My City
How I long to feel you thrive,
plant like against my eager hand.
To feel your reach like fingers,
burst like budded blooms
and sift time through your root spread
in the sand.

My spirit is too sparse t
to serve your hungry need.
Only a grain you feed on to grow whole.

Today I come to offer you
my lonely love.
But someday, I will offer you
my soul.

1990
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