The aim of the project is to conceive of an architecture that takes advantage of three dimensional space and examine community living at a new level of development. Taking a series of high-rise towers, such as the Commerce Court of Toronto, a mixed use building system shall be introduced along the horizontal plane at an elevated level: conceptually, the 25th floor. Programming a living and working area at a ‘canopy’ above the city introduces questions of social diversification and intercourse, scrutinizes structural and technological consequence, and investigates forms of community interaction. The use of existing forms is critical due to the need to explore and exploit existing potential niches in the urban environment through which a parasitic relationship between old and new construction will evolve and grow. Using maps, diagrammatic relationships and physical modeling, a viable system and pattern of growth will emerge. Using precedence in construction and the animal kingdom, a scheme of replicable units will be determined to fulfill the programs and spread out into the city. In the development of an urban canopy environment we may begin to use a liberty left untapped and enter a discourse into relationships between space, place and who we are.

Nominations for supervisor:

1. Martin Bressani
2. Ricardo Castro
3. Pieter Sijpkes
Thesis Premise: Architecture on the 25th Floor – Niche Occupation

There is an opportunity to take advantage of a relatively unexploited niche in architecture; the space between buildings of the upper levels of high-rises. Individual buildings are primarily given to specific singular programs, however, more and more today we see the advantages in the trend towards mixed use accommodations. The intention is to analyze those elements that make a community identifiable and viable and superimpose it upon the map at the upper levels of the city. The site is Commerce Court, Toronto, at 55 King Street West, a series of office towers adjacent to a courtyard space. The project will traverse three to four buildings and promote the further expansion to adjoining properties throughout the downtown core. The investigation into how the system starts, grows, and includes a formula for development shall be examined through physical modeling. With an understanding of biological systems, the inquiry will include the replication of strategies used in the natural world and reproducing them through models of a variety of materials; wood, clay, wire... from this, a base unit will be introduced and then a digital study can be applied.

The 'densification' of city centers is becoming more importunate. Currently there is an inclination against sprawl and the consumption of green fields, leading to a high demand for space in the inner cities. The forest of tall buildings in the urban jungle is given to relatively few activities within and between the individual forms. There is an available opportunity to expand some, if not all the activities and bring them together into a new layer of city interaction, on the '25th' floor.
Primary Area of Study: Canopy Architecture

What is a healthy city? How much room do we have to grow? How long can we maintain the current use and rate of consumption of energy to facilitate our standards of living? In our modern world are we really using our space economically? There are pressures building today that are bringing people back to the city cores. High-rise towers are not only accommodating commercial space, but residential, educational, and recreational functions. The planning and development, however, are based on outmoded modernist concepts in planning combined with a conditioning to live at ground level.

The current planning system and complimentary architectural solutions are based on occupying two dimensional spaces on a map\(^1\). Only recently has 3D context begun to be considered in how we perceive our city personally, and even in that capacity it is at a terrestrial interface. The concept of ‘lost space’\(^2\) or the spaces in between buildings illustrates the inefficiencies of our plans. Along the vertical axis there are many niches to occupy, from this, in providing the needs for a viable community, a system can develop and spread along the higher levels of the city. Using concepts of parasitic systems and canopy ecologies, as understood through the writings of E.O. Wilson, considering the planning and architectural imaginings of Yona Friedman and Peter Cook, while investigating systems of urban land use through Charles Jencks, I plan to investigate the viability of architecture in the upper canopy of the city.

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\(^1\) Transik, 1986, p.2-5.
\(^2\) Ibid p.1.
Program: The Horizontal High-rise

The program is to date, undefined. The consideration of developing a new community form, or a new vector along which one can expand introduces a complex architecture. With the trend towards mixed use systems, and buildings that are under construction that include a variety of function, the program has to be flexible to changes in need and occupancy requirements.

Currently the plan is to incorporate a number of residential occupancies; 1, 2, and 3 bedroom units. It will also allow for office spaces, retail, and should consider either a health care facility, library, or school, or combination there-of, in conformance to what may be considered a nascent community structure. Furthermore, it should include avenues of transportation; a pedestrian system as well as accommodate a system of motorized conveyance. The motorway should be contemplated in the case of future, widespread expansion of the program; a ‘movator’, or trolley (horizontal elevator).
Site: Commerce Court

The site is the location of Mies van der Rohe’s Towers and ‘Commerce Court’. The Toronto Dominion Bank Towers are a complex of two high-rise buildings and a one story banking pavilion (North East Corner). With 56 stories the main tower (1967) is off-center, South East on the site. A second tower of 46 stories was completed 1972 as part of the complex (Centre North). Across the street is First Canadian Place, Canada’s tallest office building at 72 stories (1976). The site also houses the 31 story Earnst and Young building that is similar in appearance to the Mies structures. It occupies the space that was the site of the original Toronto Stock Exchange and incorporates the original Façade in the East Elevation. The 32 story Canadian Pacific Tower and the TD Waterhouse tower of 36 stories are situated along the western edge of the block.

It is the centre of commerce for the city housing all the major Canadian banks, mining companies and financial institutions. There is heavy residential-condominium development in the area, illustrated by the 1 King West development on the Eastern
adjacent block, owned in part by the Mirvish family. Toronto’s downtown is transforming, residential and commercial zones are slowly merging, and ‘mixed use’ is a powerful development word.

Commerce court provides a ‘campus’ of similarly designed buildings of sufficient height to test the concept of a canopy-parasitic architecture. The structures are dispersed in a way that will allow an exploration of systems that would span between them. Additionally, there are a number of buildings in the area that would allow future expansion. Moreover, within the area are a number of new developments in residential construction, hotel buildings, health clinics and a series of retail and entertainment areas that reinforce the mixed use program investigation. Linking these into a new urban ecology is the challenge of the proposal.
Mode of Production: The Making of a Canopy Ecology

There will be a number of systems employed in the exploration.

To begin, I shall examine land use maps, urban planning diagrams and floor plans. With these I would like to draw, collage, and diagram the site pertaining to current uses, proposed applications and perceived patterns of use. I would also like to examine forest canopy and terrestrial ecologies and appropriate the same methods of inquiry in comparison.

This will also influence modeling forms. I would like to begin with a scaled site model and experiment on modes and methods of creating a structure that would span and occupy the upper levels of these buildings. Explore how an architecture can ‘parasitize’ the existing systems and grow from them. If one is to infect a building with a new program, how would it manifest, grow and colonize adjacent buildings? A hands-on approach is necessary while keeping in mind natural strategies and forms. A unit specific, or modular form may be necessary in order to begin in one place and replicate itself. This is the primary area of comparison between natural and human worlds. I would like to examine structures and strategies in nature and how they are used to occupy a forest niche among the tree tops. In some cases I would like to consider ants and various insects, birds and nesting systems, as well as other families.

The next step would be to take the study into the digital realm. This would allow, not only an interpretation of the physical form models, but may allow other avenues of exploration in structure, aesthetics, and program functionality.

This multilayered approach not only assists in the study, but illustrates the profound complexity of both a natural system and the human urban jungle.
Conclusion:

We are living in an ever more crowded city. With the demand for land and occupancy on the rise and the pressures to conserve the environment and natural resources, it is important to examine new areas for development. The city, from the standard urban plan and architectural designs, is a mosaic of lots which do not effectively capitalize on lost spaces and those areas in between buildings. On the ground level there are many elements that keep structures separated and spaces unoccupied, but at the upper levels there is opportunity to integrate systems and reintroduce the village into the environment. As inspired by underground networks and the ecologies of forest canopies throughout the world, there is a niche waiting to be occupied.

The use of 55 King St. West, Commerce court, allows us to test the idea. The centrally located node is a launching point for a budding system that will span between existing buildings and alter our perception of urban form and use. Not simply to traverse space as a bridge, but to occupy it, not in a single function, but with multiple functions and overlapping layers of activity, giving it a life of its own. We shall look to natural systems for inspiration on coping with the challenges of living high, and on strategies of occupying space and replicating units throughout the canopy. In this, form, use, and program will evolve, adapt to a dynamic environment free from the conventions of building on terra firma. Parasitic canopy architecture will introduce new methods of occupancy and examine unique concepts in planning and architecture on the ‘25th’ floor.
Committee and Resources:

Martin Bressani – I would like him as an advisor with respect to his knowledge of historical trends in architecture. He is excellent in challenging my thoughts and has a good grasp on both biological systems and how they apply to architectural forms, precedence in architecture, and can help focus my thoughts and refine them to expose the meaning. He has a wealth of knowledge in utopian experiments in architecture that will lead to active discourse and argument. Bouncing ideas between him and I and having a highly thought-provoking conversation keeps me going back to the books or re-examining a drawing or model.

Ricardo Castro – He is an excellent and inspirational mentor. He is able to encourage thought and has a fantastic library of information and firsthand knowledge of progressive architecture. His interests in theory and consideration of phenomenological perspectives inspire lateral thinking and new ideas for problem solving and conflict resolution. He is highly encouraging and supporting of well thought out endeavours. Every discourse is a conversation that challenges my ideas and wit.

Pieter Sijpkes – With energy and expertise, he is exceptional in structure design and exploring forms. He has a sense of the capabilities of materials, the potential for unique systems, and the enthusiasm to discuss and experiment with structure, composition, and arrangement. He is well informed on many of the current technologies and is enthusiastic in incorporating them in new directions.

Resources – I will be contacting various architects and urban planners for maps, plans and working drawings of the site and buildings. There will need to be correspondence with a few engineers on the existing structures, their performance, and the solutions to spanning between them with a large scale system.
List of Primary Sources:


List of Secondary Sources:


