ETHOS:
ART GALLERY, STUDIO AND HOUSING FOR ARTISTS

by
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Submitted in partial fulfillment of the requirements
for the degree of Master of Architecture (First Professional)

at
Dalhousie University
Halifax, Nova Scotia

July 2001

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Dedication

I would like to thank my parents and family. I wouldn't be here today without their love and dedication.

Contents

Abstract

This thesis examines the social value of artists and the relationship between society, artists and architecture. The vehicle for this study is the conversion of a decommissioned military support ship, Her Majesty is Canadian Ship(HMCS) Provider.

The decommissioned military ship serves as the medium to support the creative activities for both the artists and the general public in Halifax, Canada. The idea is to develop the ship into a mobile arts center, without the mechanical requirement of being self operational. To maximize its utility and purpose, the ship is to be docked at one place, and when needed, moved by tug boat.

In order to make room for new facilities, and a creative environment, mechanical and navigational rooms will be removed. The new facilities are designed to be a medium through which art and creativity can be expressed, and provide a stable and permanent gallery, studio, and housing for the artists. The Nova Scotia College of Art and Design (NSCAD) in Halifax will be housed in the ship as a focal point and resource centre for participating artists and students. The art institute will serve as an anchor for a thriving artistic community. This mobile art institution will become a traveling classroom and will communicate the importance of the arts to many different regions.

Acknowledgments

I would like to express my appreciation to my thesis supervisor Richard Kroeker, who is an art enthusiast, for his insight and encouragement.

I would also like to acknowledge my thesis advisor Kenn Honeychurch, an art educator, for his interest in my thesis.

I would like to thank the following members of the thesis discussion group: Yun Kiong Chan, David Eqbal, Chung Han Lee and Man Kin Wong.

Thanks also to Stephanie Clancy and Curtis Dyck for the assistance with presentation preparations.

Finally, special thanks to Vincent Lim and Ly Tang for their help with this publication.

Introduction

Thesis Question

How can architecture act as a medium to enhance the integration of society and artists through the creation of a new working environment for the arts community?

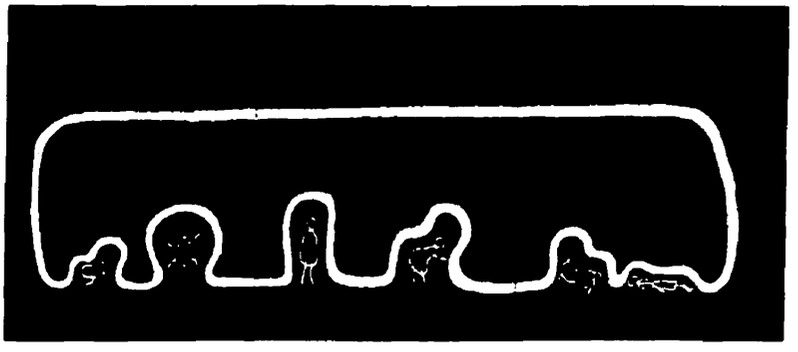
Background

Throughout history, art has played an important role in shaping the cultural form of our society. Artistic expression and activities promote the emotional and spiritual needs of individuals, educating and directing society toward higher levels of culture. Dr. Ron Burnett, a former president of Emily Carr Institute of Art and Design in Vancouver writes,

> Art is about communication and exchange. It is about innovation, experimentation and collaboration. In an age of visual and virtual landscapes, accelerated time and technological change, it is the painter and the sculptor, the designer and the photographer, the multimedia artist and the animator, who will show us how to reflect on our past in order to shape our future. [1]

Contemporary society, however, tends to neglect the value of artists and their activities. Struggling artists with limited resources are forced to live, work, and exhibit their crafts in, often less desirable neighborhoods. These artists face the consistent threat of displacement as many

*Except as noted, all photographs and drawings are by the author.



This life circle, What is Art?, shows the value of art in human life.

cities are actively revitalizing and gentrifying these same areas to relieve housing shortages. Artists are undervalued and often too quickly dismissed. Our society simply does not fully realize the value and impact of their direct contribution to the quality of life in general.

This thesis investigates the possibility of a more intimate relationship between art and society through the transformation of a decommissioned ship into a medium that can support creative activities for the artists and the general public, while addressing the need for housing for artists in Halifax, Canada.

Area of Study

Art and civilization

In earlier civilizations, art was more about function than aesthetic. It emerged from the intense needs and conditions facing the community. For example, patterns and symbols on weapons and utensils were more than just aesthetic markings of a tribal union, they record their lives. John Dewey describes,

> The rites of mourning expressed more than grief: the war and harvest dance were more than a gathering of energy for tasks to be performed; magic was more than a way of commanding forces of nature to do the bidding of man; feast were more than satisfaction of hunger. Each of these communal modes of activity united the practical, the social, and the educative in an integrated whole having aesthetic form. [2]

The communal modes of activity mentioned above were commemorated and transmitted through the community. Art developed from this evolution. It was a historic account of celebration for each civilization.

Stonehenge, England. c.2000BC.
(from Trachtenberg 1986)

Artists and Social Roles

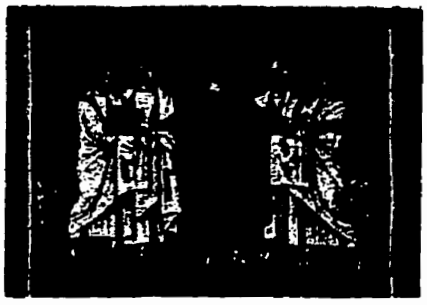
Artists engage with society through the public exhibitions of their work. In 'Active Sights: Art as Social Interaction', Timothy Van Laar discusses the five main roles of artists in society. All of them are presented continuously and is exemplified in the contemporary art world. These roles are: the artist as skilled worker, intellectual, entrepreneur, social critic, and social healer.

It is not appropriate to categorize them simply as the five models. Tensions of controversy in contemporary art arise when the artist goes against these roles and pushes the boundary of what is acceptable in art.

1. The Artist as Skilled Worker

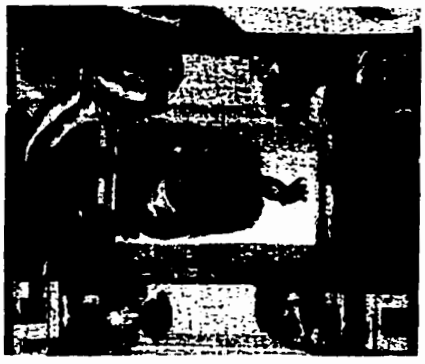
This type of artist is defined as a craftsman or as an artisan, who applies more manual skill than intellect to a certain problem. In the Western History of Art, the sculptors and artisans who were from the Greek period through the Roman period are good examples. In general, they were of low social status and were recognized by their works rather than by their names. In this case, the artist is as a craftsmen, and their work is considered

Reconstruction of the west pediment of Zeus at Olympia 468-460 BC. (from Honour 2000)



The Miracle of the Loaves and Fishes
c. AD 504. Mosaic.
(from Honour 2000)

a masterpieces. Their art is a product of specific suggestions, and ideas from their patrons. In fact, dependence on the patron is a source of major tension in this paradigm. The artist does not develop a critical relationship with society, but instead reinforces the social consensus new paragraph. In modern days, the craftsman has become more idolized and involved, and this role has been developed as the skilled workers are responsive to the society that they are living in.



God Separates the Water and Earth and Blesses his Work
Michelangelo, Sistine Chapel.
Rome, Italy, 1508-12.
(from Honour 2000)

2. The Artist as Intellectual

The artist's role as an intellectual began during the high Renaissance period, Arnold Hauser quotes,

> ...the idea of the artist as an intellectual hero and the conception of art as the educator of humanity. They were the first to make art an ingredient of intellectual and moral culture. [3]

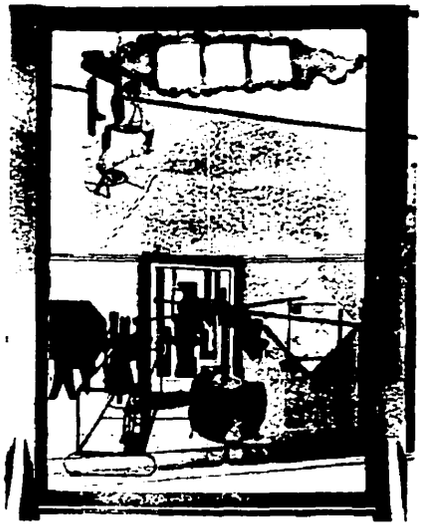
This suggests that art deals with important ideas, and the artist investigates all areas of human knowledge and contributes to them. Artists such as Michelangelo, da Vinci, Raphael, and Durer, can be seen as inventors, discoverers which engage in theoretical and analytical pursuits.

Leonardo da Vinci, Anatomical Studies, 1510. (from Honour 2000)

In contemporary times the artist continues its roles as an intellectual. For example, Duchamp, explored theoretical, philosophical, and linguistic issues. Many of his artworks consisted only of words, where art is no an object but an idea.

3. The Artist as Entrepreneur

Historically, the artist first acted as entrepreneur in the



Marcel Duchamp, *The Large Glass* 1913.
(from Honour 2000)

seventeenth century in Netherlands. An art market was supported by the middle class, where works could be bought and sold for investment purposes. One of the successors in this field was Paul Rubens, who employed a workshop of artists to produce pieces under his supervision.

For an artist to be an entrepreneur has its strengths and weakness. The financial independence is beneficial, as the artist is free to develop ideas and objects that they are solely interested in. However, this benefit is offset by the fact that these objects must be bought and sold. Consequently, the artist readily become aware only of the demands of selling. This idea easily fosters commercialism, in which the art is tailored to be bought.

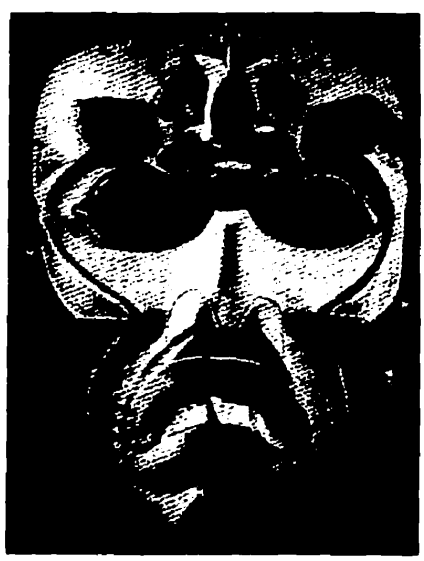
4. The Artist as Social Critic

The first major movement of artist as social critic emerged in the nineteen century. In this paradigm, art is a means of human liberation, a medium to express struggles against injustice. Historically, this model developed out of the French Revolution and Romanticism of the early 1800s. By the end of the nineteenth century, many artists were taking the role of the alienated or cast out prophet. Ofttimes, the artists sets their own values very differently from those of society at large. This model of the revolutionary social critic is derived from the defiant bohemian artist of early twentieth century Paris, and continues to influence the artist in the present day. A new visual language is created in order to reject social and aesthetic conventions. However, this social awareness often leads

Raphael, Transfiguration, 1517.
(from Honour 2000)

The Picture Gallery of Archduke Leoled Wilhelm of Austria, David Tenier c.1647. (from Honour 2000)

Blowers (Soplones), Francisco de Goya, 1799. (from Honour 2000)



Tlingit mask, mid-19th century. (from Honour 2000)

to values embedded in other disciplines, and the socially critical artist is accused of doing sociology, not art.

5. The Artist as Social Healer

The best historical precedent for the artist as social healer is the shaman. Some artists believe their work can express transcendent truths that accomplish social healing. For instance, many Tlingit masks were made for shamans incorporated animals figures, because they evoked the animals, were believed to be spirit helper, and forces of nature from the ocean, the forest, or the sky are connected like the shamans themselves to life on earth.

This model is rooted in a prehistoric role that is not by Western standards artistic, but religious. Therefore, it is a role that is concerned with human relationships. It attempts to interfere with these relationships to create a healthy future. New paragraph, however, in contemporary tim, artists who engage in shamanic rituals are not recognized in Western art. They should be valued for their aesthetic contributions and also their ritual context. Therefore, in the model of artist as social healer, the term shaman should probably be understood as metàphorical and pure artistic expression.

The Role of Arts Education in Society

Lucie Chan
Untitled, showing self-realization among the people.
(from Cranston 2000)

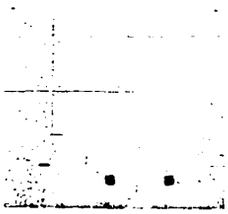
Art is the natural medium for children in expressing their thought, interpretation of the world. The arts are an implicit part of our own culture and a vital part of each person's life. However, arts education is often viewed as esoteric nice but not necessary, and easily dispensable in times of economic restraint. Viktor Lowenfeld, this century's great spokesman for the value of art education, claims that,

> It is amazing that anyone would consider art an educational frill; it is a fundamental catalyst in the thinking process and the development of cognitive ability in children. [4]

Besides the natural expressiveness of the children's art, the relationship that art plays in fostering creativity allows people to transcend the ordinary, and to propose alternative solutions for far-reaching human problems. Creativity is located in the realm of the human mind, and it explains a particular relationship between art and creativity, in another words, the arts plays an important role in developing creativity.

Making masks during Children's Saturday Art Class
Halifax, Nova Scotia, 1987.
(from NSCAD Art Education Division, 1993)

Art Studio for Artist



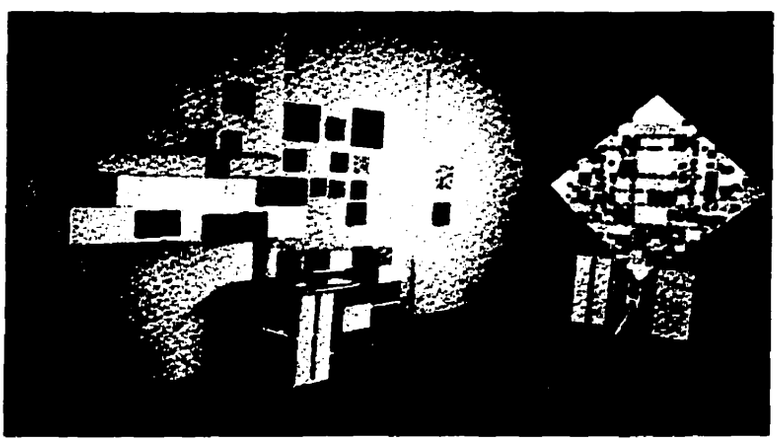
(A)

(B)

(A)Yves Gucher's art work and (B) Yves Gucher in his studio projecting the close relationship between the artist and the working environment, 1959. (from Canadian Art, Summer 2000)

The atmosphere of an art studio and classroom can have an immense impact on the productivity of artists and students. The studio environment should be not only a gallery but a resource area, a studio, and a visually exciting stimulus for learning. It must be a comfortable and a functional place to work, and must reflect the individuality of the artist, who will spend long periods of time in there. For example, a French Canadian artist Yves Gucher's studio, it has the ambience of intimatacy and more black and white than color, reflects on to his paintings occasionally.

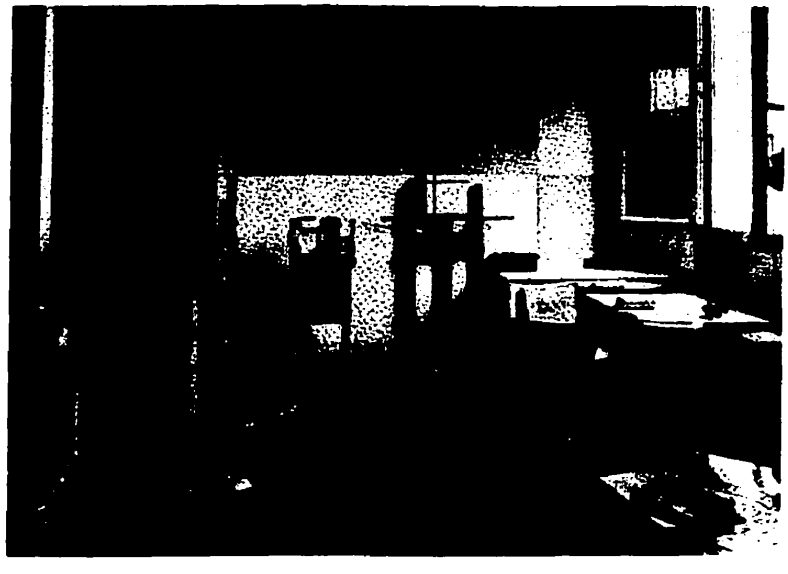
Piet Mondrian's studios are famous examples of the importance of a good studio environment. In his studios in Paris and Manhattan, he constantly rearranged, the color cards on the wall. These studios were sensual and inspiring to the generations of artist and architects who experienced them. They were his only opportunity to realize his radical conception of the total environment, a



Mondrian's studio on 59th street New York, showing *Victory Boogie-Woogie*. (from Carmean 1979)

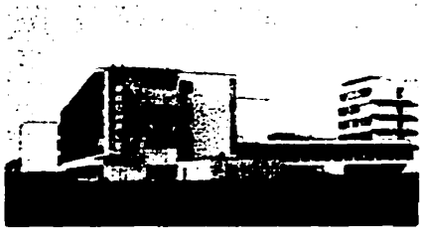
place that exemplified the inseparability of art and life. Mondrian moved from a small apartment at 353 East 56th Street, to a larger studio space on 59th Street. Although he lived in studio for just four months before his fatal pneumonia, his last painting, Victory Boogie -Woogie, reflects the exciting and stimulating environment where he worked with amazing energy and speed.

One can be certain that Mondrian would have continued to alter and augment the complex relationships of line and color. The myriad of nail holes on the off-white walls which surround the colored cards of the wall compositions shows the many changes he had already made during those last four months of his life.



Mondrian's studio in Paris in 1926 shows how the wall painting matched with the small painting on his easel.
(from Milne 1992)

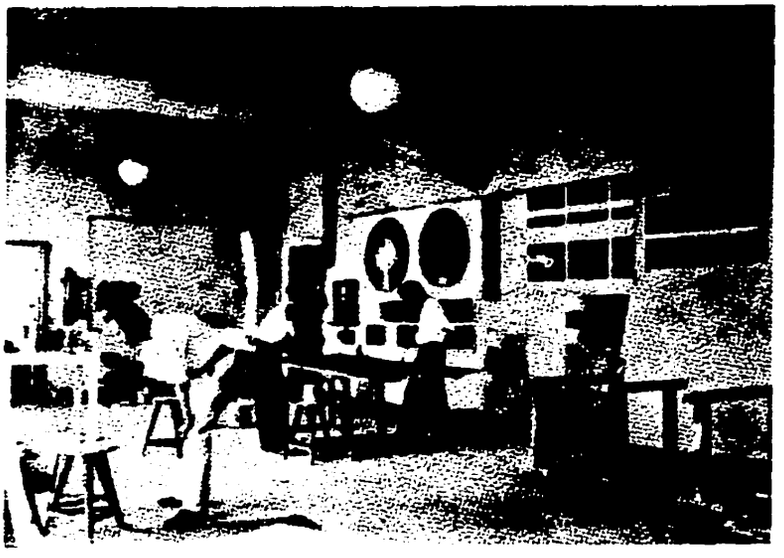
Bauhaus: A Place for Creativity



Bauhaus in Dessau, 1925-26.
(from Bayer 1959)

Historically, the Bauhaus was established in the spirit of creativity. Walter Gropius, the founder of the Bauhaus, began his studies in architecture and extended his interests into the whole field of the arts. He combined art and craft in his classes to foster a creative ambidexterity in his pupils. His strong synthesis of technology and art, made his leadership unique. At the very start he stood firm against relentless opposition and the economic difficulties of the depression period.

The Bauhaus building was built in 1925. in the city of Dessau. Germany had an unusually large number of small towns which were unique and inimitable in character. Dessau provided a fruitful working atmosphere that was free from distraction. The proximity of beautiful natural surroundings were an inspiration to those who worked at the Bauhaus.

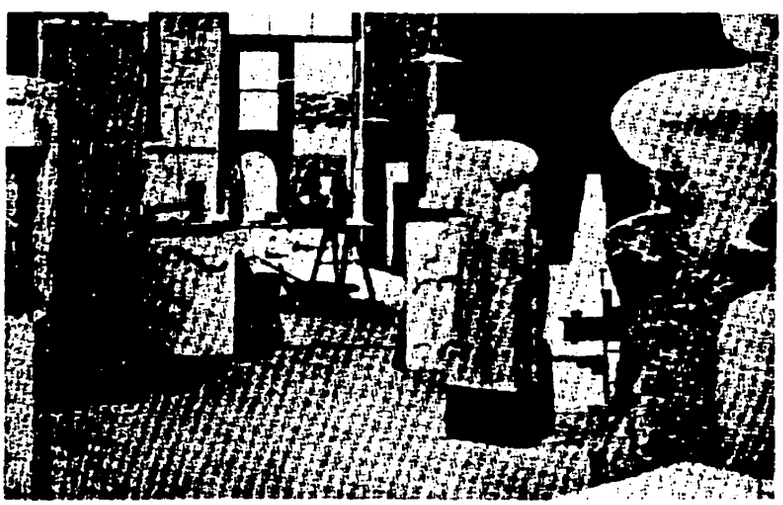


Wall painting studio in Bauhaus
in Dessau.
(from Bayers 1959)

The principal of the Bauhaus was the importance of the working correlation of all processes of creation. For this reason, the basis of collective education was sufficiently broad to permit the development of every kind of talent. The Bauhaus was center for experimentation in where economic, technical and formal research were applied to domestic architecture in an effort to combine the greatest possible variations of form. There is, for instance, the Bauhaus principle that states,

> because we live in the 20th century, the student architect or designer should be offered no refuge in the past but should be equipped for the modern world in its various aspects, artistic, technical, social, economic, spiritual, so that he may function in society not as a decorator but as a vital participant. [5]

The explicit uniqueness of the Bauhaus was its synthesis of the various arts, and its disregard of conventional distinctions between the "fine" and "applied" arts.



Sculpture studio, Bauhaus in Dessau. (from Bayer 1959)

Artist studio space in Halifax

The artists in Halifax, like many regions, are facing the constant threat of displacement. Andrew Terris, executive director of Visual Art in Nova Scotia (VANS), notes that the provincial government's support is steadily shrinking, (refer to the charts on p.15). In contrast, support for other cultural sectors has risen markedly. He argues that the Cultural Affairs Division (CAD) budget has been used unfairly,

> In fact, according to the table, Visual Arts was the only sectorial budget to suffer a decrease during this period. From 1986-87 to 1991-92, the average increase for all programs was 77 percent (with a high of 217 percent for Cultural Industries). In comparison, funding for Visual Arts declined by 9%. It should be note that all amounts are given in "current" dollars. In other words, the shrinking value of the dollar has not been taken into account. If inflation were factored in, this would represent an even greater loss for the visual arts community. [6]

Circumstance

Artist in the Halifax Regional Municipality (HRM) are short of studio space. They have to share studio space, borrow, or live unlawfully. Some students and graduates of the Nova Scotia College of Art and Design have access to equipment and space through its Continuing Education Department. But given the increasing coast and demand on studios and equipment, artists can not rely on the college to provide work space.

Size

Most artists require large studio spaces. Many of them

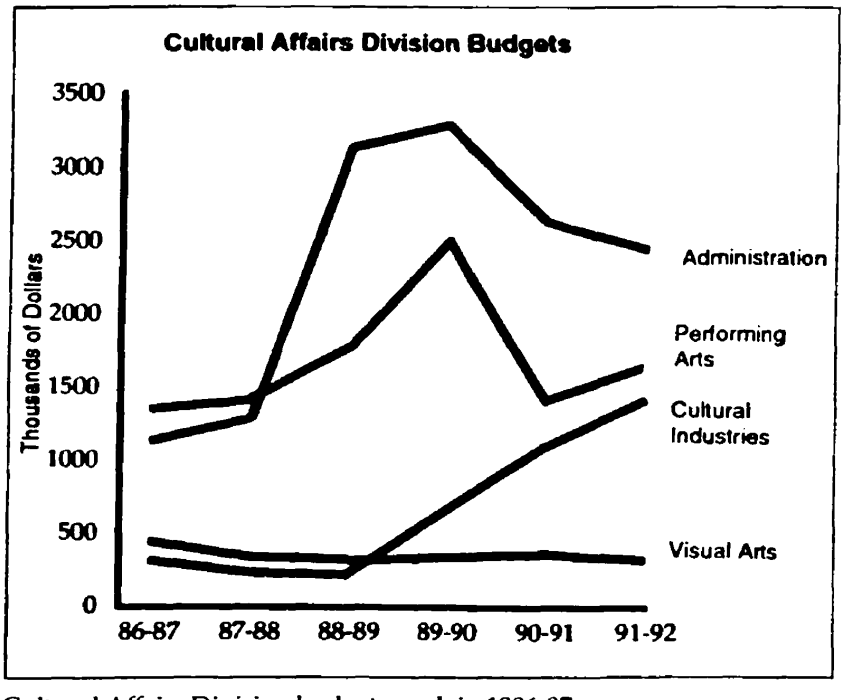
Cultural Affairs Division Budgets

	1986-87	1991-92	Percent Change
	(thousands of dollars)		
Administration	1,111	2,489	+124
Cultual Industries	451	1,428	+217
Performing Arts	1,352	1,682	+24
Visual Arts	280	256	-9
Library	54	82	+52
Cultural Showcase	146	166	+14
Heritage	364	542	+49
Production Crafts(*)	133	233	+75
Total Budget	**3.891**	**6,879**	**+77**

Sources: 1986-87 Public Accounts and1991-92 Budget forcast

(*) There was no Production Crafts budget in 1986-87; for purposes of comparison the 1987-88 budget figure is used.

Cultural Affairs Division Budget Chart in 1986-87, shows government cut backs in funding for the visual arts.
(from Terris 1992)



Cultural Affairs Division budget graph in 1986-87.
(from Terris 1992)

are working in small studios, or rent storage spaces. A printmaker, for example, would need sufficient space to accommodate a press and other print making equipment with large walls to hang work, wide doors and service elevators are needed for moving large equipment and materials, plus storage space, working space, and shelves. A sculptor, would need space, that has drive-in access or elevators. A photographer on the other hand would require less, but more specialized space. Overall, high ceilings, large rooms, and a loading ramp or elevator are critical necessity for a studio. Then, a variety in the scale of artwork is possible with a large studio space.

Ventilation

In an artist studio, one has to bear in mind that most mediums contain unhealthy, even dangerous chemicals, thus proper ventilation is a necessity to protecting artists from hazardous airborne substances.

Cost

Most HRM artists work and live in the same space. Living space subsidizes studio space, and in rare cases, working space subsidizes living space. At Pier 21, the artists collective on the Waterfront of Halifax. The 50 artisans and craftspeople pay a rent about $8.50 per square foot to the Halifax Port Corporation in 1997. In same year, the Khyber Arts Society supported art activities, and lease out studio space cost at a lower price of $1 dollar per square foot the largest space(at about 900 square feet) rented on a project by project basis. The Fringe Festival and film companies are among those likely to take over the Turret space in their building at

about less than $300 to $400 a month.

Pier 21

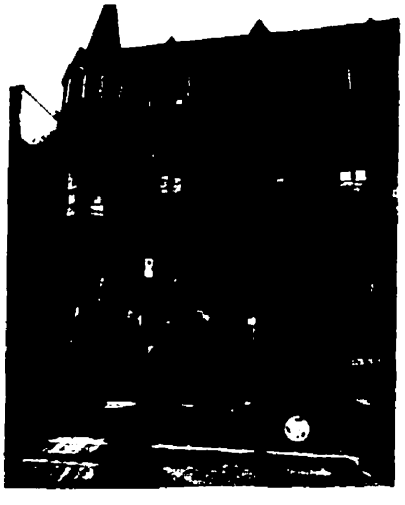
Pier 21 was home to 50 artists until the G7 summit in 1994. Ironically, gifts produced by the Pier 21 artisans were presented to officials like, Boris Yeltsin and Bill Clinton. During the summit, Prime Minister Chretian announced federal funding for a new museum of immigration at pier 21. The artists had received no correspondence from either the Halifax Port Corporation or the proponent of the museum, the Pier 21 Society, concerning their displacement. The artists had to face the responsibility of an enormously expensive relocation. A move to the north side of the Pire 21 building required the install ation of an expensive industrial elevator. Studio spaces would become too small for large canvasses, equipment, and bulky sculpting materials. A move to the south between Piers 21 and 22 required such expensive renovations that the artisans could not afford. In the fall of 1997, fifty artisans, who have been working in the arts community for more than a decade, were displaced and were force to compete with each other for scarce studio space in Halifax.

An artist in Pier 21, 1986.
(Photo by David Thomson 1986)

Khyber Art Society

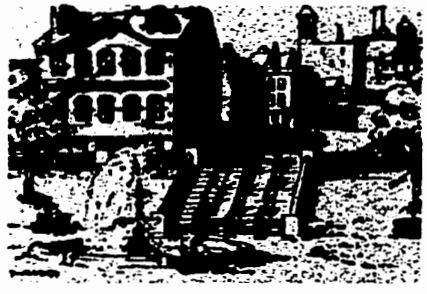
The Khyber Art Society is located on Barrington Street, in the heart of downtown Halifax. Currently, recent art school graduates are running the small artist lounge on the ground floor of the Khyber building to support their association. The Khyber is a non-profit arts centre that is primarily a self funded. They support young and emerging artists who are locally and nationally based. In 1997.

The Mayor and Municipal Clerk to execute a 5 year Lease agreement with the Khyber Arts Society. A motion to accept the terms and conditions of the Khyber Arts Society proposal passed unanimously. Instead, rent tripled from $2 to $6 per square foot a month over the first five years after the lease renewal. The Khyber is benefit to the Downtown and the greater community. The Khyber is not the answer to the problems of the Pier 21 situation or to the problem of expensive, scarce studio space in HRM, but it shows the growing support of cultural activity in Halifax.



Khyber Art Society's entrance 2001.

NSCAD

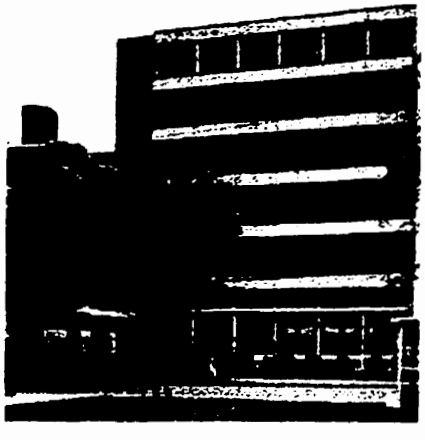


NSCAD, Granville street, 1925.
(from Saucy 1993)

The internationally recognized Nova Scotia College of Art and Design(NSCAD), was the only degree granting art college in English speaking Canada until the late 1980s. NSCAD first began in 1887 as the dream of Anna Leonowens. Mrs. Leonowens wanted to develop an artistic enterprise to celebrate Queen Victoria's Golden Jubilee. The college was then known as the Victoria School of Art and Design, and occupied space on the top floor of the Union Bank Building at the corner of Hollis and Prince Streets in the heart of downtown Halifax.

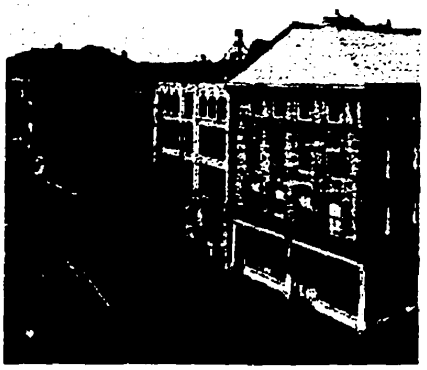
NSCA, Corburg Road, 1957.
(from Saucy 1993)

Like the migratory nature of artists' studio, the college relocated a number of times over the years, finally arriving at a site on Coburg Road in 1957. With quarters too cramped despite a new annex in 1968, the Board of Governors began a search for new premises. College officials were able to sign a long lease at its present site in Halifax's Historic Properties.



NACAD, Corborg road, 1968.
(from Saucy 1993)

This part of town, particularly Granville Street, currently enjoys a reputation for smart, trendy shops and thriving businesses. However when the college began to look for new premises in the late 1960s, Granville Street's heyday was long past. What was to become the famed Historic Properties was in 1968, no more than a collection of empty warehouses and worn shops. The area was due for demolition. A battle, led by local historians and heritage trust



Granville Street, 1979.
(from Saucy 1993)

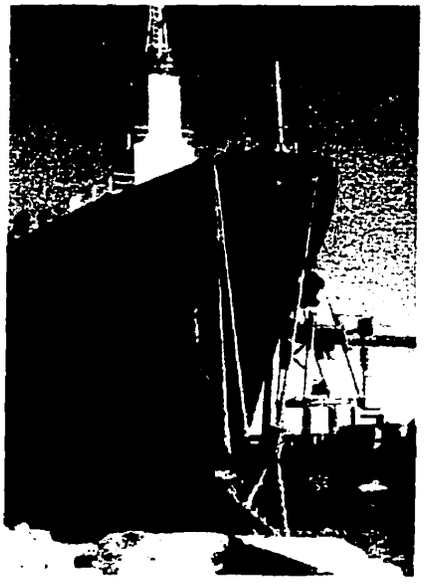
organization, was waged by the citizens of Halifax. Eventually the area was protected by a moratorium on demolition.

NSCAD's students are among the most suffering from financial problem. Tuition fees at the College are one of the highest in Canada. At present it is $4000 per annum with no guarantee. In addition, students must purchase about $2500 annually in art supplies, and even more if they are enrolled in photography, graphic design or jewelry design courses. Meanwhile, the summer employment market dwindles, forcing many NSCAD students to rely on Canada Student loans of up to $8000 per annum, and which must be repaid after graduation.

These are not the only problems faced by the students. Since the College has no residences, students must find accommodation in the scarce Halifax rental market. They must also commute to one of the other city universities to attend classes in liberal arts in order to fulfill their degree requirements. Costly transportation commuting to other city universities cuts into the time they could spend at part time jobs. As well, the faculty members have witnessed that students are consistently discouraged from the program because their difficult financial situation.

Student at NSCAD
Halifax, NS, 2001.

Halifax the Port City



South end port, Halifax, 2001.

Cranes at South End Port
Halifax, 2001.

The city of Halifax is the product of its geography, topography, and history. It's landmarks including the Halifax harbour and the Citadel. Its unique and tragic history, such as the glory of Bluenose, the Halifax Explosion, and the sinking of the Titanic, are internationally known.

Waterfront History

Halifax was founded in 1749, originaly harbour which had served as a Mikmaw camp, and then as a fishing village and trading station called Chebucto. The early city was strongly oriented to the waterfront, where the military, fishing, and shipping activities were centered. The Halifax Shipyards were built in 1889, first for the use of the Royal Navy, and later expanded for repair of merchant ships, and then in 1918 for building steamships. After the first World War, Halifax was designated as national port, port facilities at the south end were improved and a railway was constructed.

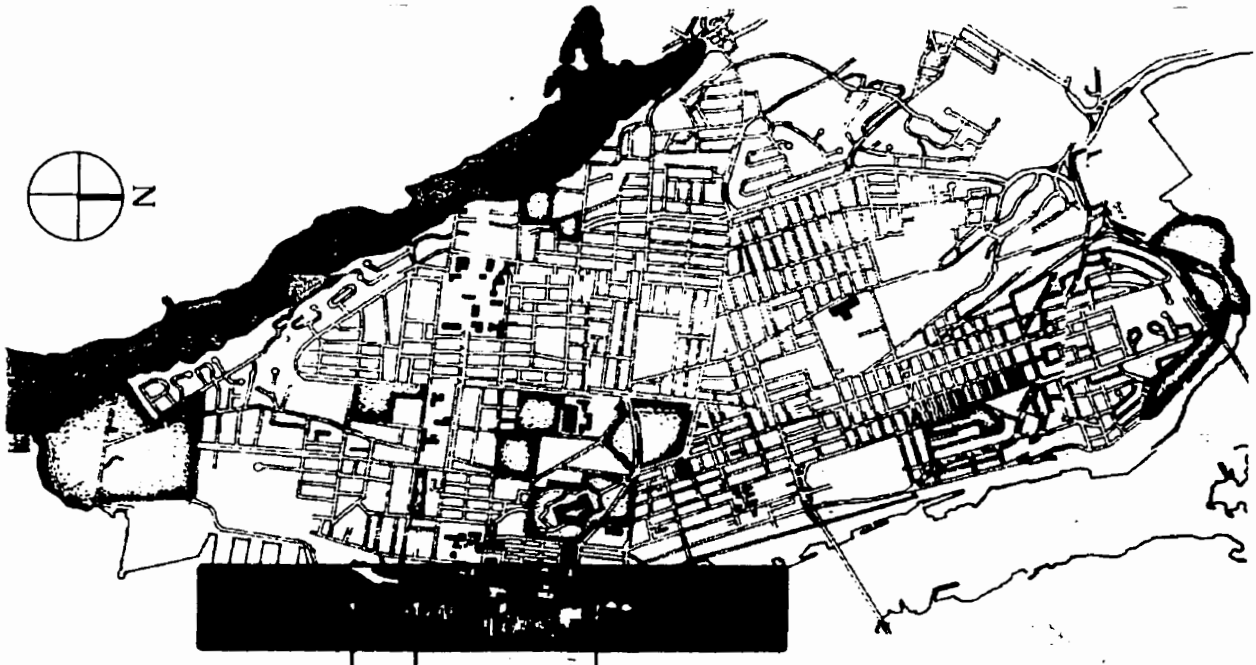
St. Georges Island
view from the site.

Containers at South End Port
Halifax, 2001.

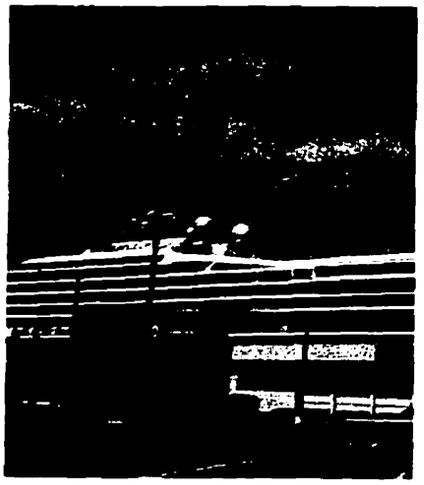
Halifax was a major port connecting Canada to the rest of the world. The harbour development was hampered when the St. Lawrence Seaway was opened to ocean-going shipping in 1959. In order to remain competitive, it improved its port facilities. Container shipping facilities eventually split between the Fairview Port and a port on the south end of the peninsula.

Grain Elevator at South End Port
Halifax, 2001.

The site for this thesis occurs in the front of the Old Nova Scotia power plant building located at the south edge of downtown Halifax, adjacent to Pier 21. About two decades ago, this area was known an artist's nest.



Map of Halifax Peninsula.



Pier 21, main entrance, Halifax 2001.

Pier 21

In Halifax, Pier 21 was Canada's 'front door' to nearly one million immigrants from 1928 to 1971. Since the closing of the immigration office, most available spaces were replaced with about 50 artist's studios. Recently, the building was refurbished as the "Pier 21 Immigration Exhibition" which recreates the immigration experience through interactive exhibitions.

The Wall

The old Nova Scotia Power Plant is located on Lower Water Street in Halifax, N. S. This concrete block building was abandoned after the new power plant in Dartmouth began operation in 1986.

Recently, Electropolis Motion Pictures has converted it into a film studio. Since the film studio requires absolute control over lighting, all the windows are sealed over by concrete. Consequently, the exterior of the building on the east side adjacent to the public board walk, is a continuouse blak wall.

The old Nova Scotia Power Plant partially the Electropolise, Halifax 2001.

New Water Front Development

In spring, 2001, a new development master plan was proposed by The Halifax Waterfront Development Corporation. The plan covers a three kilometres stretch of waterfront between Casino Nova Scotia and Pier 21 (Refer to site map p. 22), and promise to create vibrant area all year around. The plan calls for 42% or 4.5 hectares of public space, with the rest of the land set aside for a mix of commercial, institutional and residential development. In spite of their enduring effort, many issues still remain to be considered.

Frank Palermo, from the Architecture and Planning Department at Dalhousie University commented on the Waterfront Visions in the Halifax Daily newspaper,

> There are aspects of the plan that I like, but there isn't anything in there that is so kind of brilliant and sparkling and unique and creative and exciting that I would say, "That's it - that's what our waterfront is all about." and he added, "We can't settle for having worked hard and done something, and it's just possible. We need to set very, very high aspirations that say Halifax is a kind of fantastic place, and the waterfront is really an embodiment of that." [7]

View to downtown of Halifax from Dartmouth, 2001.

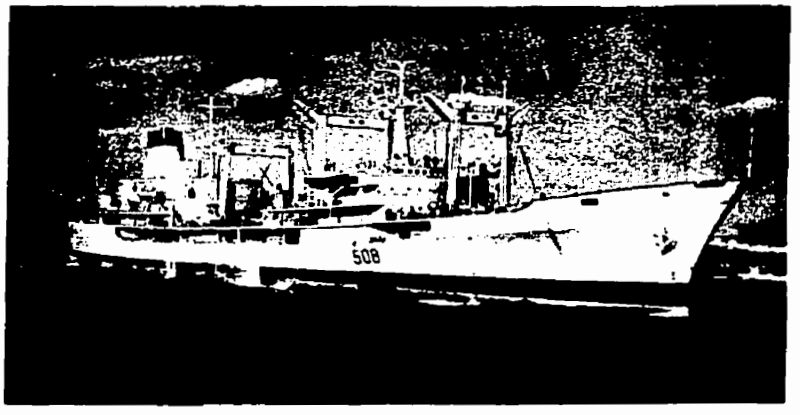
HMCS Provider: a Decommissioned Navy Ship

HMCS Provider docking at the Dartmouth Navy dockyard, 2001.

The navy supply ship, Her Majesty is Canadian Ship (HMCS) Provider, was decommissioned in June of 1998 and was stripped of its equipment, for use by the navy. Since then, it has been docked in Dartmouth waiting for prospective buyers. If there are no offers, it will then be sold for scrap metal or used for such as an artificial reef for scuba divers.

The Provider's mission was to supply Canadian navy ships with necessities such as fuel, food, munitions and spare parts. It was a very special vessel for its crew. Canadian navy, Commander Brendan Ryan, the ship's last executive officer who said,

> She has beautiful lines, she was from a different era the lines are classic 1950 lines, with a beautiful flared bow. Just a gorgeous thing to look at. All my other ships have been frigates and destroyers. [The Provider] is a much bigger ship and a much more comfortable ship to ride in. [8]



HMCS Provider in its prime time. (from http:www.fortunecity.com/marina/havana/88/AOR508.htm)

Provider (AOR 4608)

Displacement:	22,000 tons (full load)
Dimentions:	(Length) 169.2 meters (Beam) 23.2 meters (Draght) 9.1 meters
Machinary:	single screw steam turbine, 21,000 shaft hores power
Range and speed:	5,000 miles at 20 knots
Air craft:	Three CH 104 sea king helicopters
Complement:	166 officers and men
Armament:	
	Cost $ 17,000, 000 CDN
Construction:	September, 1963. Davie shipbuilding Ltd.
Lauzon, P.Q.	

Specification of the HMCS Provider in 1963. (from the Navy Museum Halifax 2001)

Construction

The Provider has been built under the rules and, supervision of Lloyd's Registers of Shipping for oil tanker standard, and strengthened for navigation in ice. The ship was built by the unit construction technique in that it was constructed by section under cover, so that it was protected from the weather. The system allowed movement of each section within the fabrication shed in such a way as to ensure the most efficient altitude for erection and welding. The separate units are then conveyed to the building to be positioned for final welding.

Habitability

The amenities in the Provider are compatible quality to other long distance range navy vessels. 0 For senior chief and petty officers, there are comfortable cabins to be shared by two and in some

cases three, with larger numbers in other messes. Both the forward and after superstructures are fitted with temperature and humidity controlled air conditioning. This facility has many advantages, for example it provides working areas that are designed to be comfortable under extreme heat. There is a well equipped laundry facility and a main galley which contains a bakery with sections for handling pastry, meat and vegetables. There is also a "dairy" equipped with ice cream and milk production machinery. And there is a large hospital area which, in addition to the usual sickbay, has a modern operating theatre, X-ray machine, general and isolation ward, as well as pharmaceutical and diagnostic facilities.

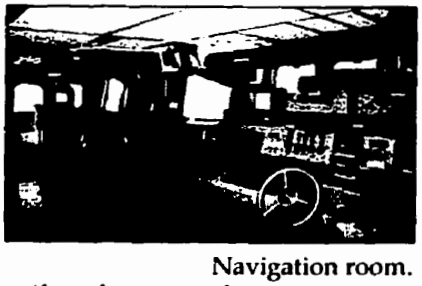
Supply Facilities

The outstanding feature of the Provider's supply facilities is the size. There are approximately 30,000 cubic feet of store rooms, excluding six magazines. There are 13 general storerooms and 10 provision stores including five refrigerated rooms. It is estimated that the Provider could be self-sustaining for six months or longer.

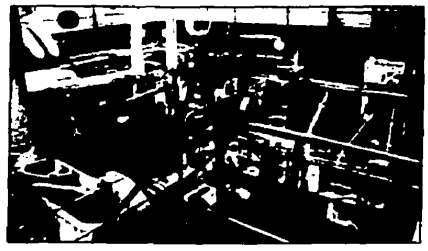
Major facilities

Bridge

The ship is navigated and steered from the bridge. It is always fully staffed when the ship is at sea. From this area the officer of the watch gives commands to the helmsmen, the lookouts and the communicators, and coordinates various activities around the ship.



Navigation room.
(from http:www.fortunecity.com/marina/havana/88/AOR508.htm)



Engine room.
(Ibid.)

Engine room

It is within the engine and boiler room that many of the various pumps, motors and steam plants are operated. All of these systems work in conjunction to supply the pressurized steam required to power the single propeller and drive the ship up to its maximum speed of 21 knots.

Operating theater.
(Ibid.)

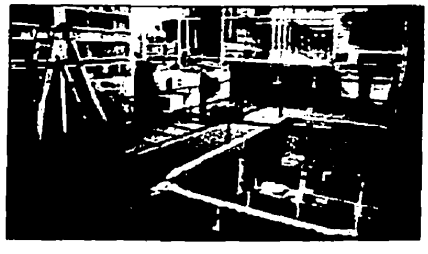
Operating theater

It carries a fully qualified doctor and supporting staff which are supplied with many state of the art surgical tools. A dental team is also on board.

Sea hanger.

Sea hanger

The sea hanger is capable of housing up to 3 sea king helicopters as well as the equipment required by the maintenance crews to conduct first and second line maintenance.



Storage hold and Elevator.
(Ibid.)

Storage hold and elevator

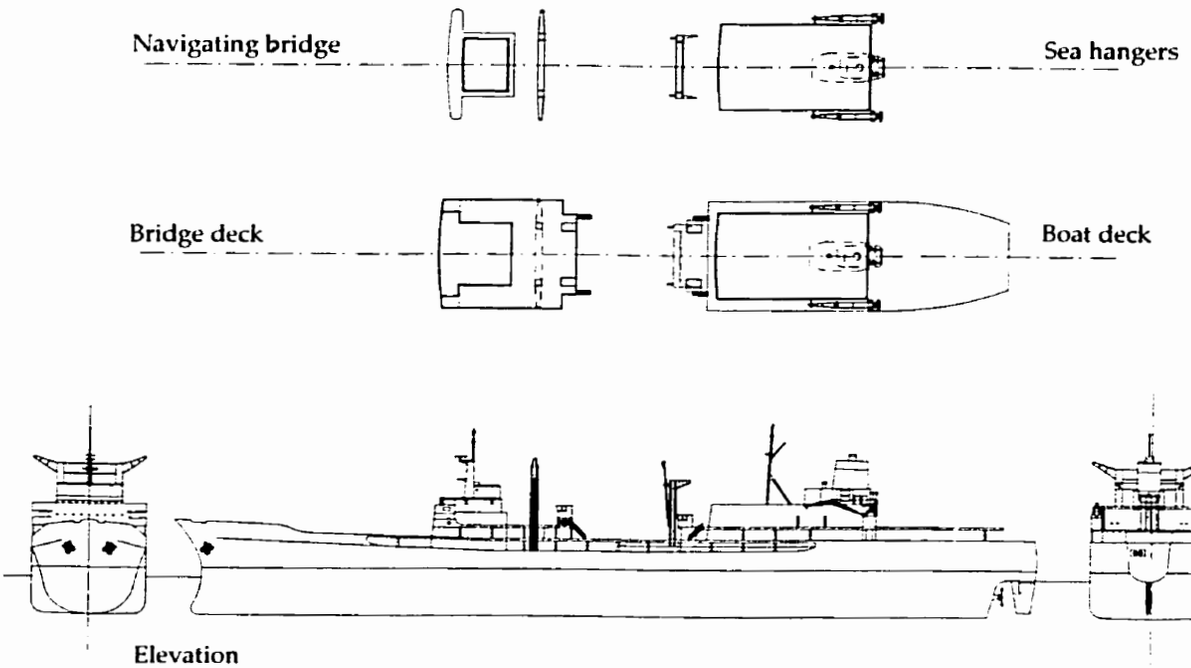
The ship can hold 4 very large walk-in fridges and can carry a wide variety of other cargo. It has two elevators moving cargo between the four storage decks, a dispersal area where cargo is transferred to other ships.

Tanks transfer control.
(Ibid.)

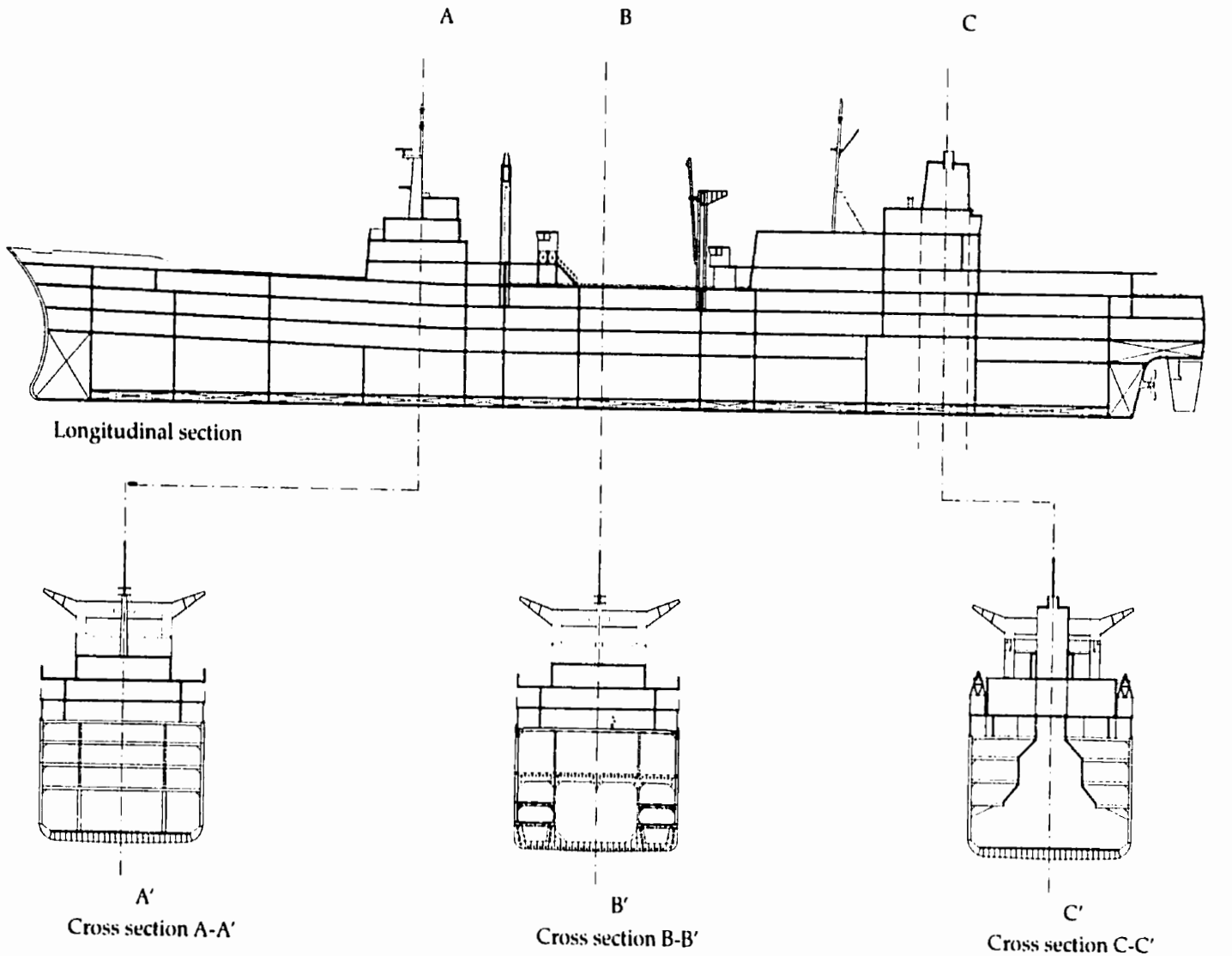
Tanks transfer control

The ship carries large quantities of fuel, for use by ships as well as helicopters. These are kept in many separate tanks allowing for the transfer of liquid cargo. Liquid is also use to stabilize the ship. This method also ensures that any contamination of a fuel compartment can be contained and isolated.

HMCS Provider



Deck plans, and elevations.



Ship sections.

Ship as Architecture

The Queen Mary in Trafalgar Square, showing the engineering achievement of ocean liner construction comparison to building, 1937
(from Kronenberg 1996)

By any standards, the modern cruise ships are spectacular achievements of engineering. But when viewed as examples of portable architecture, it gives new perspective to the achievement of their designers and builders. It is a mistake to see ships exclusively as either industrial design or architecture, when in fact they are both. Ships are machines for transport and for living. They can be analyzed both as a product of industrial design and architecture. It is only through a careful exploration that the dual nature of ship design can be expressed and understood. Peter Anson states,

> Nobody can draw ships until they have examined them closely. You must know what are the essential parts of a ship; what can be left out and what can must be put into a drawing. A ship is like the body of a human being, with bones, muscles and sinews. The "clothes" which cover the body are the least important parts. [9]

Container vessel passing through the panama canal 1995.
(from Quatemaine 1996)

In most architectural literature, there is little study on ship design. However, there are some examples of the architectural theory applied to ship design industry. Peter Quatermain in Building on the Sea describes the relationship between ship and land architecture, in which small structures and functional spaces are assembled to make the whole building. He writes,

> ...with the approach of architects such as Mies van der Rohe or Skidmore, Owings and Merill, and of engineers such as Buckminster Fuller, these designers worked, Banham argues, 'by subdividing a bulk volume to create

Engineering Building at Leicester University
by Sir James Stirling, 1963.
(from Trachtenberg 1986)

> functional spaces out of it', a procedure which accurately describes how the overall volume of a vessel, itself predetermined by overall operational parameters draught and beam, is then apportioned by the naval architect between cargo or passenger space, propulsion unit, fuel, crew accommodation and stores. [10]

The possible relationship between naval and land architecture has been referred to by many architectural critics; Sir James Stirling compared his Engineering Building at Leicester University (completed in 1963) to the profile of an air craft carrier. It likened it to the bridge set of a one sided, split-leveled flight deck. He was interested in the industrial vernacular, especially the unidentified but powerful character of the nineteenth century buildings of Liverpool. James Stirling writes,

> It should be noted that the outside appearance of these buildings is an efficient expression of their specific function, whereas, today, they may be appreciated picturesquely, and possibly utilized arbitrarily. [11]

He emphasizes construction more than the exterior appearance and its efficiency in function which suggested meaningful comparison with ship architecture.

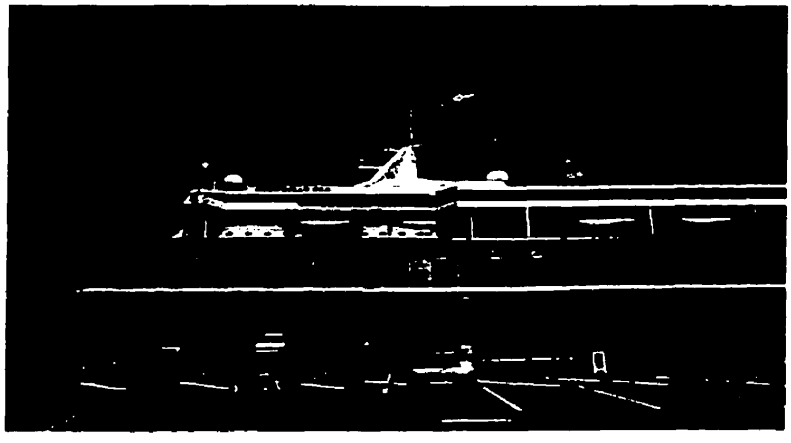
View of the entrance to Pier 21
Halifax, 2001.

The similarity between ship architecture and land architecture is apparent in large cruise liners. They give the impression that they are one building or a building with two different forms. However, the most important observation is that they share a sense of spacial hierarchy like land architecture. Both are designed with the purpose of human habitation.

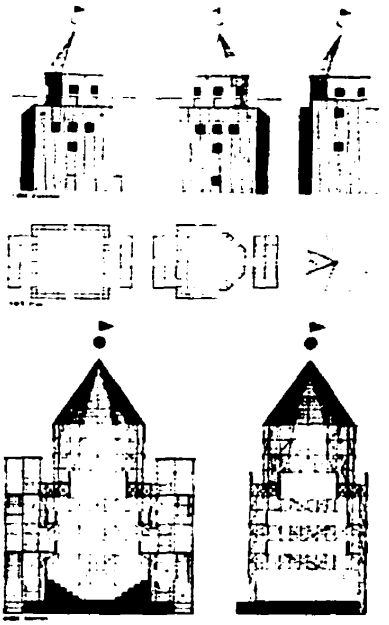
Kenneth Agnew, in *Architectural Review*, writes of the habitability and the collective environment of ocean liners. He writes,

> A large cruising liner is the nearest thing so far to a completely man-made total environment. It houses every kind of human concern, work, play, health, sickness, birth and death, and at its best the scope of its facilities transcends most building and many towns. [12]

A ship is fundamentally a living and shifting structure, When it is docking for a long time at one place, it is like a building on land. As a consequence, it can also be seen as a large mobile structure full of infinite possibilities. In contemporary architecture, one of the most well known portable buildings ever made was the Teatro



A cruse liner docking over the Pier 21, Halifax, 2001
Viewing the close relationship between naval and land architecture.

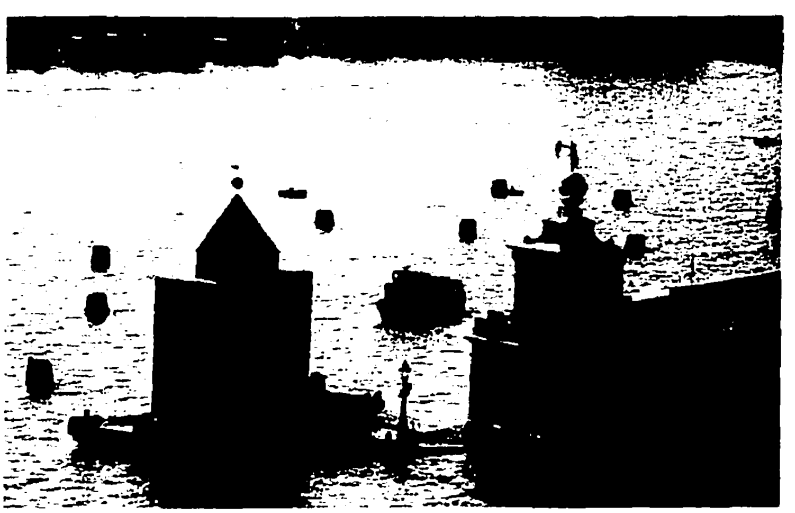


Drawings for the Teatro del Monde made for the Venice Biennial in Italy in 1979, by Aldo Rossi. (from *Architecture and Ullbanism* 1982)

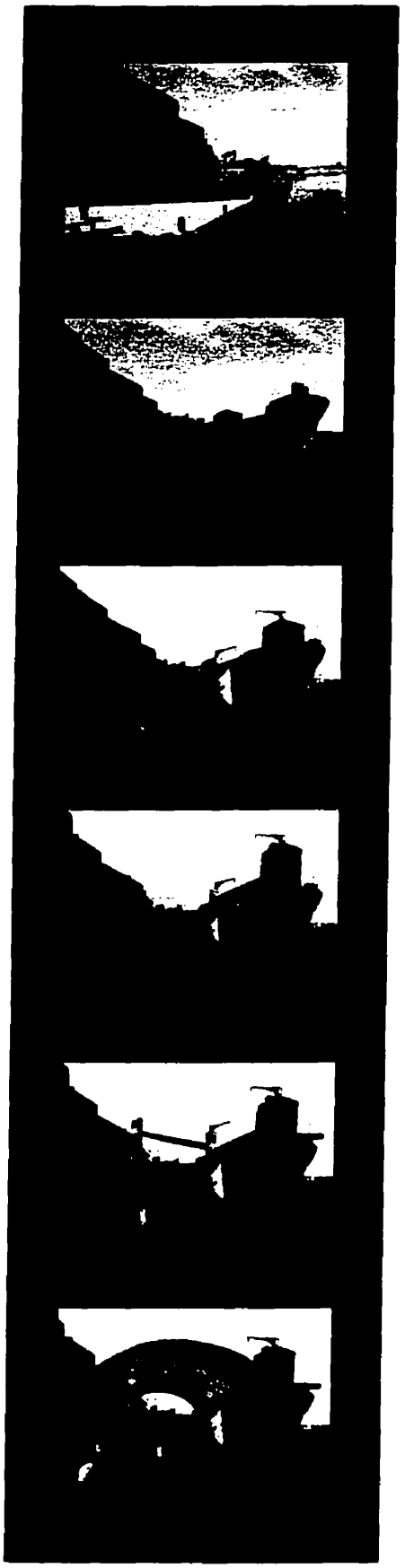
del Monde made for the Venice Biennial in Italy in 1979. Italian architect Aldo Rossi designed it based on sixteen century floating pavilions,

> The 250 seat theatre was built from steel scaffolding using a steel barge as a floating foundation. It was 17 meters high and 9.5 meters square and clad in timber boarding to present a clearly monolithic architectural presence. After the Biennial, the theater embarked on a maritime tour of other coastal towns and cities that were once part of the Venetian state. [13]

For this reason it appeared to blend into the city as it approached land's edge. It was situated amidst an urban background of towers, bridges and substantial buildings, emphasizing Rossi's ambition to alter the landscape of the city with a temporary impostor.



Floating theatre of the Teatro del Monde, Venice Biennial, 1979. It extends from the jetty of Santa Maria Della Salue out over the water. (Ibid.)



The Sequences of Design Development in Waterfront, Halifax, Nova Scotia

The new Art Complex scenario and sequencies have been plotted, based on the recent proposal of the new Waterfront Development Master Plan proposed by the Halifax Waterfront Development Corporation in spring 2001. It covered a three-kilometre stretch of water front between Casino Nova Scotia and Pier 21, and promised to make the area a vibrant, year round destination.

The new scenario and sequences will be used as the guide lines for the thesis design strategy.

The sequential view of the art complex development.

The Scenario and its Sequences

A. Sequence No. 1 (The Old Nova Scotia Power Plant)

Design Development Sequence, No. 1.
showing existing conditions at the old Nova Scotia Power Plant area.

The site is chosen in front of the old Nova Scotia Power Plant Canada's oldest port city Halifax.

It takes advantage of the recently placed a new boardwalk along the shore line, in order to promote the continuation of the boardwalk all the way south to the Point Pleasant Park. As part of the new development plans, a long term docking permission has been assigned to the artists organization for the new institution.

The architect involves in assessing the feasibility of the reuse of the old decommissioned military vessel during the design stage. After examining all the possible uses and assessment of value, the navy will hand over the old navy vessel to the Artist Organization for one dollar to avoid any liability for renovation and maintenance of the ship.

B. Sequence No. 2 (The Dock)

Design Development Sequence, No. 2.

The old navy vessel arrives at the site. Local ship builders are involved in all stages of the renovation.

All the operation facilities are removed from the upper deck of the vessel and prepared for disposal or reuse. The power trains, such as the old engine and boiler are also removed and replaced by a new power generator, which serves the entire power demand for the vessel. Meanwhile, the oil storage tanks are detoxified and modified so that these spaces may be occupied and used according to the specifications of the architect's designs.

C. Sequence No. 3 (The Old Navy Ship)

Design Development Sequence, No. 3.

The old navy ship is renovated at the site to house the new art institution. At the start of the construction, the crane will be erected on the main deck as in any conventional building construction. However, it will remain as the superstructure in order to hoist other secondary structures. As the program changes, the crane will be used essentially for the arrangement of container studios as desired by the artists. All services are operated on a closed system. Sewage and waste is compacted and incinerated while treated water is released into open sea.

D. Sequences No. 4 (The New Influence)

Design Development Sequence, No. 4.

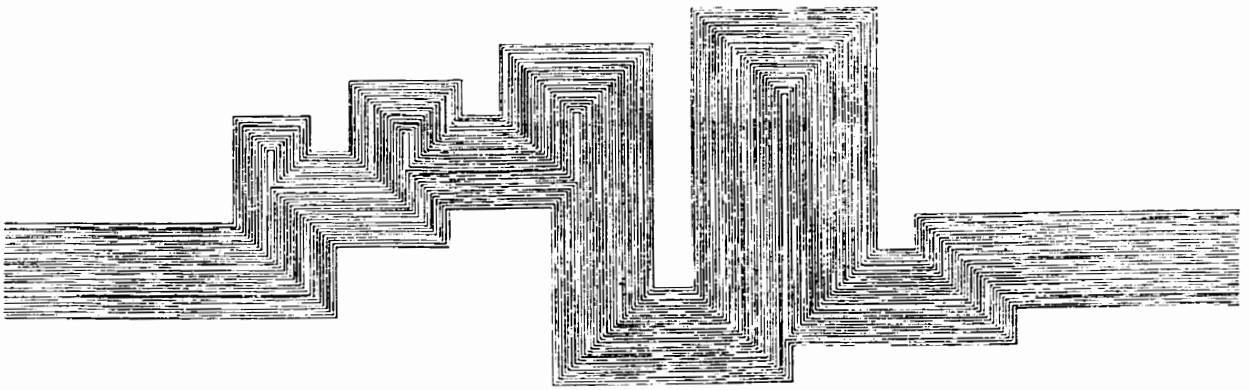
The new art institution acts as a catalyst for artistic development of in the area. Activities events hosted from the art institution creates a vitalized integration between the artist and the public.

Owned by the art institution, the abandoned old Nova Scotia Power Plant building has become the landmark in the waterfront area. It develops as a mixed use complex containing residential, office, and commercial spaces. In its construction, the scraps from the vessel are introduced as part of the building materials to reflect its identity. An elevated ramp is introduced for transporting supplies and people between the ship and building.

E. Sequence No. 5 (The Intergration)

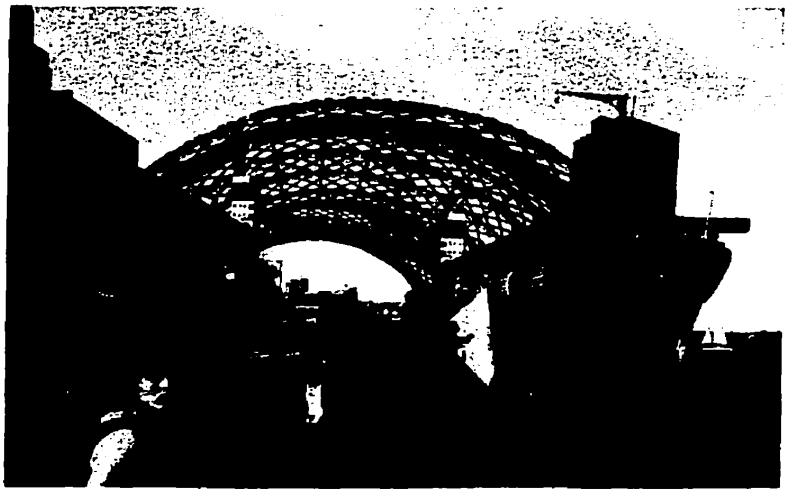
Design Development Sequence, No. 5.

The dock in between the art institution and the old Nova Scotia Power Plant building will be used to merge the two buildings in such a way that they share each others programs and facilities. A new physical connection, like the weather protected bridge or the elevated ramp, will be introduced for transporting of supplies and people between the ship and building.



Board walk pattern study

F. Sequence No. 6 (The Art Town)



The Final Design Development Sequence, No. 6.

The art institution and the old Nova Scotia Power Plant building are no longer separated and artists will be integrated in this area throughout the year. The space created between these two buildings is vital as a pedestrian habitation area for the people who access the ship and the power plant building.

The artists will use this space as an open studio and gallery, which will be open to tourists, art enthusiasts and waterfront residents.

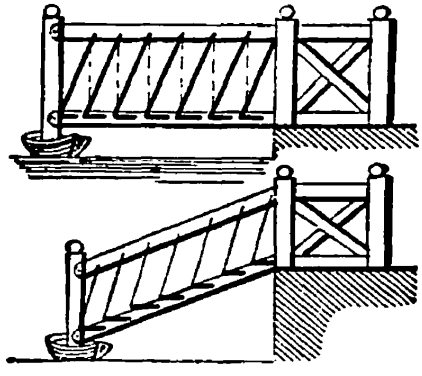
Many art related events will be held in this area which will redefine the civic importance of the area, becoming a commemorative space for the city.

Design Strategy

The strategy of the new development of the waterfront is to create a possible scenario based on research which could then be applied to any future developments.

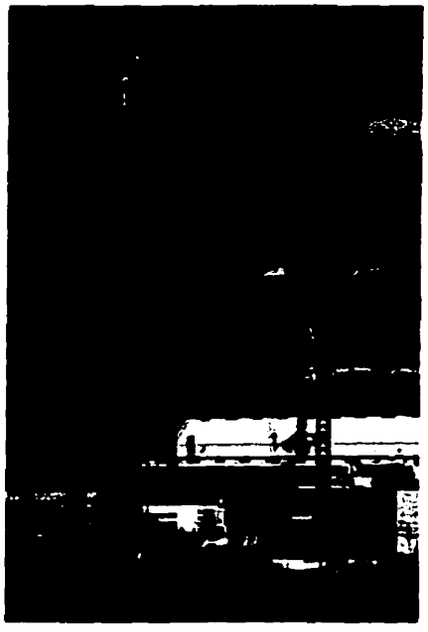
The Sequence No. 3.

The design strategy is to select the essential sequence. In this respect, sequence No. 3 has been chosen as the most crucial stage for the entire project, that is, converting the ship into a new art complex that is mobile but not self-operable, so it can help to attain the intimate relationship between the Artists and Society. The vehicle for this study is the conversion of a decommissioned military support ship, HMCS Provider, as a medium to support the creative activities for both the artist and the general public. To that end, a new superstructure and other amenities are provided to foster a creative environment.

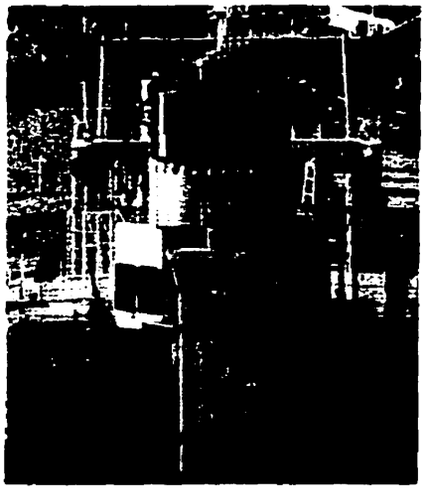


Pivoted steps for boat landing showing simple mechanical movement keeps the steps in level. (from Hiscox 1907)

Since ships suggest mobility while are cities, fixed and immobile structures. One of the most important amenities in the art complex will be the bridge, reaching out



Cranes in construction site. (from http://www.americantowercrane.com 2001)



The funnel on HMCS Provider.

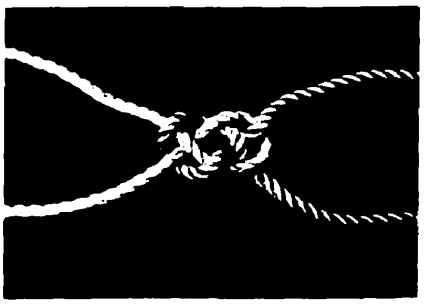
The interior of Pantheon, illustrates the contrast light and dark from the ocula at the top of the dome. (from Ando 1990)

from the main ship deck to the docking area. Pedestrians on the dock will become aware of the architectural sense of place as they cross over the bridge. The urban, extends all the way to the bridge and to the ship enhancing the sense entering the threshold of the art complex.

On the main deck, a new large scaled portable structure will be introduced in the front of the ship. It will serve as network structures, containing access ways and essential services. Into this network, studio units are served and maneuvered by the tower crane which is operated from the apex of the structure. It is built on a mobile caterpillar track platform and is based on the rotary tower.

To create a protected environment in the vestibule for the art complex, the existing funnel shell will remain intact to support a layer of skin cladding with cut-out pieces of hull panel. In its exterior, the ship projects its an image of an art community in a maritime port city. The architectural form is manifested by the curved powerful form of the ship's hull. The strong beam of sunlight projected on to the space inside of the funnel, like the ocular at the top of the dome of the Pantheon, will create a truly architecturally striking presence. Underneath the vestibule, the gallery space will be located at the bottom of the hull with elevators located at the center of the gallery.

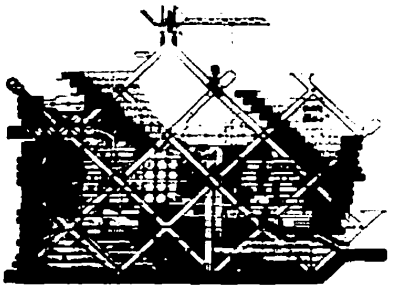
The artists' studios will be created from converted shipping containers. They will occupy most of the space on the main deck. They will be reoriented or aligned frequently as the program requires, to create different pat-



Carrick Bend detail

terns of studio or exhibition environments.

In the middle of the hull of the ship, a sunken garden and public library for the natural light to penetrate into the lower deck area, benefitting the studios located on this level. To enhance the use of the public space, the metaphor of the knot will be applied through a long linear grand stair case within this area, connecting all the decks by looping through from the top to bottom of the ship.



Plug in structure, Archigram
(from Cook 1999)

One of the striking features of the art complex will be the amphitheater at the forecastle. Although it can be used as a portable stage, it will be integrated seamlessly onto the main deck to symbolize the life of light under the main deck. Depending on the event, it can be easily be dismantled from the deck and transported it to the dock lands by the cranes.

Section through an ocean liner.
Illustration from Le Corbusier
showing the steamer as a model for
collective living.
(from Kronnenburg 1995)

Next, the decommissioned military ship will resolve the challenge of finding a suitable location and housing for the entire art college(NSCAD) by providing accommodations for the artists, art students and art educators in a permanent and unique setting which will encourage collaboration. The unique environment will encourage the development of artists associations and leadership within the arts community. Thereby creating a strong and unified voice for the local art organizations, and bridges to the society at large.

The increase in cooperation and concentration of artists will enhance the art community's ability to communi-

cate with the various levels of government, and force them to take note of their collective concerns.

The adaptation and reuse of the old ship will serve as the catalyst for other development in the waterfront area. Consequently, such development will revitalize a deteriorated area of the city, and set an example for a new usage to water front space.

Container ship passing through the canal.
(from Quartermaine 1995)

These new facilities will be a medium through which notions of art and creativity are expressed while providing a stable and permanent housing for the artists. The mobile nature of the new art complex will also enable it to become a traveling class room to communicate the importance and value of the arts to different cities.

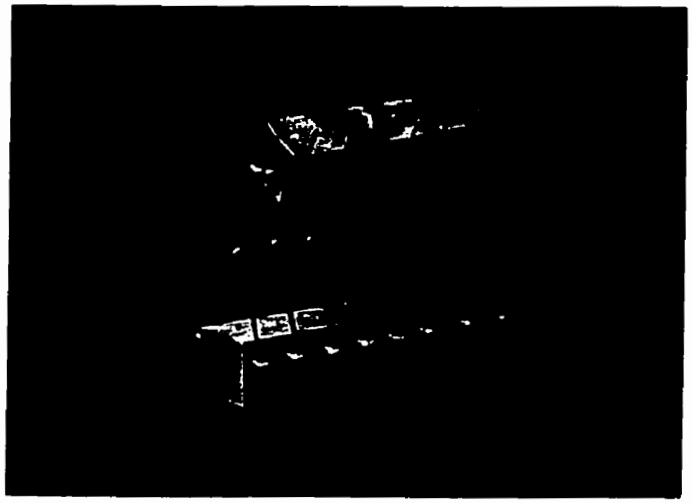
Map of ocean liner route in Atlantic ocean. Inset, shows the canals and canalised rivers in east coast of north America, showing the possible travel roots for the mobile art centre.

Preliminary Design : Metaphor for the Port

PORTABLE

Metaphor for the ship.

SERVICE



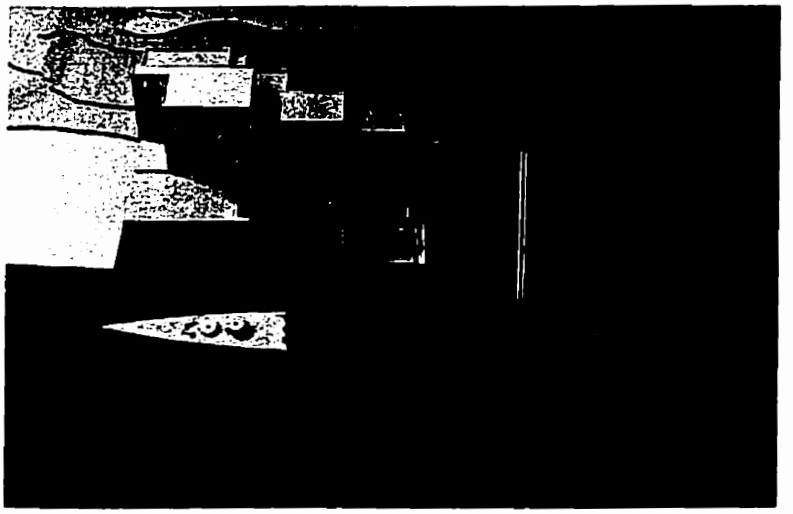
Metaphor for the grain elevator.

UTILITY

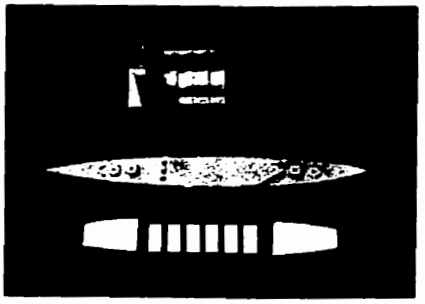
Metaphor for the crane and the pivot bridge.

First Design Development: Scennario sequence No.3

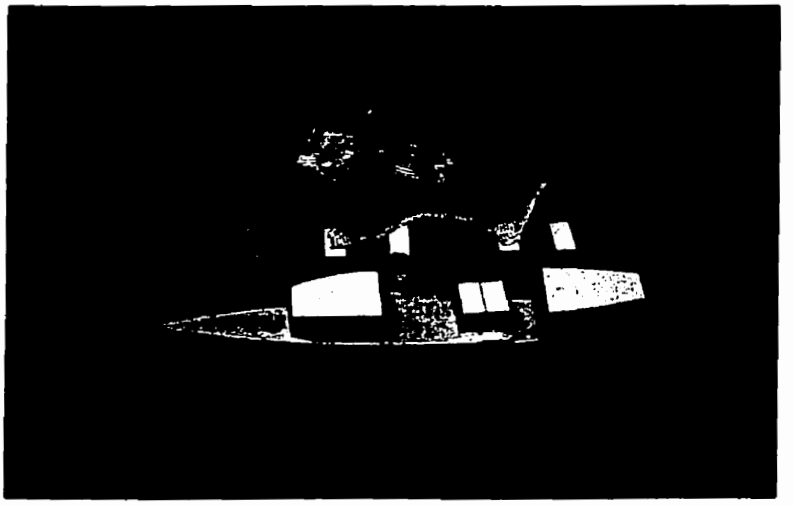
Reuse of ship parts.



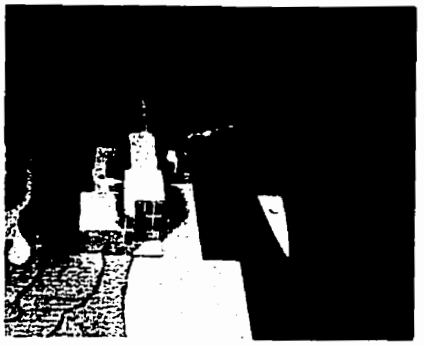
New development.



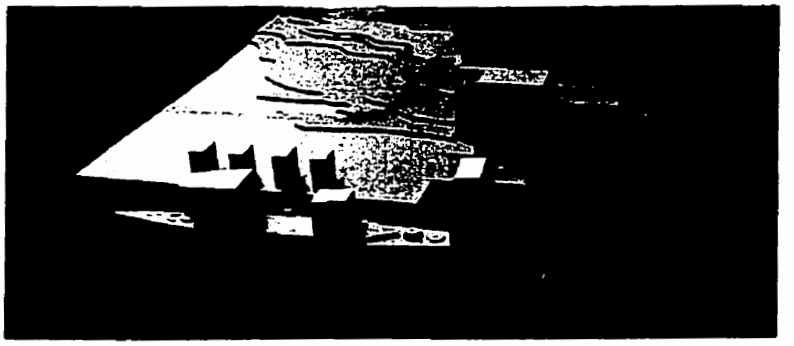
From top, 3 design elements: bridge, hull, and studios.



Possible events, within program of the art complex.

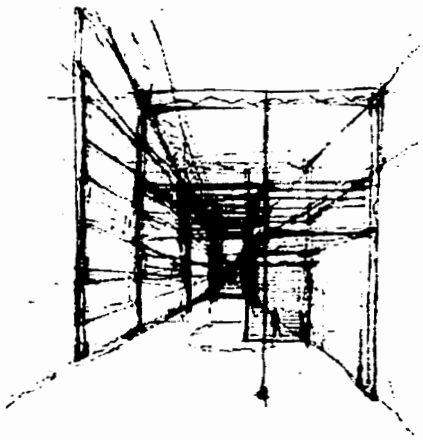


Pivot connection.



Mobile studios and gallery.

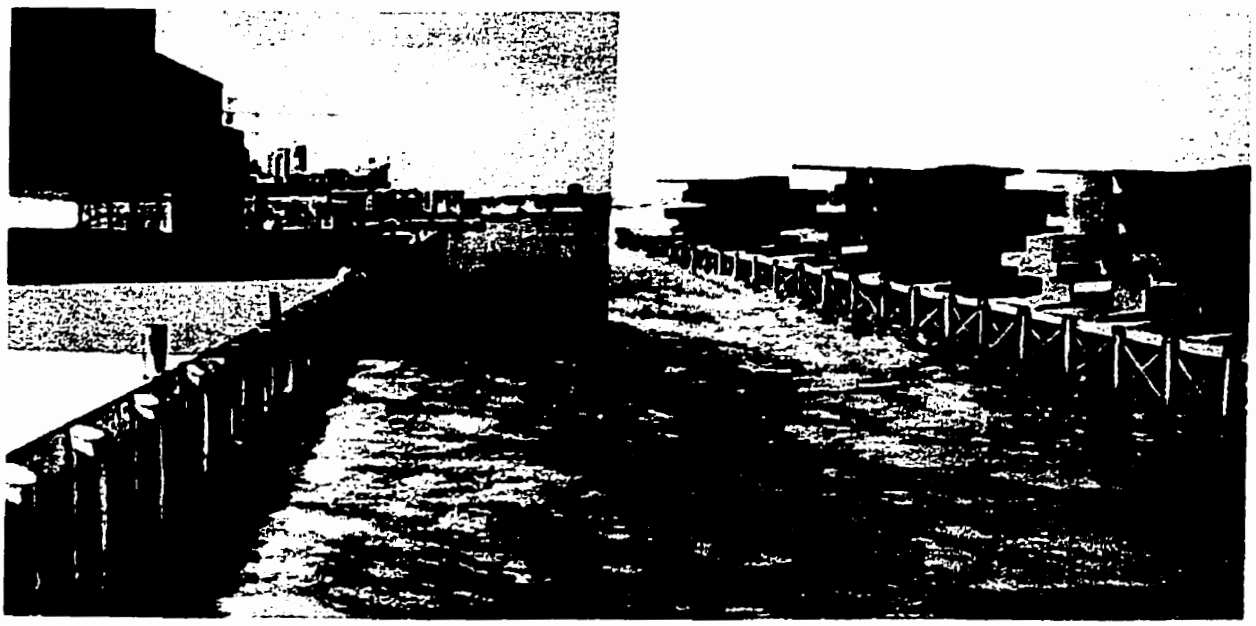
Design Sketches

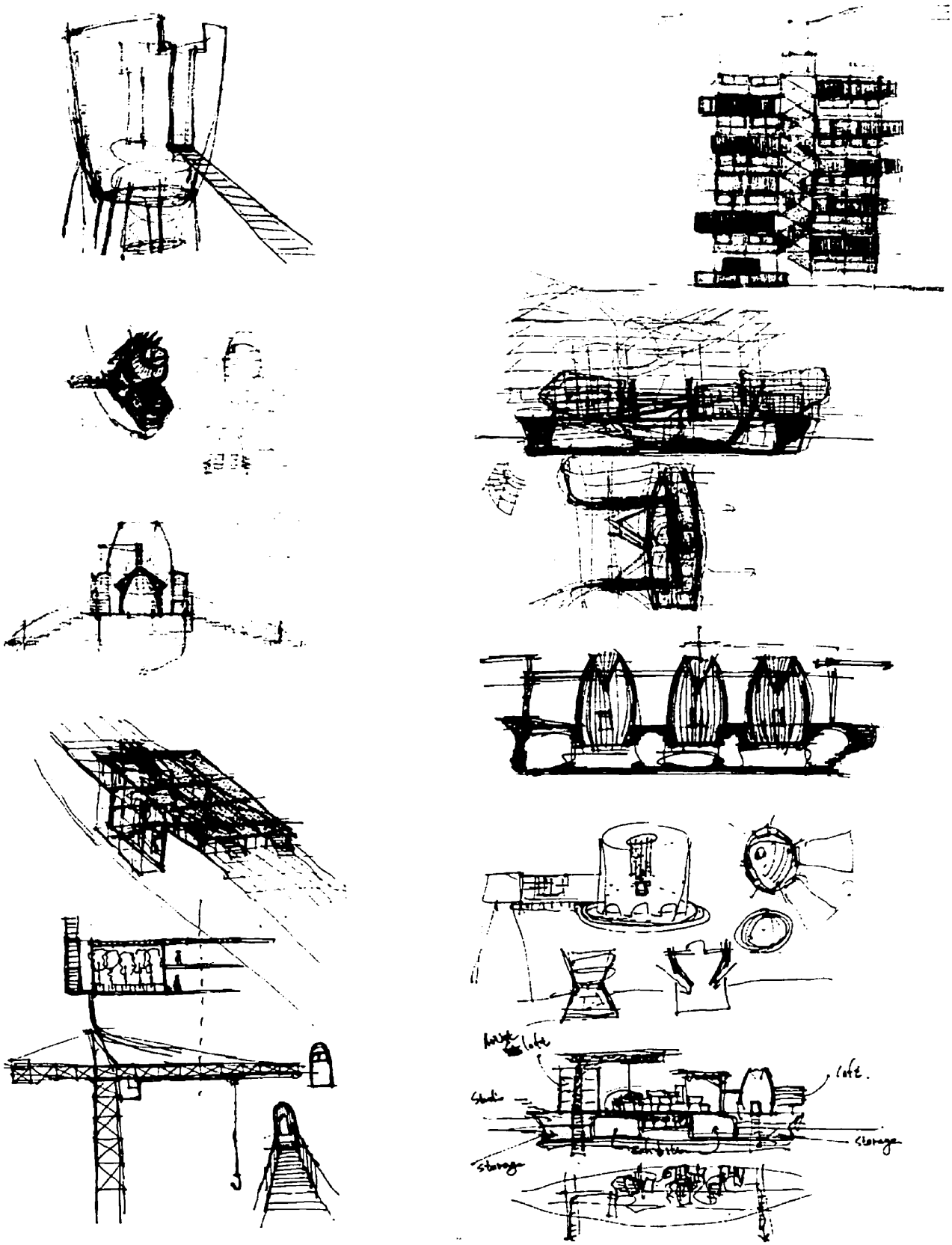


Interior view in the gallery area.

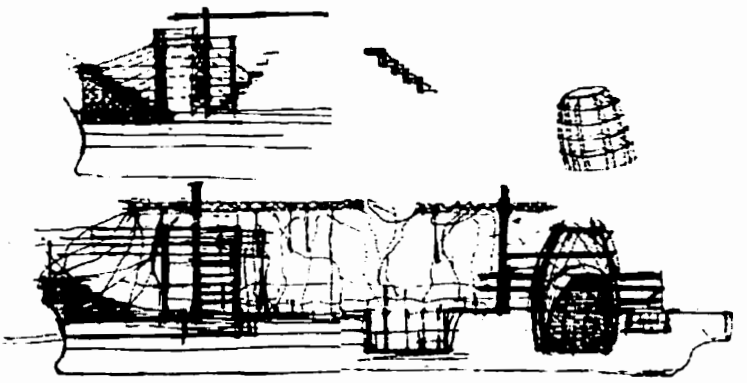
Abstract No. 2.

Abstract No. 1.

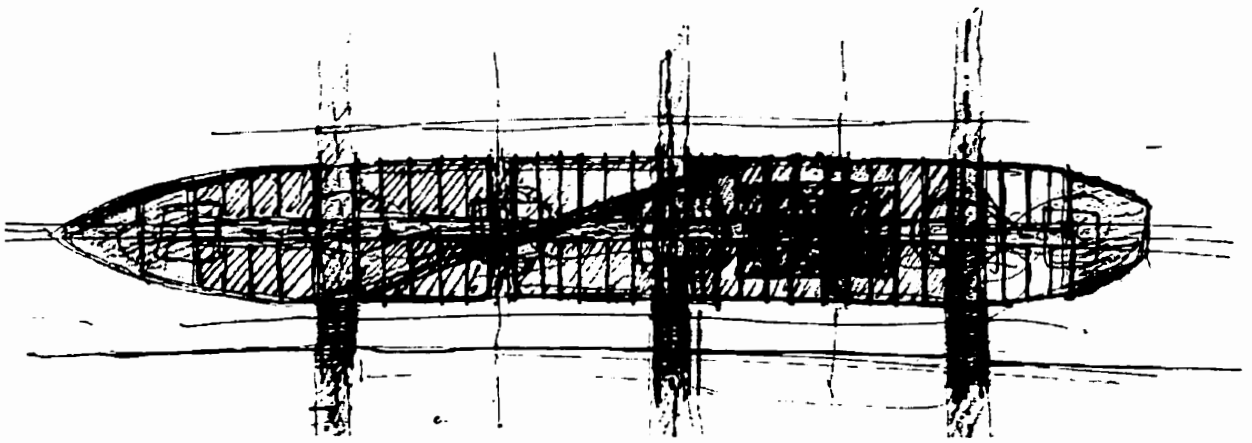




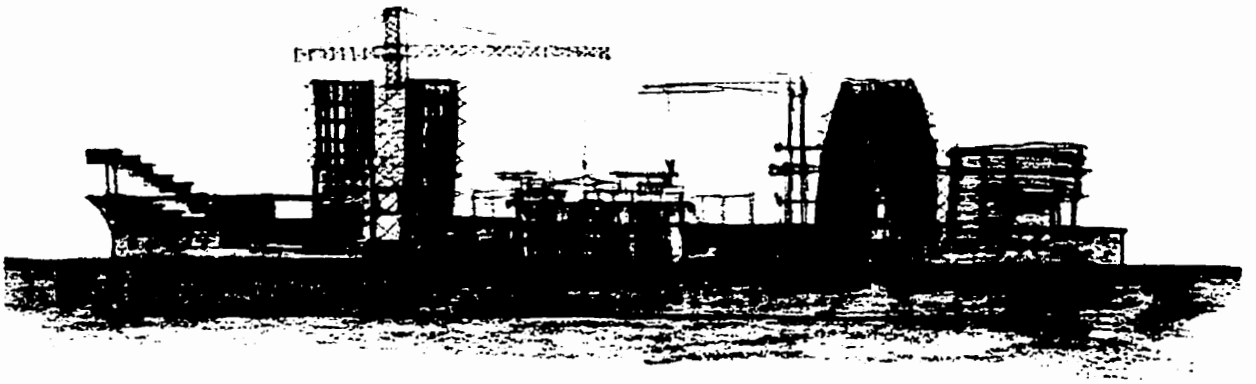
Idea sketch.



Section development.

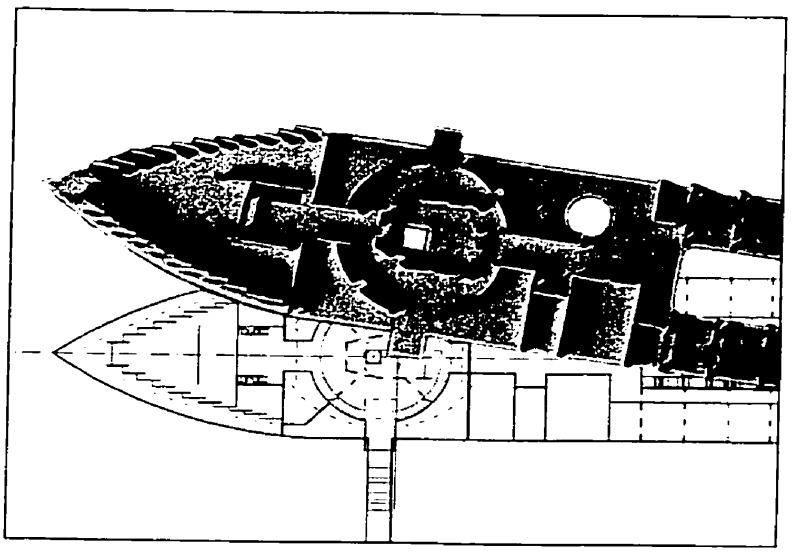


Plan development, urban strategy.



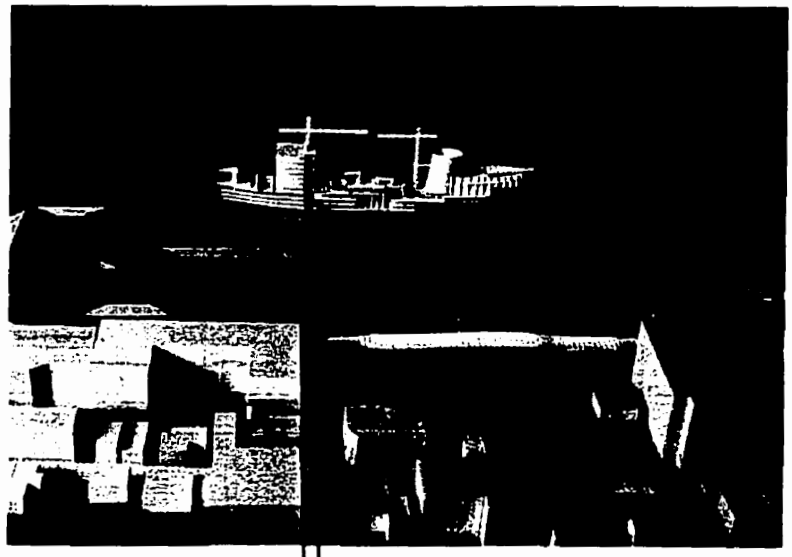
Elevation development, the hull as landscape.

Final design



Final Design Development: Scenario Sequence No. 3

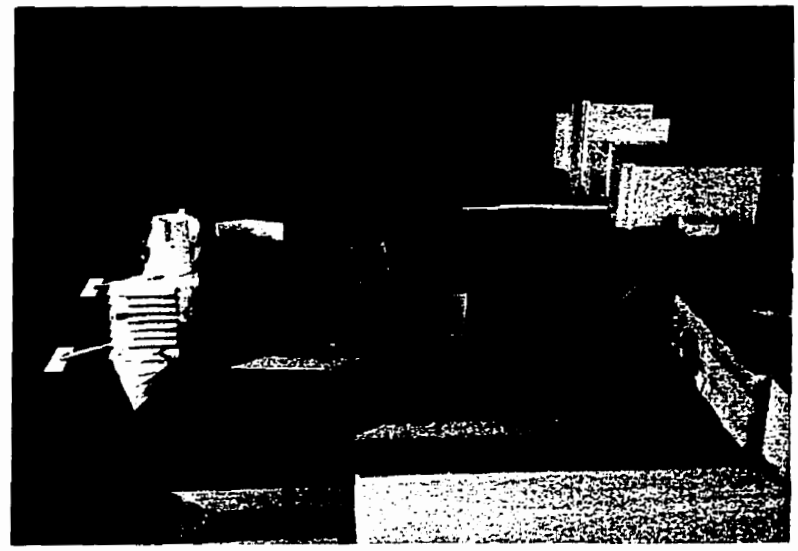
Site model showing land architecture without the art complex.



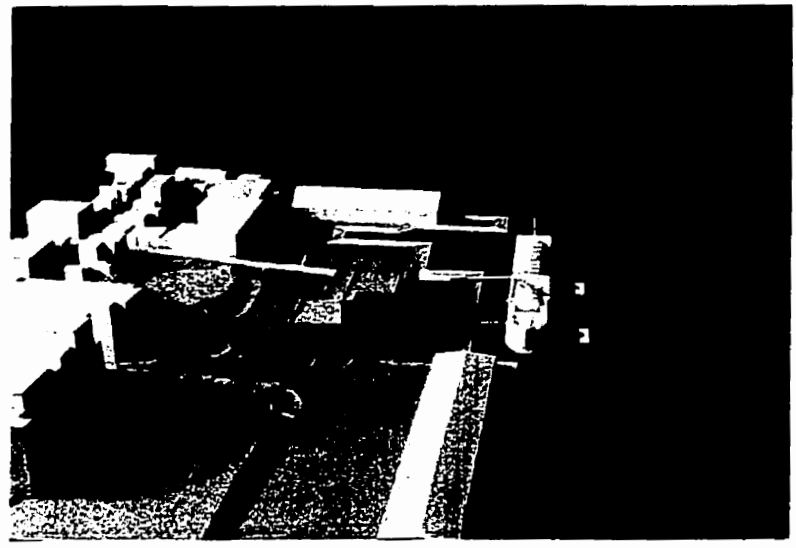
View from the upper area of Morris Street.

Site plan.

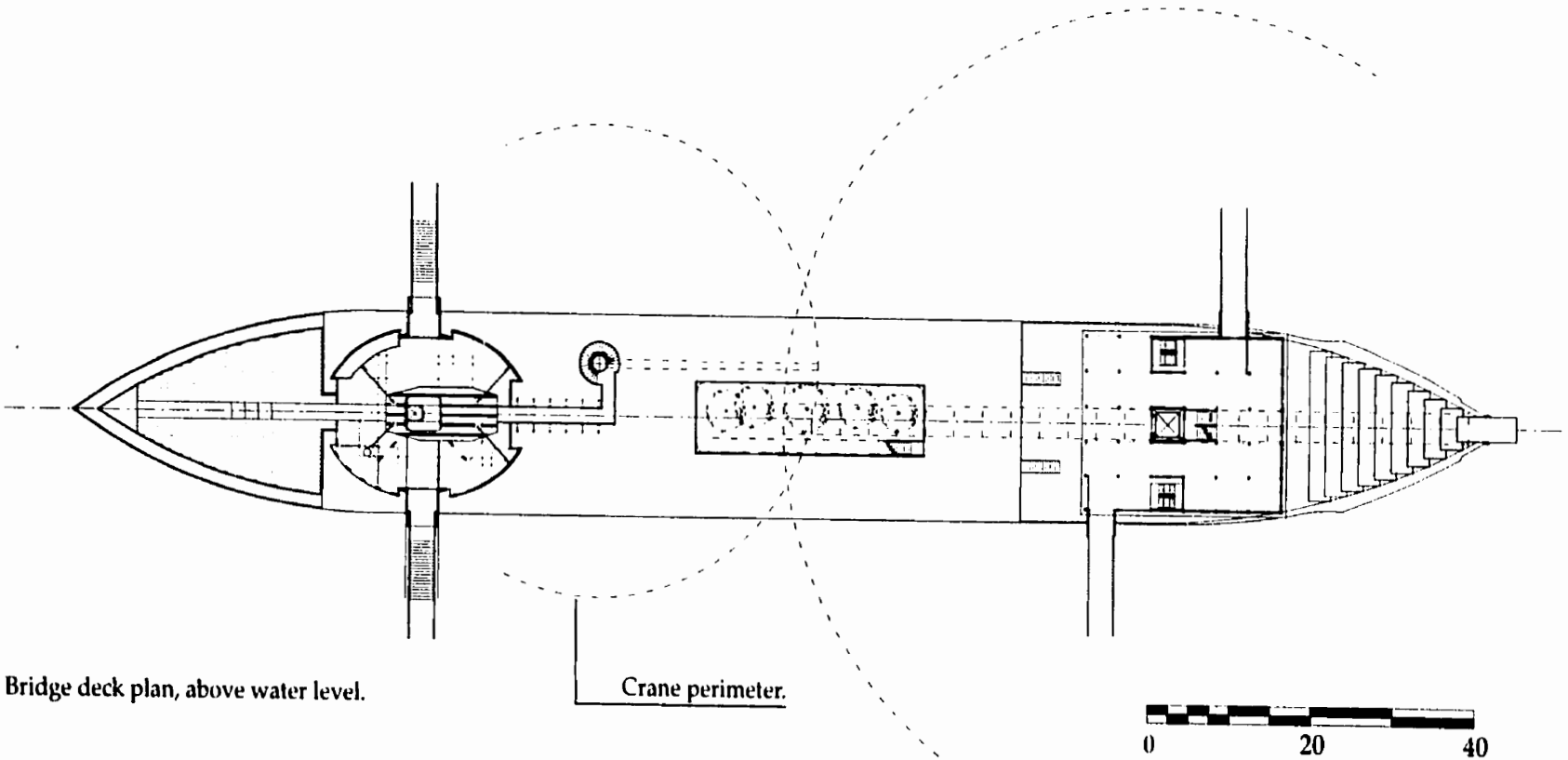
View from east.



View from north.



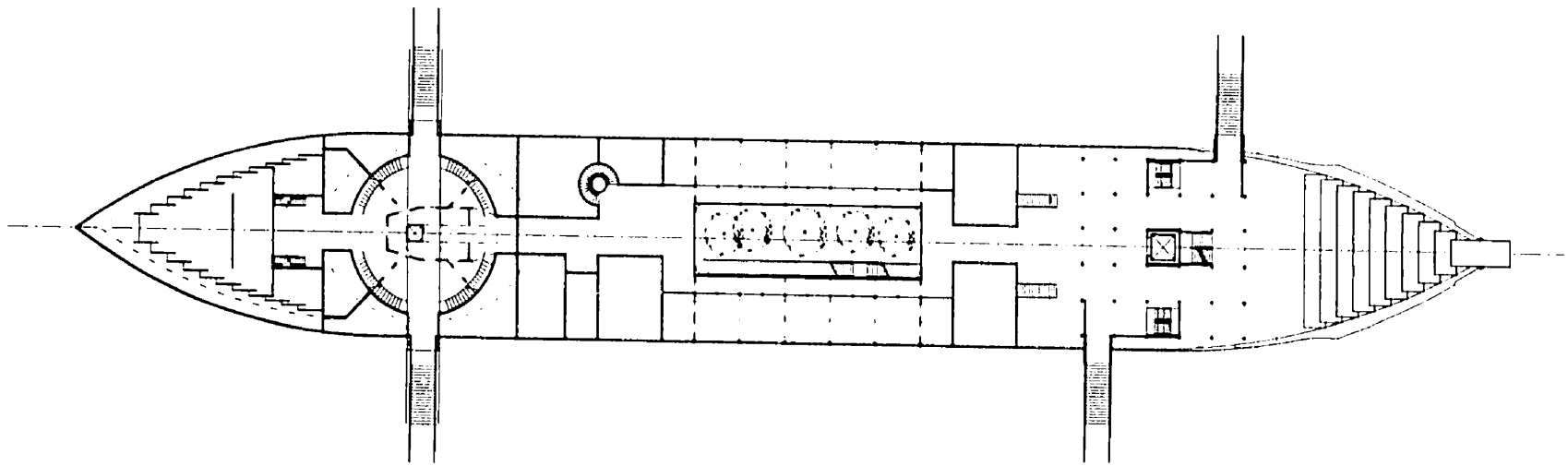
View from south.



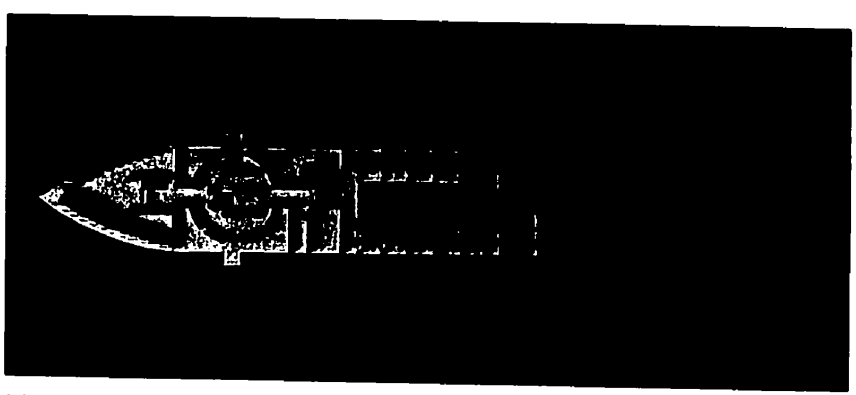
Bridge deck plan, above water level.

Bridge deck extruded plan.

Volume study model, overal volume: 53000 cubic metear approx.

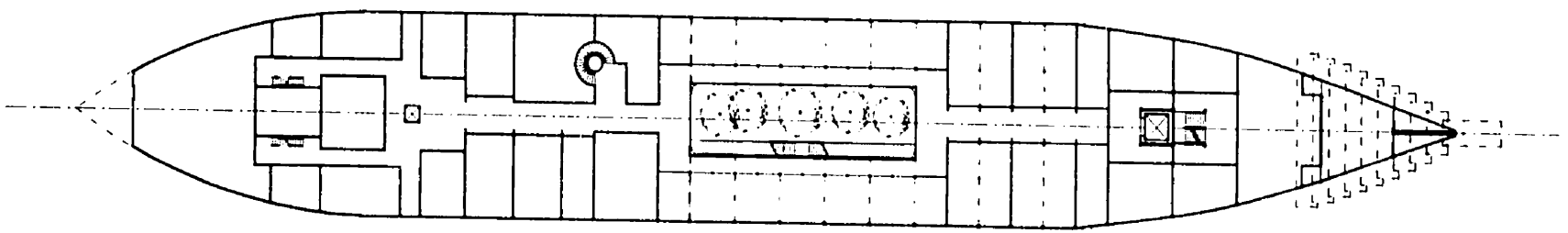


Main deck plan, above the water level.

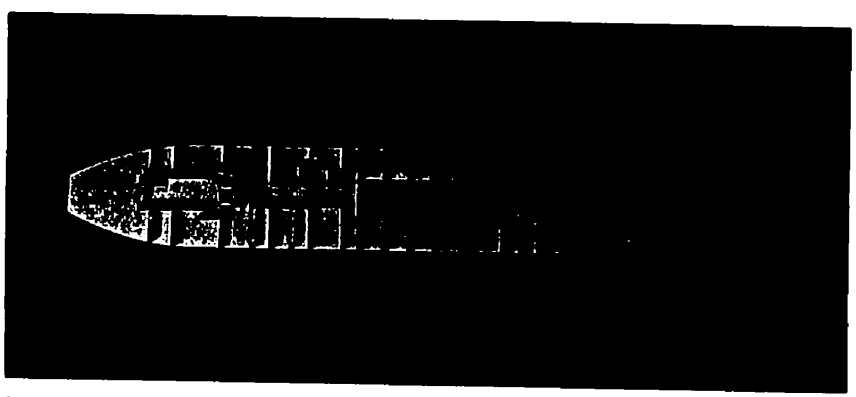


Main deck extruded plan.

Volumetric study model.

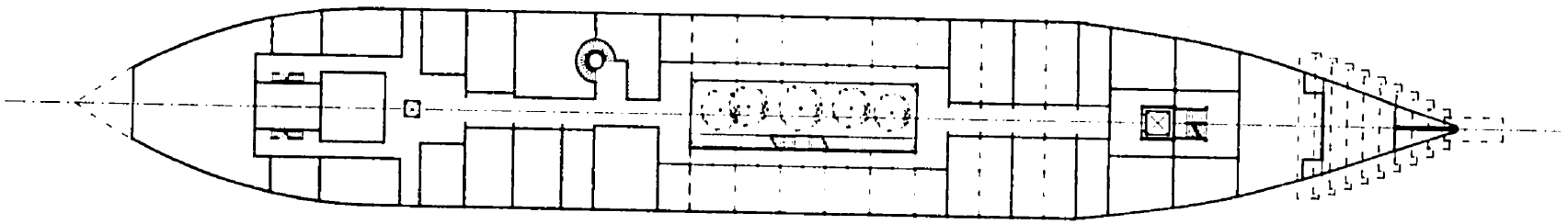


Upper deck plan, above water level.

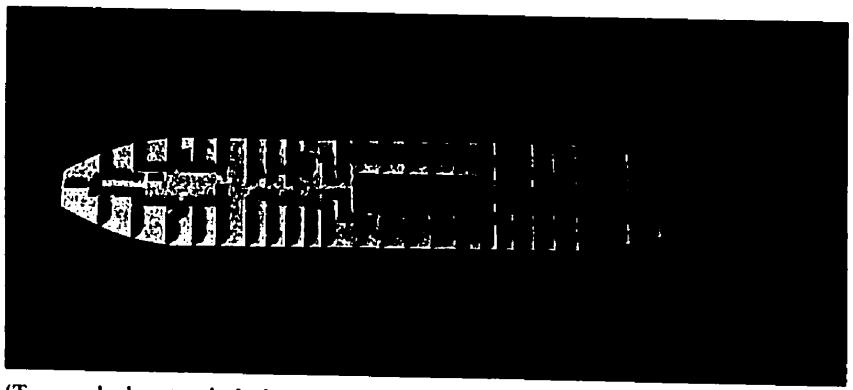


Upper deck extruded plan.

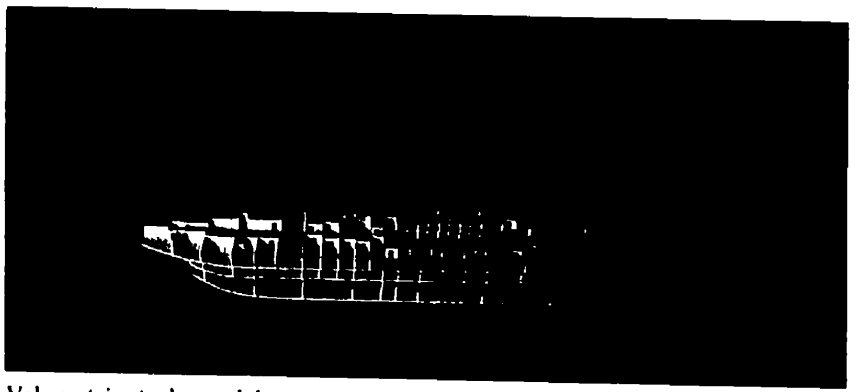
Volumetric study model.



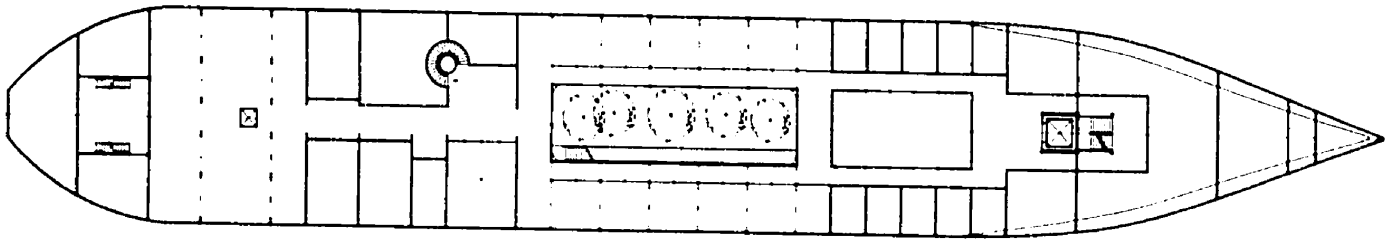
'Tween deck plan, on water level).



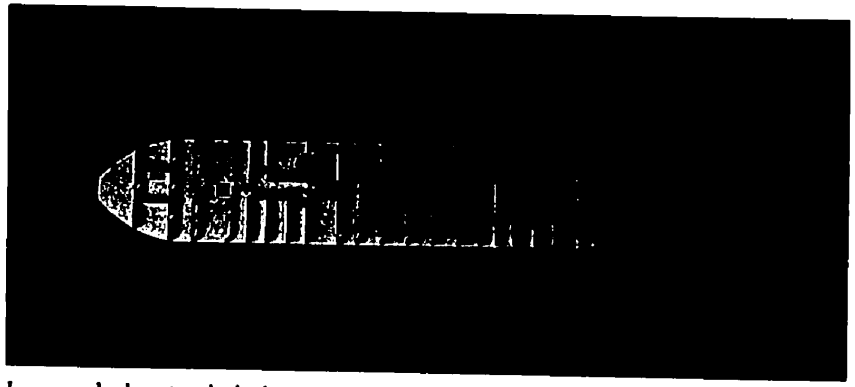
'Tween deck extruded plan.



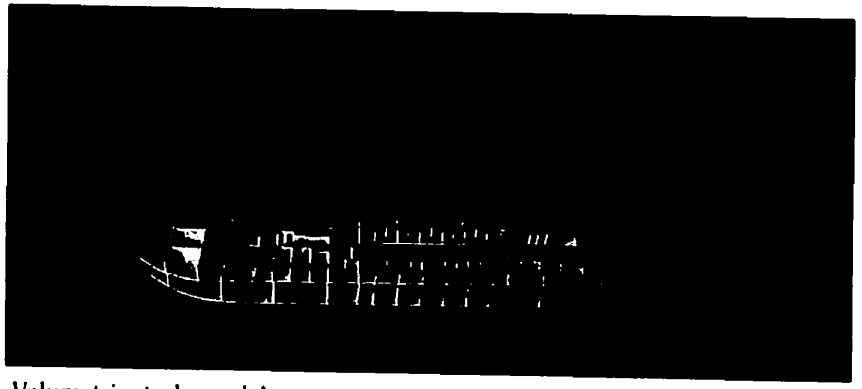
Volumetric study model.



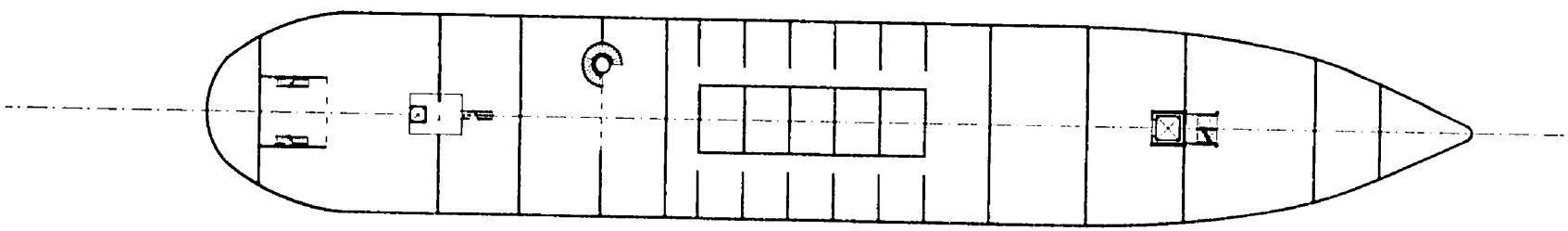
Lower deck plan, bellow water level).



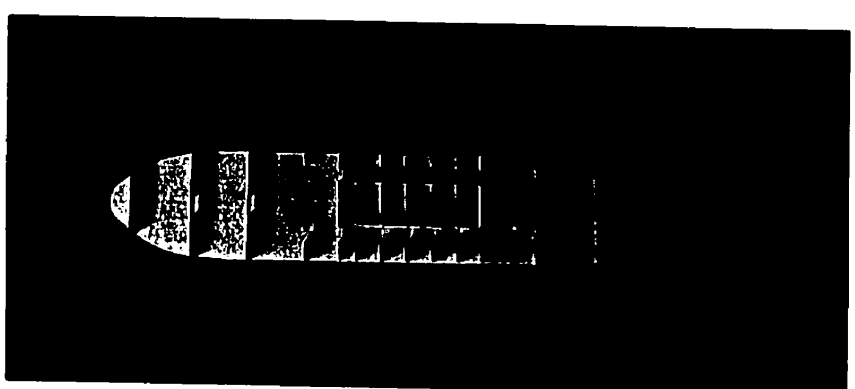
Lower deck extruded plan.



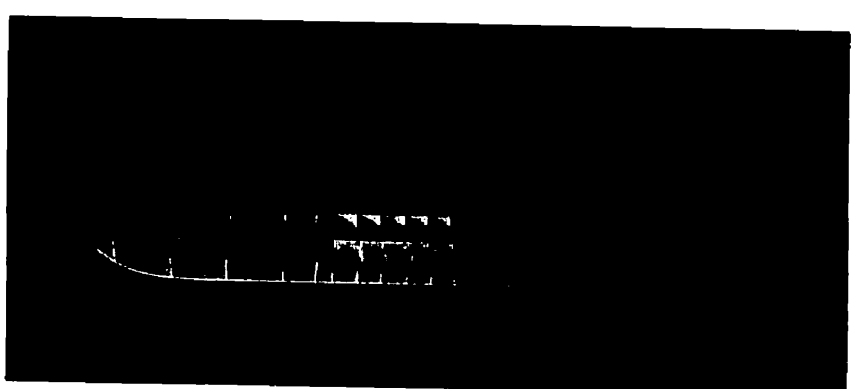
Volumetric study model.



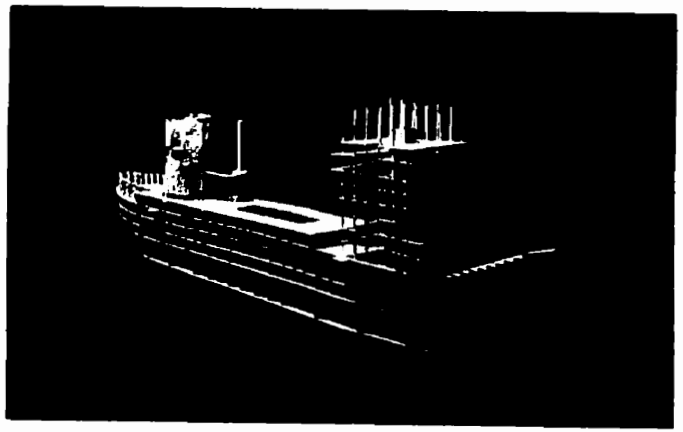
Bottom deck plan, bellow water level.



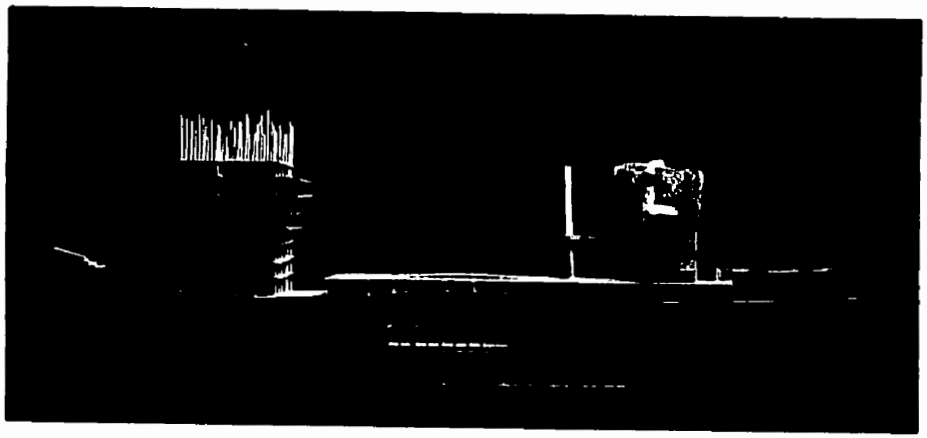
Bottom deck physical plan.



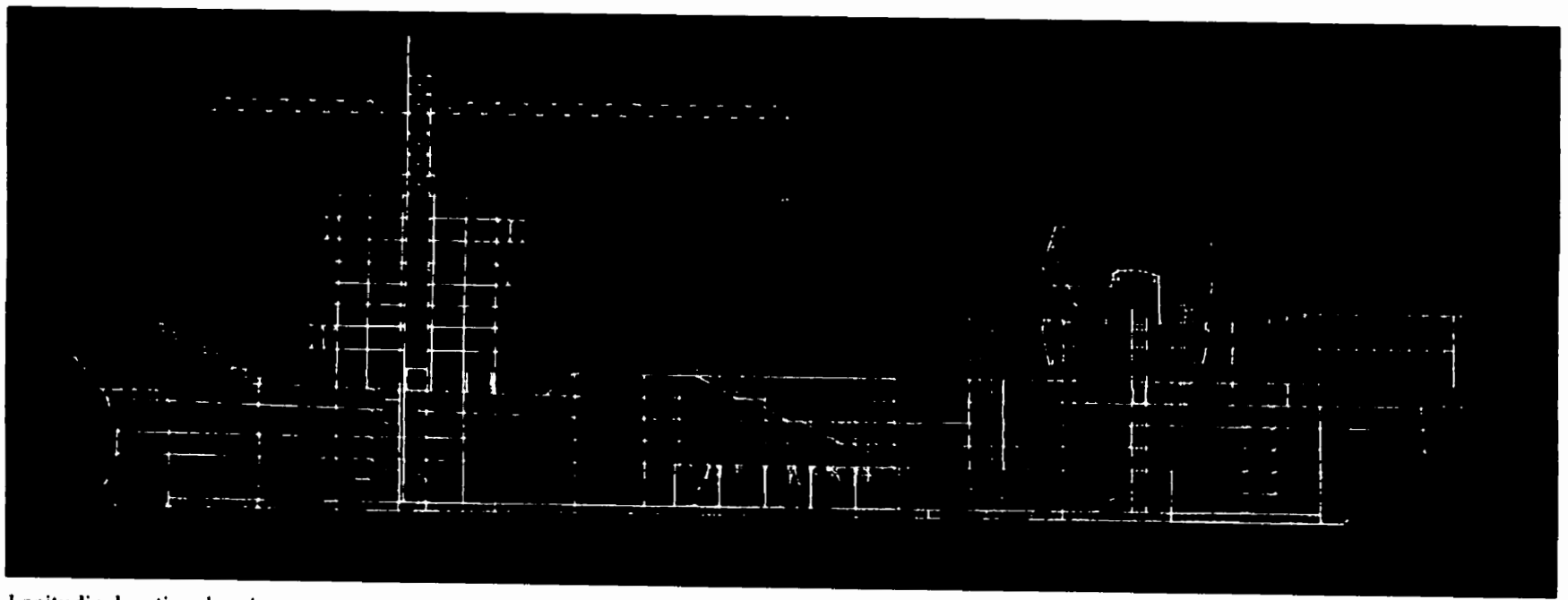
Volumetric study model.



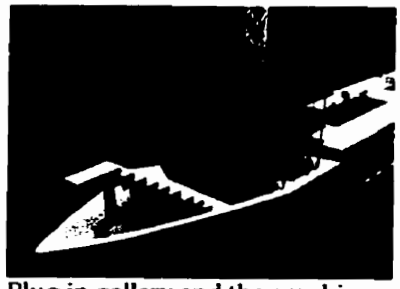
Overall volumetric model.



Volumetric and light study model.

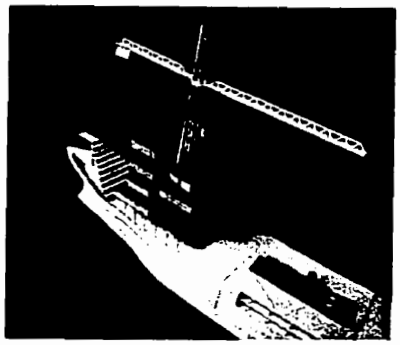


Logitudinal section drawing.

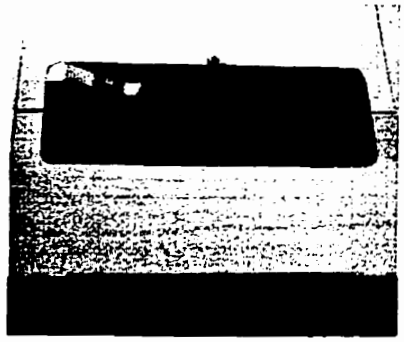


Plug in gallery and the amphi-theatre in the forecastle.

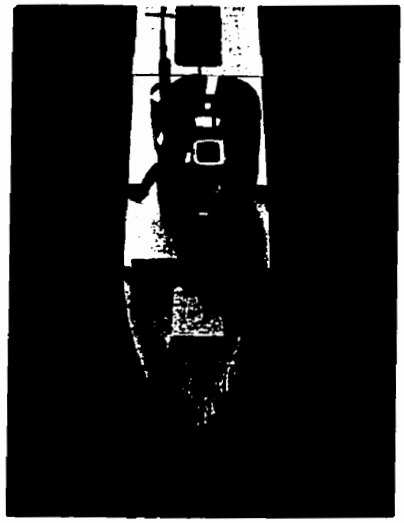
Funnel exhibition area.



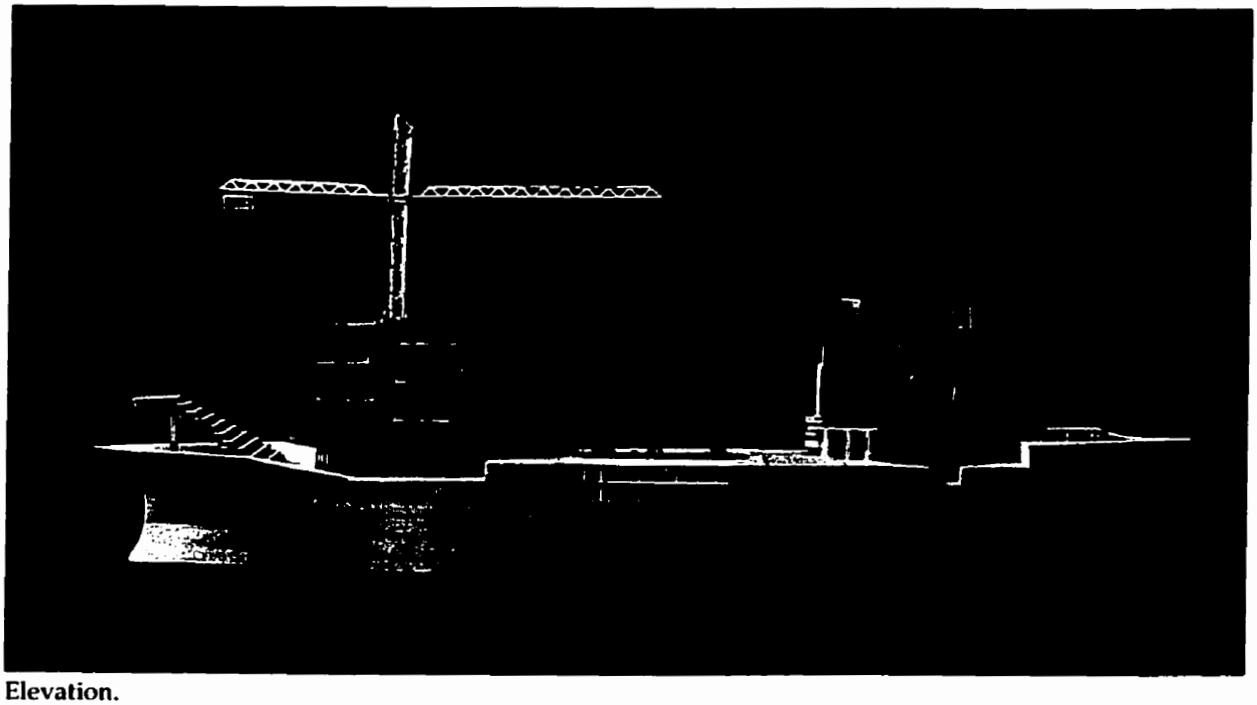
Plug in gallery, top view.



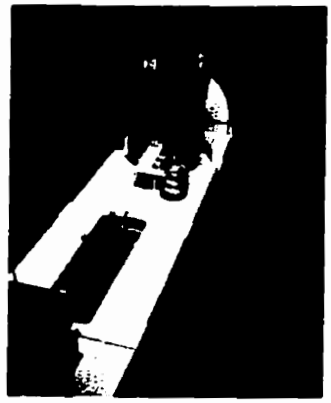
Sunken garden, top view.



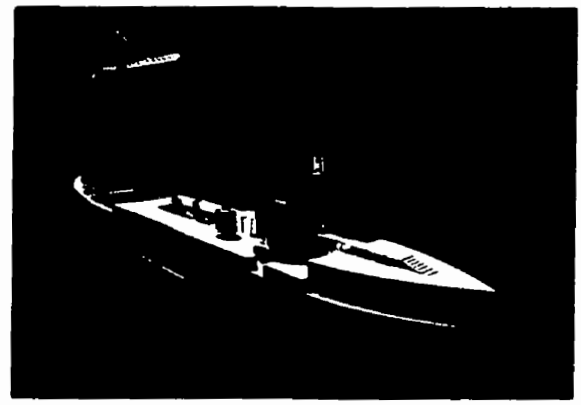
Right, overall view of the funnel auditorium and gallery.



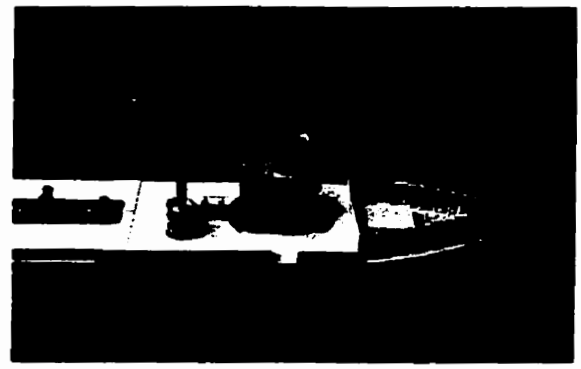
Elevation.



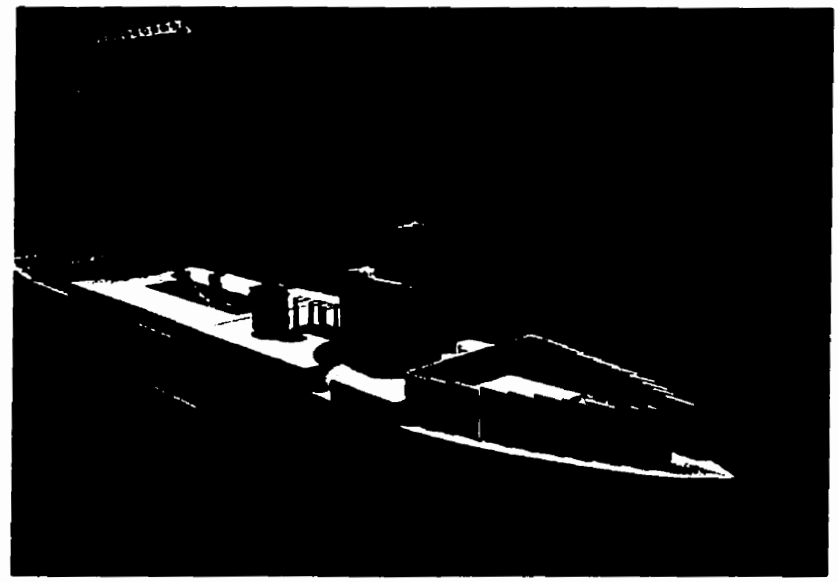
View of the bridge deck.



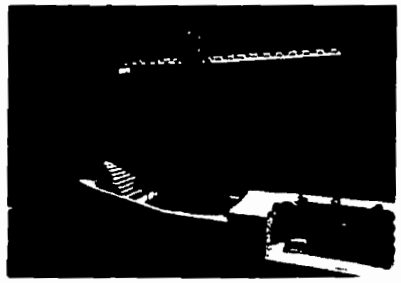
Overall rear view.



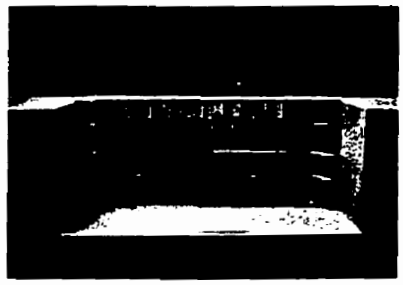
The existing funnel shell without new addition.



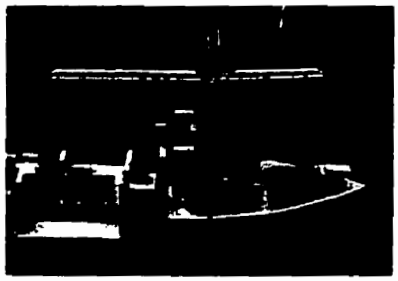
Rear view, the existing funnel shell and the gallery without the roof.



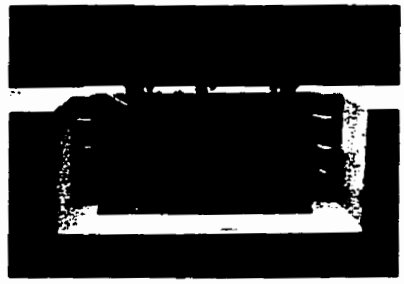
The plug in gallery and sunken garden section.



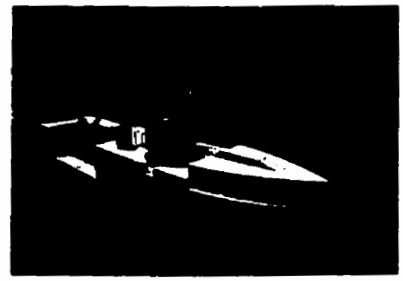
Public stairs connects the library and the class rooms.



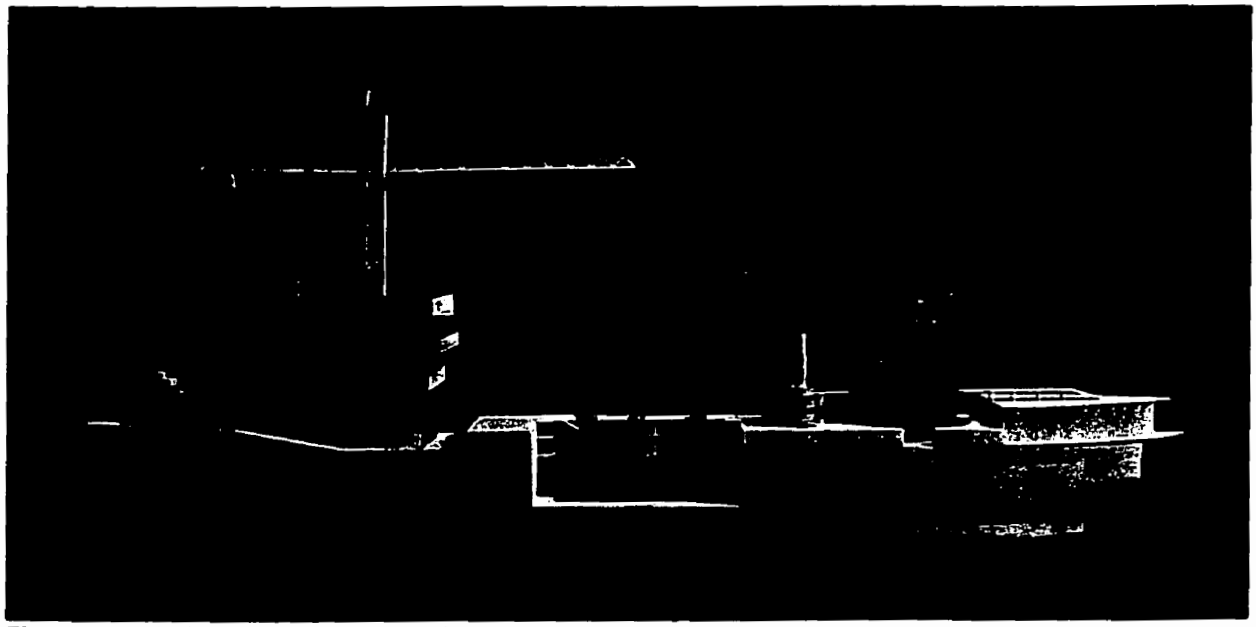
The sunken garden with container studios.



The sunken garden sectional view.



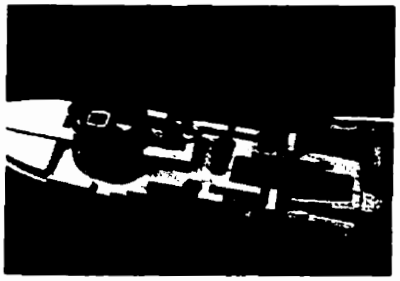
Overall view from the rear.



Elevation with the sunken garden section.

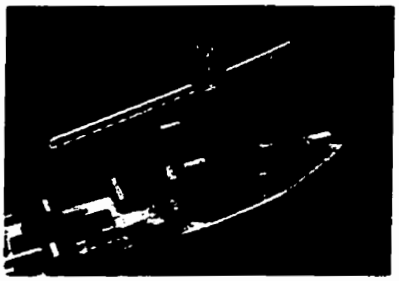
Container studios on the bridge deck at the site.

Bridge deck.

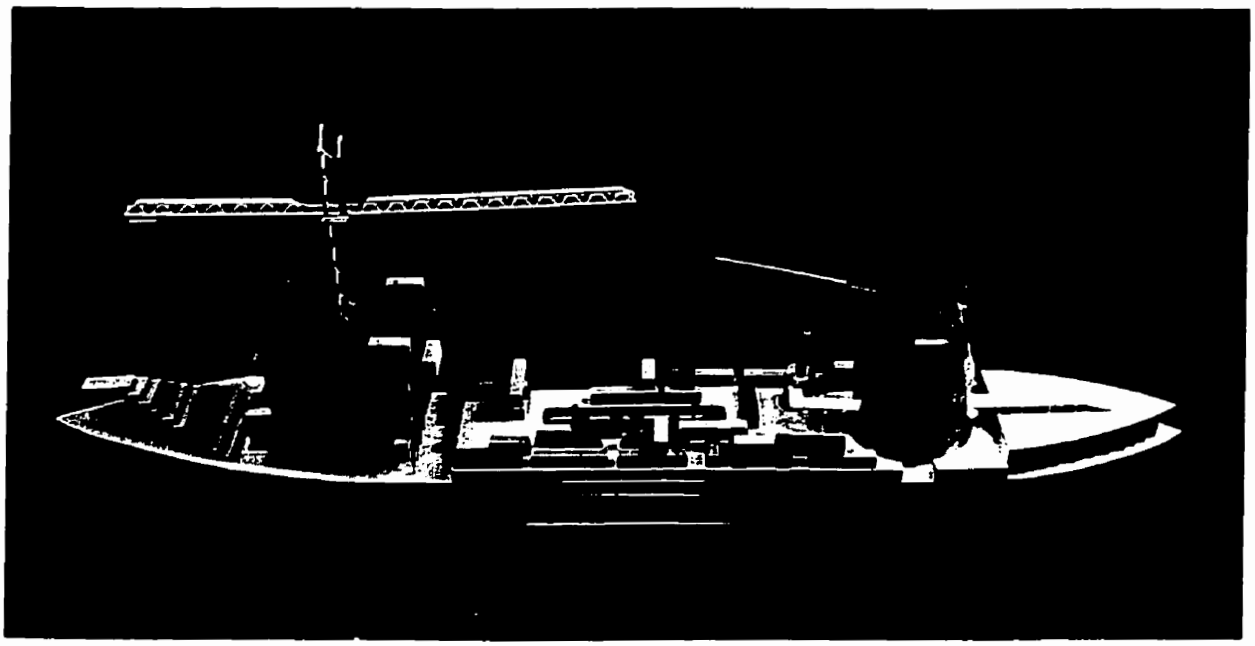


Top view.

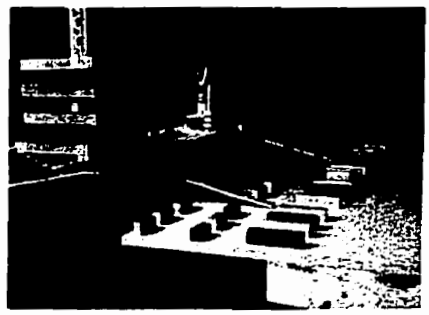
Art complex in docking positon.



The plug in gallery with container studios.



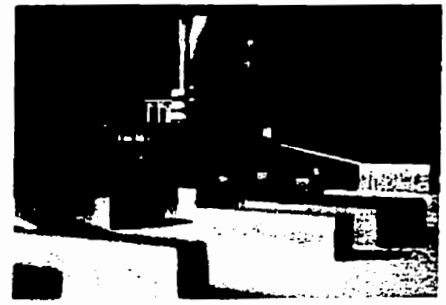
Entire view of the art complex with recommened container studio configuration.



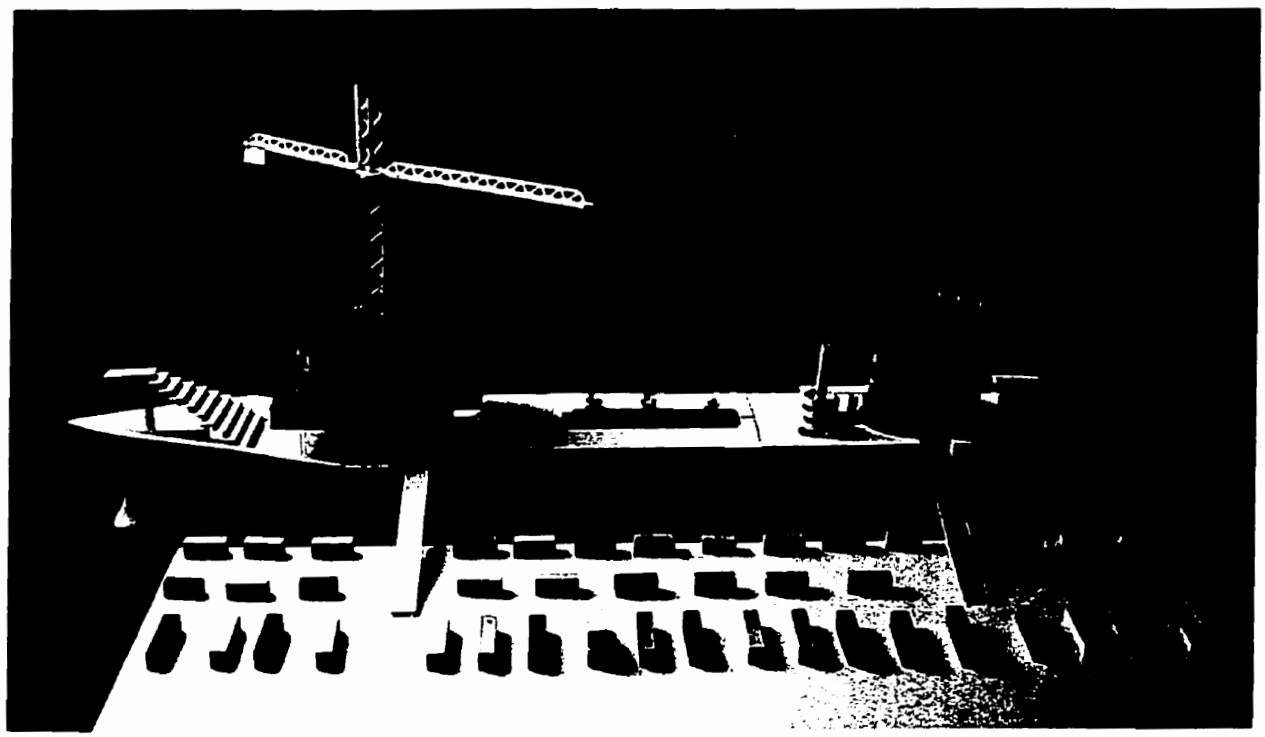
Possible event on the board work area.

The light weight structures are erected by the cranes.

Viewing the bridge to the main deck.



Viewing the another bridge to the funnel exhibition entrance.



Proposed continer exhibiition format.

Summary

Response to thesis question

How can architecture act as a medium to enhance the integration of society and artists through the creation of a new working environment for the arts community?

The choice of a specific medium is an integral part of the message which the artist is attempting to convey with the audience. In fact the medium itself can often convey to the audience the ideas and feelings of the artist. Architecture can be a medium, as well, for our society. Architects have been using architecture to express and accommodate the needs of society, and the structures that are created become the cultural identity of its time.

While I have been developing this thesis, I realized that a sense of identity is inextricably associated with a specific physical or spiritual place. This concept of architectural sense of place is more than the specific of a geographic locations. A new criteria needed to investigated to devise architectural forms.

This investigation has led me to conclude that architectural design is not limited to physical constraints. In other words, architectural design need not be a victim of geography. A unique aspect of the ship as the architectural form and medium is the concept that architecture can exist anywhere, free from the topographical or geographical attributes of a particular location. It is the

intention of this thesis to illustrate and argue that portable buildings and living spaces on ships are more than an expedient provision of loose fit, low-cost projects to deal with the problem of housing for the artists. The ship and its proposed designs are a responsive and interactive solution for housing. It promises to change with the changing moods, colours, climates, culture and environments of the artists.

The concept of a portable building has advantages which have been tested through its successful utilization in traditional, historic, and vernacular circumstances. The strategy was incorporated in the old decommissioned military ship Provider and the old Nova Scotia Power Plant Building development scenario, which became the recommended scenario. In this scenario, the architect is required to balance the interest of the public as well as the interests of the artists' community in developing a space that can be inclusive and which maximizes the satisfaction of the small artist community and the public community at large.

I recognize that at the time that this thesis was initiated, the critical mass and economic viability required to promote the value of arts in our society, to realize the value of the artists, to take note of the importance of art education, to encourage public participation, and the flexibility of regulation in supporting this project has not reached the necessary threshold of consciousness in the Halifax community. The possibility of this art complex ever existing relies on the conviction among

artist to work in a mobile studio. That will be a symbol of Nova Scotia's rich naval culture and naval history.

I recognize that the success of the project depends on the level of development in the proposals for the new art complex, the mixed use complex, and the board walk. However, I believe that human catalysts, such as the artists and art audiences in society matter the most.

Recently, I have been informed that the Nova Scotia College of Art and Design in Halifax started looking for possible locations for relocation due to the expiration of its lease. It is noteworthy to mention that the Art College has revitalized the neighborhoods which it occupied and this fact supports my belief that the artists contribute to their community by its their very existence.

Appendix

Case Study 1.

The Barrier Reef Floating Hotel

The ability of water to support large structures has been explored and accomplished throughout history. Unlike the Aldo Rossi's theatre, there is one recently built for commercial purposes,the Barrier Reef Floating Hotel, opened in March 1988 as the first permanent facility situated adjacent to Australia's Great Barrier Reef.

> The building was built in Singapore and was taken to the site using a heavy lift carrier. The 200-room hotel has a main substructure built in the form of a steel barge. Two floors are contained within the barge and a further five floors above the barge contains such amenities as lobby, restaurant , kitchens, shops and bars. [14]

Public spaces within the hotel are large and open but the single unit's bedrooms are made from prefabricated modules slotted into place in the superstructure. As the hotel was moored in an extremely sensitive conservation area, all services are operated on a closed system where sewage and waste is compacted and incinerated and treated water is released to the open sea.

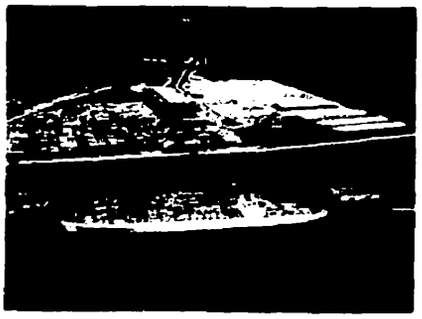
The Barrier Reef Floating Hotel, Australia, 1988.
(From House in Motion 1995)

Case Study 2.

The Eiichi. Floating Island, Honshue, 1989.

The uniqueness of the building is initially meant that the quality of their esthetic part was less important than its sufficient in funtion. However, the quality of planning and appearance began to be more valuable,

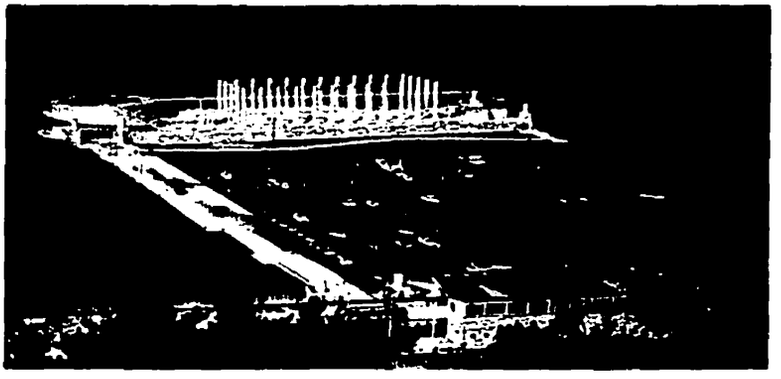
For instance, the floating Island project located in the Japanese Inland Sea adjacent to Honshu was completed in 1989.



The container ship along side the city shows the same impression with the floting island in Honshu.

> The floating island, consists primarily of a theatre, a gallery and an aquarium and is situated away from shore so that its structure will act as protection for marina. The engineering element is a large floating platform, of 130 meters by 40 meters, which has been used as a base to support a dramatic superstructure consisting of a rotunda, walkways and 30 large vertical steel columns. [15]

It was designed to have its own distinct image, in the same way that any new leisure building would have. The image of this building is far from a simply engineered solution but appears to emphasize conventional land built forms despite the obvious fact that it floats and also shares same characteristic with the docking ship in harbour.



The Eiichi. Floating Island, Honshue, 1989.

Brief history of HMCS Provider

The operational support ship, formerly known as fleet replenishment ship, HMCS Provider, Second of Name, was built in April 1961 and her keel was laid in the following month. She was launched on 5 July 1962
and commissioned on 28 September 1963 .

With her facilities for furnishing mobile support, Provider enables the units of the fleet to operate for extended periods at sea. After her arrival at Halifax on 6 December 1963, she took up her position as replenishment ship for the fleet.

The course of her duties required her to take part in NATO exercises in various areas, in the Mediterranean, above the Arctic Circle north of Norway, off Bermuda and in the Caribbean.

At the close of 1969 she transferred her base from the east to the west cost, leaving Halifax in November and arriving at Esquimalt in the following month.

In the Pacific where she continues to operate at the moment, she voyages along the coast, northward to the Bering Sea and southward to San Diego. In 1970 she made a voyage to Pearl Harbor and Japan.

Directorate of History
Canadian Forces Headquarters
Ottawa, 6 December 1971 [9]

Notes

1. Dr. Ron Burnett, *Emily Carr Institute of Art and Design*, <http://www.ciad.bc/eciadMain/> (December 2000).

2. John Dewey, *Art as Experience* (New York: A Perigee Book, 1980), 327.

3. Arnord Houser, *The Social History of Art* (London: Rouuledge and Kegan Paul, 1951), 126.

4. Viktor Lowenfeld, *Creative and Mental Growth*, 7th ed. (New York: Collier Macmillan, 1982), 45.

5. Herbert Bayer, Walter Gropius, and Ise Gropius, ed., *Bauhaus 1919-1928* (Boston: Charles T. Brandford Company, 1959), 6.

6. Andrew Terris, "Nova Scotia Government Turning its Back on the Visual Arts," *Visual Arts News*, vol. 14, no. 4 (Winter, 1992): 4.

7. Chris Lambi, "Waterfront Visions," *Halifax Sunday Daily News* (18 Feburary, 2001): A4 and A5.

8. Michael Lightstone, "Provider's Final Bow," *The Halifax Daily News* (25 June, 1998), A1 and A2.

9. Peter Anson, *How to Draw Ships* (London: The Studio Publication, 1955), 89.

10. Peter Quartermain, *Building on the Sea: Form and Meaning in Modern Ship Architecture* (London: Academy Editions, 1996), 50.

11. Deyan Sudjic, *The 100 Mile City* (London: Deutch, 1992), 15.

12. Quartermain, *Building on the Sea*, 55.

13. *Aldo Rossi and 21 Works* (Tokyo: A and U Publishing Co., 1982), 110-123.

14. Robert Kronenburg, *Houses in Motion: The Genesis, History and Development of the Portable Building* (New York: St. Martin's Press,1995), 27.

15. David Hutton, "Barrier Reef Floating Hotel," *Process Architecture*, no. 96 (June 1991): 82-87.

16. Eiichi Yanagida, "Floating Island," *Process Architecture*, no. 96 (June 1991): 88-93.

References

Books and Articles

Ando, Tadao. *Meterial, Geometry and Nature in Tadao Ando.* London: Phaidon, 1990.

Bayer, Herbert, Walter Gropius, and Ise Gropious, ed. *Bauhaus 1919-1928.* Boston: Charles T. Brandford Company, 1959.

Burnett, Dr. Ron. *Emily Carr Institute of Art and Design.* < http://www.ciad.bc/eciadMain/> (December 2000).

Carmean, E. A., Jr. *Mondrian: The Diamond Compositions.* Washington: National Gallery of Art, 1979.

Cook, Peter. *Archigram.* New York: Princeton Architectural Press, 1999.

Curtis, William J.R. *Modern Architecture.* London: Phaidon Press, 1996.

Doewy, John. *Art as Experience.* New York: A Perigee Book, 1980.

Directorate of History Canadian Forces Headquarters. Ottawa, 6 December 1971.

Hiscox, Gardner D. *Mechanical Movements: Powers and Devices.* New York: The Norman W. Henry Publishing Co., 1907.

"HMCS Provider(AOR 508)." *HMCS Provider.* <http://www.fortunecity.com/marina/havana/88/AOR508.htm> (December 2000).

Honour, Hugh, and John Fleming. *The Visual Arts: A History.* 5th ed. New York: Prentice Hall Inc., 2000.

Hoyle, Brian, ed. *Cityports, Coastal Zones and Regional Change: International Perspectives on Planning and Management.* Chichester: John Wiley & Sons, 1996.

Hutton, David. "Barrier Reef Floating Hotel." *Process Architecture,* no. 96 (June 1991): 82-87.

Kronenburg, Robert. *Houses in Motion: The Genesis, History and Development of the Portable Building.* London: Academy Editions, 1995.

Landsing, Kenneth M. *Art, Artists, and Art Education.* New York: McGraw-Hill Book

Company, 1971.

Lowenfeld, Viktor. *The Lowenfeld Lectures.* 7th ed. London: The Pennsylvania State University Press, 1982.

Mc Fee, June, Rogena King and M. Degge. *Art, Culture, and Environment: A Catalyst for Teaching.* Iowa: Kendall/Hunt Publishing Company, 1980.

Milne, John. *Mondrian.* New York: Phaidon Press, 1992.

"NSCAD Launches Fund-raising Campaign." *Visual Arts News,* vol. 7, no. 1 (March/April 1985): 7-8.

Puglisi, Luigi Prestinenza. *Hyper Architecture: Spaces in the Electronic Age.* Boston: Birkhauser, 1999.

Quartermain, Peter. *Building on the Sea: Form and Meaning in Modern Ship Architecture.* London: Academy Editions, 1996.

Rehoused in History. Halifax: Nova Scotia College of Art and Design, 1979.

Richard Dooley. "Providing a Brighter Future." *The Halifax Daily News* (25 June 1998): A1.

Sandalack, Beverly A., and Andrei Nicola, ed. *Urban Structure - Halifax: An Urban Design Approach.* Halifax: Tuns Press, 1998.

Schultz T. Larry. *Studio Art: a Resource for Artist-Teachers.* New York: Van Nostrand Reinhold Company, 1973.

Soucy, Donald., and Harold Pearse. *The First Hundred Years: A History of The Nova Scotia College of Art and Design.* Halifax: The Nova Scotia College of Art and Design, 1993.

Terris, Andrew. "Nova Scotia Government Turning its Back on the Visual Arts." *Visual Arts News,* vol. 14, no. 4 (Winter 1992): 4-5.

Trachtenberg, Marvin. *Architecture: From Prehistory to Post-Modernism.* New York: Harry N. Abrams, Inc. 1986.

Van Laar, Timothy., and Leonard Diepeveen. *Active Sights: Art as Social Interaction.* California: Mayfield Publishing Company, 1998.

Yanagida, Eiichi. "Floating Island." *Process Architecture,* no. 96 (June 1991): 88-93.