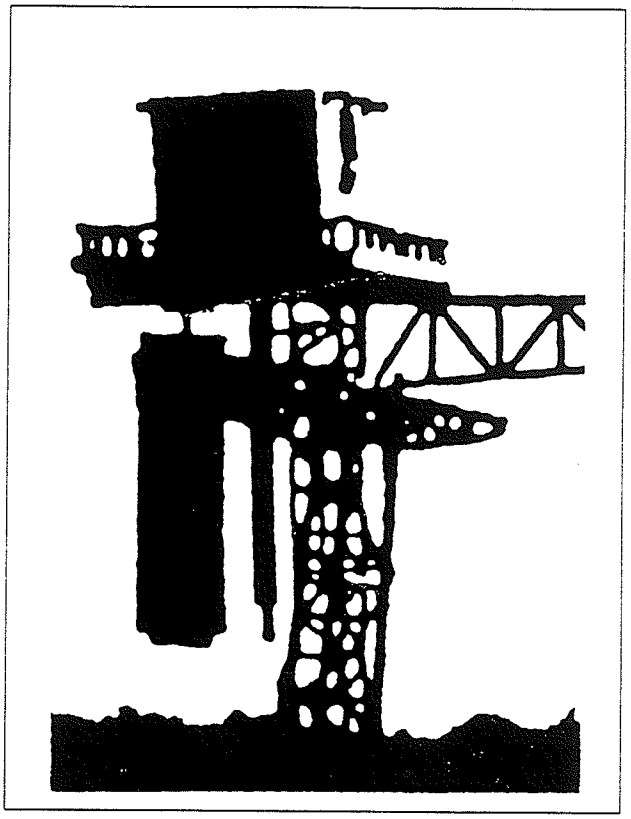
URBAN ARCHITECTURE

The Opportunity of a Bridge



BY

Deron T. Miller

5709092

A practicum submitted to the Faculty of Graduate Studies
of the University of Manitoba
in partial fulfillment of the requirements for the degree of

MASTER OF LANDSCAPE ARCHITECTURE

August 1992

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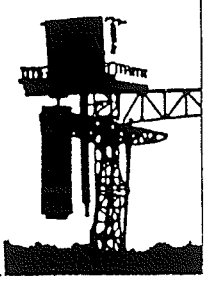
DEDICATION

This practicum is dedicated to a very special person whose unwaivering love gave me the strength to continue; my wife **Stacy.**



ACKNOWLEDGEMENTS

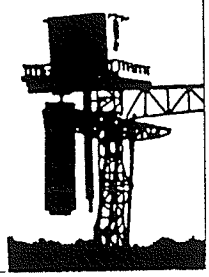
I would like to thank the members of my practicum committee; Mr.Herb Enns, Mr.Doug Clark and my practicum advisor Professor Alf Simon for offering their unique personal wisdom and insight and allowing me the opportunity to explore .

I would also like to thank Mr. Michael Scatliff for his support, guidance and inspiration throughout this practicum.

Special thanks to Joe Laufman and Peter Peersman for their kindness.

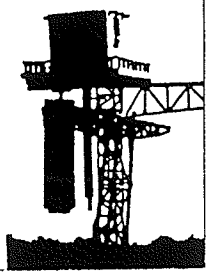
I would like to thank my parents, Arlene and Gerry Miller who faithfully supported me and encouraged me in all my endeavours. . .

And thanks be to God for his precious Gift.

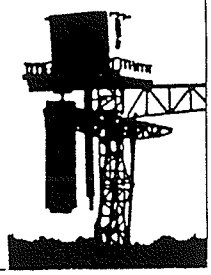


URBAN ARCHITECTURE

The Opportunity of a Bridge



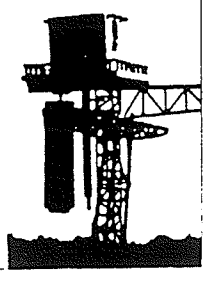
LIST OF FIGURES

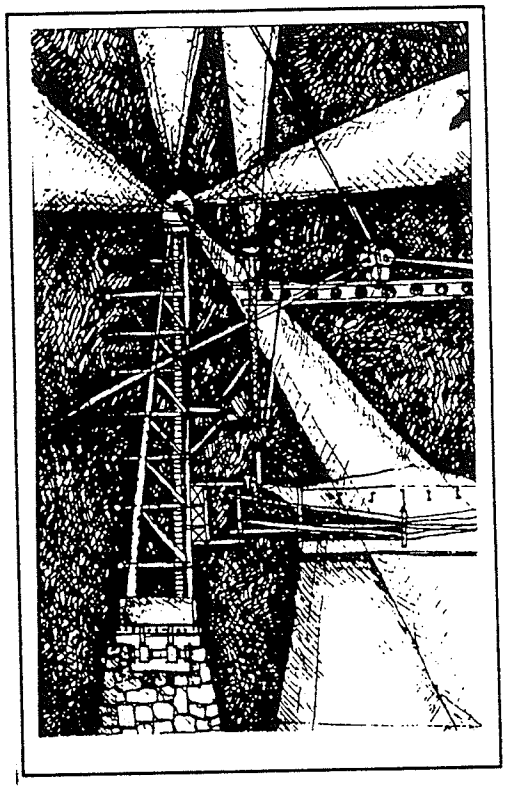


FOREWARD

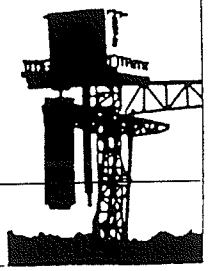
Over the past ten years the City of Winnipeg has seen intense riverbank development. This development is due to the realization and recognition of the potential for historical, cultural and physical recreation embodied in the waterways. An emphasis has been placed on the development of the banks; in terms of parks and various forms of soft and hard walkways to establish a recreational network. One issue related to the riverfront development is the architectural potential presented by the core area bridges, a potential which has not been fully explored. Many of the bridges contained within this area appear to have been designed primarily to serve as a means for transportation to cross an obstacle. However some of the older bridges, particularly the Main and Norwood Street Bridges, display remnants of an architectural approach to bridge design. With the recent development or "opening up" of the riverbank, an enhanced awareness of these bridges now presents opportunities for them to serve a more significant and valuable purpose.

This practicum is in response to the recently created and overlooked opportunities represented by the bridges within the core area. The study will demonstrate a strategy for detailed architectural development and revitalization of the Main Street Bridge (Bridge of the Old Forts) one of the bridges situated in the core. The bridge will be considered in terms of its potential for historic and cultural identity, for contemporary use (accessibility and accomodation, aesthetic enhancement) and its ability to provide vision for the future. It is hoped that the study will become a stimulus which will establish the importance and potential for architectural integration in future bridge design.





1.0 INTRODUCTION



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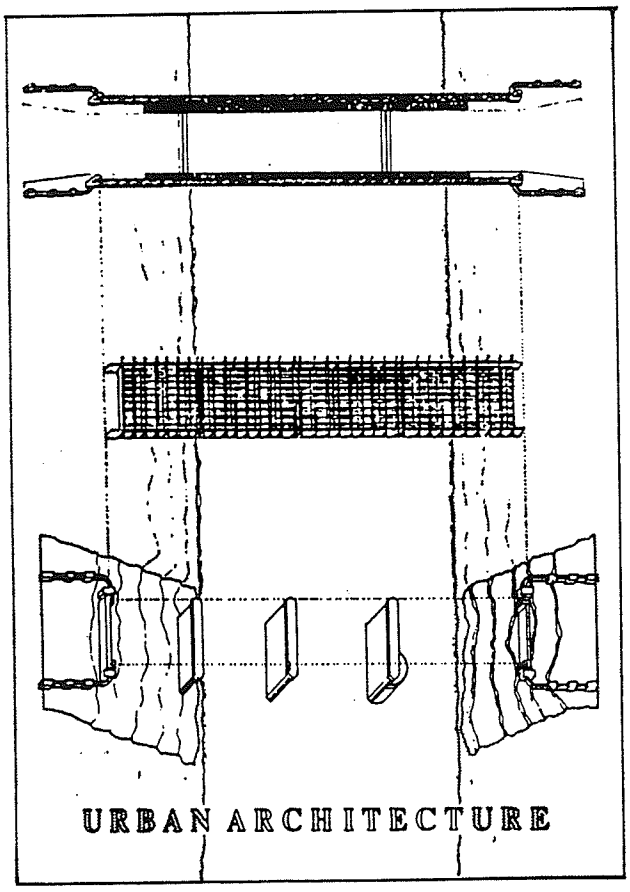
1.0 INTRODUCTION

The study will focus on the Main Street bridge (Bridge of the Old Forts), which spans the Assiniboine River. This bridge displays an architectural integrity not present in recent bridge development. The alluring construction and materials of the bridge combined with its historical and cultural significance provide an overwhelming opportunity for exploration. The bridge is also slated for future development which will ultimately lead to the demolition of the existing structure. The study will attempt to provide an alternative to demolition that would enhance and revitalize the existing structure while providing a unique experience for all who would use it.



1.1 Study Objectives

The major purpose of this study is to explore the opportunities and potentials presented by the Main Street bridge.

Specific objectives are:

i. to identify the relevance/ importance of the historical object

ii. to explore the premise of meaningful contemporary architecture

iii. to investigate the potential for an architecture that acknowledges an uncertain future.

1.2 Study Approach

a. The study will explore the bridge as a historical object. Through the tracing of the historical background an attempt will be made to discover the cultural implications the bridge possesses. It is hoped that through this exploration insight will be gained as to the relevance and/or opportunities for design development.

b. The bridge will be assessed according to its present condition. Implications for aesthetic as well as functional opportunities will be derived from the assessment. It is hoped that this exploration will reveal opportunites and insight for potential design development.

c. The study will investigate the idea of cultural identity through architectural form. The spirit of place, form and meaning and the aspect of time and meaning will be critically explored to gain insight into the premise of meaningful contemporary architecture.

d. The final stage will be the synthesis of the discoveries and insight gained from the analytical process manifested through form as a tangible design expression.

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1.3 Site Location

HISTORIC BUILDINGS
A. Legislative Building
B. Hotel Fort Garry
C. Union Station
D. St Boniface Cathedral

OTHER BUILDINGS
E. Fort Garry Place
F. St. Boniface Hospital
G. Forks Market

OPEN SPACE AND PARKS
H. Memorial Park
I. South Legislative Grounds
J. McFayden Park
K. Fort Rouge Park
L. Bonnycastle Park
M. The Forks National Park
N. La Verendrye Park

HISTORIC OPEN SPACE
O.South Point
P. Upper Fort Garry

BRIDGES
Q. Osborne Street Bridge
R. Donald Street Bridge
S. Main Street Bridge
T. Norwood Street Bridge
U. CNR Mainline
V. Retired Rail Bridge

WALKWAYS
W. Assiniboine Riverwalk
X. Tache Promenade
Y. Tache Promenade Extension

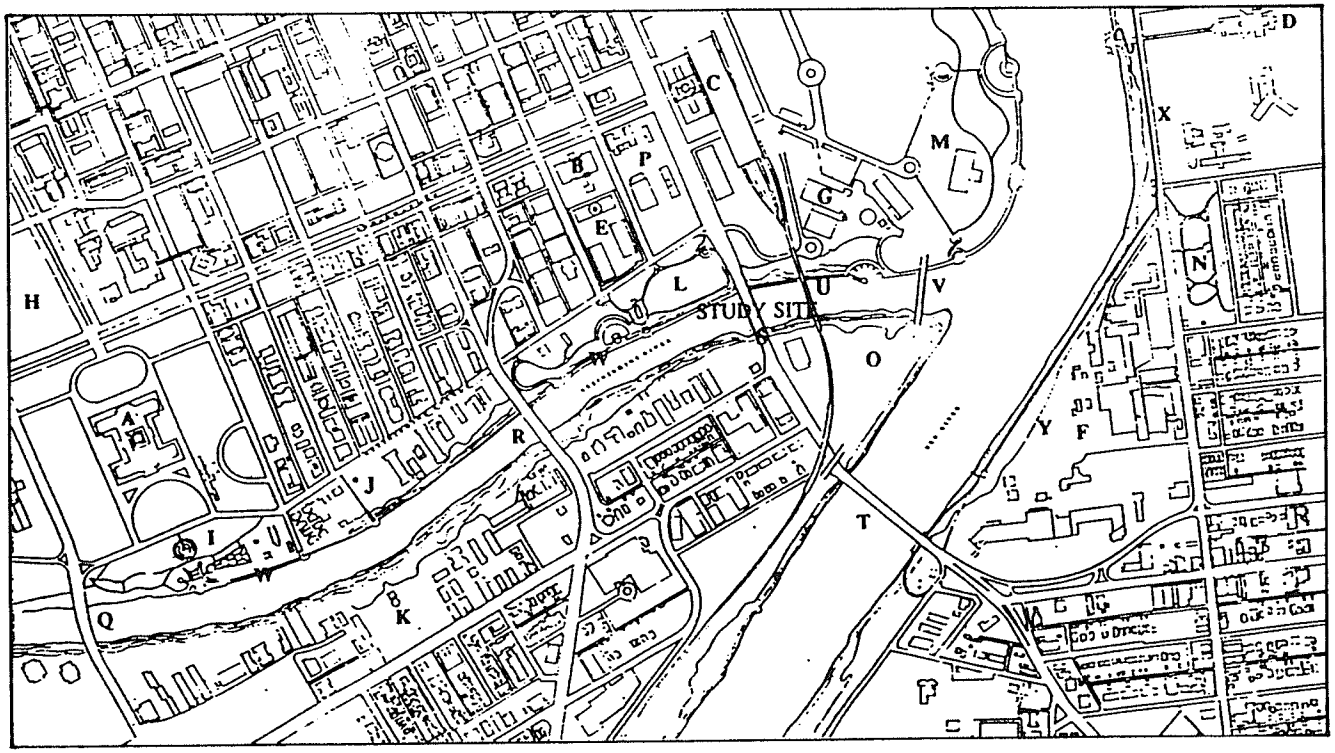

Figure.1.3.1

SITE LOCATION

General Context

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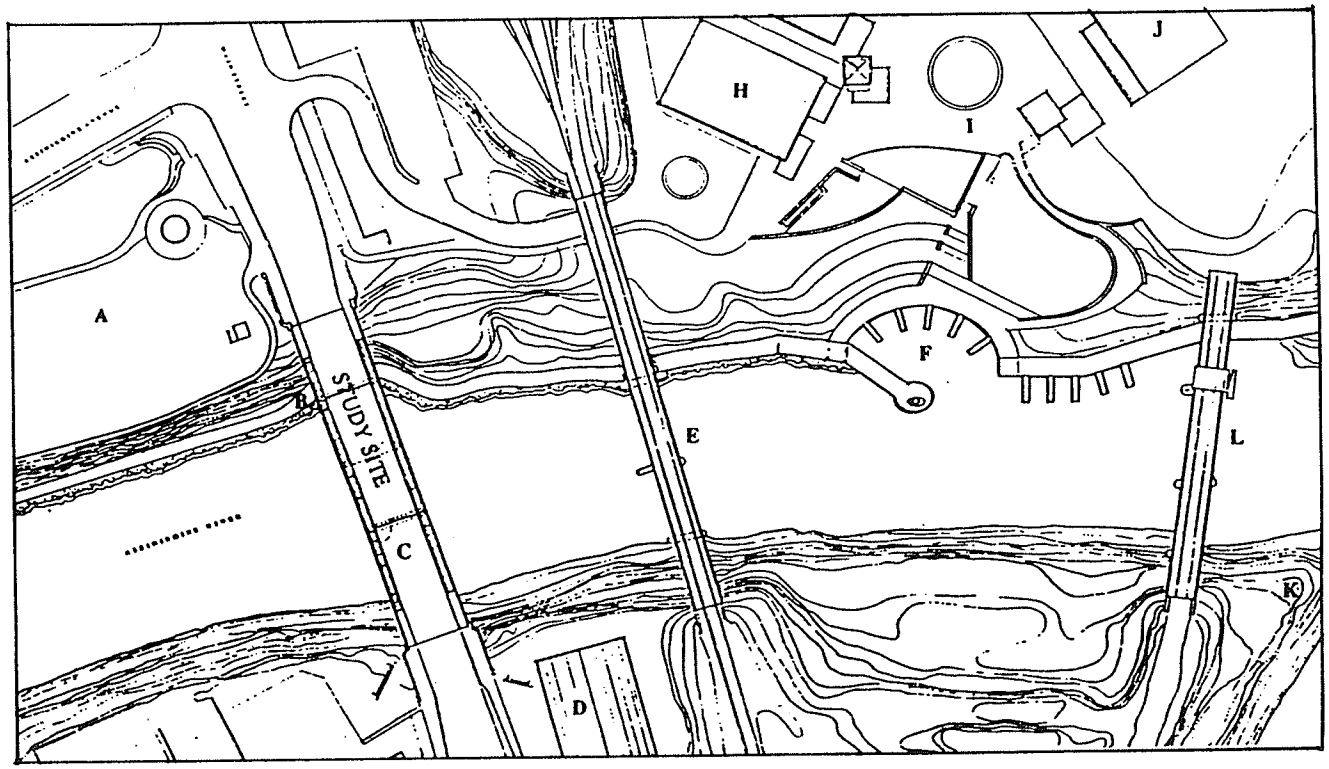
1.3 Site Location



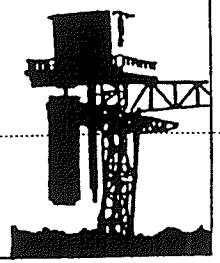
LEGEND

A. Bonnycastle Park
B. Assiniboine Riverwalk
D. Main Street Bridge - STUDY SITE
E. Curling Club
F. CNR Mainline
H. Forks Market
I. Forks Plaza
J. Johnson Terminal
K. South Point
L. Retired Rail Bridge

Figure.1.3.2

SITE LOCATION

Immediate Context



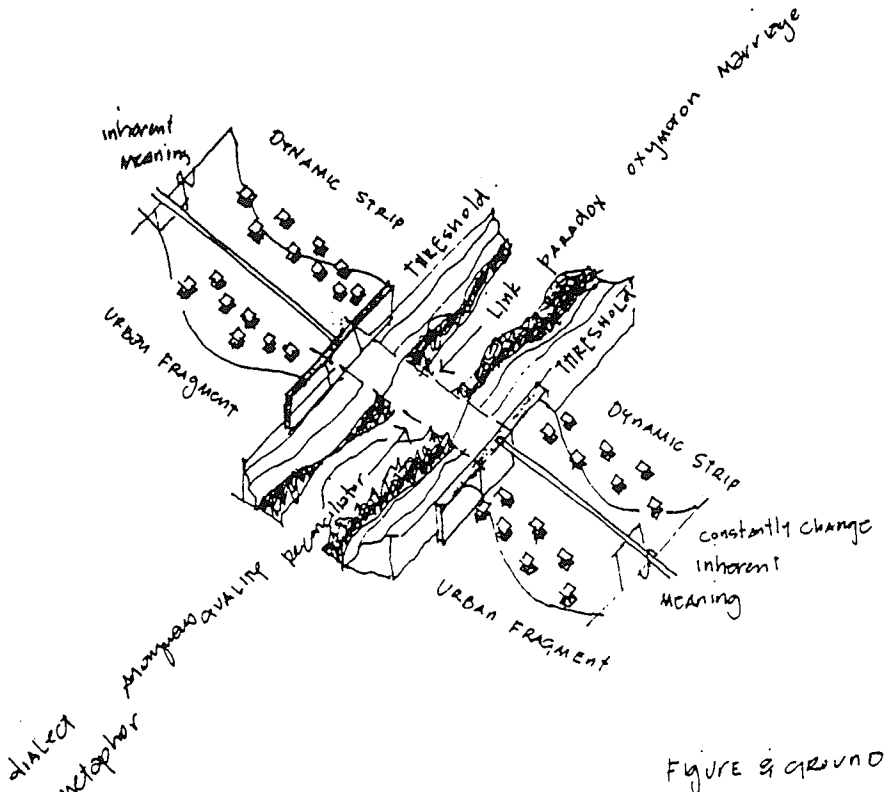
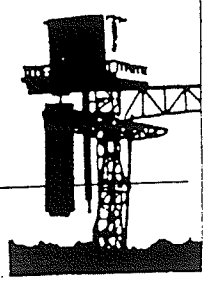


FIGURE GROUND

2.0 SITE ANALYSIS

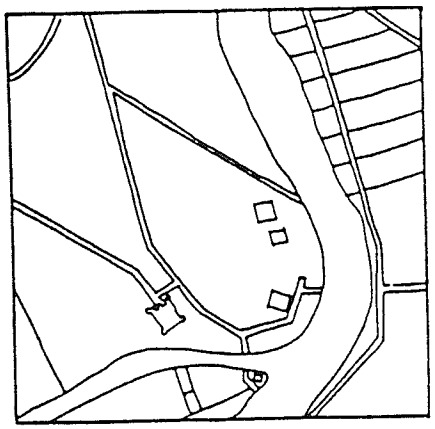


2.0 SITE ANALYSIS

2.1 Historical Context

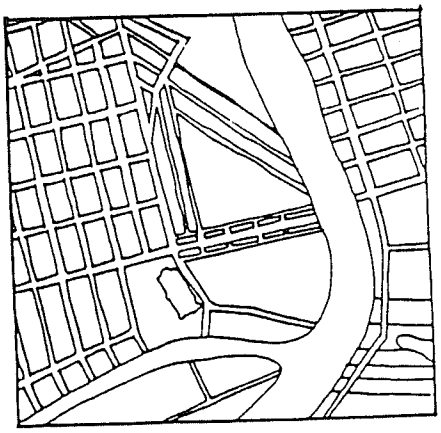
2.1.1 THE BRIDGE IN CONTEXT

1835



The area adjacent to the Main Street Bridge is an area that is rich in historical character. It was the site of various forts integral to the establishment and development of the City of Winnipeg including: Fort Rouge (1738), Fort Gibraltar, before and after relocation, (1810-1816), (1817-1826), Fort Douglas (1824-1826), and Upper Fort Garry (1834-1882). These forts are significant in characterizing the cultural implications of the existing context as well as their impact on the development and location of the present Main Street Bridge.

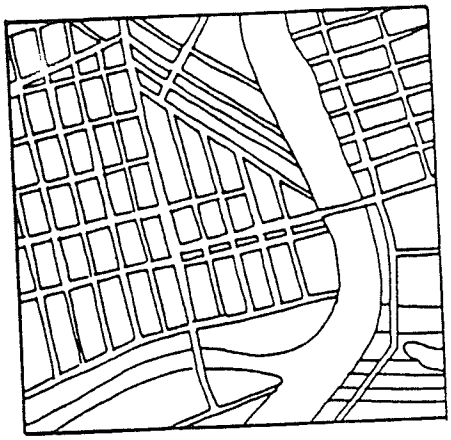
1874



The old forts, in location as well as downstream linkage (Lower Fort Garry), were important in the eventual location of the Main Street Bridge. A portion of the trail which existed linking the upper and lower forts eventually became Main Street Winnipeg. As growth occurred south of the Assiniboine River the main road extended around the walls of the existing fort coming to an abrupt end at the north bank of the river. At this time the river

was traversed by foot in the winter and raft in the summer. Eventually a ferry crossing was established. The ferry was not an efficient means of traverse failing to provide service during the fall freeze up and the spring thaw.

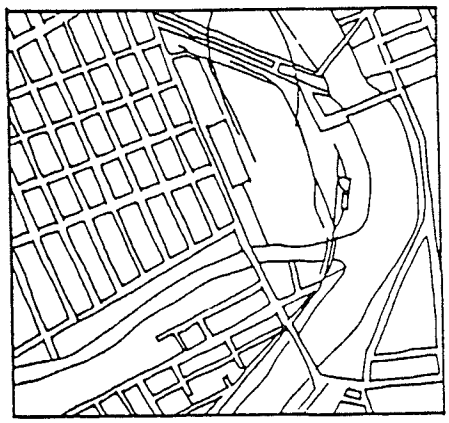
1884



The Hudson Bay Company was also integral in the location and development of the Main Street Bridge. The company owned a five hundred acre land reserve including the area presently developed as The Forks and the Upper Fort Garry. In a financial based effort to attract the railway to the land which they owned, a new company was formed. The company was called The Red River Assiniboine Bridge Company, a subsidiary of the Hudson Bay Company. In 1881 the newly formed company constructed the first bridge in the area of the present Main Street Bridge; it was known as the Assiniboine Bridge. The bridge was built primarily for the HBC's private use requiring a toll for public crossing. This newly constructed bridge was significant in the improved access and development of the city core.

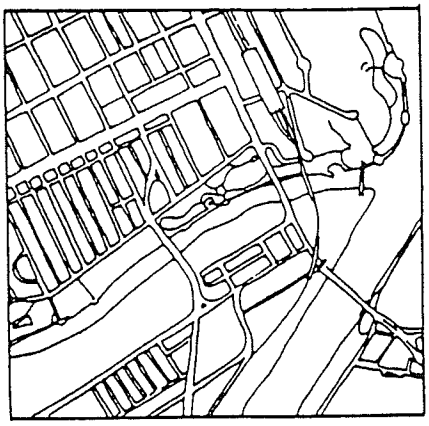
1910

The HBC's motive for the construction of the Assiniboine Bridge was the eventual removal of the Upper Fort Garry, and in turn the establishment of Main Street as a major arterial route. The company's intentions were to develop a commercial corridor that would entice business southward from Portage and Main. Owned and operated by the HBC the Assiniboine bridge was a financial success. However the bid to establish commercial development was less effective than the residential development that occurred on the



south bank of the Assiniboine River. This area became known as Fort Rouge and developed as a result of the increased access provided by the HBC's bridge. The HBC lost interest in the bridge at which point it was purchased by the City of Winnipeg. Fort Rouge assumed an important role in this purchase, as they were requesting three free bridge connections before they would join the City of Winnipeg. The Assiniboine Bridge was eventually replaced in 1897 with the first Main Street Bridge. The removal of the Upper Fort Garry, and the straightening of the Main Street corridor resulted in the present location of the bridge.

1991



The most recent Main Street Bridge was completed in 1931 and still functions at present. The bridge is sited similar to its predecessors and acts as an extension of the Main Street corridor. The bridge utilized labour from the cities of Winnipeg and St. Boniface and primarily Canadian materials in its construction. It was initiated as a make-work project during the depression, "the first major relief work completed in the west."[1] The Main and Norwood bridges were constructed in unison and became important cultural entities and tangible objects of civic pride.

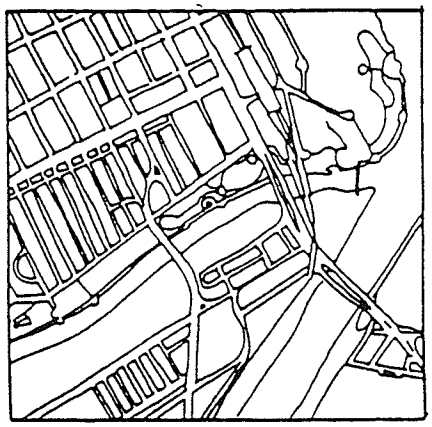
---

[1]The Winnipeg Evening Tribune, *"Old Forts'" and Norwood Bridges Ready for Official Opening Saturday*, November 20, 1931.

Full recognition was given to the fact that the aesthetic treatment of bridges is now receiving greater consideration than ever before. For the reason that beauty and utility have been so thoroughly associated, the people of Winnipeg are proud of their two bridges.[2]

They were viewed by the public as beautiful, as a combination of architectural expression and state of the art engineering. The construction of the bridges also embodied a strong social significance because they provided a means of employment for a struggling population.

Future



At present the Main and Norwood Bridges are slated for twin spanning. The bridges that were once endeared to the masses as objects of civic pride and accomplishment have through time become only traces of what they once were. The sweat and comraderie that produced these bridges in an economically troubled time is no longer seen or appreciated. The demolition of these bridges for future development may be a great loss to our cultural heritage and inherently disrespectful to our ancestry. The bridges display potential to be celebrated not destroyed; civic comraderie and pride could once again be fostered. These bridges illustrate potential to regain the splendour they once embodied through care and respect.

---

[2]Western Canadian Contractor, *Winnipeg's New Steel Bridges Near Completion*, September, 1931. pg. 18.

2.1.2 THE BRIDGE AS OBJECT

Introduction

Though it may not be possible to divorce the bridge from its setting it is inevitable that during the design process it has to some extent been thought of as an entity, a thing on its own.[3]

The Main Street Bridge is functionally a means to traverse the Assiniboine River. However as architecture "in the sense that it occupies space and simultaneously modifies it,"[4] it bears the responsibility of independence. This independence is represented by the form of the bridge as an object and the details that comprise the object itself. The materials (and hence the manifestation of form) become the expression of the bridge. This expression is one of a beginning, and a journey to the present, documented by the deterioration of the object itself.

The bridge as architecture allows the opportunity for analysis of form and material, as well as the cultural setting in which it was created. This research yields a greater understanding of not only the physical form of the object, but the socio-cultural implications that surrounded it at its inception. The Main Street Bridge was constructed of primarily four materials: limestone, steel, wood and concrete. The bridge will be analyzed in terms of the four materials and their represented form with regard to history, present condition, and implications for the future.

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[3]Antony Sealy, Bridges and Aqueducts. London: H Evelyn Ltd., 1976. pg.163.

[4]Ibid

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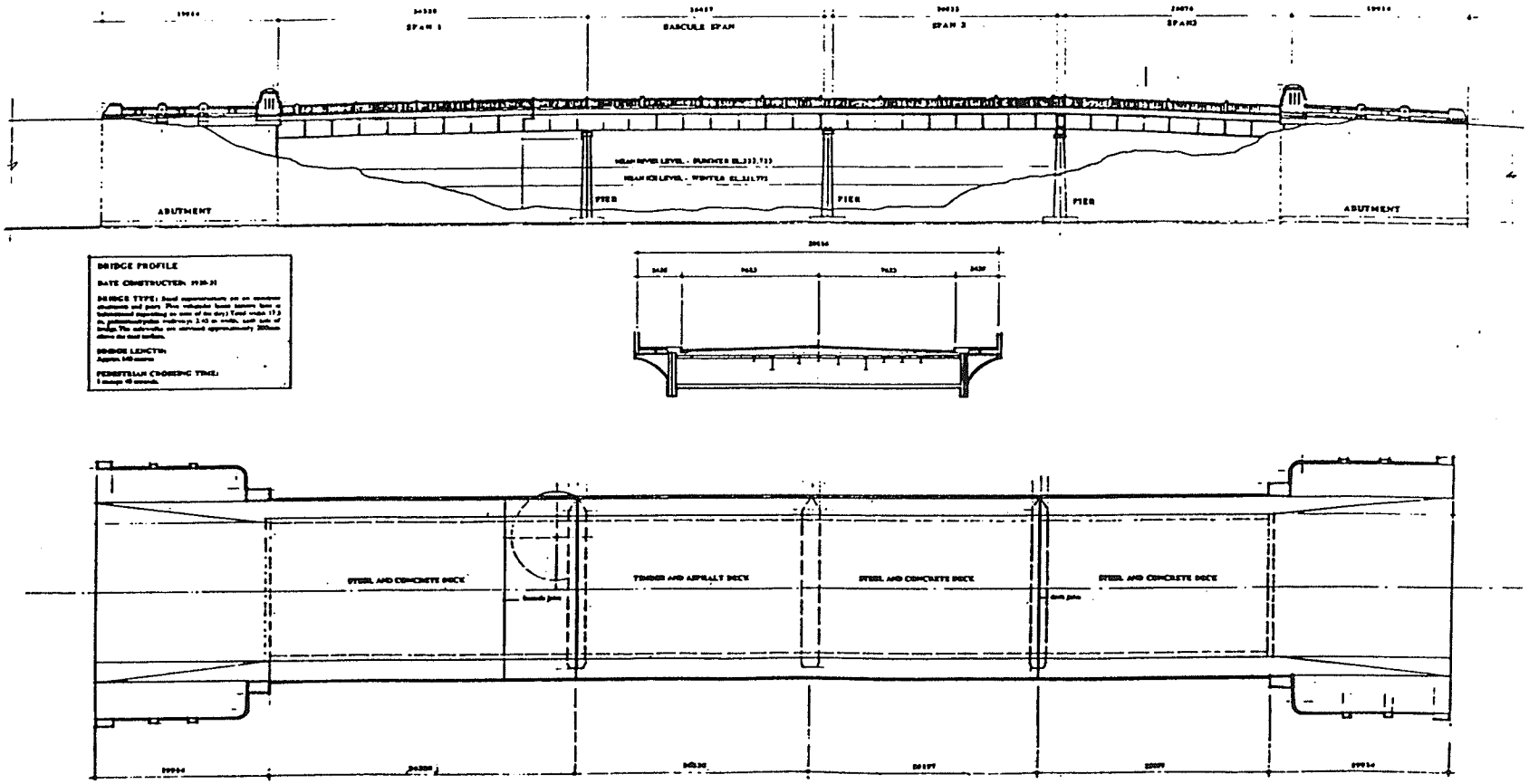
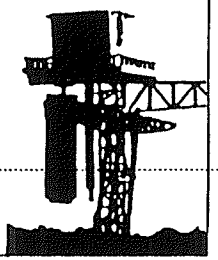


Figure 2.1.2.1

HISTORICAL CONTEXT

The Bridge as Object



Analysis

MATERIAL A: Limestone

History

The Limestone approaches are important entities "adding to the beauty of the bridges and at the same time maintaining the degree of utility insisted upon by the engineers are the pylons and balustrades of the approaches."[5] The limestone is local Manitoba Tyndall, extracted form Gillis Quarries. Arthur A. Stoughton, a Winnipeg architect, designed the limestone approaches as they can be seen to this day.

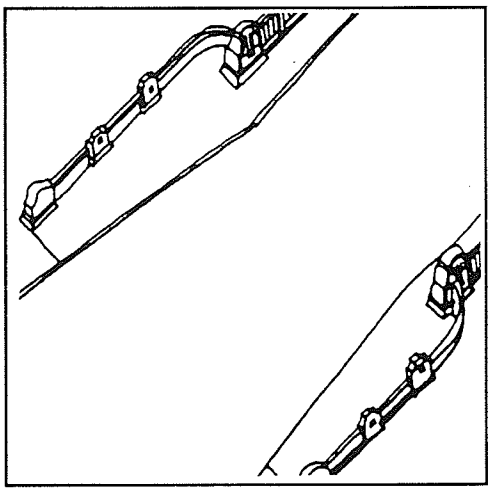


Figure 2.1.2.2 Limestone Approach

Present Condition

The condition of the limestone approaches is relatively good at present. After sixty years they still portray a sense of austerity, and maintain a personal scale for the pedestrian. They also act as entrance gateways and exits signifying a special element in the context of the street. The limestone approaches through time have greyed and weathered, however they still display their architectural integrity and craftsmanship.

Implications

The limestone approaches warrant consideration for aesthetic enhancement. They were designed and built with local materials and were an expression of pride and accomplishment in an economically troubled time. Today the cultural significance, like the elements, has deteriorated. If for no other reason these entities should be maintained

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[5]Western Canadian Contractor, *Winnipeg's New Steel Bridges Near Completion,* September, 1931. pg. 18

as a symbol of the culture that created them. They are meticulously crafted and provide a gateway for pedestrians, cyclists and people in vehicles. The approaches visually as well as physically anchor the bridge to the banks which it spans.

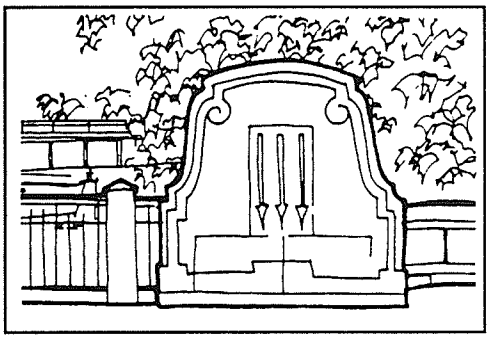

Figure 2.1.2.3 Limestone Detail

MATERIAL B: **Steel**

"The Main Street Bridge, Winnipeg, showing the graceful appearance that can be obtained with a structural steel superstructure."[6]

History

The Main Street Bridge is a steel superstructure, fabricated and installed by the Dominion Bridge Company Ltd. of Winnipeg in 1931. It is known as a deck bridge, and is constructed of "three fixed girder spans and a future bascule span."[7] The deck is reinforced concrete surface topped with asphalt. It is supported entirely by the steel beams and girders.

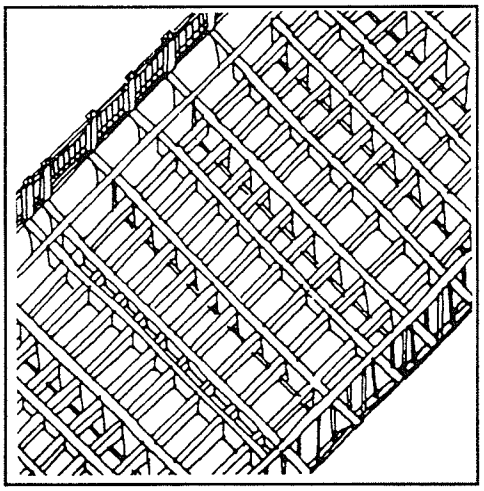

Figure 2.1.2.4 Steel Superstructure

Present Conditions

The steel construction material of the Main Street Bridge is in poor condition. The bridge is presently

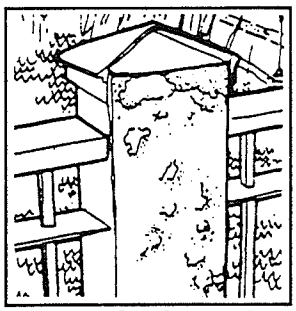

Figure 2.1.2.5 steel post detail

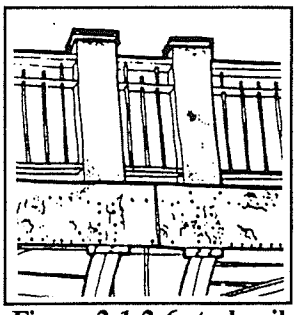

Figure 2.1.2.6 steel rail detail

[6]Western Canadian Contractor, *Winnipeg's New Steel Bridges Near Completion,* September, 1931. pg.19.

[7] Ibid. pg.19.

undergoing structural stabilization revitalize the existing structure. However, the aesthetic appearance of the bridge has not received any attention. Due to the lack of maintenence the steel of the bridge is corroded and deteriorated almost to the point of collapse. Loss of post caps, rust and general neglect of the steel work has left the bridge with an overall appearance of neglect and dilapidation.

Implications

The poor condition of the steel superstructure is the result of years of neglect. The steel work is a representation of innovation and technology of a time. The Dominion Bridge Company was one of the largest steel manufacturing companies in Canada, employing hundreds of Manitoba residents during the depression. The technological innovations and cultural origins, are important factors to consider. The present attempts to stabilize the structure are a band-aid measure to a greater more significant dilemma. The bridge as architecture, and not solely function, demonstrates that it is worthy of holistic upgrading including all aesthetic considerations.

Material C: **Wood**

History

The decking of the bascule span is constructed of timber which is preserved with creosote and paved with an asphalt wear surface. "The object of this type of construction was to keep down the the dead load of the span and thereby to cut

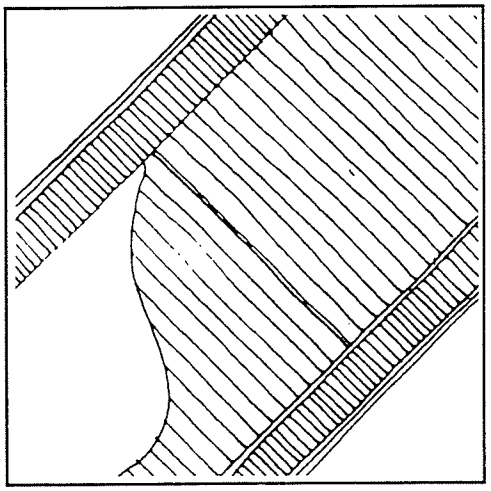

Figure 2.1.2.7 Wood Structure

down on the size of the counterweight,"[8] required to raise it for boat passage. The walkways on either side of the roadway are also constructed of creosote treated timber, supported by the cantilever of the steel superstructure.

Present Condition

The timber of the Main street bridge is no exception to natural deterioration over time; the nature of the material makes it highly susceptible to damage from salt, sand and moisture. The present attempt to reinforce the structure of the bridge also utilizes timber in its constructlion, " the southbound lane of the Main Street Bridge almost collapsed a few years ago, and is now supported by timbers under the deck."[9]

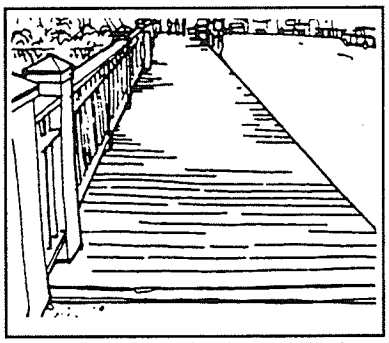

Figure 2.1.2.8 Timber deck detail

Implications

The character of the wood construction is a pleasant surprise. Unique to the Main Street bridge, the wood slats of the walkway allow visual penetration to the water below, conveying a sense of impermanence, a character of a much smaller intimate structure. The quality of the wood, (primarily proportion and texture) provide a human scale for the pedestrian and present an opportunity to the designer for exploration.

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[8]Western Canadian Contractor, *Winnipeg's New Steel Bridges Near Completion,* September, 1931. pg. 19.

[9] Winnipeg Real Estate News, *Bridge Options Outlined Main and Norwood bridges to be rebuilt,* June 5, 1992.

Material D: Concrete

History

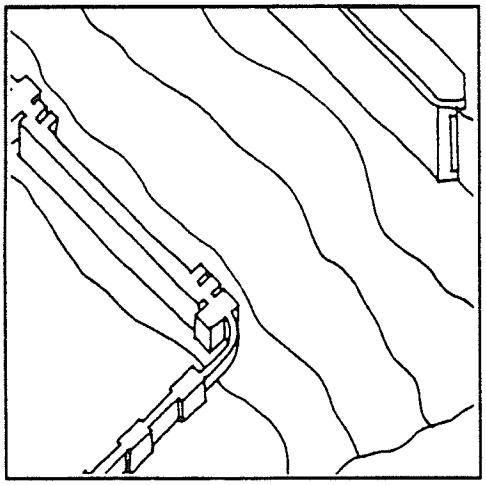

Figure 2.1.2.9 Concrete Supports

The steel superstructure rests upon two concrete abutments (one at either end) with three concrete piers situated between them. The concrete was placed by a company from Winnipeg known as the Foley Brothers. A mild winter caused problems with locating heavy machinery on the ice, resulting in the extensive use of manual labour. This provided employment opportunities for many Manitobans stricken by depression, "to as great an extent as possible, Foley Brothers used manual labour, thereby providing a great deal of employment."[10]

Present Condition

At present the concrete work of the bridge is in relatively good overall condition.Some general weathering is visible in terms of corrosion,spalding and water stains. The north pier of the bridge was painted with bands of colour to enhance the visual impact from both the water and the recently constructed Assiniboine Riverwalk. This renovation only begins to touch on the potential of the piers.

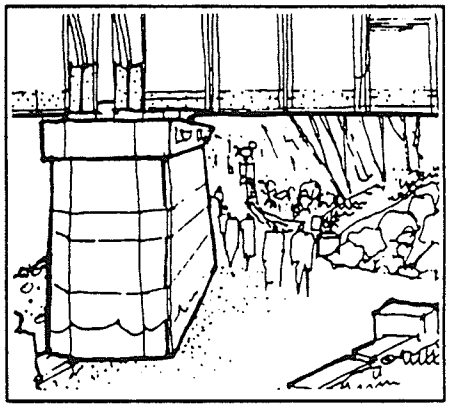

Figure 2.1.2.10 Concrete detail

Implications

The concrete work of the Main Street Bridge was an accomplishment. The production and forming within

[10] Winnipeg Real Estate News, *Bridge Options Outlined Main and Norwood bridges to be rebuilt*, June 5, 1992.

a riverine environment, the struggle with the weather conditions and the economic depression were all overcome. The technological innovations of the time, the provision of employment for the people, and the overall detailing provide the bridge not only with existing character but potential for articulation.

2.2 Physical Context

2.2.1 CONTEXTUAL LINKAGE

"This is another truly architectural characteristic of the bridge: the mobility of the observer gives a dynamic to an otherwise static object or space. The changing views of and from the bridge will be significant, whether the designer has considered this or not."[11]

The bridge as architecture is dynamic by virtue of its function; a means of traversing an obstacle. The Main Street bridge accomodates three primary methods of crossing, pedestrian, vehicular and cyclist. The three modes of traverse are unique in terms of spatial perception determined ultimately by the position of the body and the speed at which one is travelling. The experience of the bridge is also determined by the physical seperation of the three modes into specific zones of crossing, thus limiting the visual opportunities presented to the participant. The context of the bridge remains static (the bridge as object does not move). However, the experience of the context is modified by the participant according to the mode and therefore physical location of travel. The bridge presents opportunities for visual linkage to the context through views and vistas to and from the structure. Visual linkages are traditionally thought of as a subjective qualification of a scene into desirable and undesirable views according to the predominant focus from one specific point to another. The bridge does not allow for only this type of visual analysis because of its dynamic nature. Visual linkage is not only one of seeing, but one of experiencing. Experience implies time and space. The bridge occupies space

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[11] Antony Sealy, *Bridges and Aqueducts*.London:H. Evelyn Ltd.,1976.pg. 161.

through its own physical structure. However the bridge borrows, from the context, its spatial experience. As a dynamic entity the bridge therefore becomes the spatial curator of a collection of views, subsequently modified according to the direction and means of traverse. This is the visual experience. When the bridge functions as a crossing it is the visual experience that the participant becomes a part of, rather than a static representative image.

The Main Street bridge was conceived as a crossing. It is improbable to suggest that the placement of the bridge was related to the visual impact of the surroundings as a spatial determinant. It is also unlikely that the views to and from the bridge were carefully planned so that the participants would experience maximum visual pleasure. However, the bridge exists. The structure was placed within a context, the context over time has changed, but the bridge remains. Through the visual experience, the bridge was and is, an instrument for portraying the image of the context at a present moment. It does not document the changes, but acts only as a vehicle to provide experience in the present.

Historically, the Main Street bridge typically provided upper bank views and vistas to and from the bridge. The lower bank views and vistas were primarily experienced by boat operators. In the present this has changed. The development of The Assiniboine Riverwalk has resulted in the lower bank views and vistas to be experienced by pedestrians as well as cyclists; a visual opportunity unavailable in the past. In its present context the bridge can be studied only in terms of the existing visual experience. Hypotheses can then be formulated as to the implications for future potential and opportunities.

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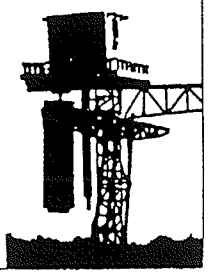
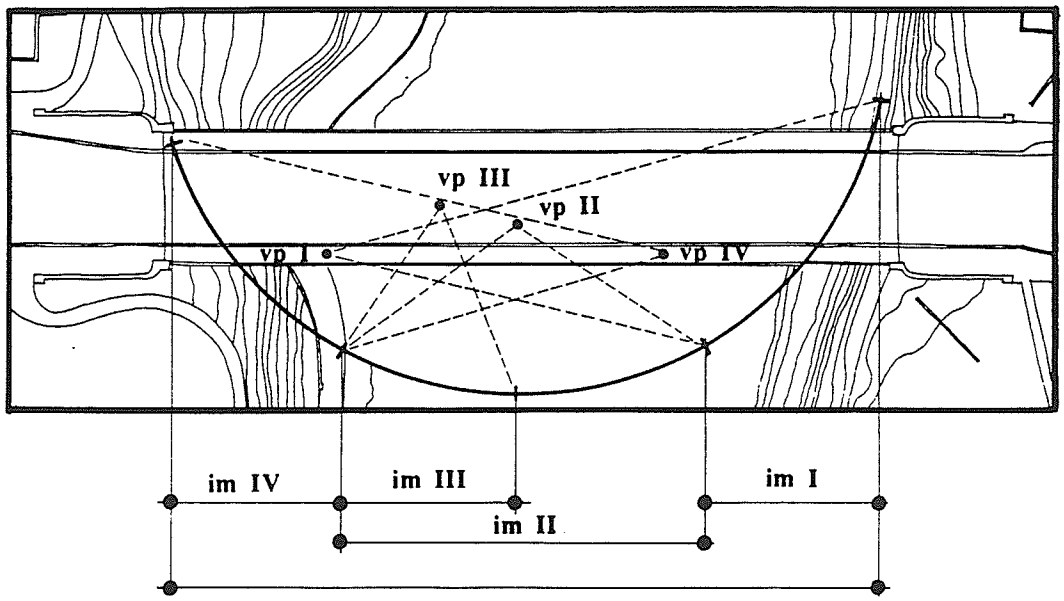
5709092

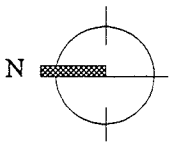
Methodology

The Main Street Bridge as an object in space and an instrument for visual experience can be divided into categories. These are defined by the polar co-ordinates and the physical location of the participant (upper or lower bank, to or from the bridge). In order to visualize the dynamic nature of the bridge, images will be presented as a sequential scene. The scenes will be a bi-directional sequence which attempts to express the dynamic nature of the bridge through static images. The images utilized represent common views as a method of visualizing the experience. The upper bank visual experience will be assessed according to the three modes of traverse and the direction of travel. The lower bank will be assessed according to the three modes of passage (pedestrian, cyclist and boat) and the direction of travel. The implications and opportunities suggested by the existing visual experience will be stated for each category to allow insight for conceptual development.





View Sequence A - Image Plan



im. - Image
vp. - Viewing Point

Visual Sequence Summary

-presentation of the Manitoba Legislative Buildings, between two apartment blocks, revealed and concealed
-the presentation of the Donald Street Bridge nestled within the vegetation of the banks of the Assiniboine River, revealed and concealed as the participant progresses.
-Osborne hi-rise structures visually apparent from thr bridge center.
Assiniboine Riverwalk, Bonnycastle Park main access stair and outdoor theatre structure visually apparent.
-Billboard media dominant at the south end.

Implications

The potential exists to strengthen the awareness of the visual link to the legislative dome. The Donald Street Bridge may provide visual interest for pedestrians, however it is not as dominant to participants in vehicles. This is primarily due to the lack of detail cognition resulting from the speed of travel. The billboard media to the south end of the bridge is too prominent. The potential exists for less imposing, contextually sensitive structures.

VISUAL EXPERIENCE

VIEW SEQUENCE A

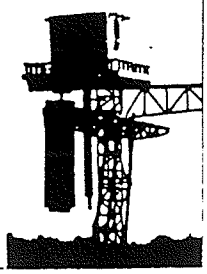


IMAGE I
CATEGORY 1: Upper bank from bridge.
VIEWING LOCATION: West side of bridge
VIEWING LOCATION: North
VIEWING MODE: Pedestrian,cycle

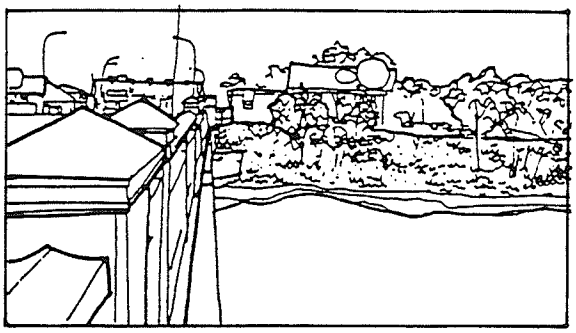


IMAGE II
CATEGORY 1: Upper bank from bridge
VIEWING LOCATION: West side of bridge
VIEWING LOCATION:West
VIEWING MODE: Pedestrian, vehicle, cycle

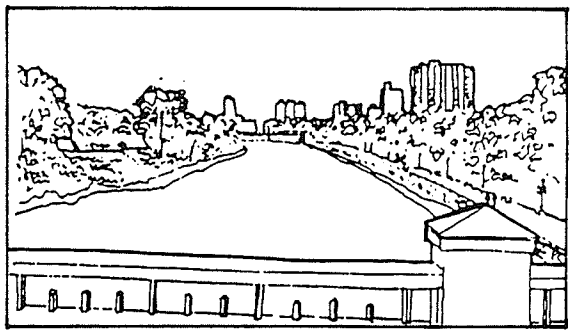


IMAGE III
CATEGORY 1: Upper bank from bridge.
VIEWING LOCATION: West side of bridge
VIEWING LOCATION:West
VIEWING MODE: Pedestrian, vehicle, cycle

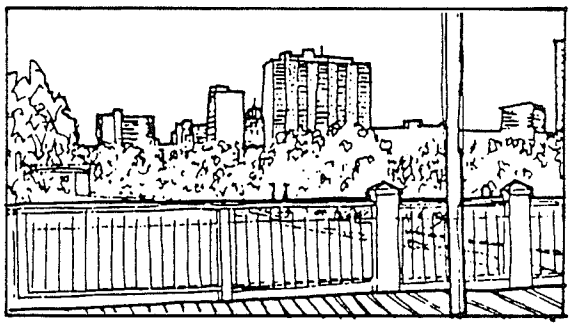
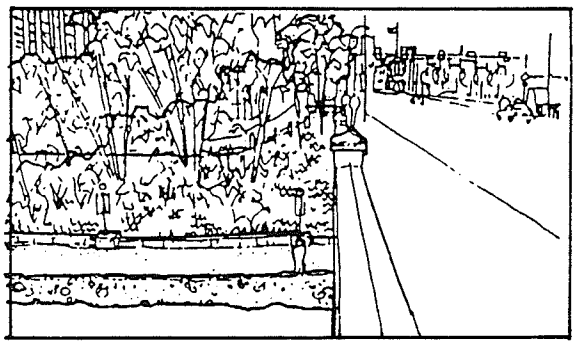
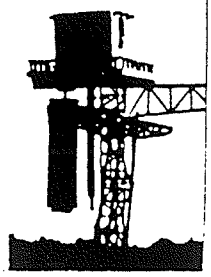


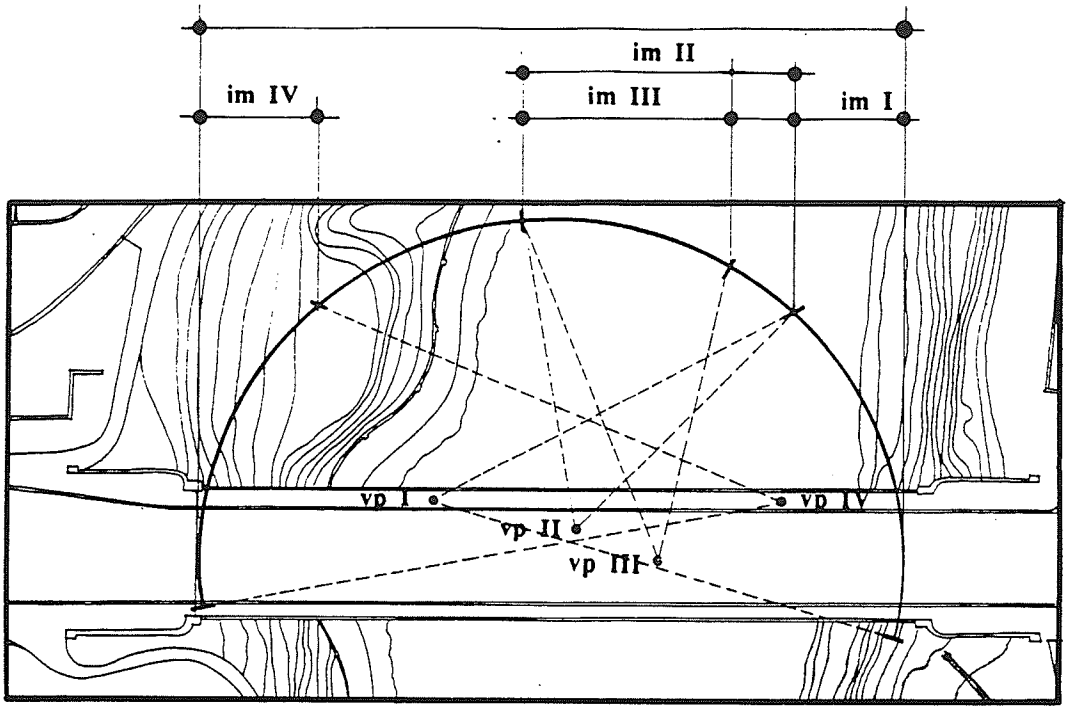
IMAGE IV
CATEGORY 1: Upper bank from bridge.
VIEWING LOCATION: West side of bridge
VIEWING LOCATION: South
VIEWING MODE: Pedestrian, vehicle, cycle



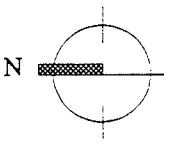
VISUAL EXPERIENCE

VIEW SEQUENCE A





View Sequence B - Image Plan



im. - Image
vp. - Viewing Point

Visual Sequence Summary

-Assiniboine Quay and Dolphin visually apparent through bridge railings
-Existing CN Rail bridge dominates eastern view
-The St. Boniface Cathedral, St. Boniface College dome and the towers of the St. Boniface Hospital physical plant are concealed and revealed above the CN bridge
-Counter Weight of old CN bridge apparent
-Forks Tower concealed and revealed by bank vegetation
-Assiniboine Riverwalk apparent
-Billboard media less imposing, curling club visually dominant to south
-South Point briefly apparent

Implications

The potential exists to strengthen the awareness of the visual link to the St. Boniface Cathedral, for all forms of transportation. The future development of the old CN bridge and corresponding development of the counter-weight, may become an interesting visual link. The visual link to activities at The Forks could be enhanced primarily for pedestrians and cyclists. The articulation of the south-east corner could present the curling club and billboard media in a less visually imposing manner.

VISUAL EXPERIENCE

VIEW SEQUENCE B

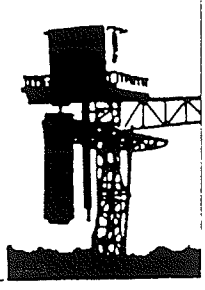


IMAGE I
CATEGORY 1: Upper bank from bridge.
VIEWING LOCATION: East side of bridge
VIEWING LOCATION: North
VIEWING MODE: Pedestrian, vehicle, cycle

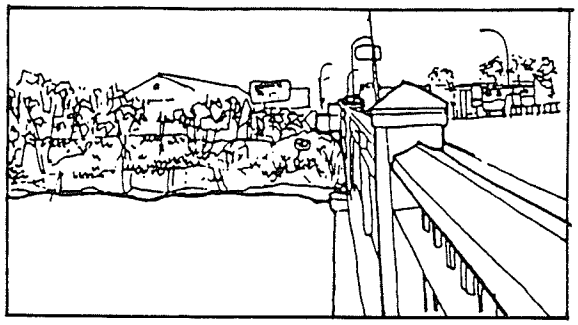


IMAGE II
CATEGORY 1: Upper bank from bridge.
VIEWING LOCATION: East side of bridge
VIEWING LOCATION: East
VIEWING MODE: Pedestrian, vehicle, cycle

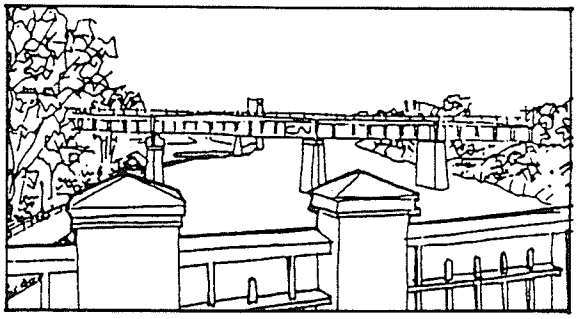


IMAGE II
CATEGORY 1: Upper bank from bridge.
VIEWING LOCATION: East side of bridge
VIEWING LOCATION: East
VIEWING MODE: Pedestrian, vehicle, cycle

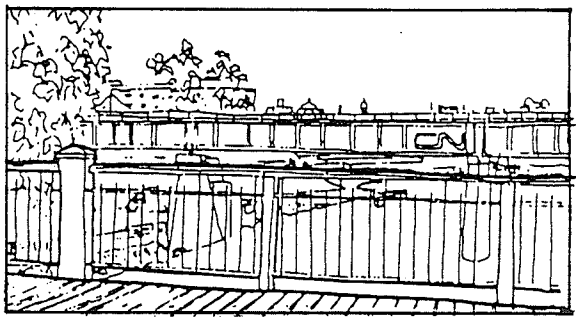
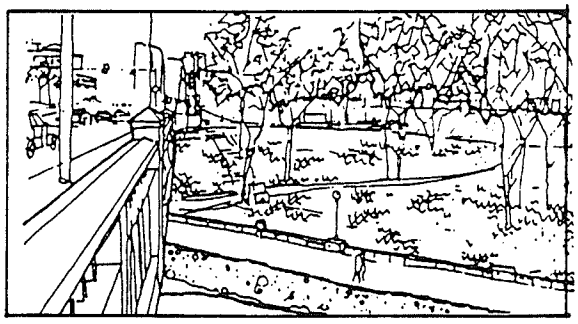
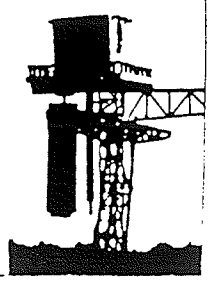


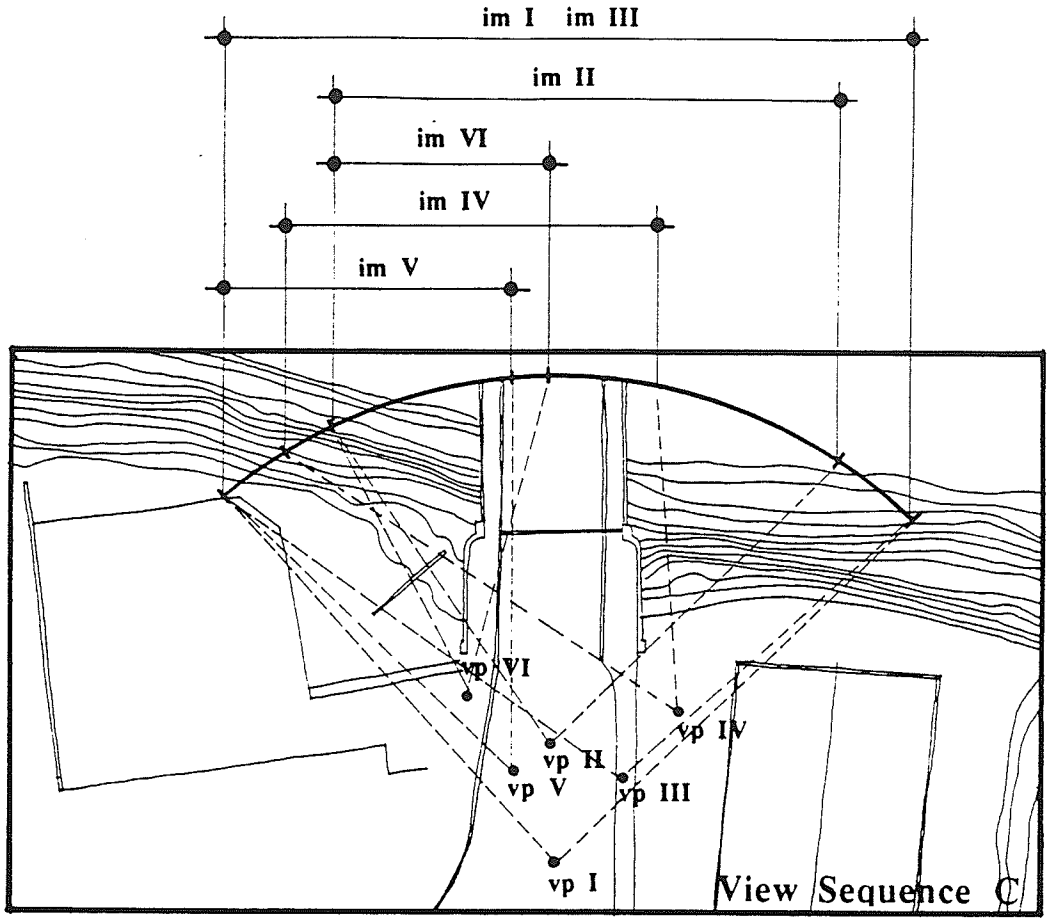
IMAGE IV
CATEGORY 3: Lower bank to bridge.
VIEWING LOCATION: North Bank
VIEWING LOCATION:East
VIEWING MODE:Pedestrian, cycle,boat.



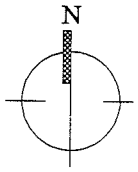
VISUAL EXPERIENCE

VIEW SEQUENCE B





View Sequence C - Image Plan



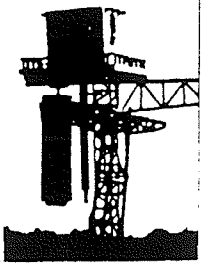
im. - Image
vp. - Viewing Point

Visual Sequence Summary

-Winnipeg core hi-rise cluster (i.e. Trizec Building, Richardson Building etc.) dominates vehicular view.
- distant approach of bridge conceals view of core due to road alignment and billboard media
-Change in bridge elevation provides natural threshold for presentation of the core
-Bridge overhead lane markers provide frame and focus for view of the core
-Views of core cluster intermittent and not axial for pedestrians and cyclists
-Fort Garry Place imposing from the west, Fort Garry Hotel concealed and revealed
-dome of CN station apparent
-bridge appears only as a part of the roadway from a distance
-limestone entry ballustrades indicate bridge entrance

VISUAL EXPERIENCE

VIEW SEQUENCE C



Implications

The most intriguing opportunity is the framed view of the core cluster. The road alignment to the south (preceding the bridge) is angled in such a manner that the view of the core is concealed. As a vehicle approaches the bridge the view of the core unfolds, climaxing at the threshold created by the change in elevation of the bridge. The elevation of the bridge isolates the core cluster and draws it drammatically forward to dominate the visual experience of the bridge. The solids (buildings) in this scenario are important, however the void that is captured between the buildings (on axis to the bridge) provides the strongest image. The fact that the Main Street bridge is part of the Trans-Canada Highway system provides an opportunity for this descriptive view to inscribe an important impression for tourists as well as permanent rsidents. The wealth of historic buildings in this experience also increases the potential for strong visual impact. The framing instruments of the billboard media and the lane markers provide an accidental enhancement of the core view by creating a framed gateway. This happy accident provides potential for conceptual development and enhancement of the opportunity which it presents.

VISUAL EXPERIENCE

VIEW SEQUENCE C

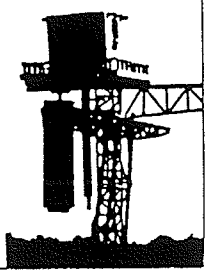


IMAGE I
CATEGORY 2: Upper bank to bridge.
VIEWING LOCATION:Center of bridge
VIEWING LOCATION: North
VIEWING MODE: Vehicle, cycle

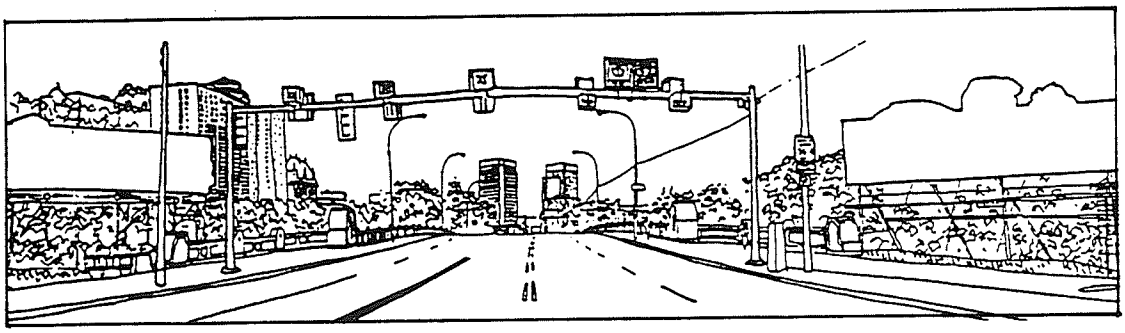


IMAGE II
CATEGORY 2: Upper bank to bridge.
VIEWING LOCATION: Center of bridge
VIEWING LOCATION: North
VIEWING MODE: Vehicle, cycle

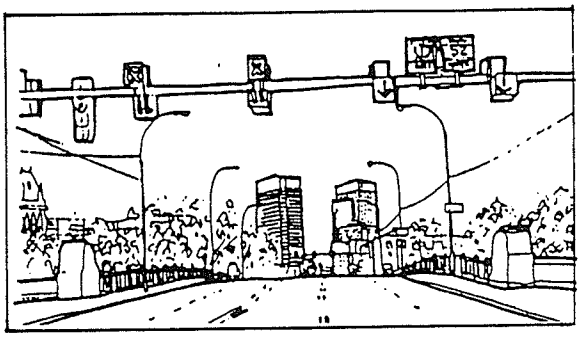
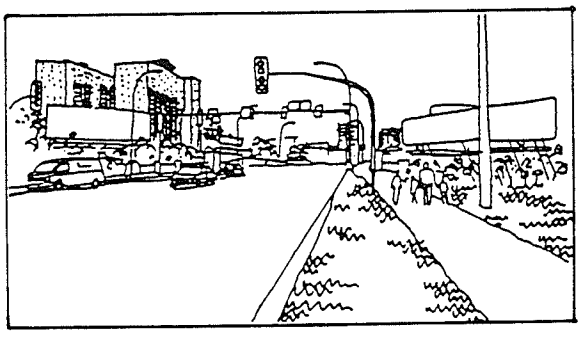


IMAGE III
CATEGORY 2: Upper bank to bridge.
VIEWING LOCATION: East side of bridge
VIEWING LOCATION: North
VIEWING MODE: Pedestrian, cycle



VISUAL EXPERIENCE

VIEW SEQUENCE C

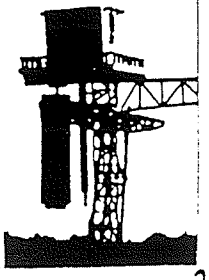


IMAGE IV
CATEGORY 1: Upper bank to bridge.
VIEWING LOCATION: East side of bridge
VIEWING LOCATION: North
VIEWING MODE: Pedestrian, cycle

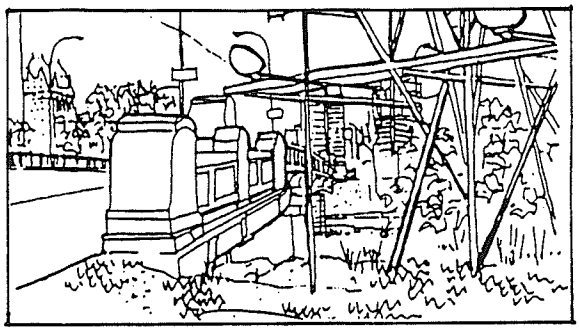


IMAGE V
CATEGORY 1: Upper bank to bridge.
VIEWING LOCATION: West side of bridge
VIEWING LOCATION: North
VIEWING MODE: Pedestrian, cycle

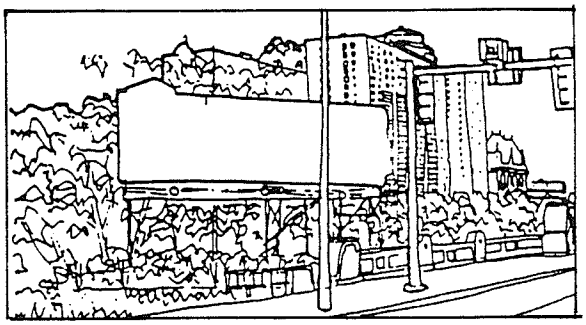


IMAGE VI
CATEGORY 1: Upper bank to bridge.
VIEWING LOCATION: West side of bridge
VIEWING LOCATION: North
VIEWING MODE: Pedestrian, cycle

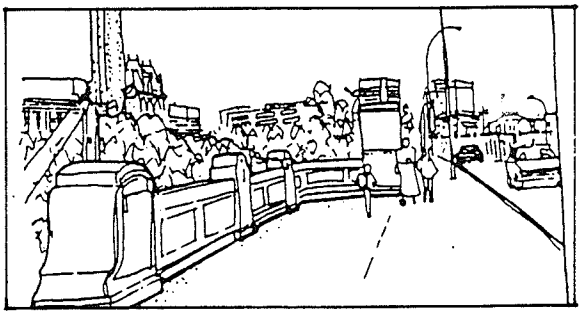
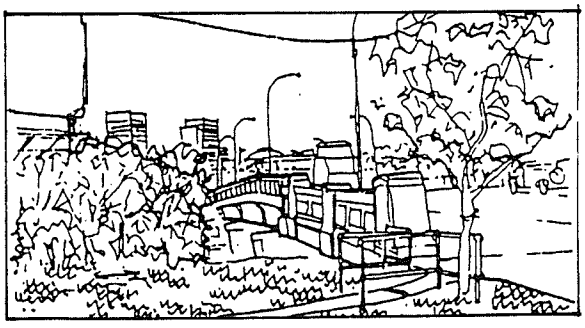
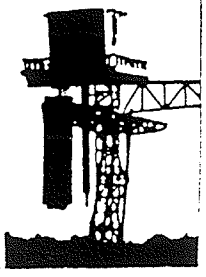


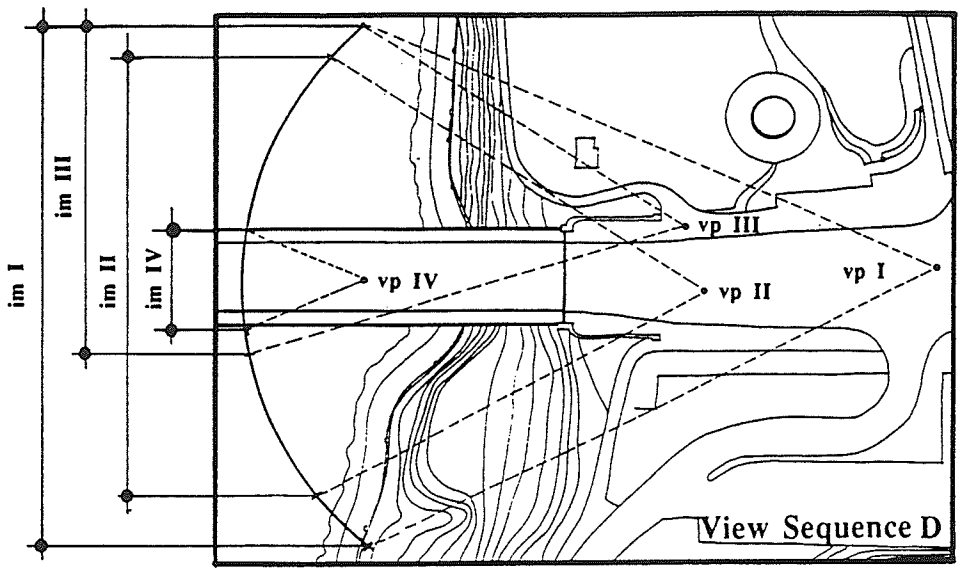
IMAGE VII
CATEGORY 1: Upper bank to bridge.
VIEWING LOCATION: West side of bridge
VIEWING LOCATION: North
VIEWING MODE: Pedestrian, cycle



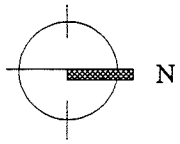
VISUAL EXPERIENCE

VIEW SEQUENCE C





View Sequence D - Image Plan



im. - Image
vp. - Viewing Point

Visual Sequence Summary

-from distance bridge not apparent, appears only as apart of the roadway
-vegetation frames roadway corridor opening
-change in bridge elevation provides a natural threshold
-bridge overhead lane markers and vegetation provide contextual frame and focus
-Limestone entry balustrades indicate bridge entrance
-roadway (prior to threshold) focuses skyward
-space following the threshold is bounded by structures on all sides, intimate, enclosed and visually cluttered with signage
-skyline is clear of obstructions

Implications

The approach to the bridge from the north displays development potential in the ascent to, and descent from, the threshold. The bridge directs the participants view skyward (particularly vehicular) as one approaches the threshold. The sky as the predominant visual focus creates a feeling of uncluttered, unbounded space. As the participant approaches and crosses the threshold, they begin their descent into an architecturally enclosed space, bounded on all sides and visually diverse. The lower space is an enclosed dynamic hub accepting and dispensing traffic according to its course. The bounded space is a climax that contains the eye and completes the experience. The architectural definition of the space needs to be addressed. However the low elevation and bounded enclosure provide the space with a strong sense of stability while acting as a conduit for collection and dispersion. Once again the lane markers (and in this experience the vegetation) act as a gateway and provide the opportunity for exploration and enhancement of the experience.

VISUAL EXPERIENCE

VIEW SEQUENCE D

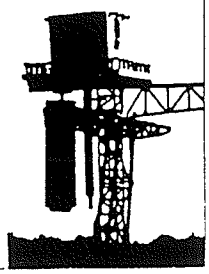


IMAGE I
CATEGORY 2: Upper bank to bridge.
VIEWING LOCATION: Center of roadway
VIEWING DIRECTION: South
VIEWING MODE:Vehicle, cycle

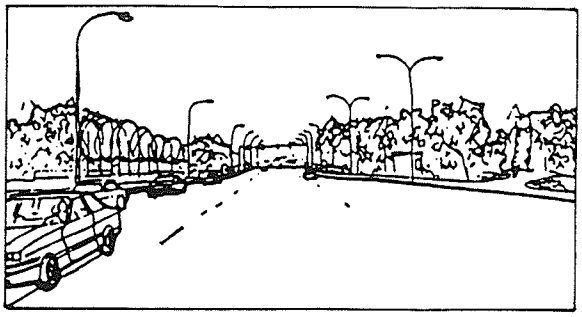


IMAGE II
CATEGORY 2: Upper bank to bridge.
VIEWING LOCATION: Center of roadway
VIEWING DIRECTION: South
VIEWING MODE:Vehicle, cycle

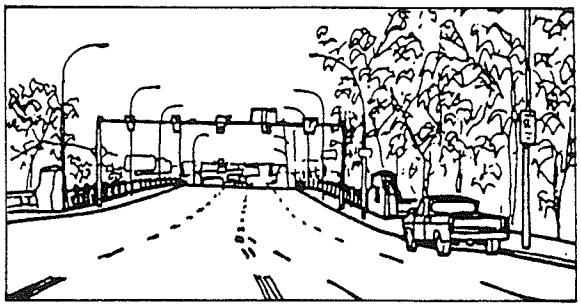
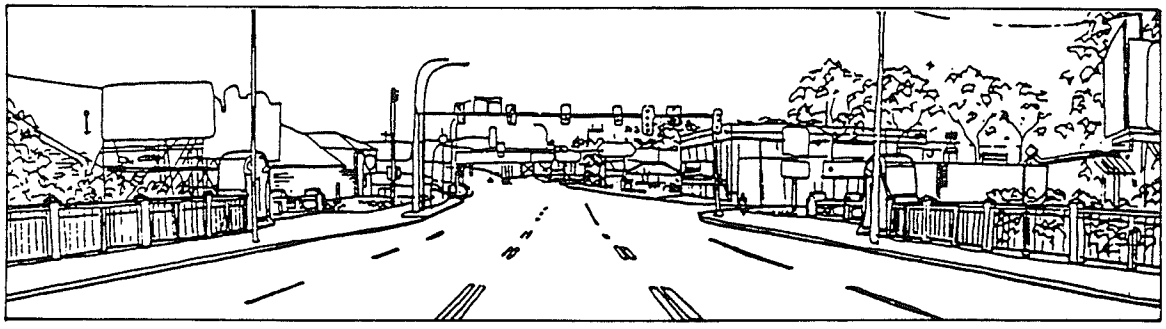


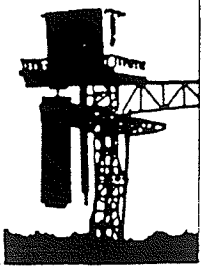
IMAGE III
CATEGORY 2: Upper bank to bridge.
VIEWING LOCATION:West side of roadway
VIEWING DIRECTION: South
VIEWING MODE: Pedestrian, cycle

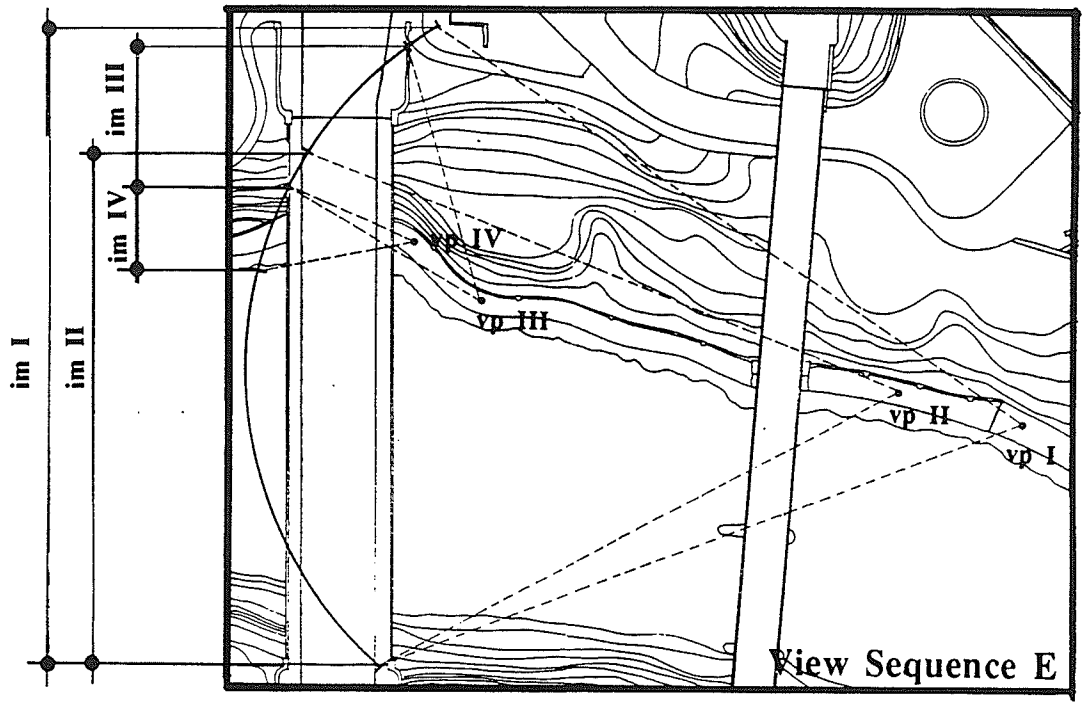
IMAGE IV
CATEGORY 2: Upper bank from bridge.
VIEWING LOCATION: Center of Bridge
VIEWING DIRECTION: South
VIEWING MODE:Vehicle, cycle



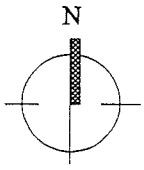
VISUAL EXPERIENCE

VIEW SEQUENCE D





View Sequence E - Image Plan



im. - Image
vp. - Viewing Point

Visual Sequence Summary

-Main Street bridge is visually framed by the CN bridge structure
-bridge structure and detail can be discerned
-bridge maintains a sense of austerity nestled in the vegetated banks
-bridge acts as a gateway, construction materials and structural character visually dominant

Implications

The lower bank views to the bridge provide opportunities that were not present at the bridge's inception. Presently they allow for the opportunity of exploration. The passing beneath the bridge acts as a natural gateway, blocking out and framing the context, according to the vantage point of the participant. The structural characteristics of the bridge are revealed to the participant in a way that was not possible prior to the incorporation of the riverside walkway. Also the contrast between the designed structure and the natural bank vegetation provides an opportunity for articulation and enhancement. In this experience the manifestation of the bridge is truly architectural. It acts as a solid, with the object itself bearing the weight of its own spatial definition.

VISUAL EXPERIENCE

VIEW SEQUENCE E

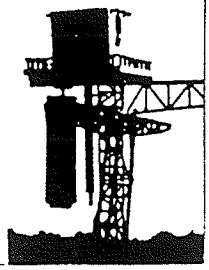


IMAGE I
CATEGORY 3: Lower bank to bridge.
VIEWING LOCATION: North Bank
VIEWING DIRECTION:West
VIEWING MODE:Pedestrian, cycle,boat.

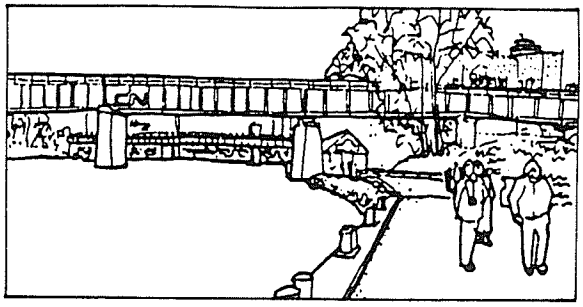


IMAGE II
CATEGORY 3: Lower bank to bridge.
VIEWING LOCATION: North Bank
VIEWING DIRECTION:West
VIEWING MODE:Pedestrian, cycle.

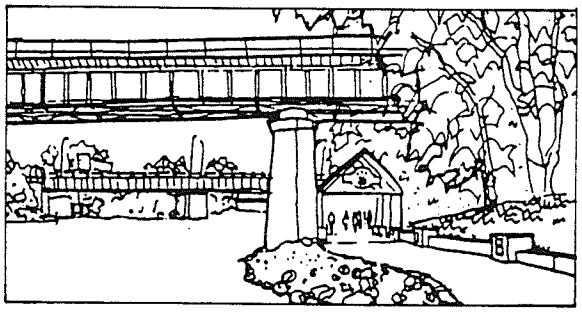


IMAGE III
CATEGORY 3: Lower bank to bridge.
VIEWING LOCATION: North Bank
VIEWING DIRECTION:North west
VIEWING MODE:Pedestrian, cycle,boat

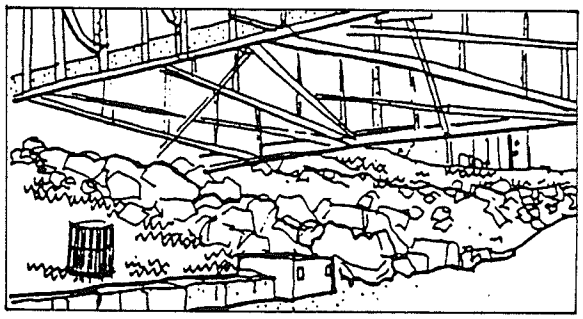
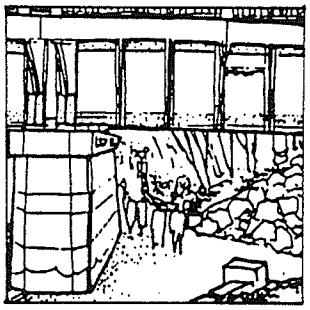
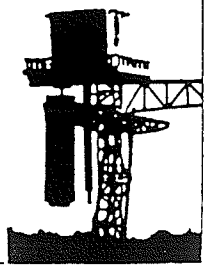


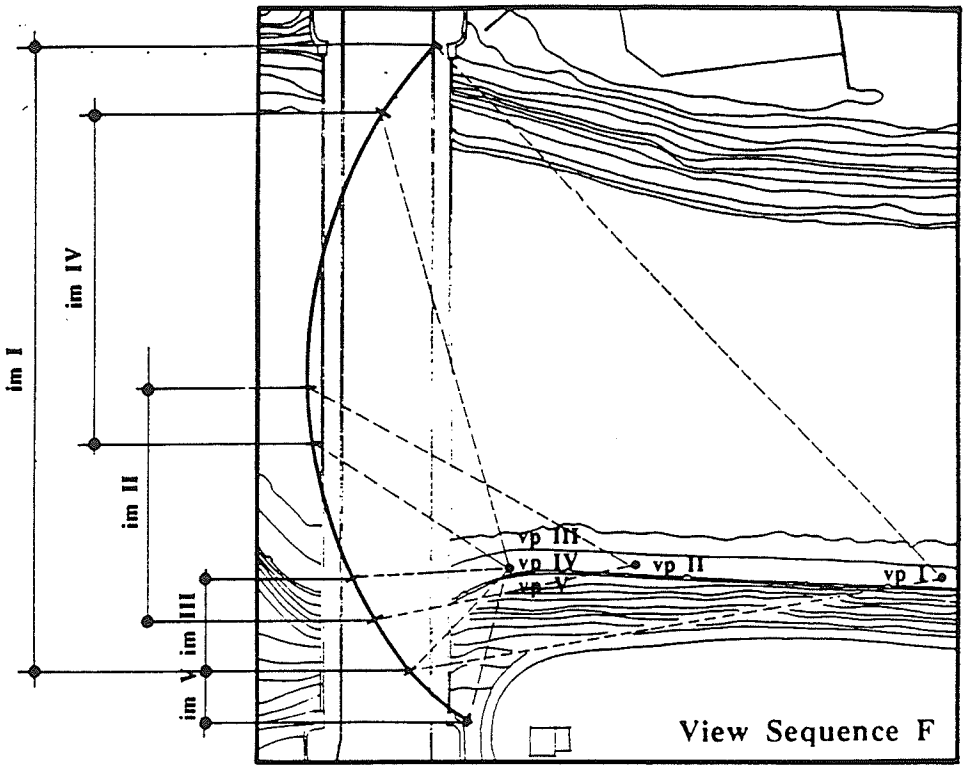
IMAGE IV
CATEGORY 3: Lower bank to bridge.
VIEWING LOCATION: North Bank
VIEWING DIRECTION:West
VIEWING MODE:Pedestrian, cycle



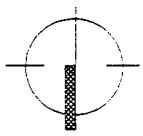
VISUAL EXPERIENCE

VIEW SEQUENCE E





View Sequence F - Image Plan



N

im. - Image
vp. - Viewing Point

Visual Sequence Summary

-bridge becomes focus of participants entering from Donald Street Access
-bridge appears stable and austere
-The Assiniboine Quay and the Dolphin are framed by the construction of the bridge
-bridge acts as a gateway
-provoides the first gateway to the Forks development

Implications

The bridge provides an opportunity for enhanced visual linkage to the Forks development. It could assume a dominant role in the visual appearance of The Forks; as a primary entrance and visual framing device. As in visual sequence E the structural characteristics of the bridge are revealed to the participant in a way that was not possible before. The bridge could also play a role in the control of boat traffic as well as enhancing the experience through visual articulation.

VISUAL EXPERIENCE

VIEW SEQUENCE F

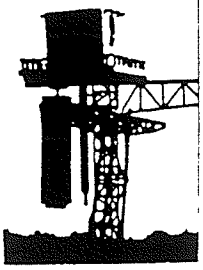


IMAGE I
CATEGORY 3: Lower bank to bridge.
VIEWING LOCATION: North Bank
VIEWING DIRECTION:East
VIEWING MODE:Pedestrian, cycle,boat.

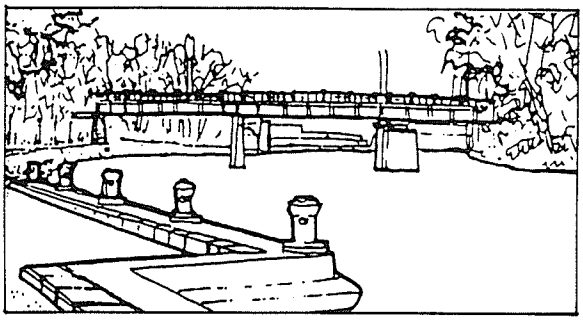


IMAGE II
CATEGORY 3: Lower bank to bridge.
VIEWING LOCATION: North Bank
VIEWING DIRECTION:East
VIEWING MODE:Pedestrian, cycle,boat.

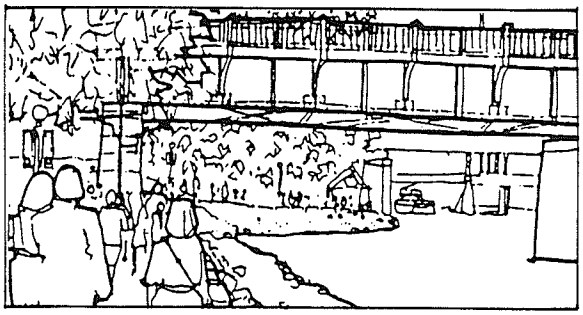


IMAGE III
CATEGORY 3: Lower bank to bridge.
VIEWING LOCATION: North Bank
VIEWING DIRECTION:North
VIEWING MODE:Pedestrian, cycle,boat.

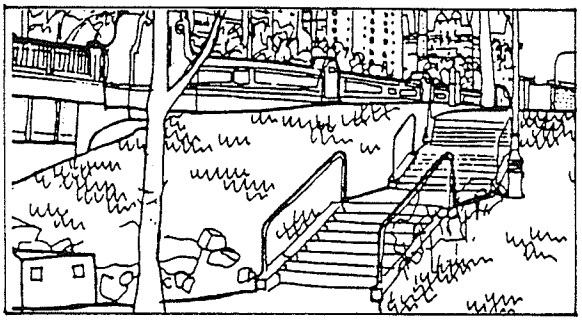
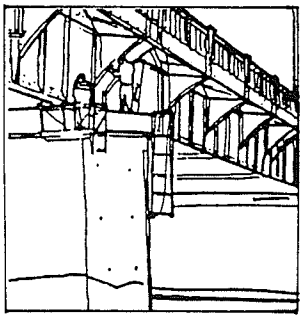
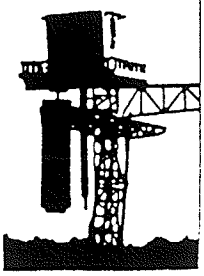


IMAGE IV
CATEGORY 3: Lower bank to bridge.
VIEWING LOCATION: North Bank
VIEWING DIRECTION:South
VIEWING MODE:Pedestrian, cycle



VISUAL EXPERIENCE

VIEW SEQUENCE F



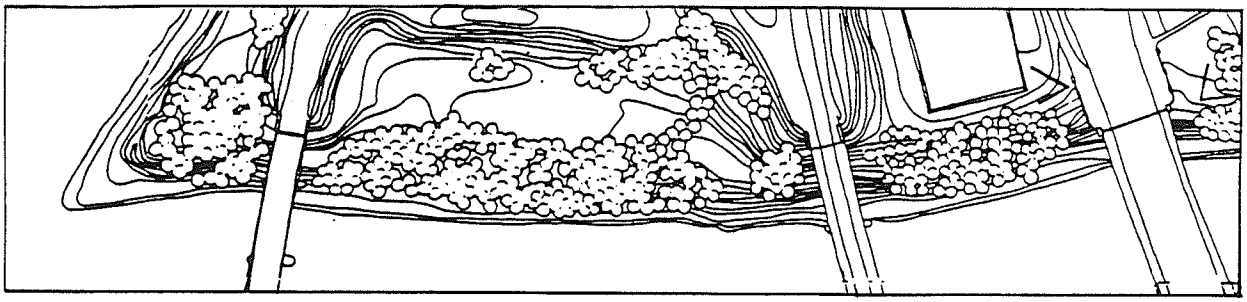


Figure 2.2.2.1 Site Plan

Bank Characterization

South Bank
BANK SECTION A
LOCATION: South East
BANK CHARACTERISTIC: Heavily vegetated natural bank, eroded and unstable, primarily public lands, basically undeveloped.
ACCESS TO LOWER BANK: none
ACCESS TO UPPER BANK: informal path
POTENTIAL LINKAGE: South Point

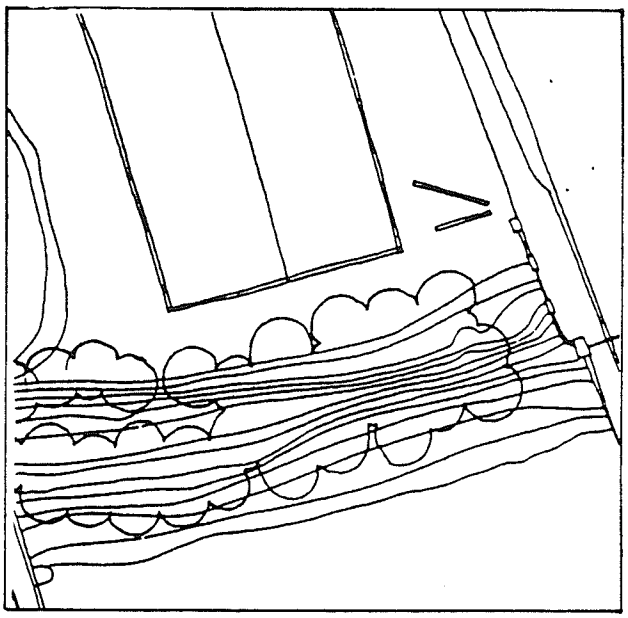


Figure 2.2.2.2 Bridge Area Detail

Assessment

Presently the bridge does not allow for access to the lower bank riverside area. The bank is eroded, steep and unstable. The potential exists to stabilize the bank and possibly allow lower bank penetration. However the natural character of the bank should remain, and therefore development should be minimal. The informal path that acts as the upper bank path is obstructed by the billboards and overgrown vegetation. Potential for a sensitive, natural upgrade of the informal path to the historical South Point exists if the obstructions are removed.

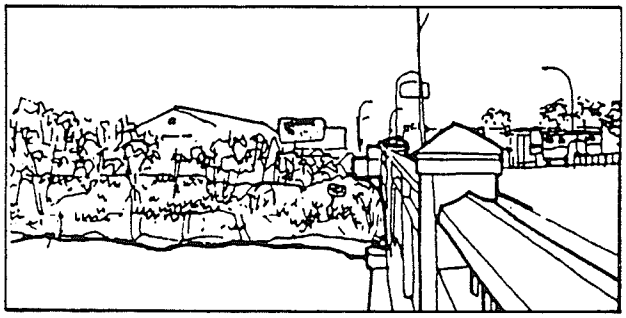
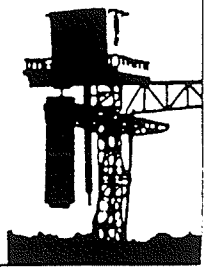


Figure 2.2.2.3 View to south-east bank



BANK CHARACTERIZATION
BANK SECTION A - SOUTH EAST

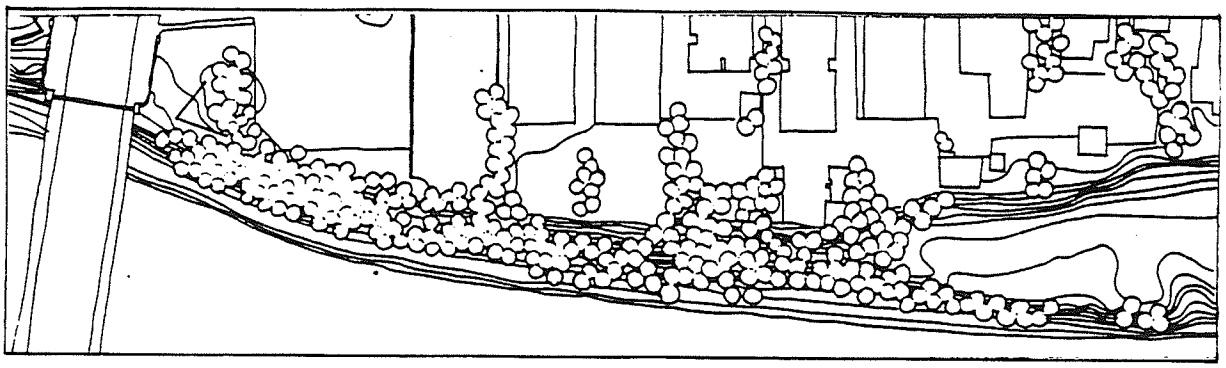


Figure 2.2.2.4 Site Plan

N

Bank Characterization

South Bank
BANK SECTION B
LOCATION: South West
BANK CHARACTERISTIC: Vegetated bank, with developed
areas (sod) primarily private lands,
ACCESS TO LOWER BANK: none
ACCESS TO UPPER BANK: none
POTENTIAL LINKAGE: none

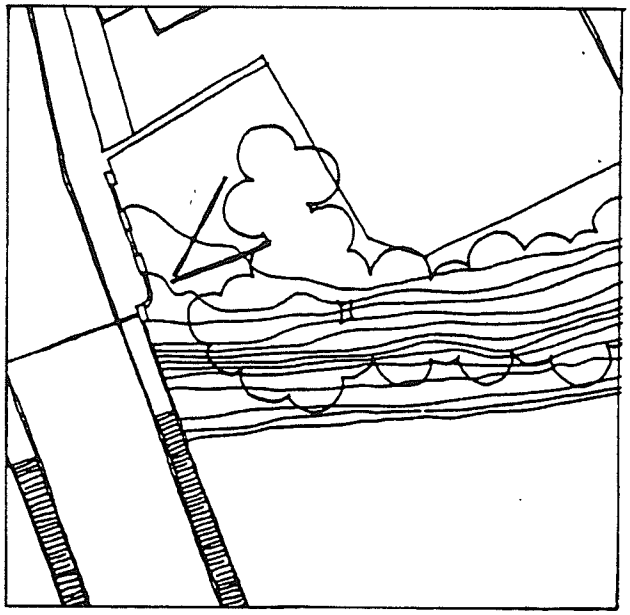


Figure 2.2.2.5 Bridge Area Detail

Assessment

The development that has occured on bank section B is primarily private. This does not allow for access potential as the uses are incompatible at present. The bank still retains much of its natural vegetation although the land is primarily developed. Access development should remain minimal and lower bank access would need to be localized to the general area of the bridge.

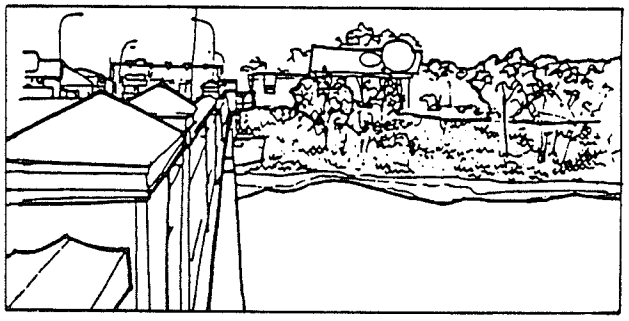
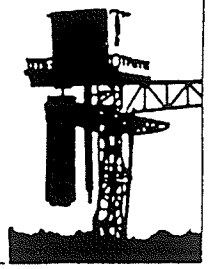


Figure 2.2.2.6 View to south-west bank

BANK CHARACTERIZATION
BANK SECTION B - SOUTH WEST



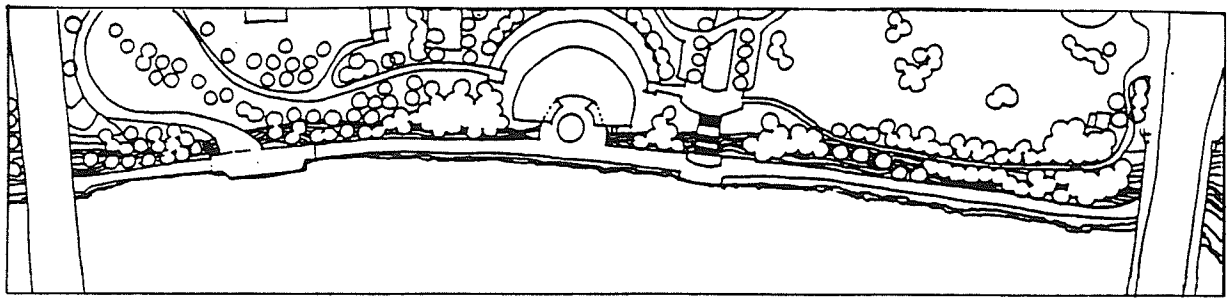


Figure 2.2.2.7 Site Plan

Bank Characterization

North Bank
BANK SECTION C
LOCATION: North West
BANK CHARACTERISTIC: Vegetated natural bank, developed, intense public use
ACCESS TO LOWER BANK: Bonnycastle Main Stair,
Donald Street Access
ACCESS TO UPPER BANK: upper bank path (Bonnycastle Park)
POTENTIAL LINKAGE: Assiniboine Riverwalk and its amenities

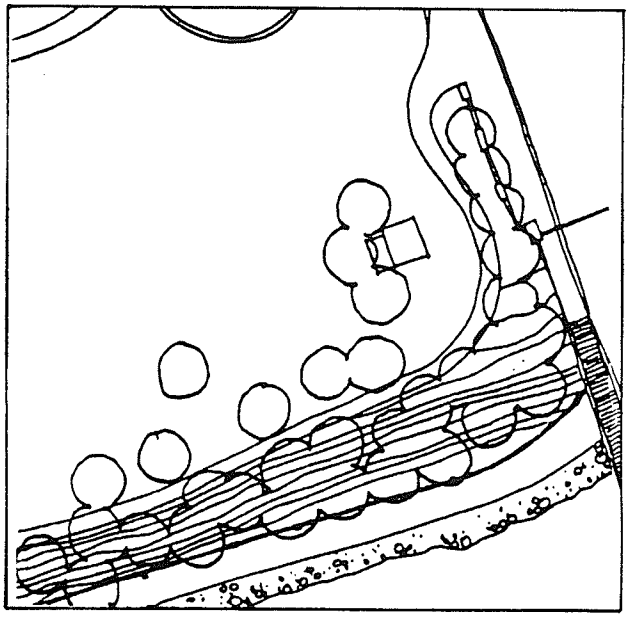
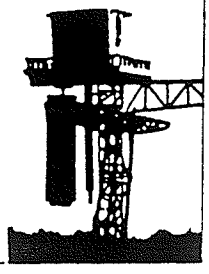


Figure 2.2.2.8 Bridge Area Detail

Assessment

Bank Section C is characterized by intense development of public park lands. The bridge is connected at the upper portion to Bonnycastle Park and linked into its path system.
The bridge does not provide direct lower bank access due to the slope. The lower bank can be accessed through Bonnycastle park which is directly linked to the bridge. The potential to enhance the relationship between the intensely developed bank and the bridge through architectural development exists.

Figure 2.2.2.9 View to north-west bank



BANK CHARACTERIZATION
BANK SECTION C - NORTH WEST

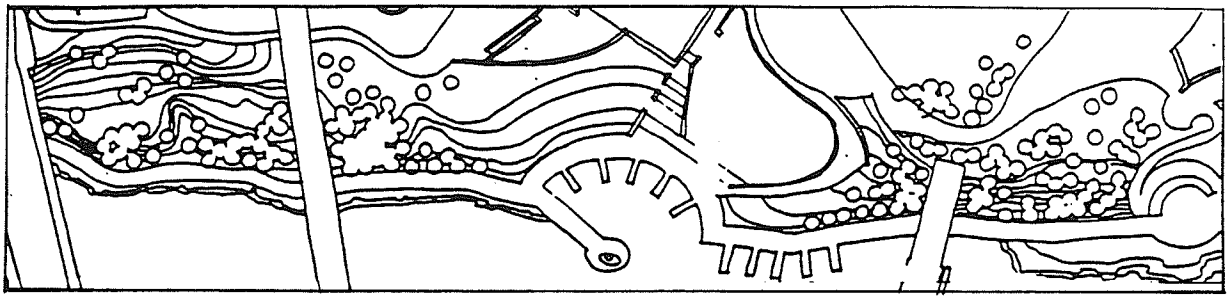


Figure 2.2.2.10 Site Plan

Bank Characterization

North Bank
BANK SECTION D
LOCATION: North East
BANK CHARACTERISTIC: Vegetation pockets , developed,
intense public use
ACCESS TO LOWER BANK:Stair, barrier free ramp
ACCESS TO UPPER BANK: upper bank path
POTENTIAL LINKAGE: The Forks and its amenities

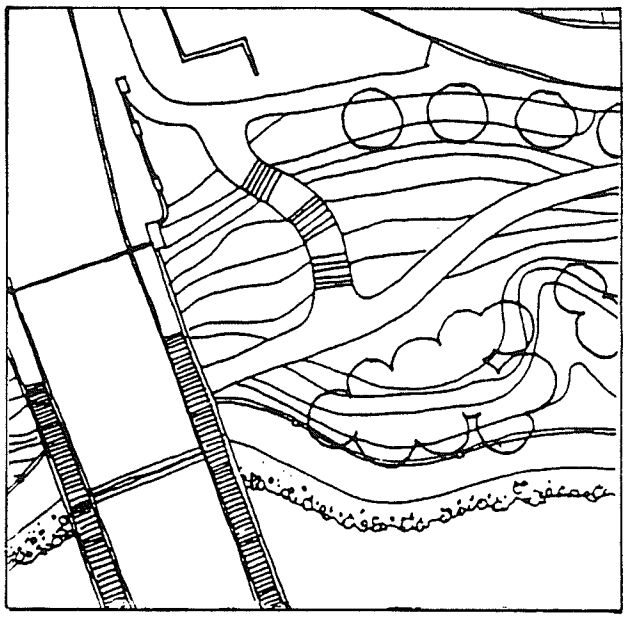


Figure 2.2.2.11 Bridge Area Detail

Assessment

Bank Section D is the only section with a formalized access system adjacent to the bridge that allows various forms of access to the lower bank. The Forks development can be accessed from both the upper and the lower links. The access to the lower bank may be excessive, the ramp is more regularly utilized with the stair appearing superfluous.

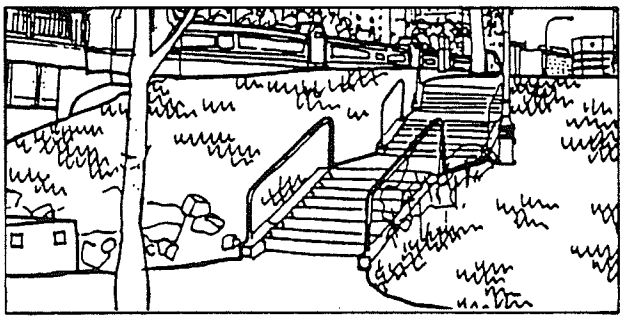
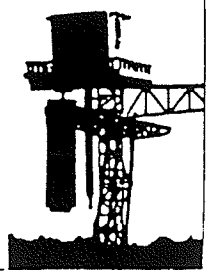
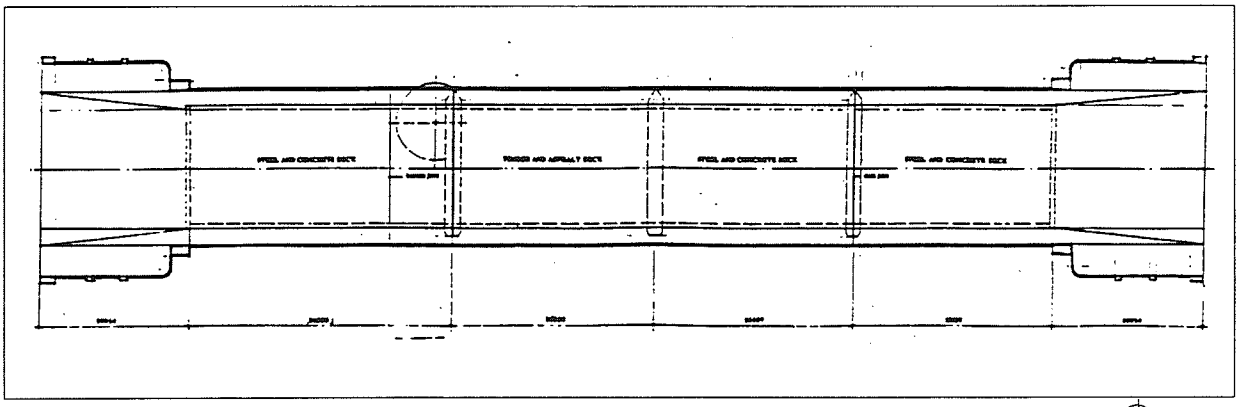


Figure 2.2.2.12 View to south-west bank

BANK CHARACTERIZATION
BANK SECTION D - NORTH EAST





N

Figure 2.2.2.13 Existing Traverse Systems

Assessment

The Main Street bridge allows for the crossing of vehicles, bicycles and pedestrians; in this respect it is successful. However the three modes of traverse are incompatible and thus conflict will arise. Presently the bridge does not provide a cyclist right of way which results in conflict between cyclists and pedestrians and cyclists and vehicles, this needs to be addressed. Also the pedestrian walkway is narrow and cluttered with signage and light posts. The pedestrians are seperated from the vehicular traffic by a six inch curb which will not protect them if a vehicle passes into the walk way area.

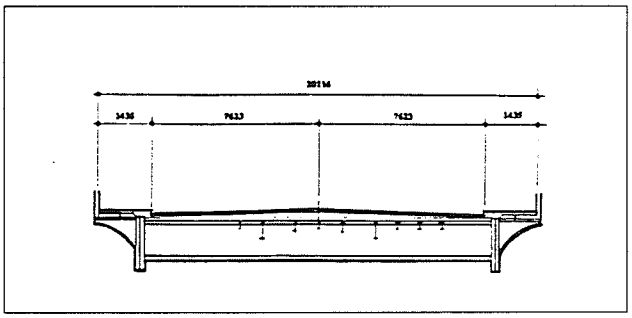


Figure 2.2.2.14 Traverse Mode Zones

Summary

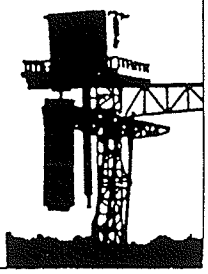
The bridge creates conflict through its form. It should allow for seperation of traverse modes to function more efficiently and further the potential for meaningful experience.

South Bank Summary

The North Bank is a highly developed public domain. The bridge must address the needs of the development to remain vibrant. Opportunities for intense architectural development, are present here, more so than at the South Bank location. The two banks, although being connected, offer unique opportunities and display the potential for very different architectural treatment.

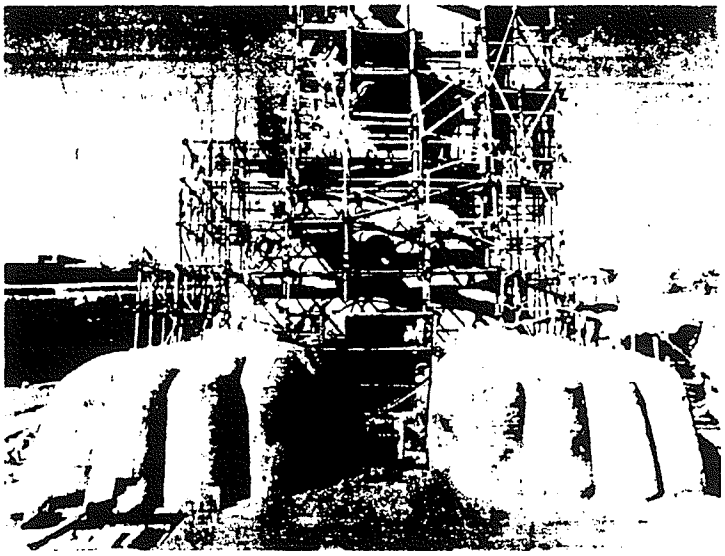
South Bank Summary

Overall the south bank is an area with minimal public disturbance. The character of the bank does not lend itself to intense development (for various reasons as discussed). The potential for localized development at the bridge, with minimal intervention, is desirable.

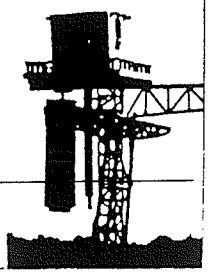


BRIDGE CHARACTERIZATION

CHARACTERIZATION SUMMARY



3.0 CONCEPTUAL DEVELOPMENT



3.0 CONCEPTUAL DEVELOPMENT

3.1 Identity and Meaning

3.1.1 The Spirit of Place

No one can comprehend what goes on under the sun. Despite all his efforts to search it out, man cannot discover its meaning. Even if a wise man claims he knows, he cannot really comprehend it. ECC 8:17

The spirit of place is a philosophical premise that has received much attention in architectural writings in the past. In general these writings rely heavily on the aesthetic of the place, often its historical content and its ability to capture the participant into its splendour. Thus it is deemed to have a "spirit of place". This view of place will often lead to the idolatry of finite objects, "these things - the beauty, the memory of our own past, - are good images of what we desire; but if they are mistaken for the thing itself, they turn into dumb idols, breaking the hearts of their worshippers.[12] The attempt to define the spirit of place should not focus on the physical location but should aspire to study the qualities of that place that stimulate the only thing on earth which, by nature, possesses both body (object) and Spirit; the human being. The human being is a diverse, complex creation. In all its diversity there is an overwhelming similiarity; only in them, on this earth, is a spirit contained within a physical object. Therefore it can be stated that the spirit of place resides within the participant at that place. The place itself then becomes the medium through which the spirit is stimulated.

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[12] C.S.Lewis, *The Weight of Glory and Other Addresses,* (revised and expanded edition) New York:MacMillan Publishing Company,1980,pg.7.

3.1.2 Form and Meaning

". . . contemporary man lives with the illusion of the infinite power of reason. He has forgotten his fragility and his capacity for wonder, generally assuming that all the phenomena of his world, from water to fire to perception or human behaviour have been 'explained'. " [13]

The culture in which we are participants has experienced radical technological advance. It is important to understand the culture in which we exist, the mass secularization as well as the characteristic multi-culturalism, which renders the question of meaningful identity difficult. The technology that the average person is exposed to within our culture mutes the spiritual and leaves the corporeal participant overwhelmed with stimulation and the desire for more. "People can croak ' Entertainment ! Entertainment! until they're blue in the face. The fact remains that films like *Star Wars* have become jerry-built substitutes for the great myths and rituals of beleif, hope and redemption that used to shape cultures before mass secular society took over."[14] This de-spiritualization has led to the demise of the contemplation of the poetic and a loss of culturally defined symbols. Our society is one of experience, " they attempt to satisfy their feelings of inner emptiness and malaise by pursuing experiences that provide momentary illusions of well being"[15] How do you bring meaning through form to a culture that " consists of going from one experience to another, none of which lasts longer than the time it takes to live it.?"[16] The idea of meaning is further complicated by advancements in hyper-media and electronics, such as computers, television and video, through which society is adopting a new perception of time and space. "The tendencies toward spiritualization are here

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[13]Alberto Perez-Gomez, *Architecture and the Crisis of Modern Science,* Cambridge, Massachusetts: The MIT Press, 1983 pg.6.

[14] Newsweek,January 1, 1979,p.50.

[15]Jim Peterson, *Living Proof,* Colorado Springs, Colorado: NavPress,1989, p.22.

[16]Ibid. p.22.

countercated evocatively by the simulacra of an extremely vivid corporeality."[17] The culture in which we exist is complex. Architecture must respond to this complexity by providing a medium to solicit for contemplation and response at various levels of human understanding, not to absorb the participant into a deeper technological trance but to awaken them from it. " It is characteristic of good urban architecture that it has not one, but many images, and not one, but many layers of meaning."[18]

3.1.3 Time and Meaning

The race is not to the swift
or the battle to the strong,
nor does food come to the wise
or wealth to the brilliant
or favour to the learned;
but time and chance happen to them
all. ECC 9:11

The Main Street bridge is a piece of the history and development of Winnipeg. This alone constitutes its value. Our culture is one of disposal. Technology allows us the freedom to construct at a rate faster than ever before. Architecture can be tossed aside when it is no longer useful and a new structure will take its place, as if the previous had never existed. Architecture used to be constructed by many generations of workers, passed on like myths and rituals. It was the embodiment of culture, pride and the document of generations of workers with a common belief and goal. Our culture is gradually erasing itself from existence through technological advance. We glorify and try to preserve artifacts of ancient cultures, "the Egyptian monuments are like an old man,

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[17]Angela Krewani,Christian W. Thomsen. "Virtual Realities," in Daidalos 1991, p.120.

[18] Denise Scott Brown,"Hennepin Avenue,Minneapolis" in A.D.,1990,pg 69.

. . . you have to take care of this old man. You can't just leave him to fall down."[19] Without excercising the same amount of care or concern for the objects of our own lineage, "the two bridges are old, can't handle traffic flows, and must be replaced."[20] The case, however is not one for preservation; preservation is a self-defeating premise. Preservation denies the existence of time and change. The object must be addressed as a dynamic entity; a system in a constant state of change. We must accept the Second Law of Thermodynamics which states,

> In any ordered system, open or closed, there exists a tendency for that system to decay to a state of disorder, which tendency can only be suspended or reversed by an external source of ordering energy.[21]

The law implies that from the outset all things physical, chemical or biological begin to deteriorate and ultimately will fall apart. It is true that all have their own magnitude of time as we understand it, however, eventually all objects will cease to exist. When we address history from this theoretical premise it suggests that we should accept the object in the present as a dynamic entity undergoing the process of deterioration. That is not to say the object doesn't have value, it merely states that the object cannot be what it once was. We must accept the object for what it is. This does not mean that the past is worthless, but merely that it (the past) is to be utilized in the present as a basis for knowledge. The past should be learned from, and built upon in the present, while acknowledging an uncertain future.

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[19] The Winnipeg Free Press,"*Egypt's legacy under stress,*" March 29,1992.

[20]Winnipeg Real Estate News, *Bridge Options Outlined Main and Norwood bridges to be rebuilt,* June 5, 1992.

[21] Henry M. Morris, *King of Creation*, San Diego: CLP Publishers,1980, p.114.

3.1.4 Conceptual Rationale -Philosophy

i. TO IDENTIFY THE RELEVANCE/ IMPORTANCE OF THE HISTORICAL OBJECT

The Main Street bridge is an important cultural entity. The bridge is an expression of the character of our society and embodies the fortitude of the pioneer. It overcame extreme weather conditions, the many perils of construction within a riverine environment and provided employment for many Manitobans stricken by the depression. The bridge over time has become only a trace of what it was. The structure remains, the function remains, but the sweat and comraderie that produced the bridge is no longer seen or appreciated, " besides which both bridges have gone into an "ugly" stage-they just look bad, with rusting steel and cracking concrete."[22] As we age our worth is judged by our performance. The physical structure becomes weak, the wisdom and insight are no longer seen or appreciated, and thus we are discarded. Our culture has sacrificed the insight gained from contemplation for the instant gratification of sensory stimulation. The past should be learned from and built upon in the present, the knowledge of one generation should be utilized and built upon by the next, " for where learning makes a free commerce between the ages there is always the danger (*chance*) that the characteristic errors of one may be corrected by the characteristic truths of another."[23]

ii. TO EXPLORE THE PREMISE OF MEANINGFUL CONTEMPORARY ARCHITECTURE.

In order to be meaningful, contemporary architecture must attempt to address the culture in which it is placed. It must offer many levels of meaning from simple recreational

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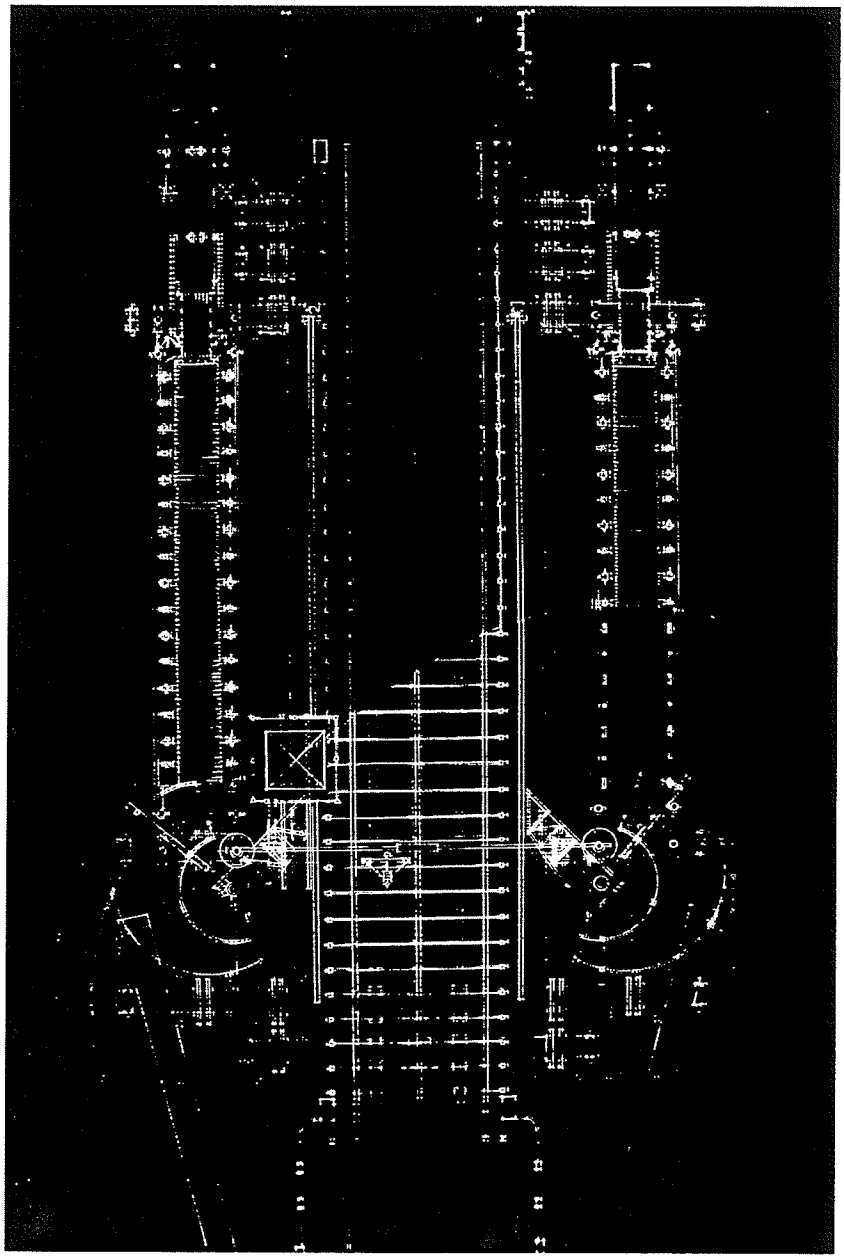
[22]Winnipeg Real Estate News, *Bridge Options Outlined Main and Norwood bridges to be rebuilt,* June 5,1992.

[23]C.S. Lewis,*The Screwtape Letters*, Markham Ontario,Penquin Books Canada Ltd. 1988, pg.113.

pleasure and interest, to contemplation and intellectual pursuit. The object must become the medium through which the participant is stimulated to the capacity that they as an individual are able. Architecture should strive to reconcile the practical with the poetic to respond to the complexity of our times.

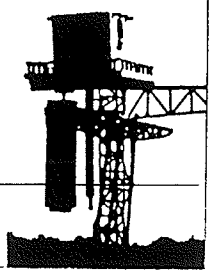
iii. TO INVESTIGATE THE POTENTIAL FOR AN ARCHITECTURE THAT ACKNOWLEDGES AN UNCERTAIN FUTURE.

It has been stated that all things physical, chemical or biological begin to deteriorate and will ultimately fall apart. An architecture that accepts this premise, accepts that fact that the object from its inception exists in a constant state of change. All things are temporary. An architecture that acknowledges the future must allow for the possibility of change, because "no one knows what is coming- who can tell him what will happen after him?" (Ecc 10: 14)



4.0 THE BRIDGE

PROPOSAL



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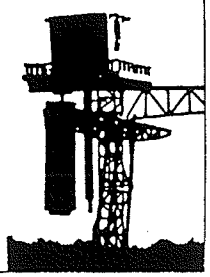
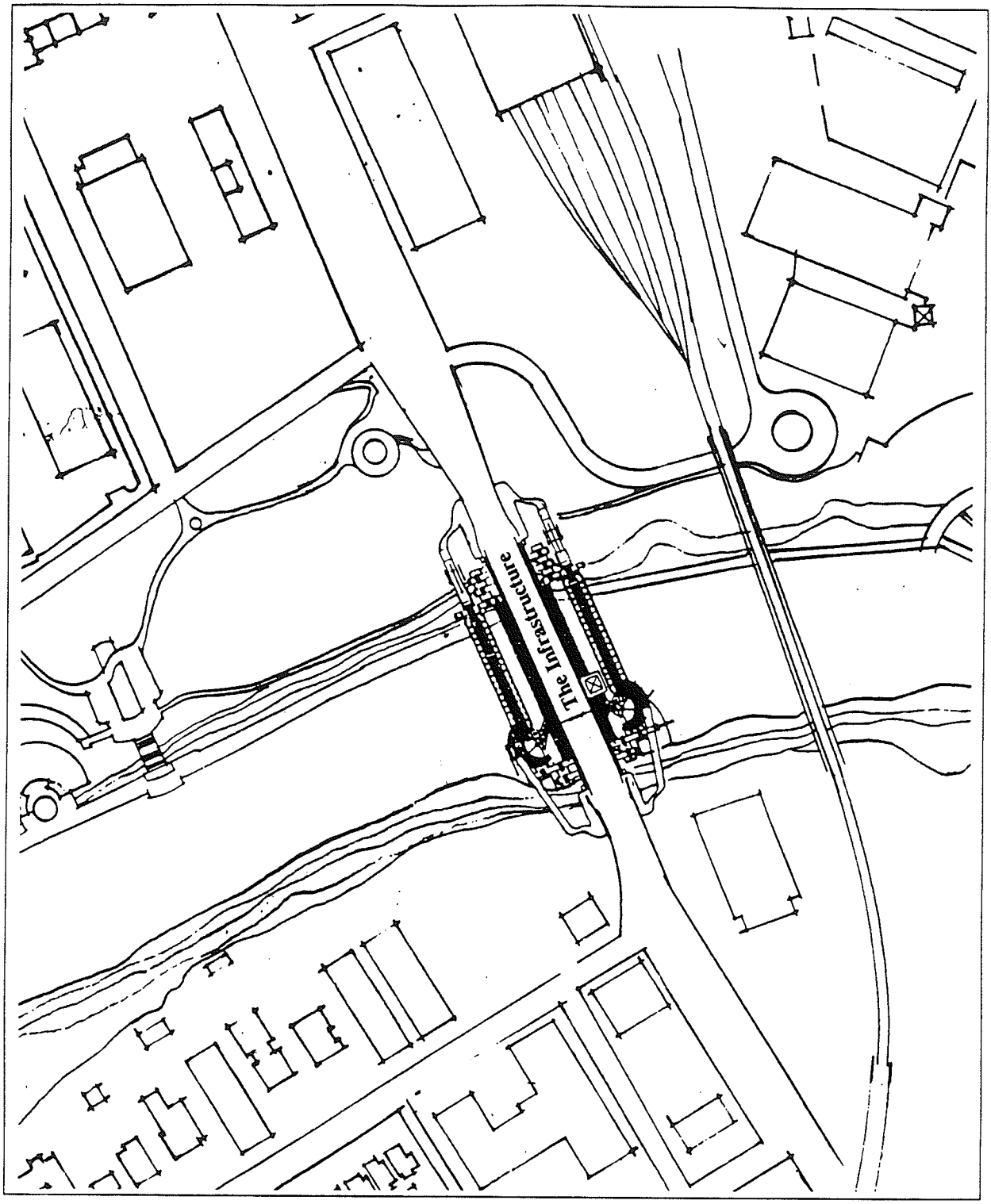
4.0 THE BRIDGE PROPOSAL

4.1 The Infrastructure

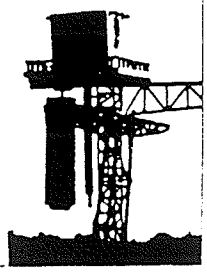
The manifestation of the philosophy results in the incorporation of an imposed external infrastructure system. This architectural language represents the finite, spatio-temporal nature of the existing object. The infrastructure is an external ordering system (derived from the existing form itself) which suspends or prolongs the decay of the artifact to a state of disorder. The imposed infrastructure is a system that allows for change, is temporary in its architectural expression, and will respond to change over time. It is flexible and entirely independant, providing support for the existing bridge yet it maintains its own seperate character. The system is comprised of a series of individual components. The components are assembled, each with their own character and responsibility, to form one unified body that builds upon the past and attempts to provide meaningful contemporary architecture while acknowledging an uncertain future.

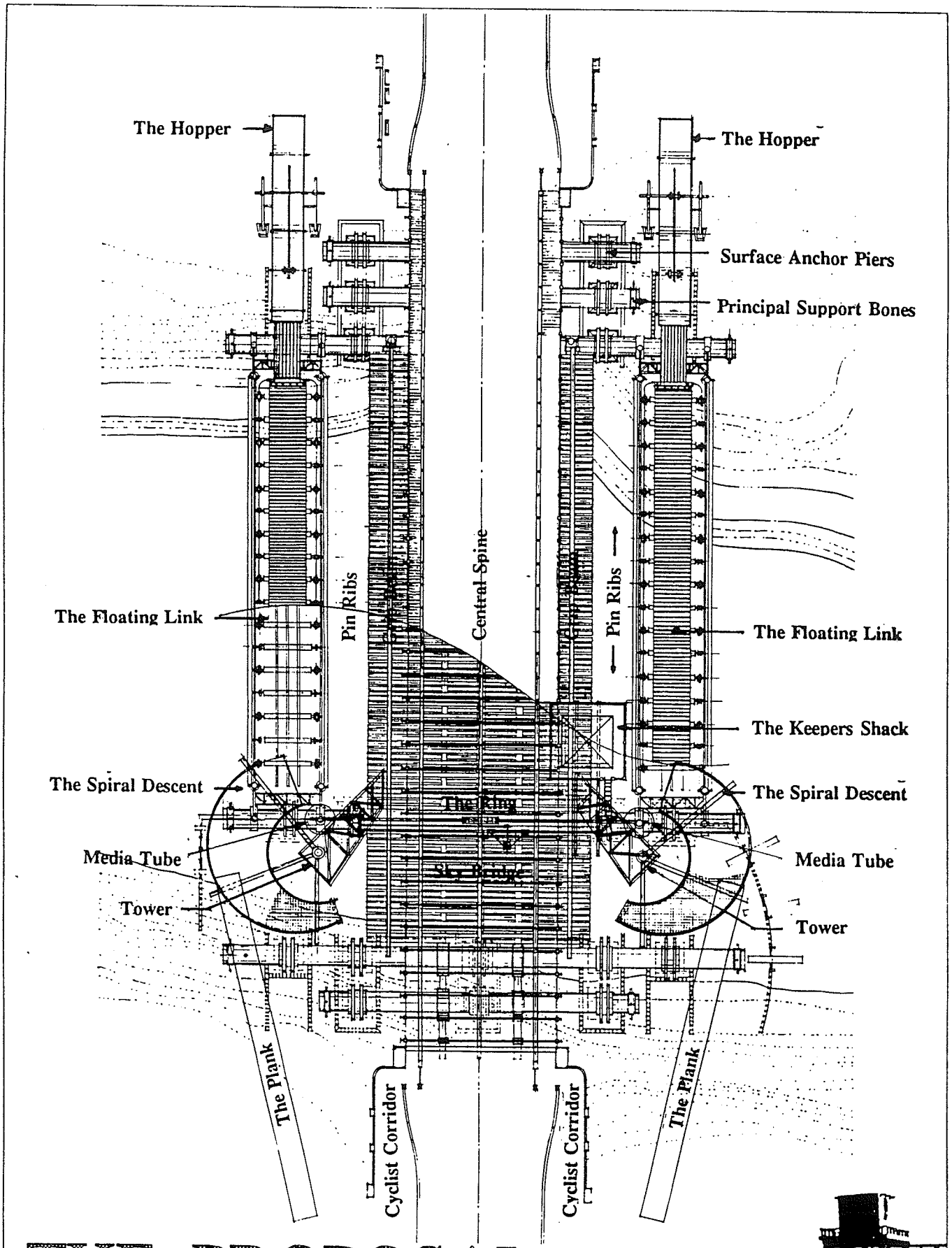




THE PROPOSAL

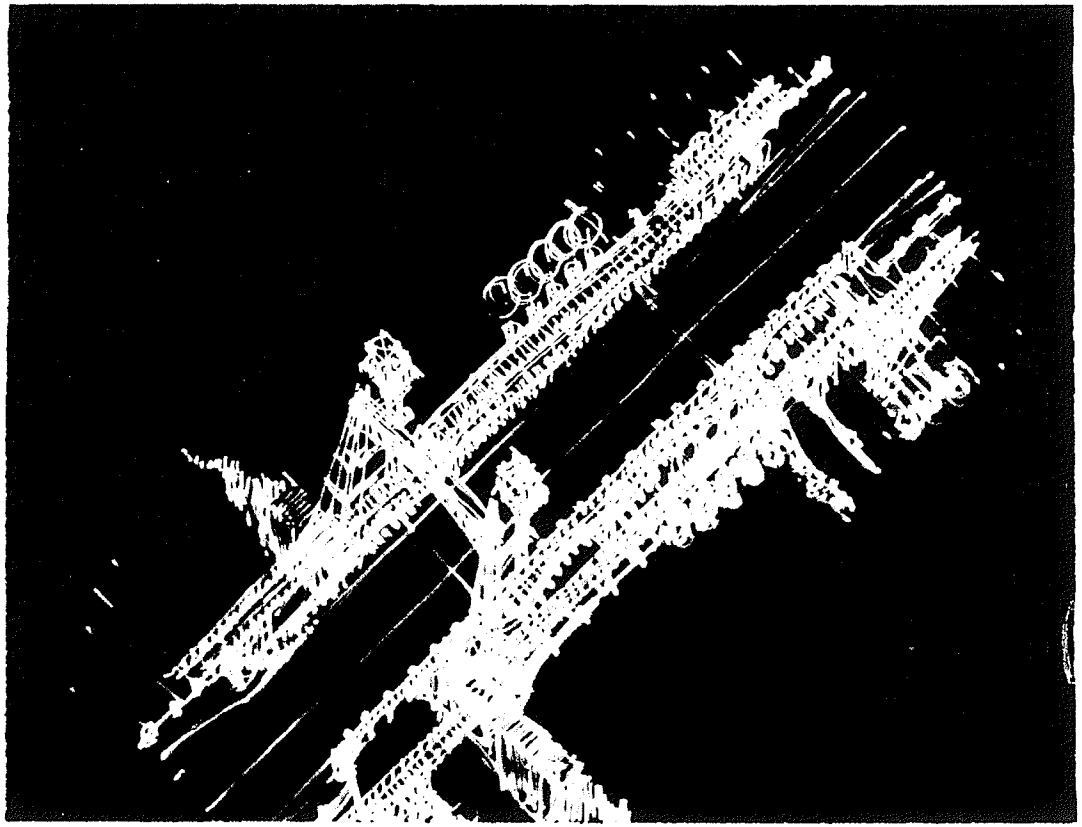
THE IMPOSITION IN CONTEXT





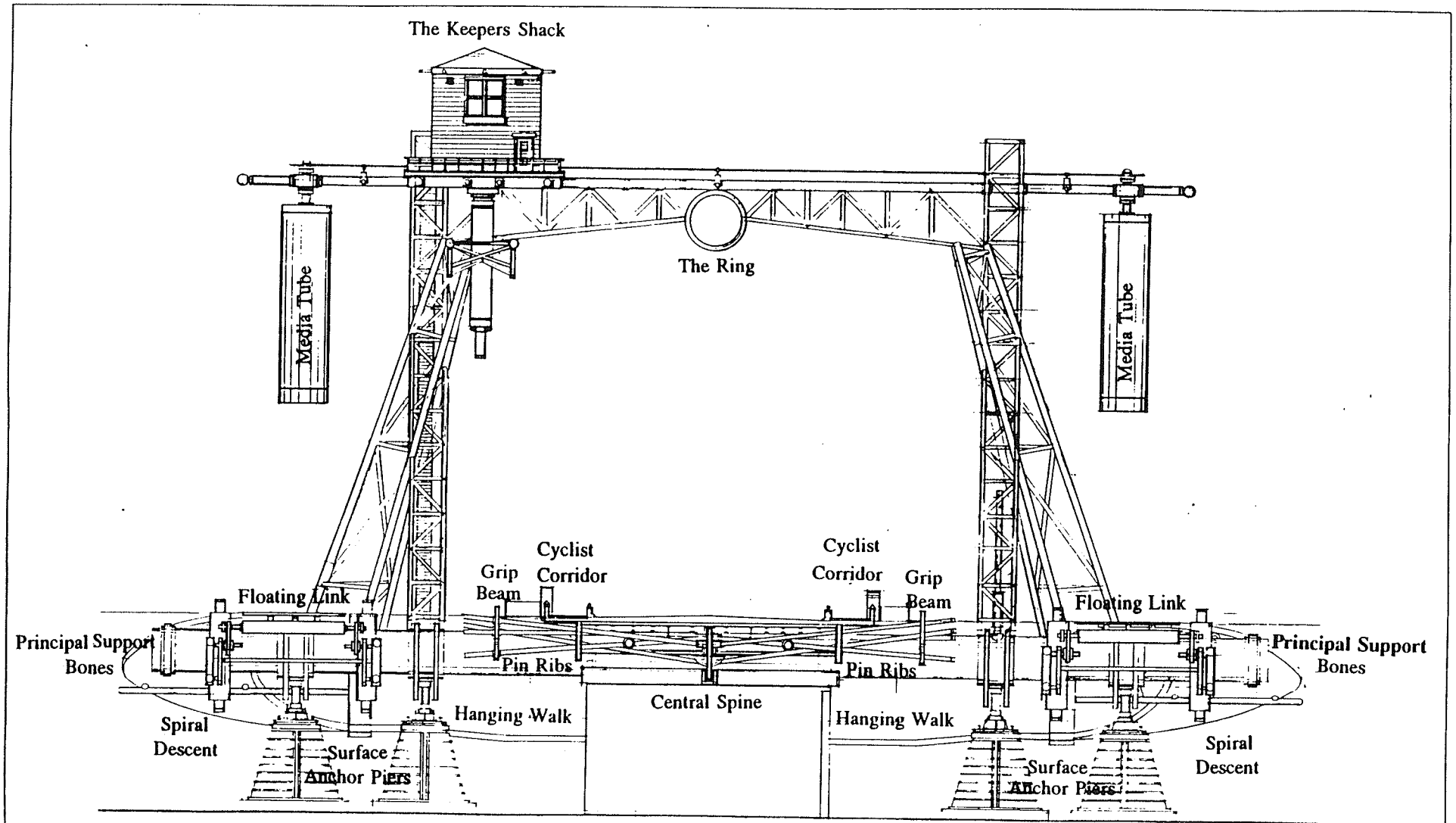
THE PROPOSAL

THE IMPOSITION AS CONTEXT



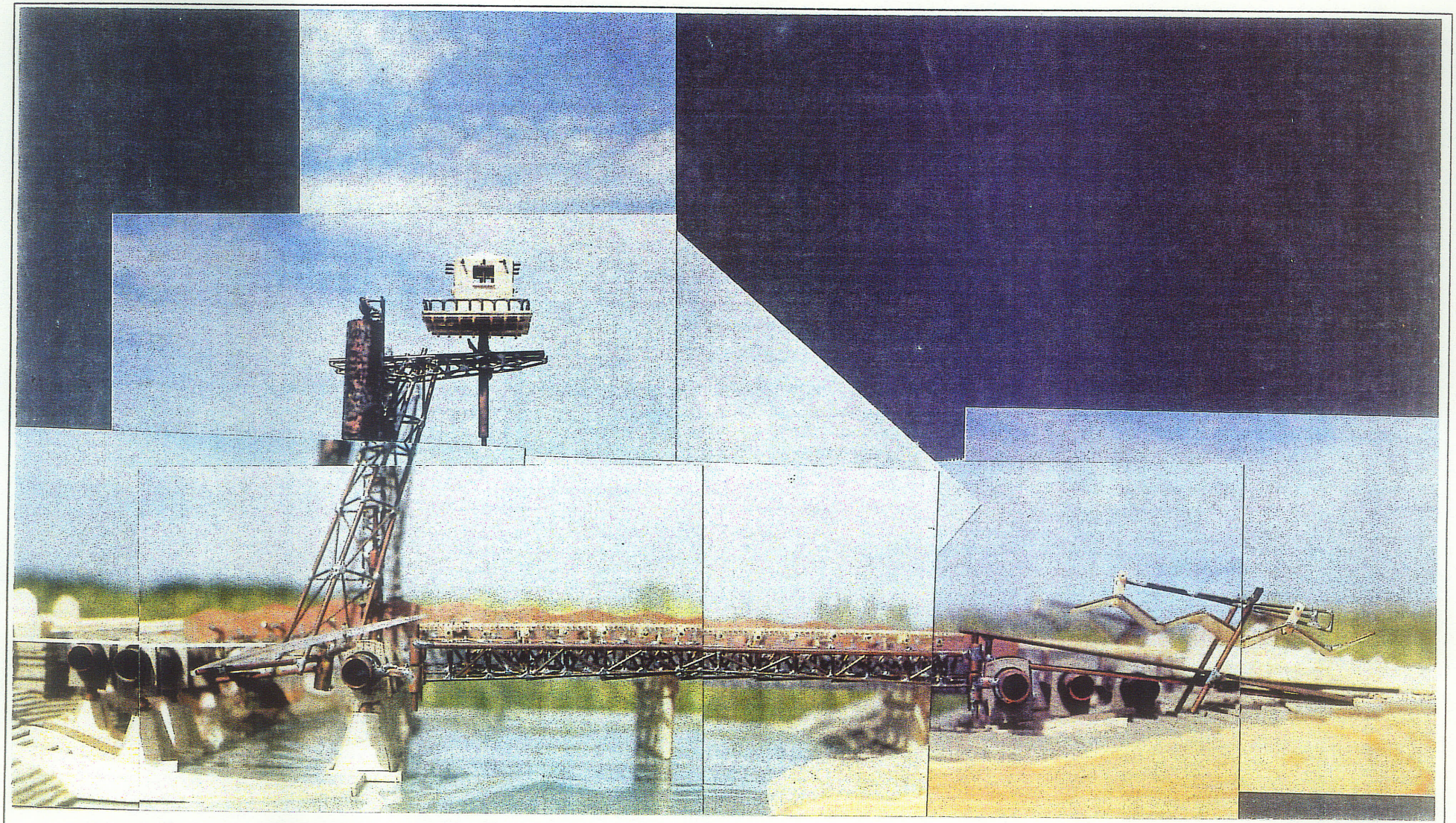
THE PROPOSAL

FLYING VIEW SKETCH



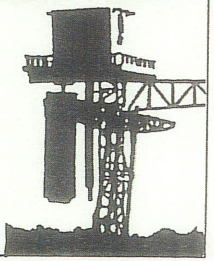
THE PROPOSAL

. . . A SLICE



THE PROPOSAL

A VIEW FROM THE EAST



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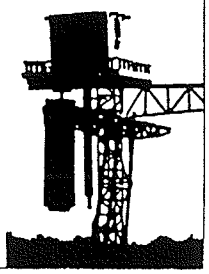
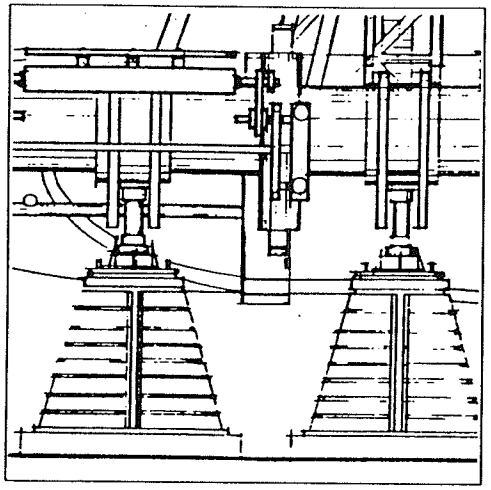
4.2 The Components

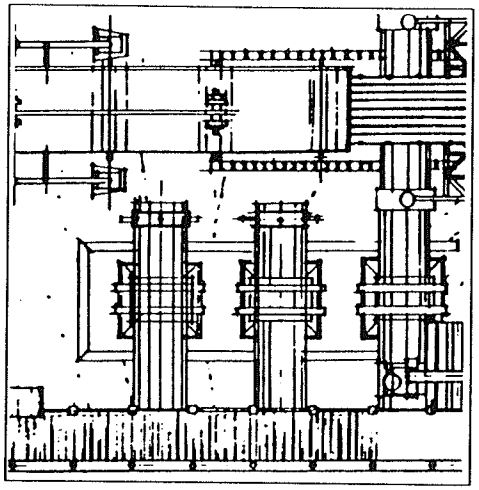
PRINCIPAL SUPPORT SYSTEMS

A. Surface Anchor Piers: The surface anchor piers are the primary foundation of the system. They are constructed of concrete and limestone to recognize the materials of the existing structure and address the regional context. The anchors connect the system to the ground plane which ulimately provides the main support. There are 24 individual piers that attempt to respond to the location at which they are placed. The piers that puncture the banks are retained by limestone walls that mimic the slope of the bank. This is an attempt to reconcile the imposed structure (pier) with the bank that has been violated. Replicating the slope of the existing bank through architectural form is an attempt to respond to the unique character of each pier location. Thus reconciling the imposition with the condition that exists at the point of insertion. The piers that are set in the river also respond to their individual locations. The design creates the illusion of a floating object on the surface of the water. The suggestion is, that the liquid provides the stability for the structure at these points. It represents a curious marriage in that the dynamic and unpredictable is providing the support for the seemingly static and predictable. The architectural expression of the piers suggests a reliance and a respect for the individual conditions in which they are imposed.

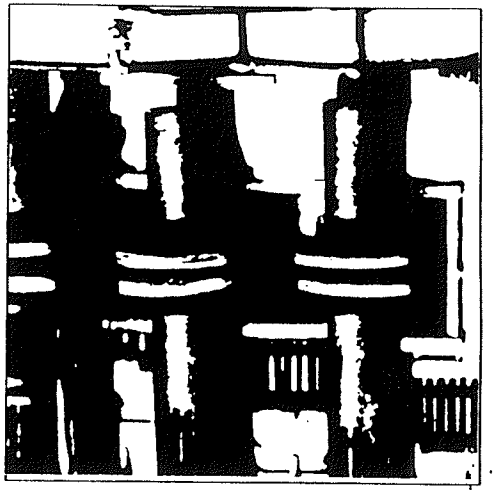




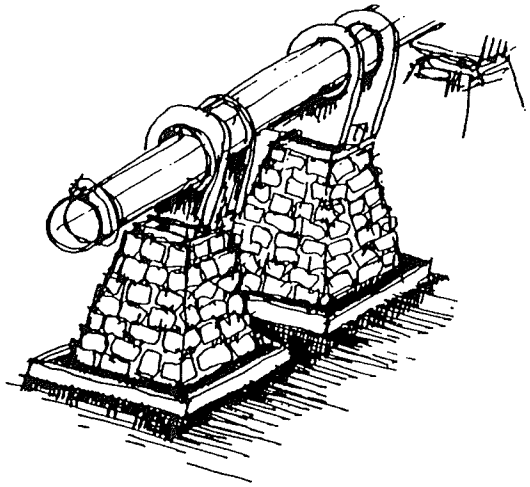
Piers from the front

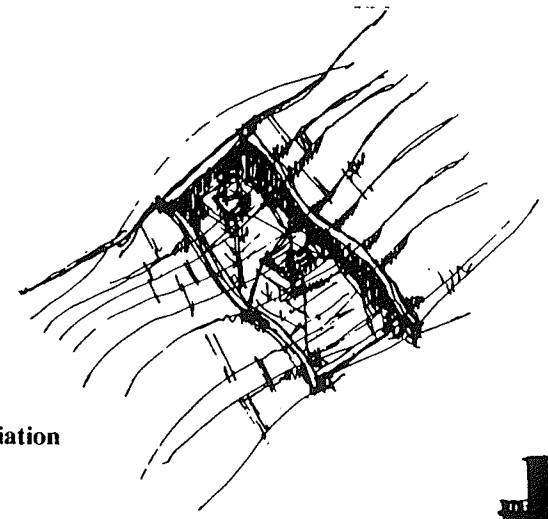


Piers from the top



Piers from the top again

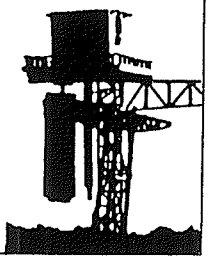




Reconciliation

THE PROPOSAL

SURFACE ANCHOR PIERS



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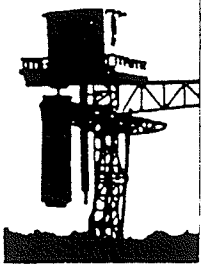
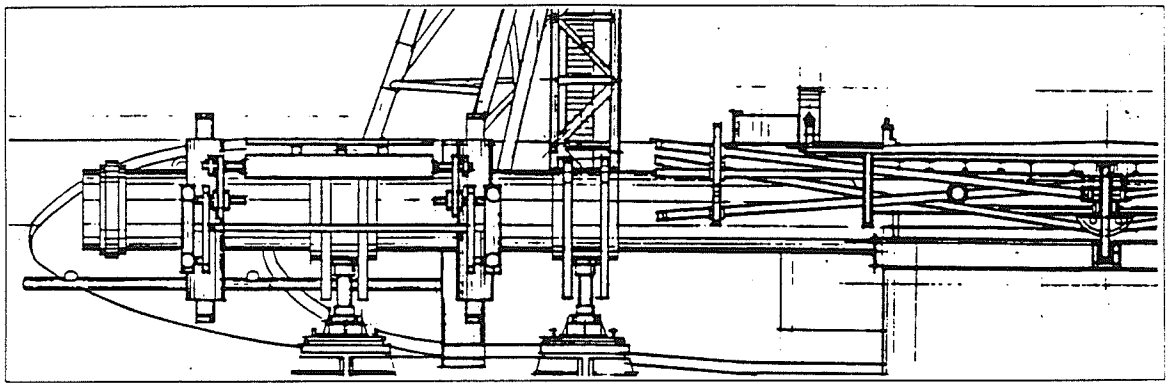
PRINCIPAL SUPPORT SYSTEMS

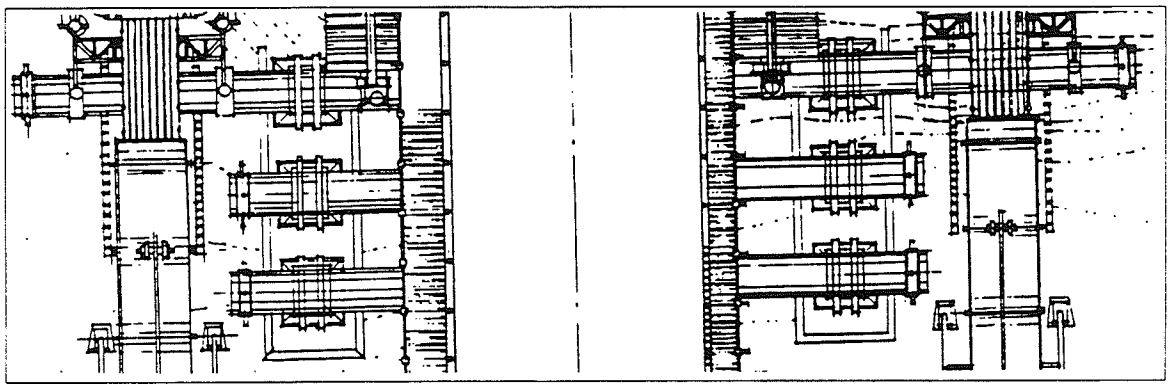
B. Principal Support Bones and Central Spine.

The fundamental members of the infrastructure are the principal support bones and the central spine. The members rely on the surface anchors for their support, while providing the main structure to which all other components are attached. There are six bones that run perpendicular to the existing bridge and puncture the steel superstructure to supplement the deteriorating system. The bones serve not only to provide structure for the new system but to augment the existing. The central spine is situated at the midpoint of the existing bridge. It is a clear span which extends the length of the existing structure and is connected (at each end of the span) to the bones. The spine is the primary brace parallel to the existing bridge while acting as the central core to which the secondary support systems are linked.

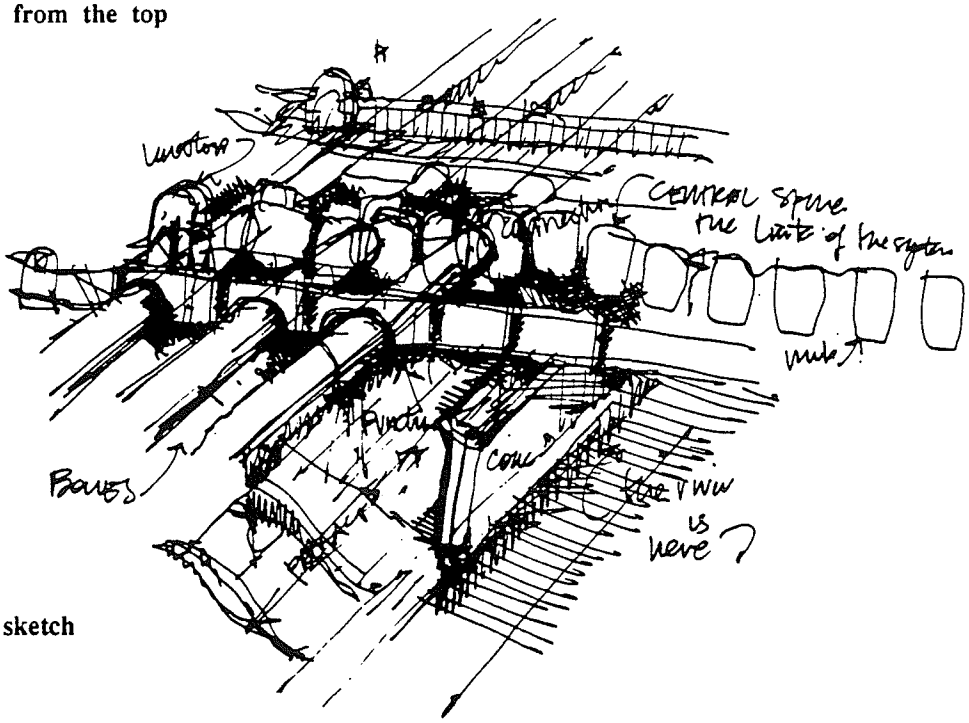




a view from the front



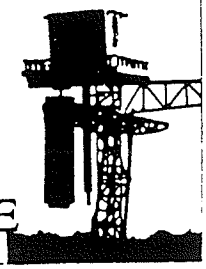
a view from the top



spinal sketch

THE PROPOSAL

PRINCIPAL SUPPORT BONES & CENTRAL SPINE



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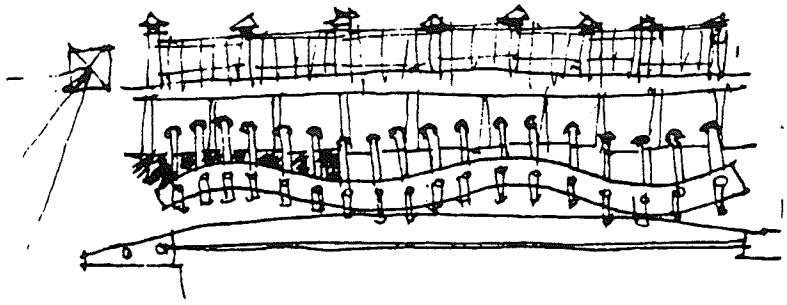
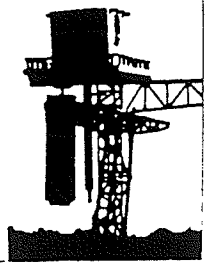
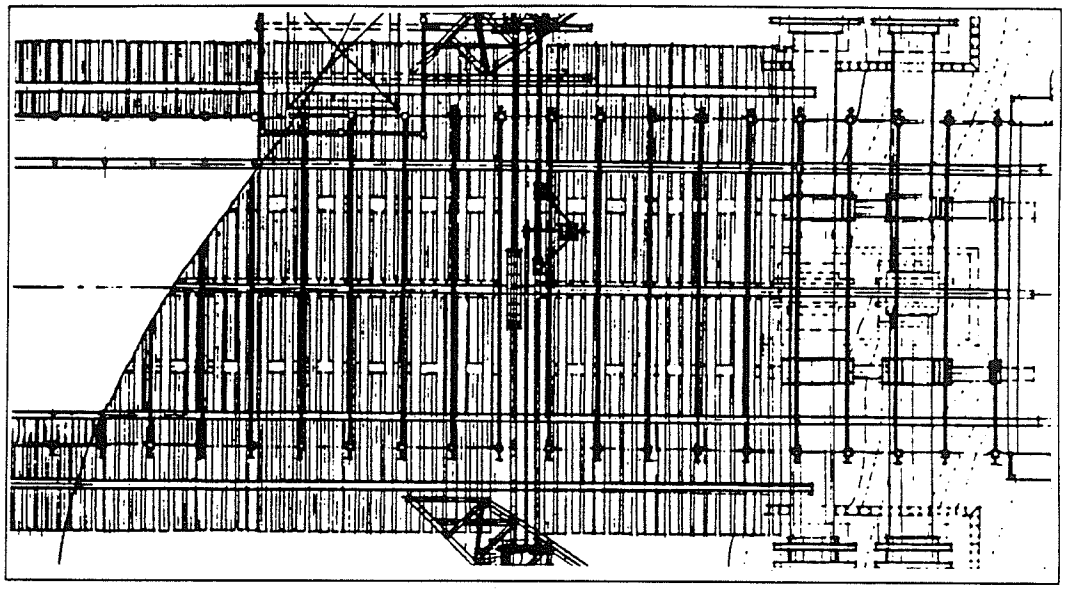
SECONDARY SUPPORT SYSTEMS

A. Pin Ribs and Grip Beam

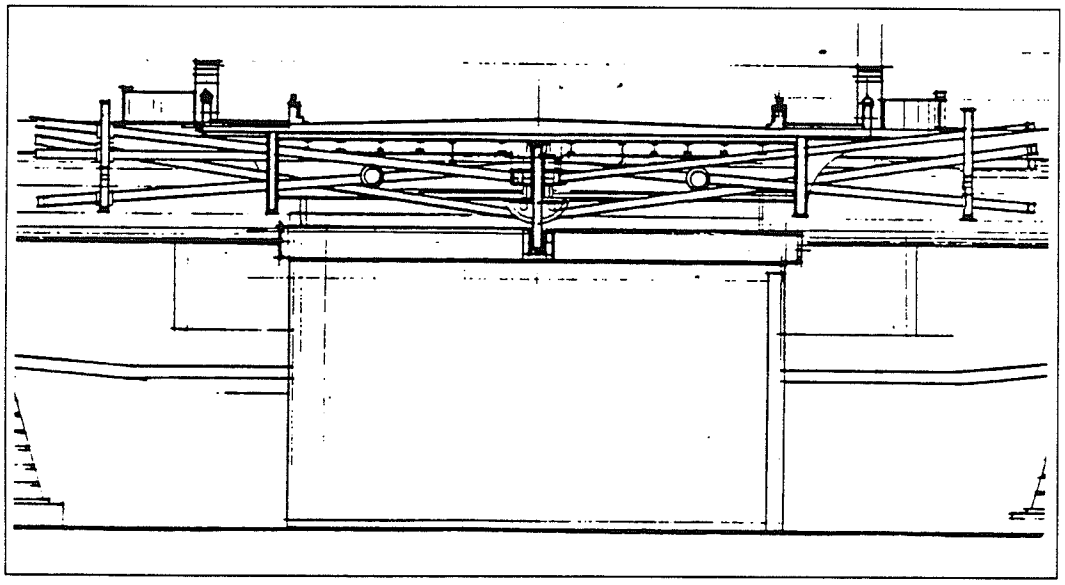
The secondary support components of the infrastructure are the Pin Ribs and Grip Beam. The Pin Ribs are situated to provide support to specific critical points of the existing structure. The Ribs pierce the existing structure and are then coupled to the central spine. The pattern and angle of the Ribs are derived from to the joist structure of the existing bridge to provide them with necessary assistance. The Grip Beam is the bond at the external end of the ribs. The form of the Grip responds to the location of the Pin Ribs. Its form expresses the series of calculated incisions of the Pin Ribs and therefore is entirely derived from the existing bridge structure according to its deficiencies.







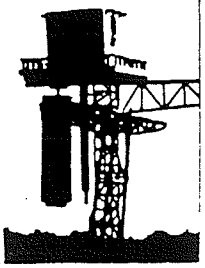
The ribs and the grip from the top

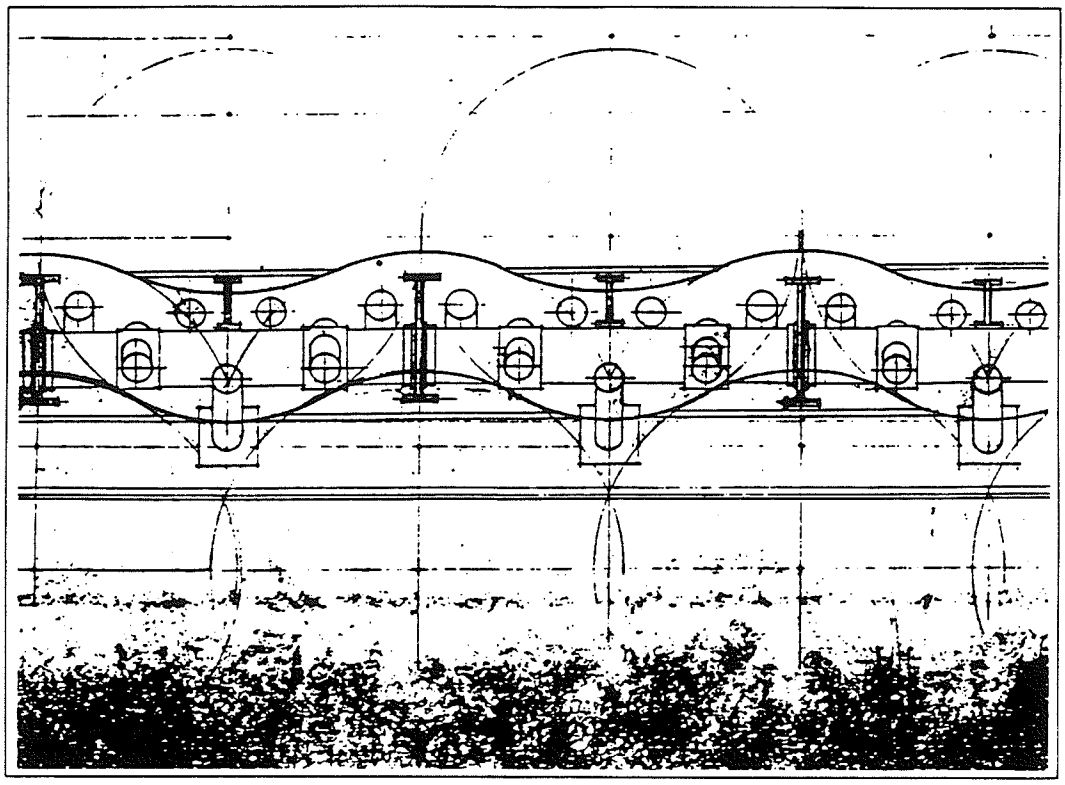


A slice through the ribs and the grip

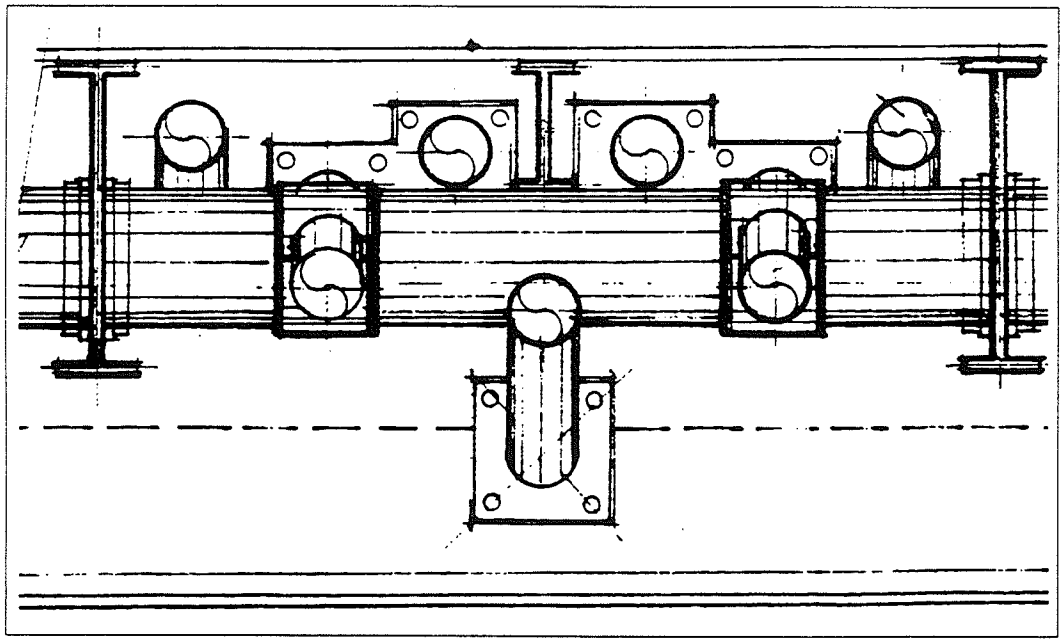
THE PROPOSAL

PIN RIBS AND GRIP BEAM





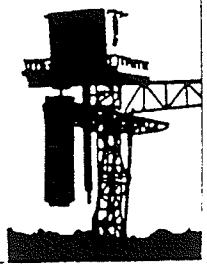
front view of the ribs and the grip



the ribs without the grip

THE PROPOSAL

PIN RIBS AND GRIP BEAM



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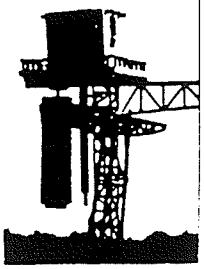
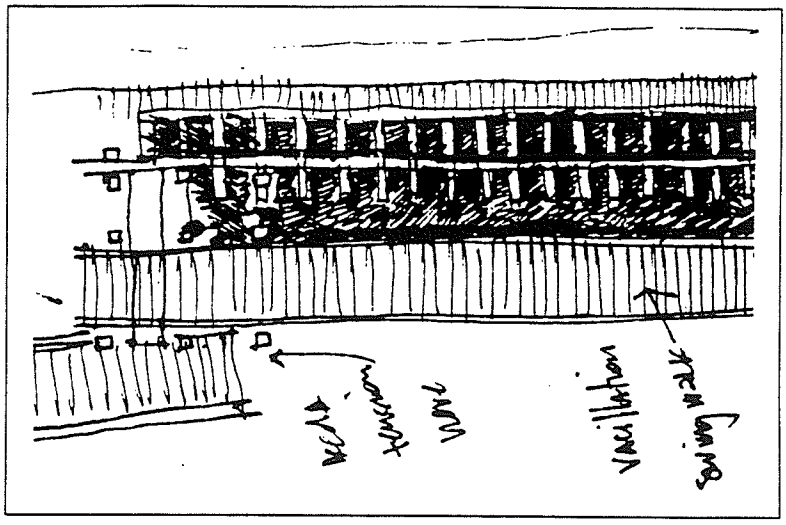
TRAVERSE SYSTEMS

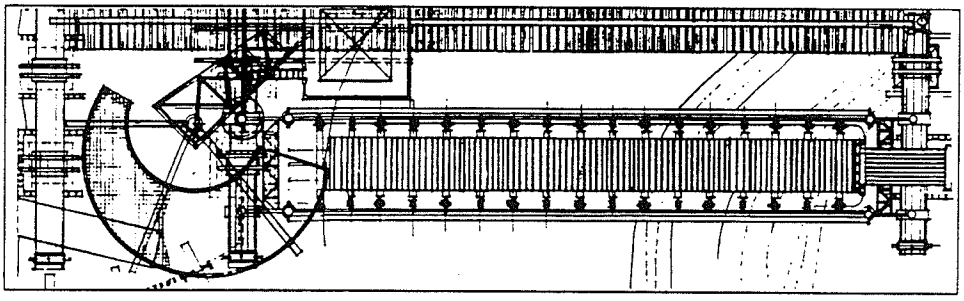
A. The Floating Link

The floating links are linear pedestrian crossings. The links consist of four main trusses (steel) above which is suspended the floating walk (timber). The floating walk is raised above the main trusses and surfaced with timber decking that allows views through to the water below. However, the main reason the walk is elevated is so that as the participant is crossing they cannot perceive the structural support system. Therefore it appears as though they are dangling above the water surface below. The elevation of the walk above the trusses is achieved by a suspension system. The suspension system inspires movement of the timber structure beneath the participant as they progress along the walk. The floating walk is constructed in this way to represent the fragile nature of human existence. It is an attempt to inspire an emotional response (anxiety exhiliration etc.). The walk responds to a desire to heighten the awareness and the experience of crossing while providing a medium to encourage different levels of human interaction.The floating link spans the distance between, and is coupled to the principal support bones. The links are placed as a unit by skyhook once the bones are in place. This allows the links to be removed (at any time in the future) to allow for vehicle lane expansion. The bones will provide the infrastructure for the future lane additions (expansion of the bone system as well as the surface anchors may be required depending on the number of lanes added). The links can then be relocated at the exterior of the newly added lanes.

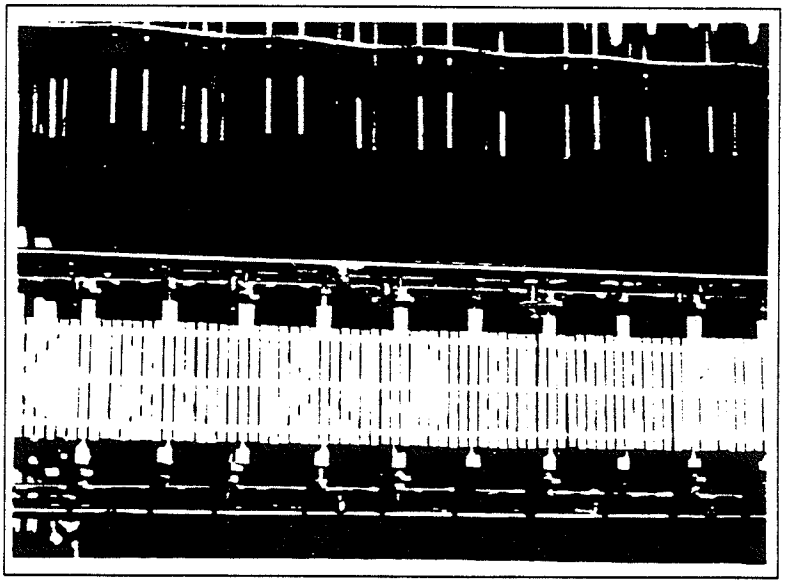




the link in concept



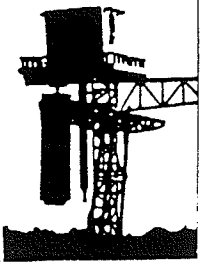
refinement of the link

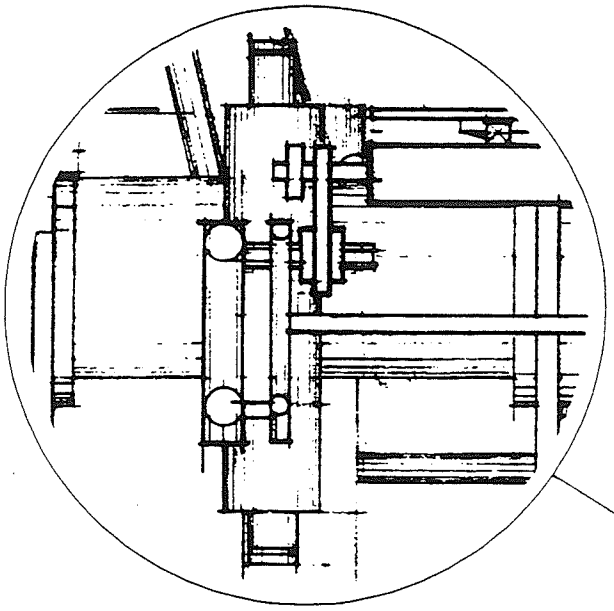


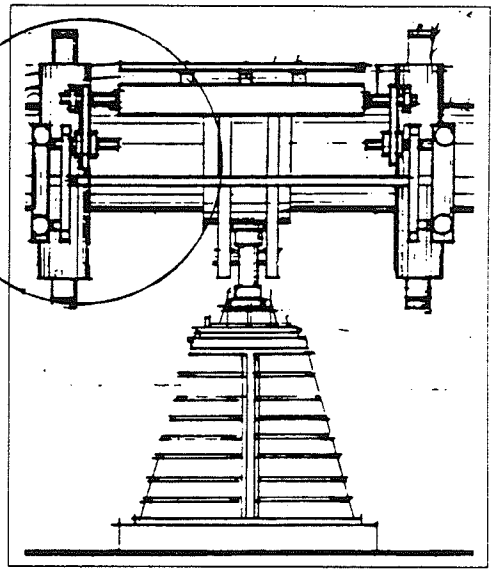
the link as constructed

THE PROPOSAL

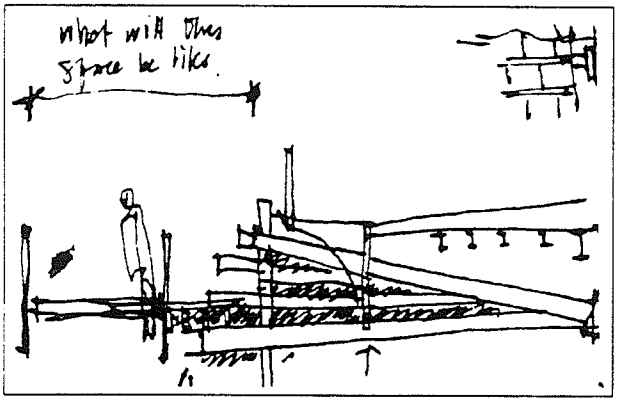
THE FLOATING LINK







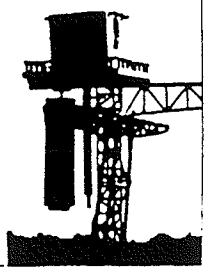
the suspension



the space as concept

THE PROPOSAL

THE FLOATING LINK



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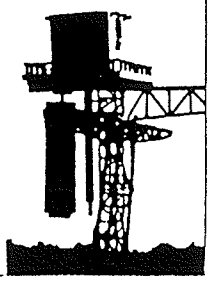
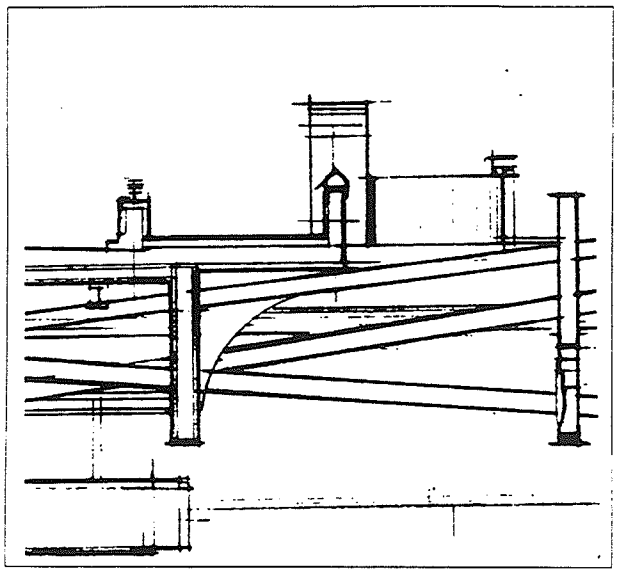
TRAVERSE SYSTEMS

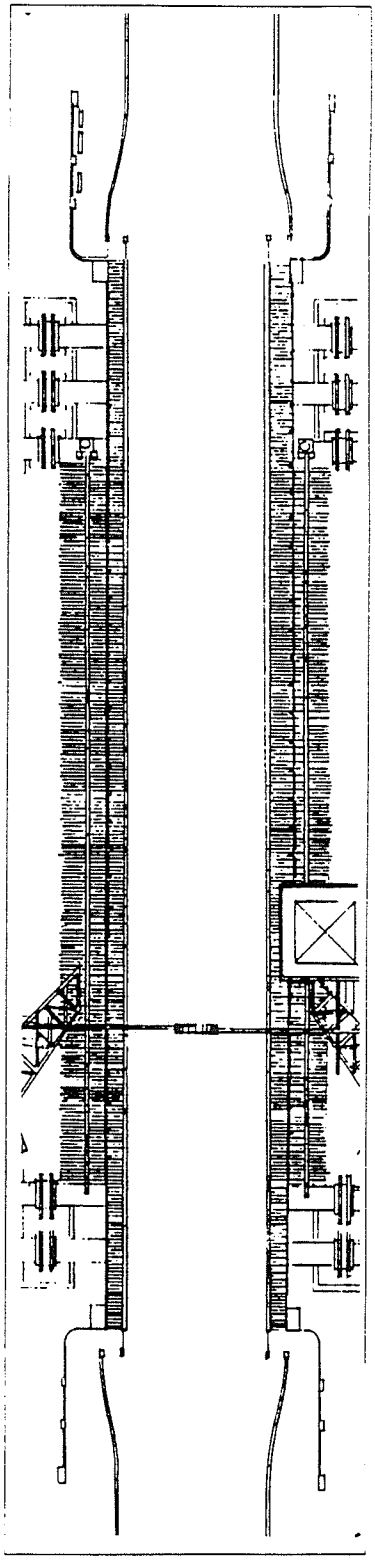
B. Cyclist Corridor

The cyclist corridor is a response to the need for seperation of traverse modes. The cyclist corridor reclaims the existing pedestrian walk as its instrument for crossing. The corridor is grade seperated from the Floating walk with the existing railing acting as its outer limit. The inner limit provides seperation from vehicular traffic through the introduction of a concrete wall. The concrete wall is articulated with reveals and limestone inset to enhance the form and respond to the context of the existing limestone entry and balustrade.





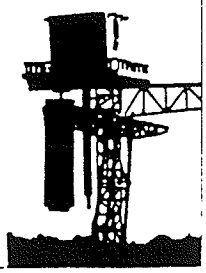
the corridor



the corridor

THE PROPOSAL

CYCLIST CORRIDOR



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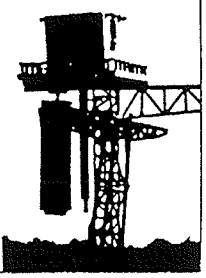
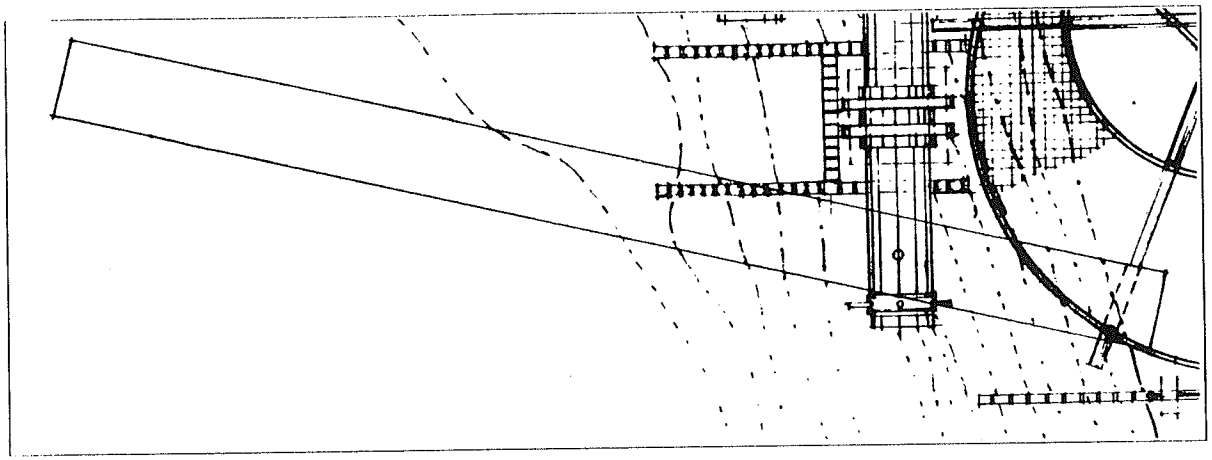
BANK NEXUS

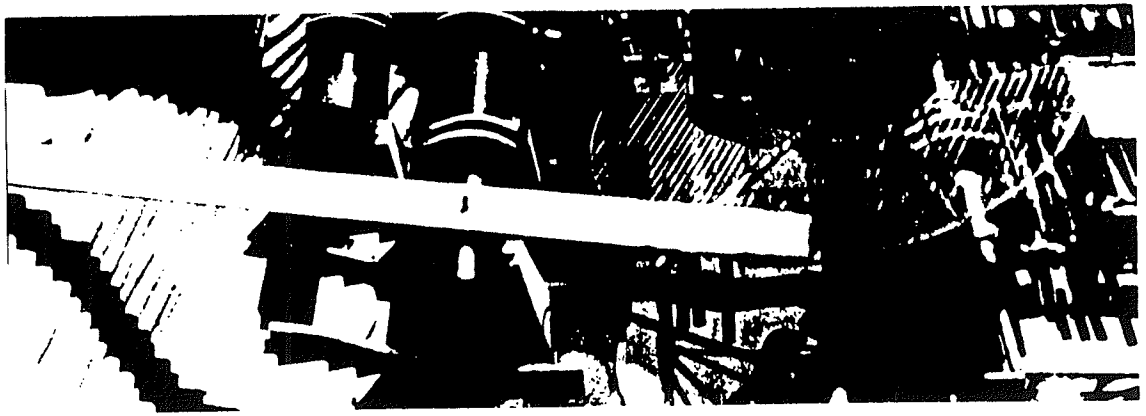
A. The Plank

The south bank connection is designated as "The Plank". The plank spans the distance between the existing bank of the Assiniboine and the transitional spiral descent (see Passage Systems). The plank addresses the context in which it is placed. It does this through the expression of its form as a response to the naturalized bank and the suburban communities that precede the bridge from the south. The expression of entrance is one of suburban to urban as one proceeds along the plank, replicating the scenario of the surrounding contextual approach to the bridge. The plank is oriented on a 25 degree angle from the existing structure, and has a slight incline from the bank to the descent. This orientation allows the participant an outward view of the surrounding context rather than a linear view across to the other side. It is hoped that this orientation would heighten the participant's awareness to the context. The orientation enlists a certain amount of interest and apprehension. This is because the course of the pedestrian is not a linear course, creating an illusion that you may plummet off the edge if you continue along the plank.

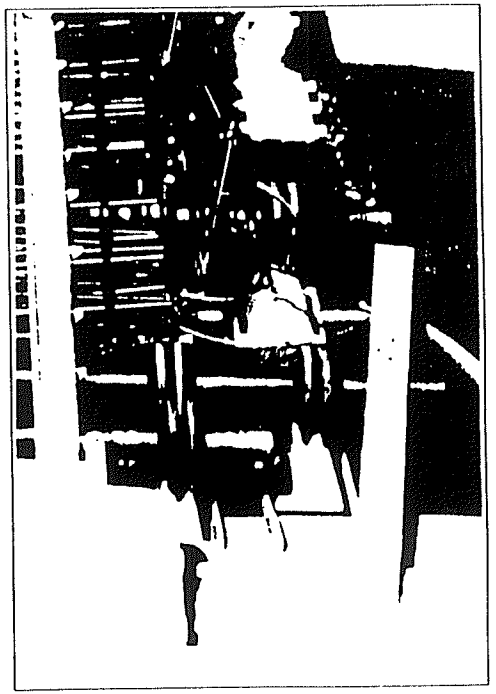




the plank as drawn



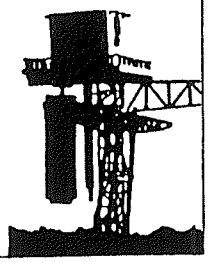
the plank as constructed



the plummet

THE PROPOSAL

THE PLANK



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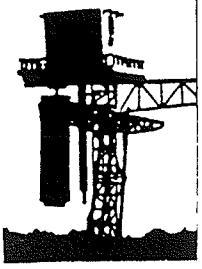
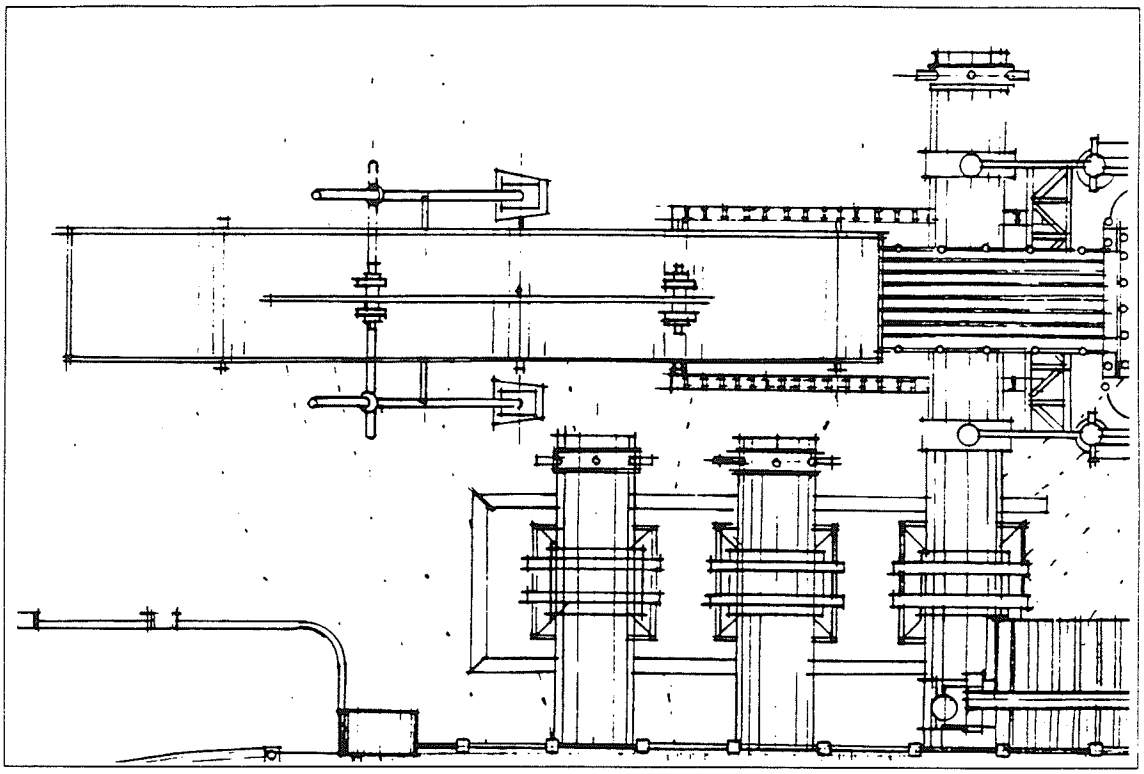
BANK NEXUS

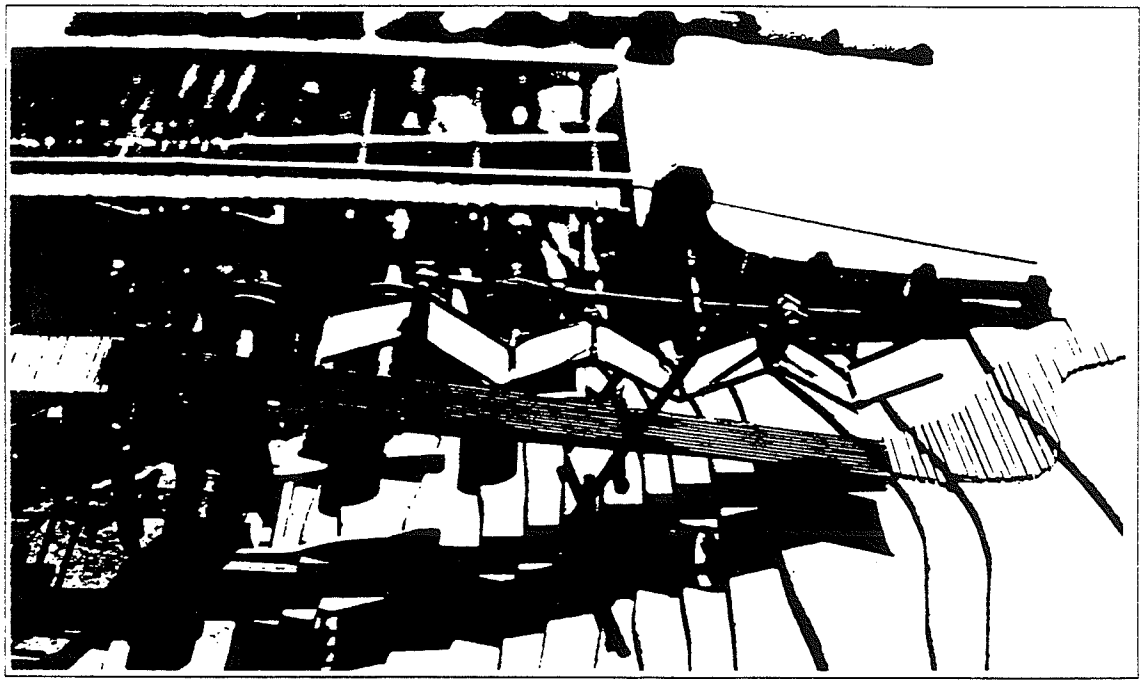
B. The Hopper

The Hopper is the designation of the north bank access. The hopper addresses the urban development of the downtown core manifested through its architectural expression. It is a covered procession that acts as a transitional gateway for pedestrians from the core to the outlying suburban areas. It is a response to the developed rather than the natural.





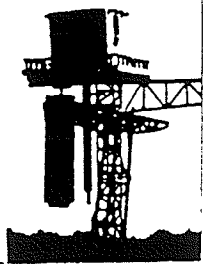
the hopper from the top



the hopper from the side

THE PROPOSAL

THE HOPPER



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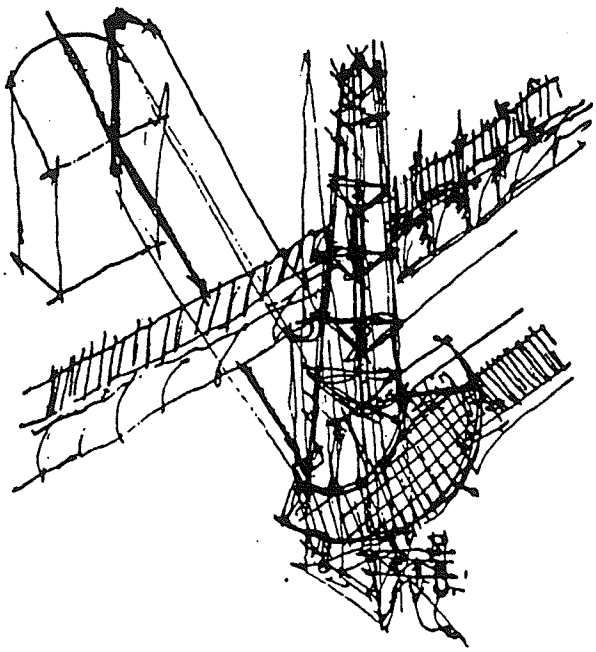
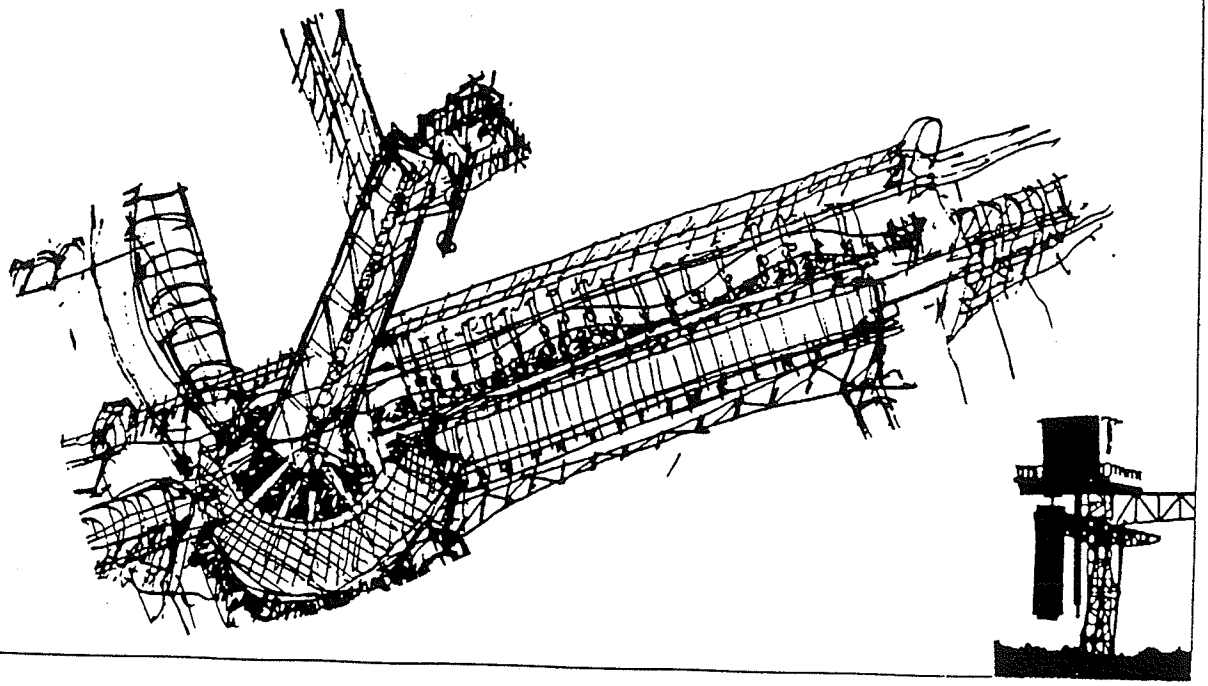
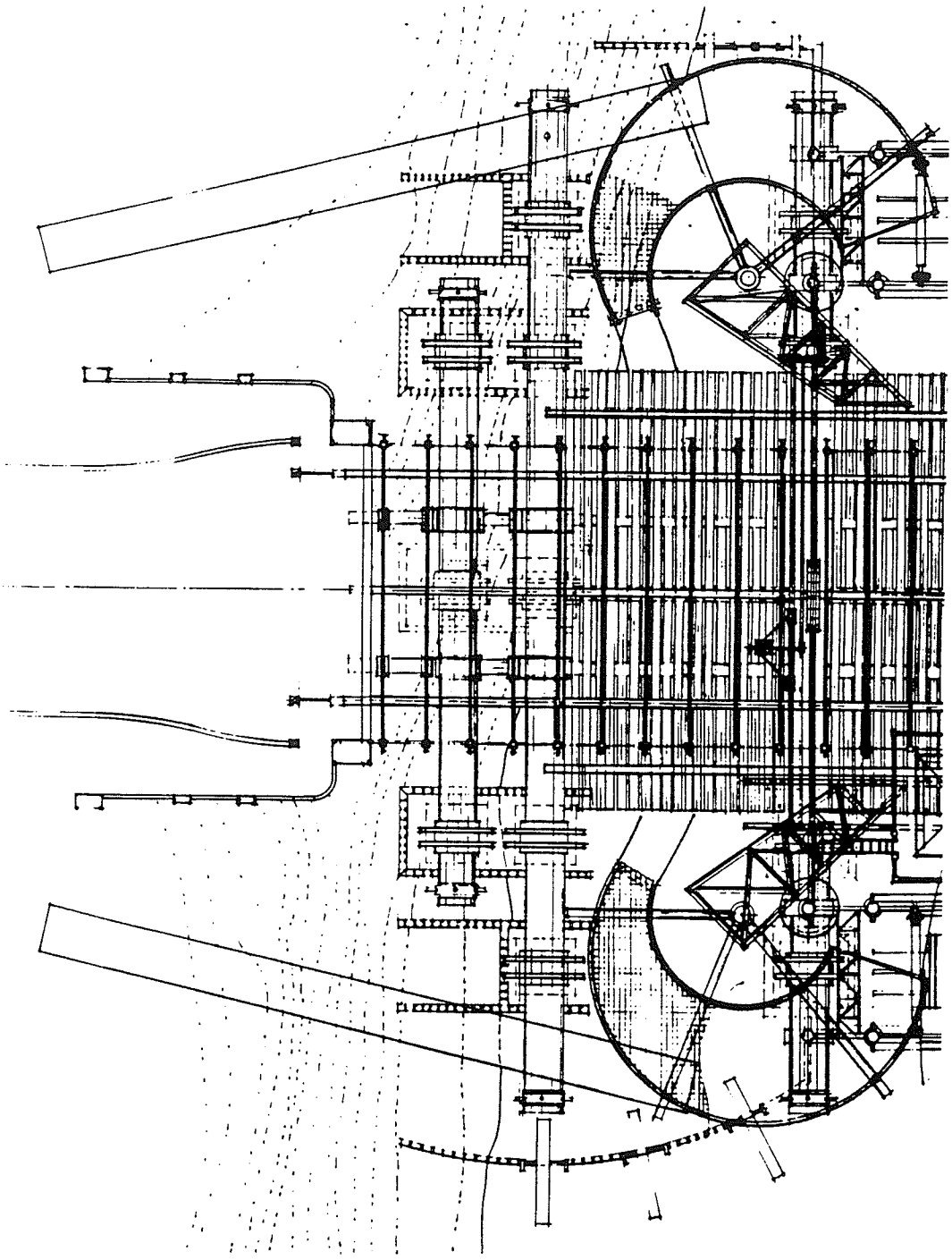


PASSAGE SYSTEMS

A.The Spiral Descent

The spiral descent is situated at the south end of the infrastructure. It is the pivotal union between the floating walk and the plank and is supported entirely by members attached to the lower end of the tower (see also Tower Systems). The spiral descent has a 1:12 sloped descent to the Hanging Link. The spiral is articulated to create a feeling of descent, a transition from the act of crossing to the act of passage. Its form is constructed of steel mesh which allows the penetration of views to the water below. The descent is intended to create an ominous feeling, and inspire retreat. Much like the floating walk the spiral solicits apprehension.

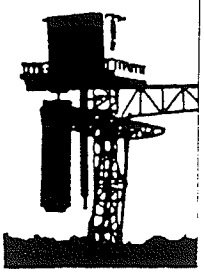




the spiral descent in context

THE PROPOSAL

THE SPIRAL DESCENT



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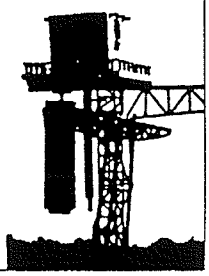
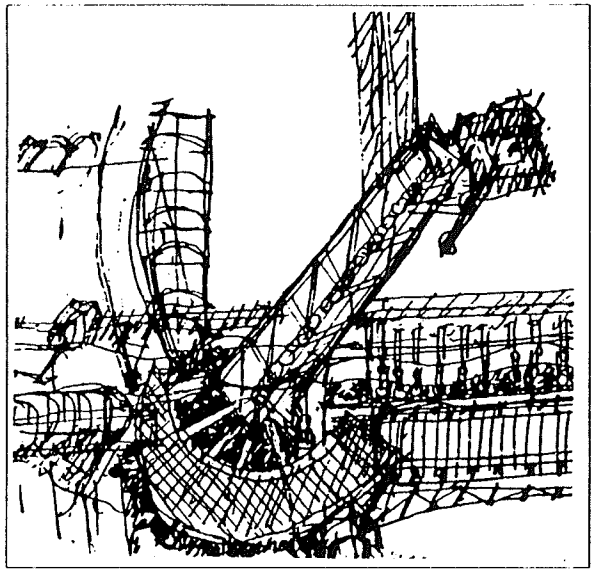
PASSAGE SYSTEMS

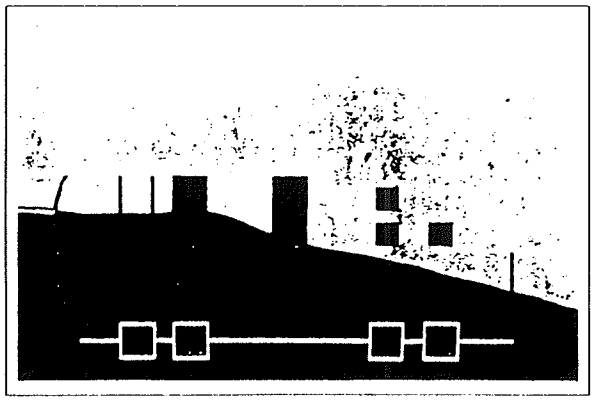
B. Jardin de L'eau and the Hanging Walk

The Hanging walk is situated within the Jardin de L'eau. The Jardin de L'eau is designated in french as it is situated at the south end of the bridge adjacent to the french community of St.Boniface. The Jardin is created in the confines of the space occupied by the south pier of the existing structure and the adjacent bank. The water in the area is retained through a series of constructed weirs that allow the water level and wave action to be controlled. Marsh vegetation is encouraged in the area and there is a water-wall incorporated on the south face of the existing pier. The waterwall will create the sound of running water while promoting the growth of moss and algae on the pier itself. The Jardin image is that of a moist grotto as one passes in unison with the flow and direction of the water. The hanging walk is the procession that allows for interaction with the Jardin. It swings down through the vegetation to heighten the experience of the passage. The hanging walk is intended to be a slow procession and to purvey an overwhelming sense of enclosure and intimacy within the grotto. The Hanging Walk is the only created passage and does not allow connection to the lower bank, it is simply a means to move through the Jardin and arrive at the other side. The Jardin is intended to be an autonomous entity that borrows from it's spatial confines to portray its image. The Jardin is an area of sublime tension as one can only physically achieve what it allows; a passage between.

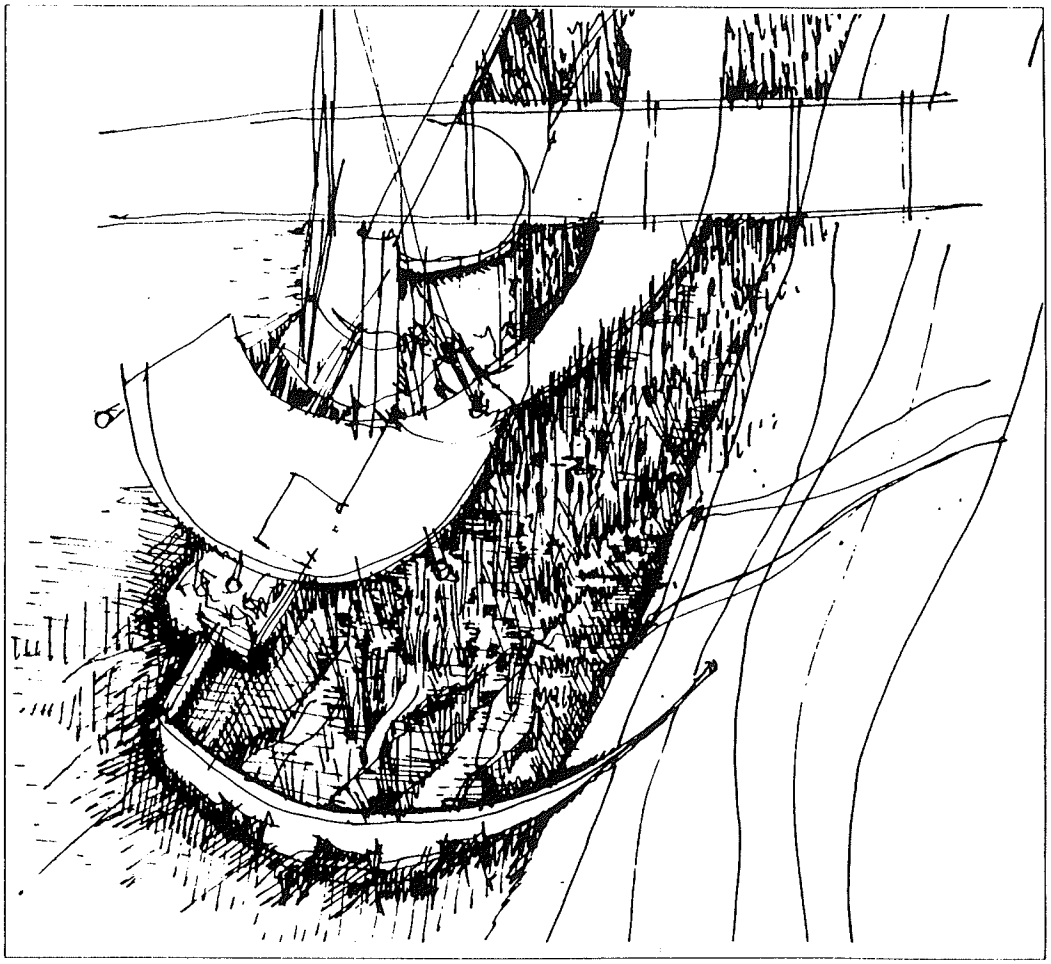




the passage



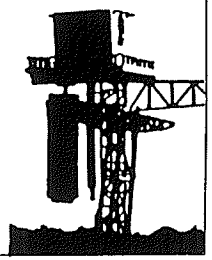
the ground plane



the idea

THE PROPOSAL

JARDIN DE L'EAU



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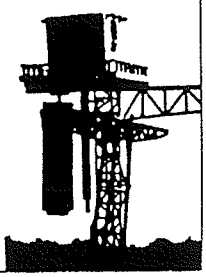
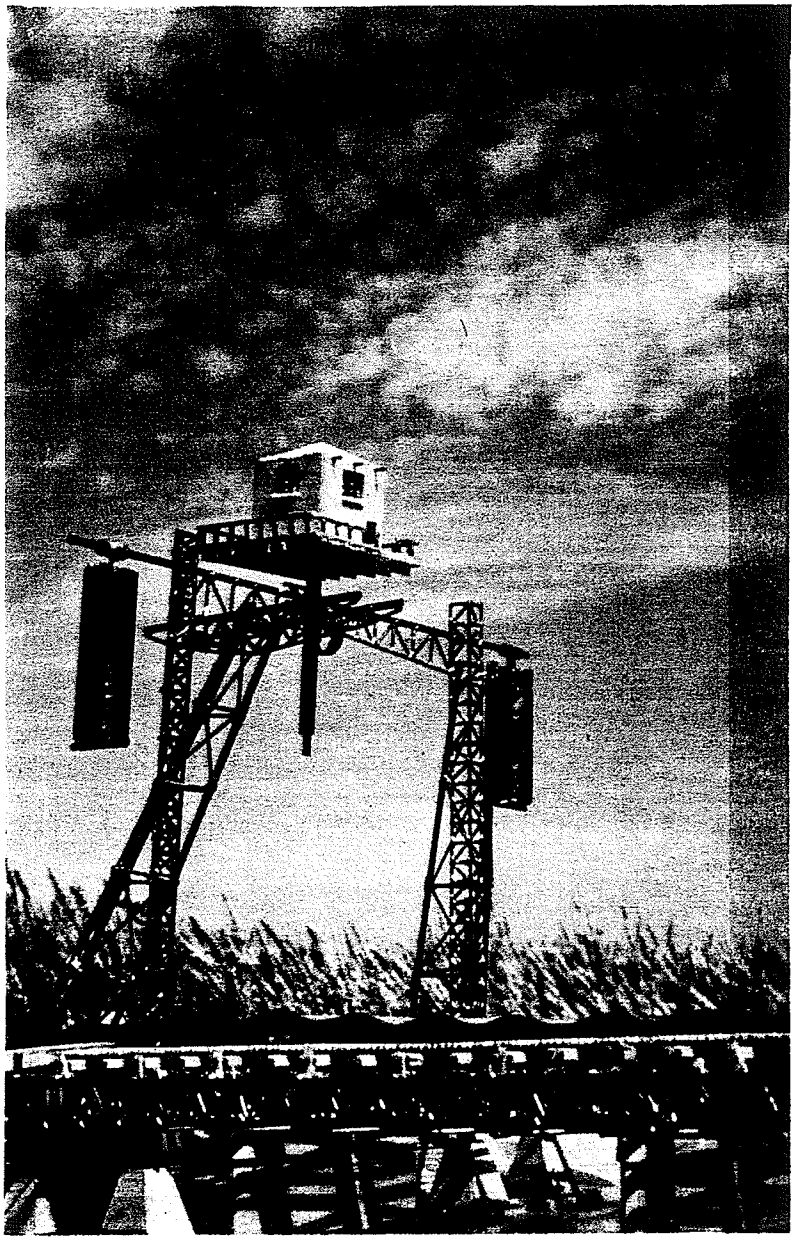
TOWER SYSTEMS

A.The Towers

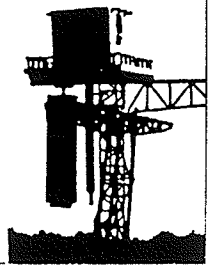
The towers are the prominent vertical components of the infrastructure. Their language recalls the contextual forms of communication and hydro-electric towers. The towers are a response to the need to establish a formal gateway; which they create at the threshold of the existing structure. The framing property of the towers and the threshold of the existing bridge draw the core cluster forward acting as a vehicle to isolate and focus the image. The towers lean towards the north, (as you approach from the south) to welcome the participant and create a sense of motion and ceremonial entry. The towers present a much different face when approaching from the north, they appear upright and austere. The towers are articulated in this matter to provide the participant with a strong impression of exit.

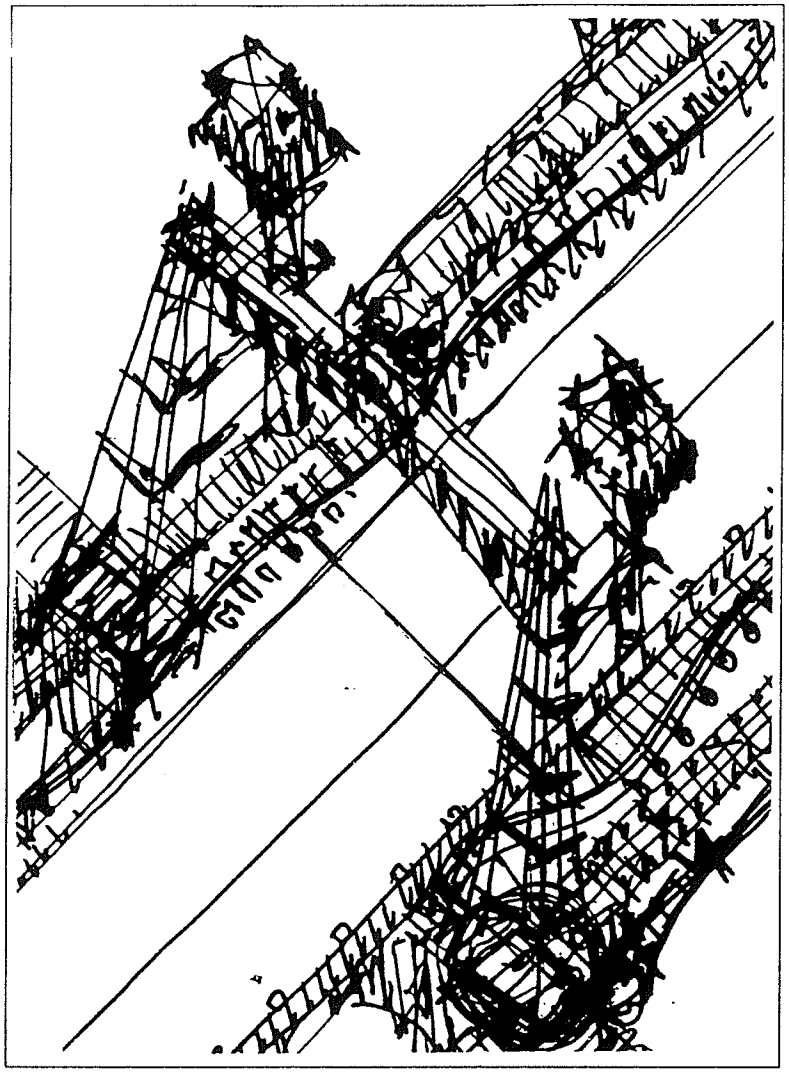




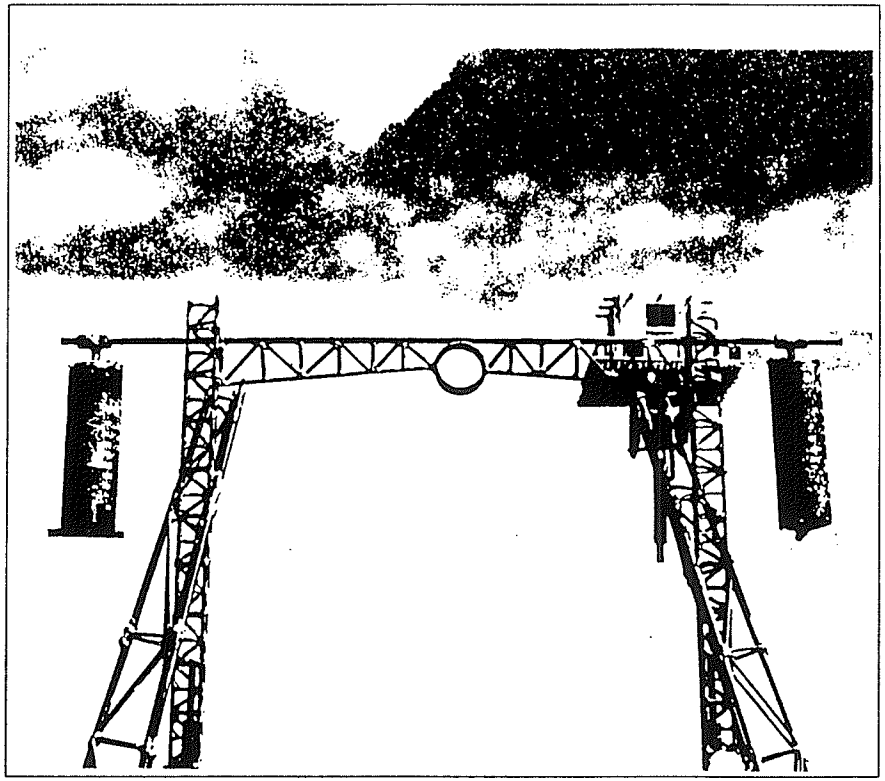
THE PROPOSAL

THE TOWERS





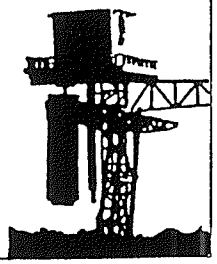
tower study

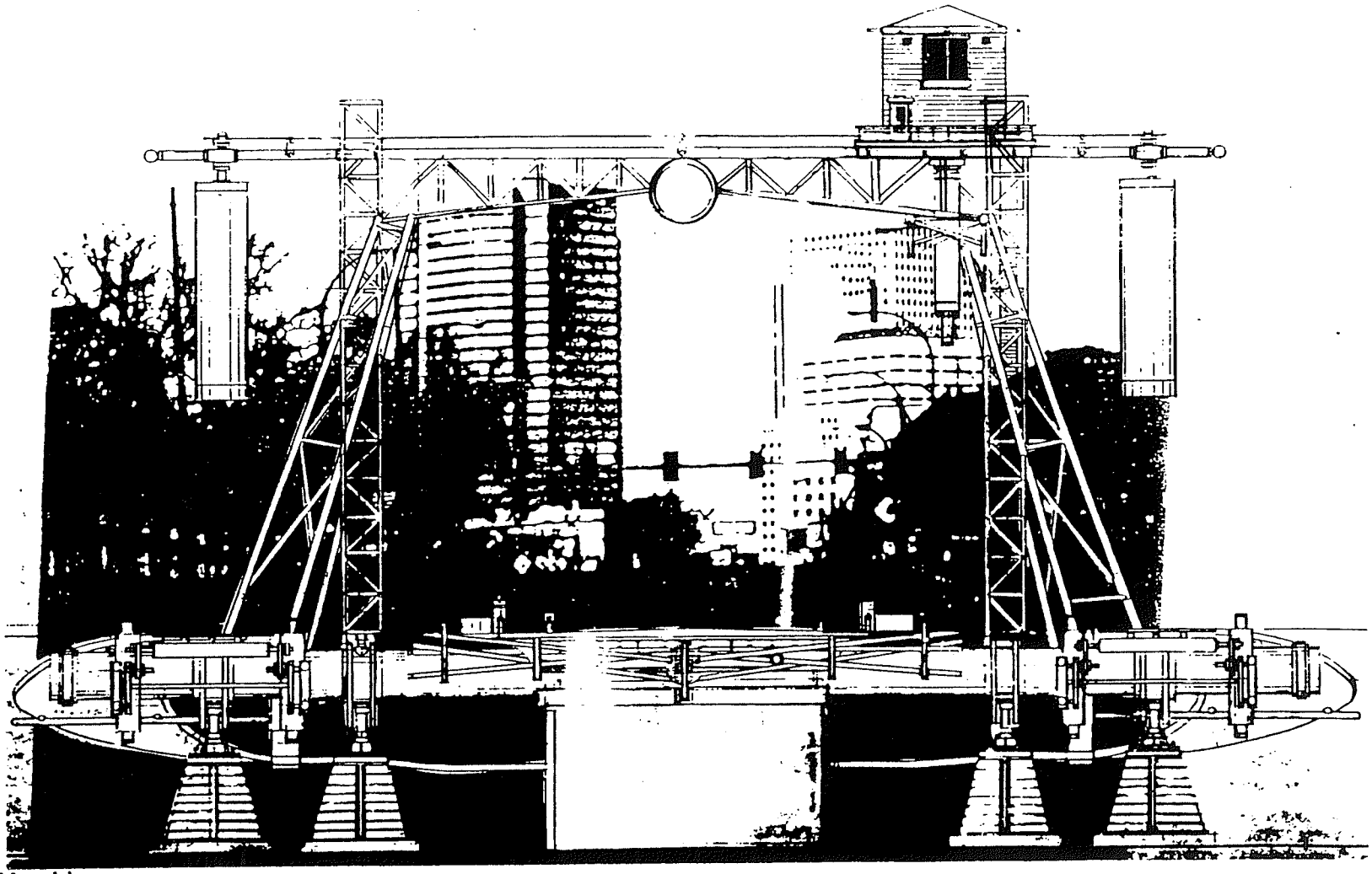


towers as realized

THE PROPOSAL

THE TOWERS

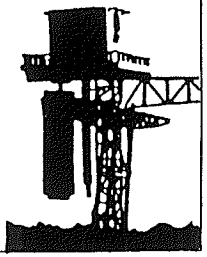




threshold vision

THE PROPOSAL

THE TOWERS



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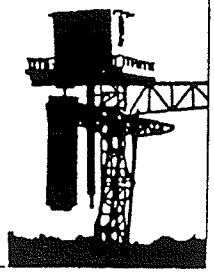
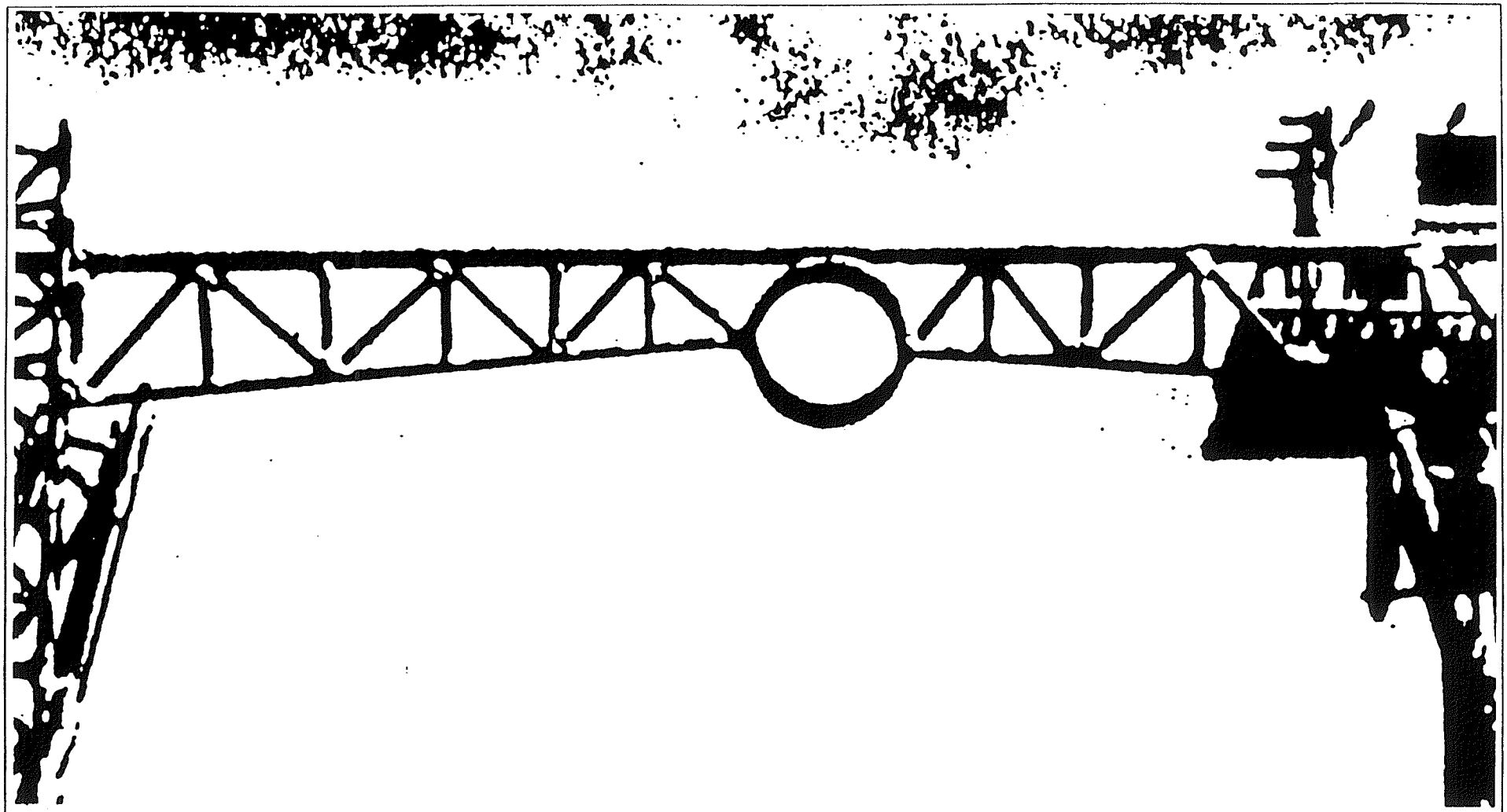
TOWER SYSTEMS

B. The Ring

The ring is situated in the center of the truss that connects the two towers. Its function is to capture the sky in the void between the buildings of the core cluster and represent it as part of the image of the bridge. It expresses the image of the captured sky, an image borrowed from the context that becomes part of the present expression to solicit contemplation.





sky capture

THE PROPOSAL

THE RING

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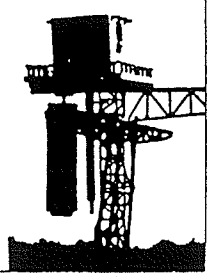
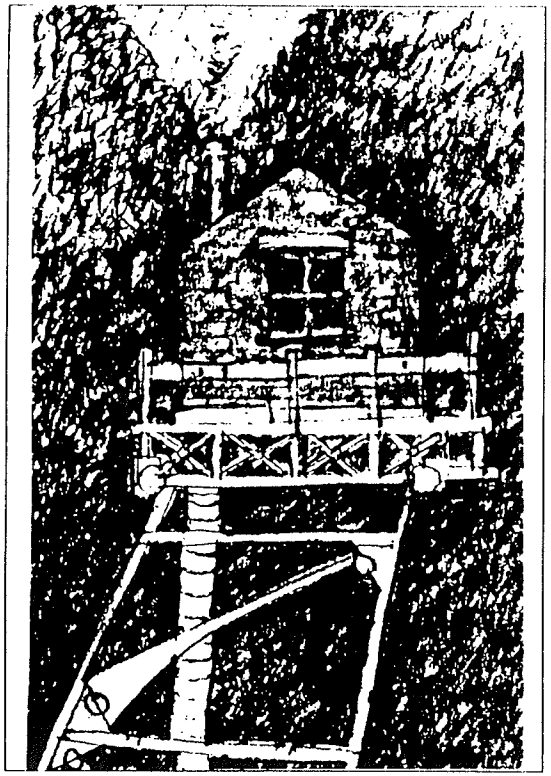
TOWER SYSTEMS

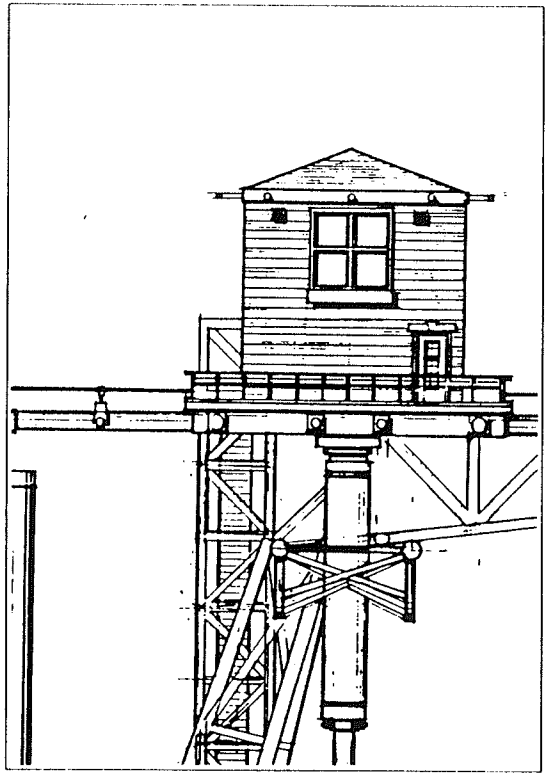
C. The Keepers Shack

The Keepers Shack is a constructed house elevated above the infrastructure and supported by the towers. The shack is two stories with a permanent resident (the Keeper). The resident is an attempt to establish a human connection with the structure. The Keeper would be in charge of public relations (i.e. waving) as well as the control of boat traffic, vehicular traffic reports, lights and laser operation as well as other miscellaneous duties. The incorporation of the permanent resident attempts to provide identity and meaningful response to the participants that use the bridge at a personal level while alluding to the historically "manned" bridge.

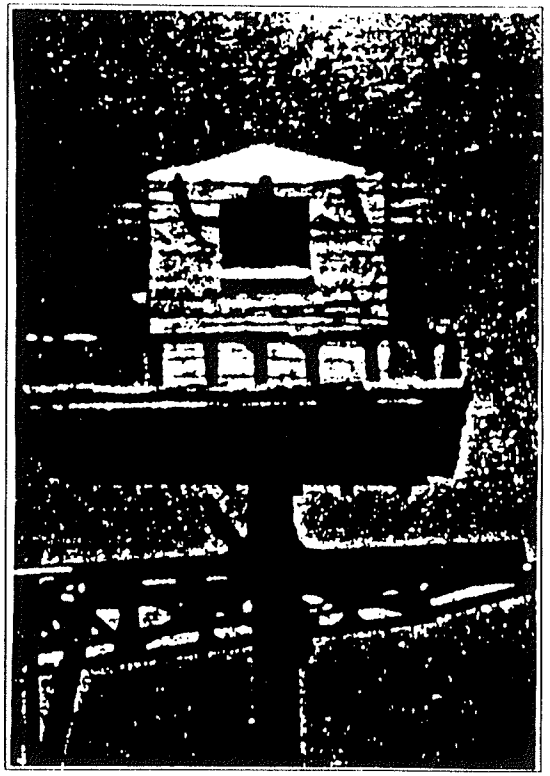




the sketch



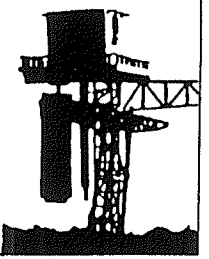
the refinement



the built

THE PROPOSAL

THE KEEPERS SHACK



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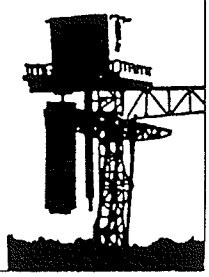
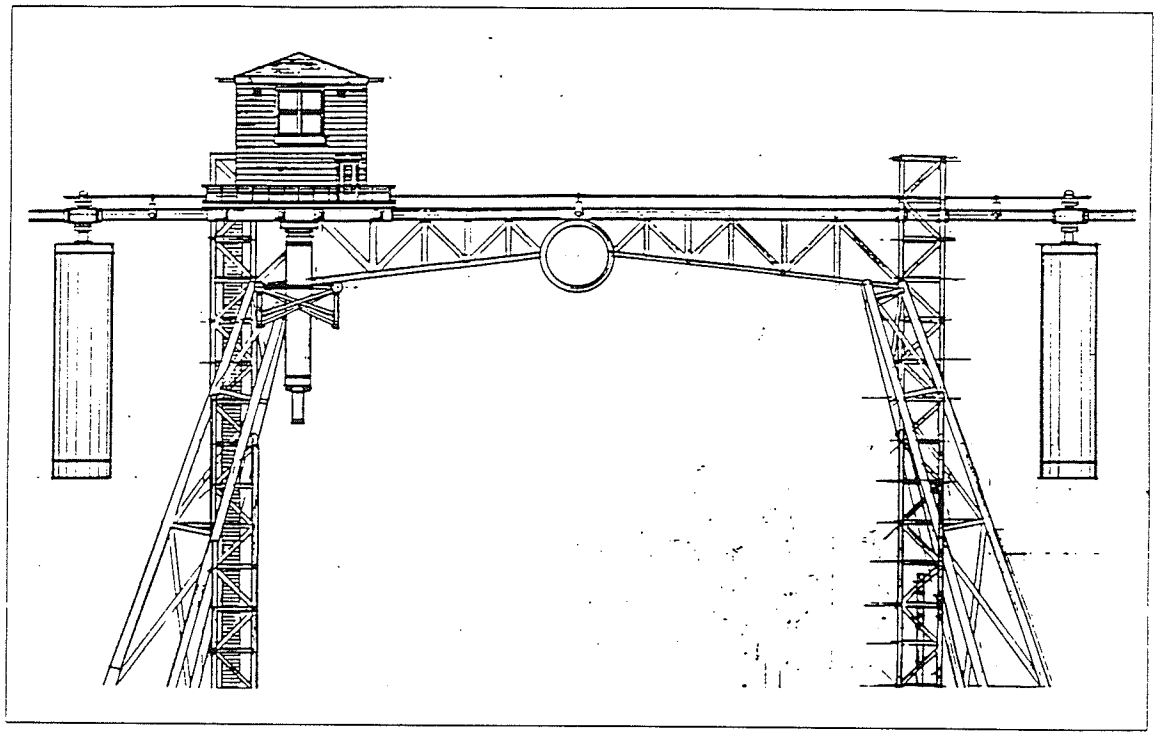
TOWER SYSTEMS

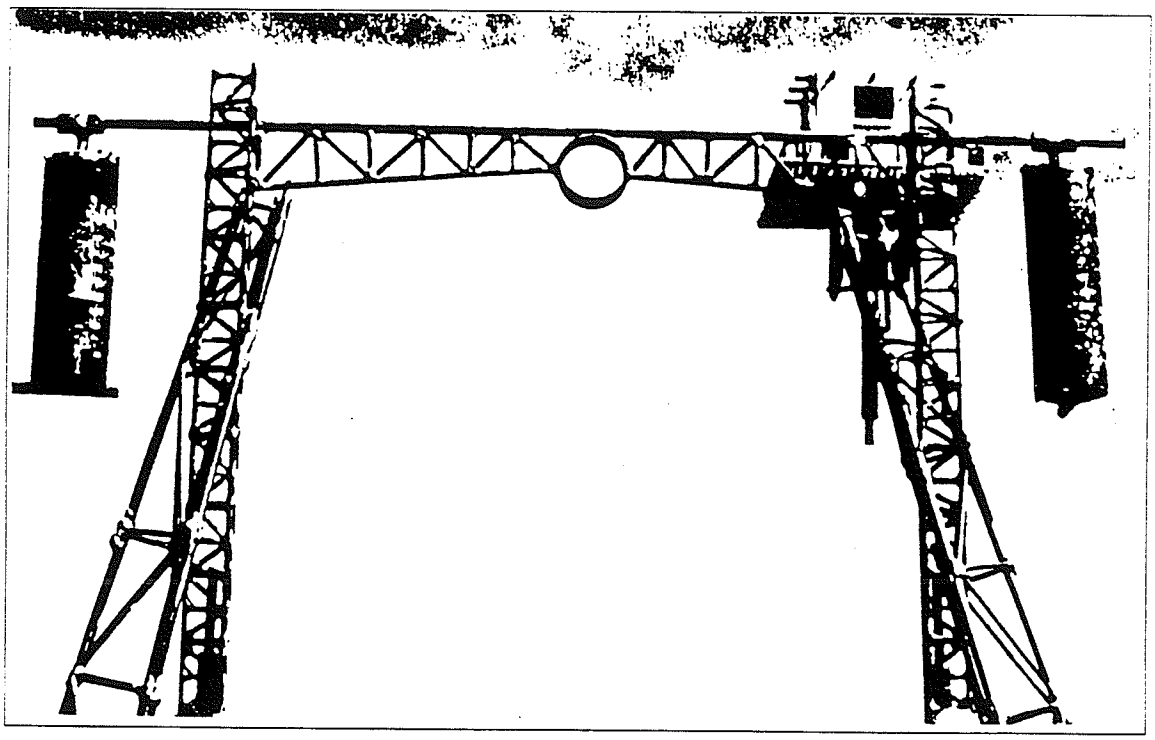
D. Media Tubes

The media tubes replace the existing billboard structures. They become a piece of the overall infrastructure system, suspended by the towers. The media tubes are cylindrical computer screens that project dynamic rather than static images. The subject of the images is a dynamic range from advertisements to videos to current public notices. The opportunity here is to use the media system not just for advertisement but for education as well as enjoyment.





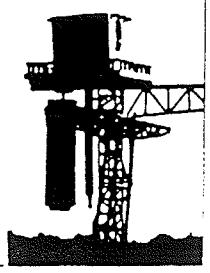
the drawn



the built

THE PROPOSAL

MEDIA TUBES



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LIGHTING SYSTEMS

A. Sky Bridges

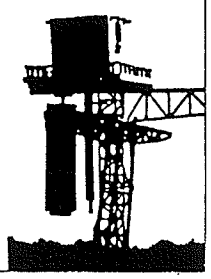
The sky bridge is a laser system whose primary purpose is to link (by laser light) the bridge with critical points in the surrounding context. The core cluster, The Forks, the Legislative Building and the St.Boniface Cathedral would all be targets of the laser. The system could also be utilized during celebrations to encourage interaction with the bridge and establish it as an identifiable object within the city at large.

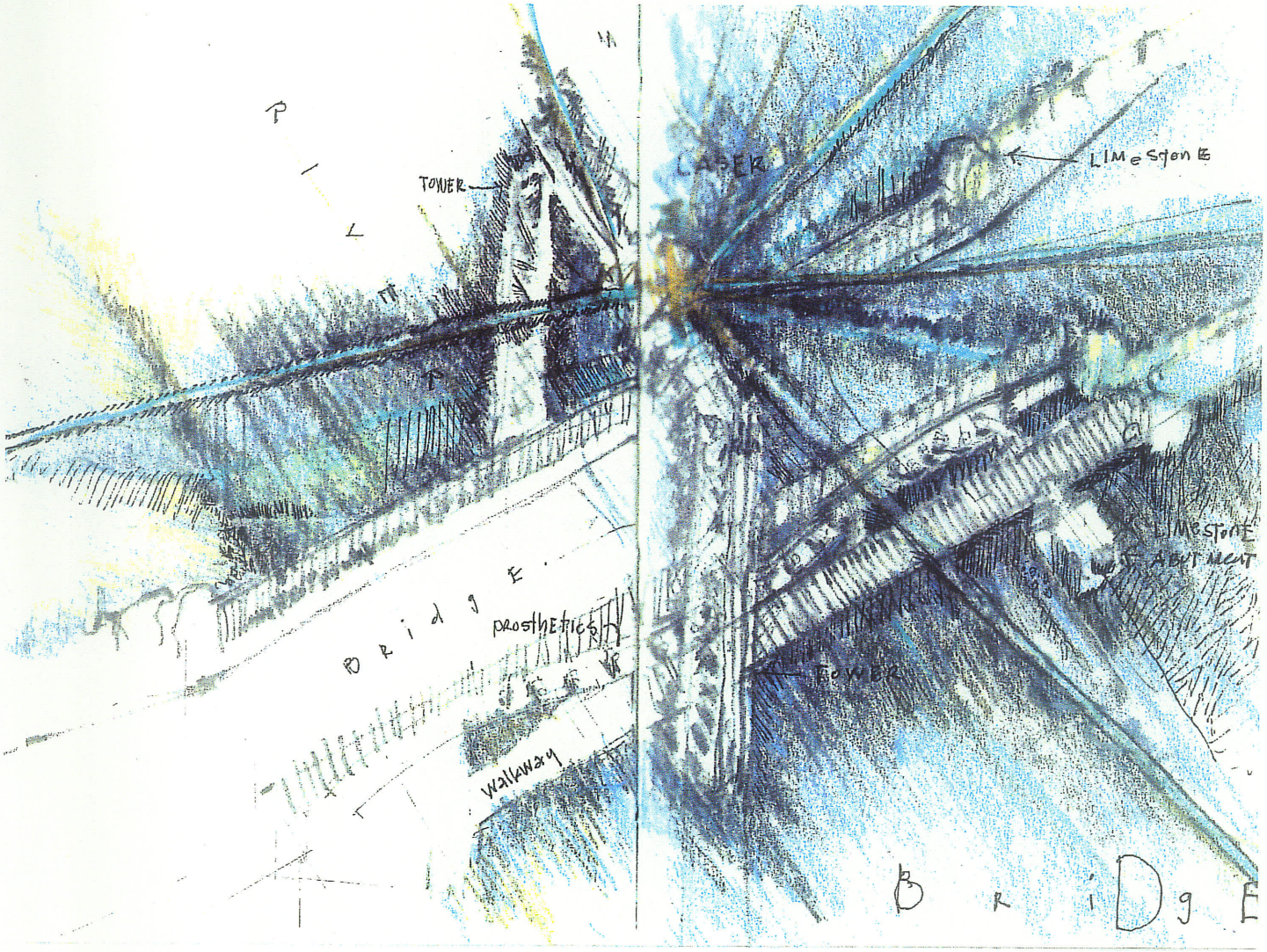
B. Inner Glow

The inner glow is a lighting strategy that would incorporate fiber optics. The fiber optic strands would be fastened to the rear of the grip and project light towards the existing structure and the floating walk while illuminating the Pin Ribs to create the image of the "inner glow."

C. Aircraft Lumaire

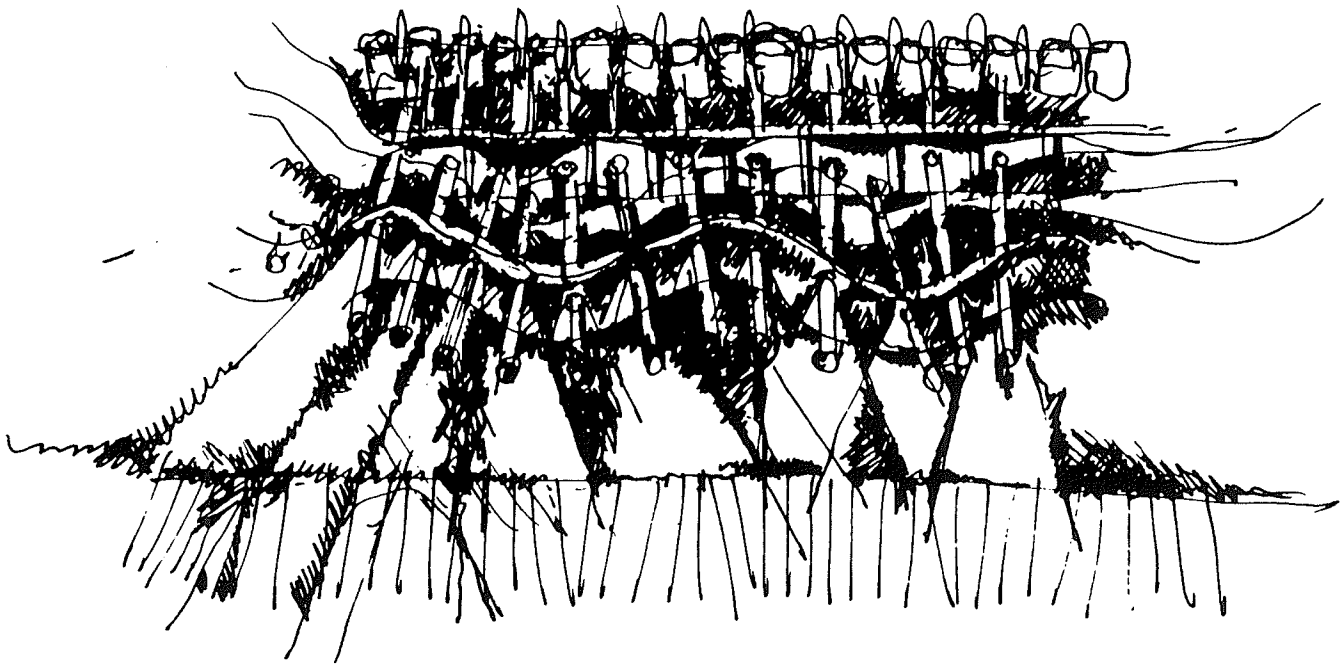
The Aircraft lumaires would replace the existing gooseneck lights. The lights would be surface mounted on the cyclist/vehicle seperation wall. They would provide the main lighting for the bridge as well as the cyclist corridor.





THE PROPOSAL

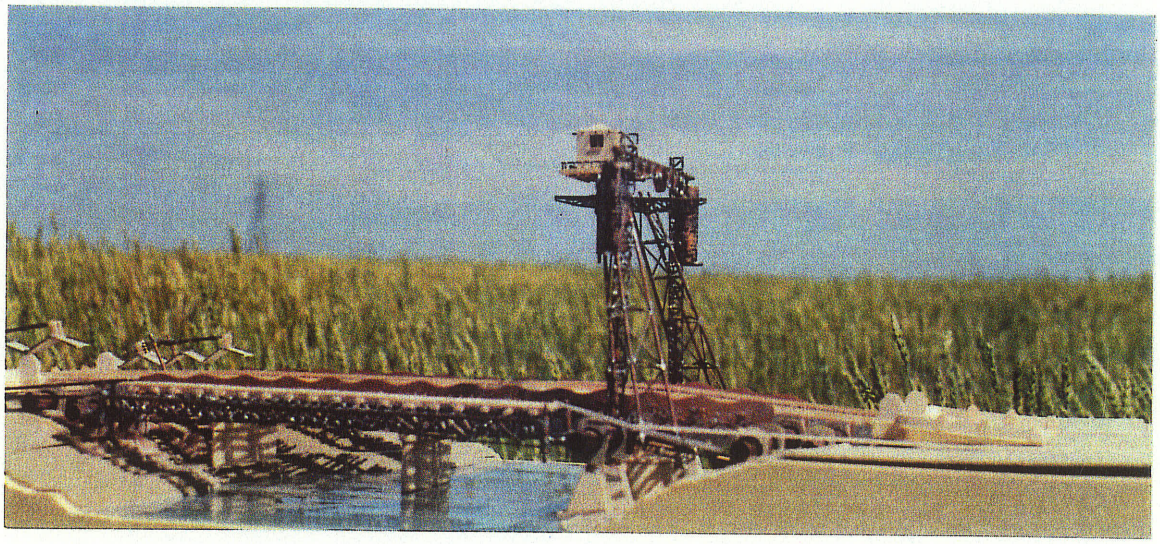
SKY BRIDGES

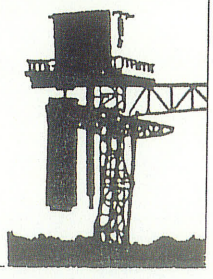


THE PROPOSAL

INNER GLOW

4.3 Conclusion
. . . THE EXPRESSION





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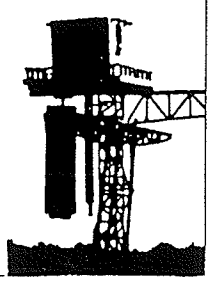

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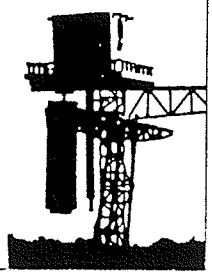
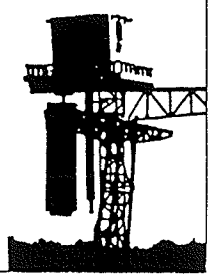
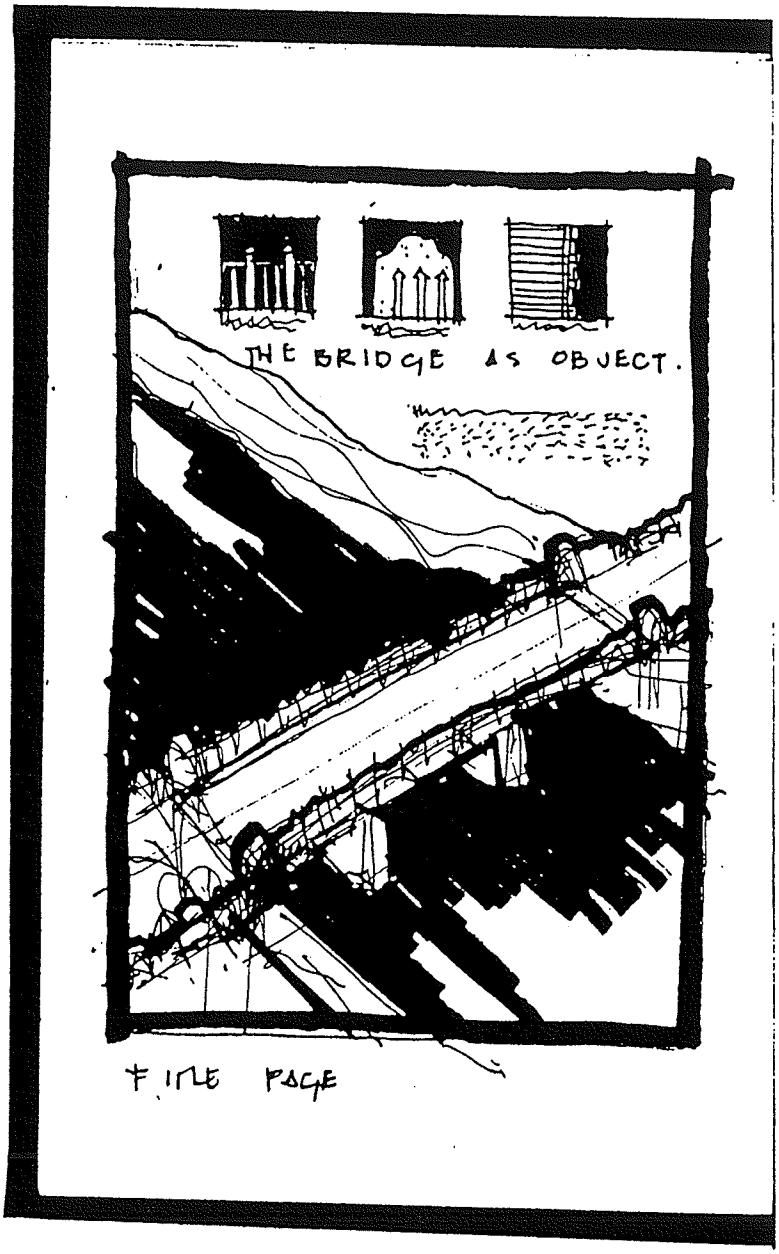
APPENDICES



APPENDIX A
SUPPLEMENTARY SKETCHES





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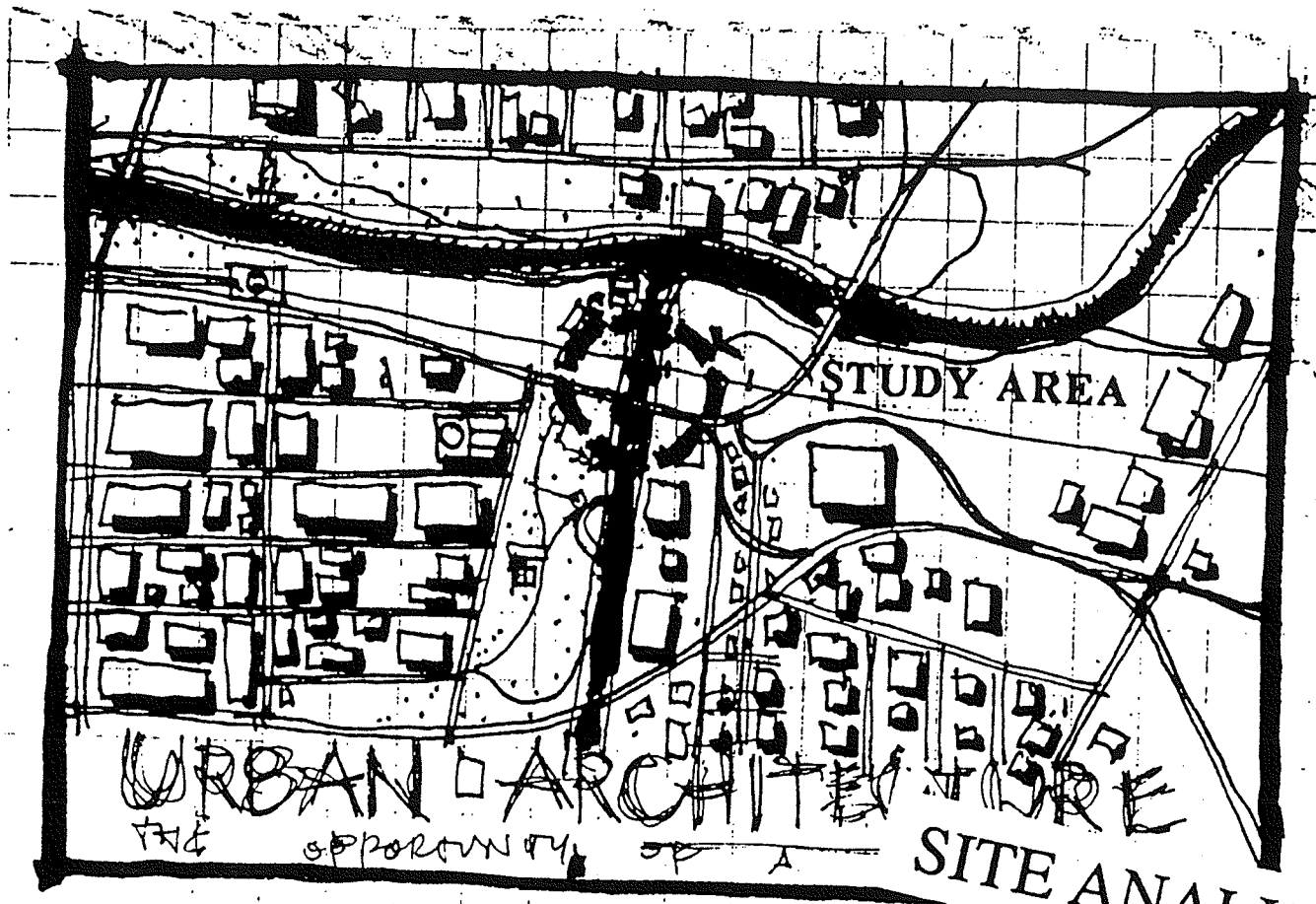
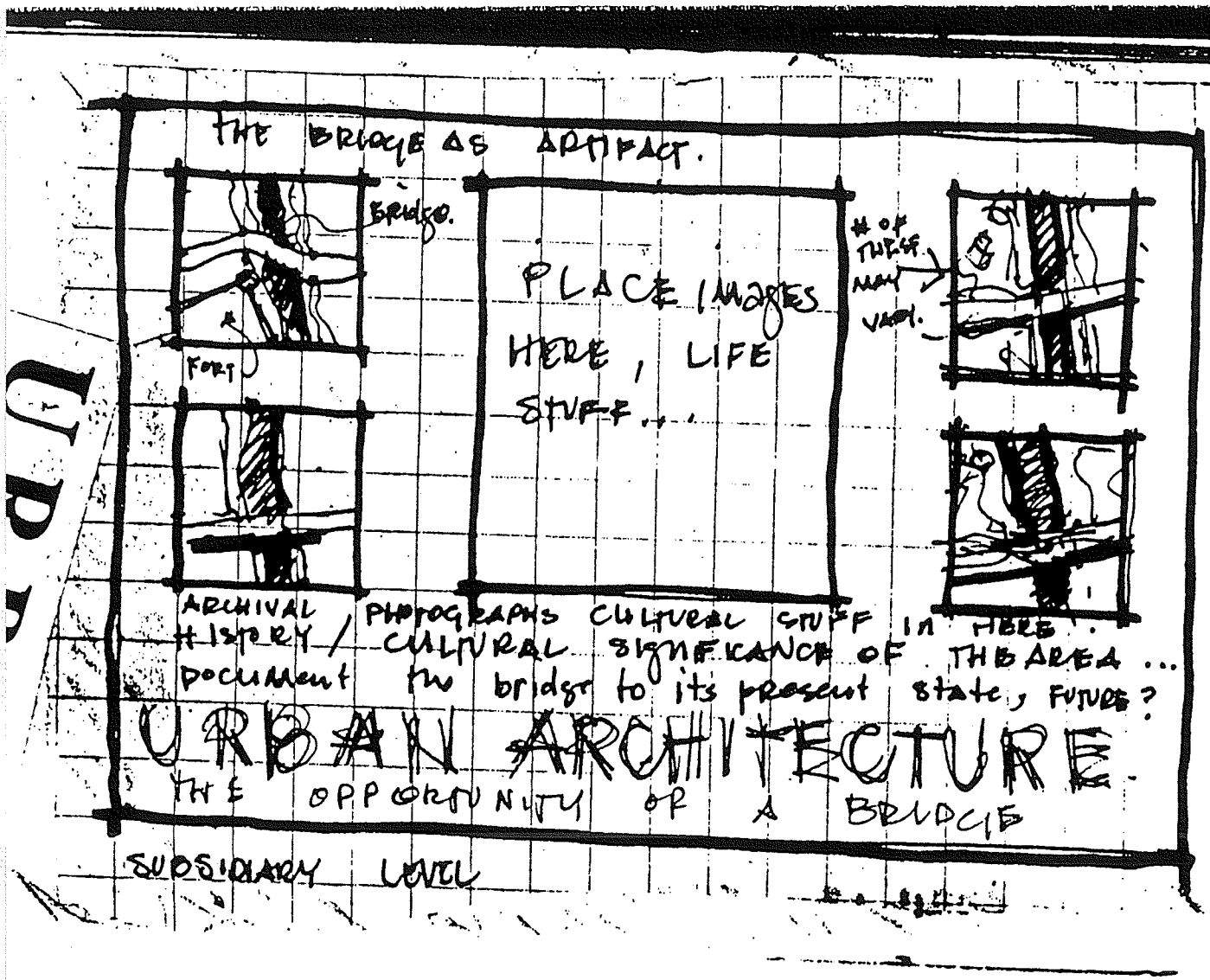
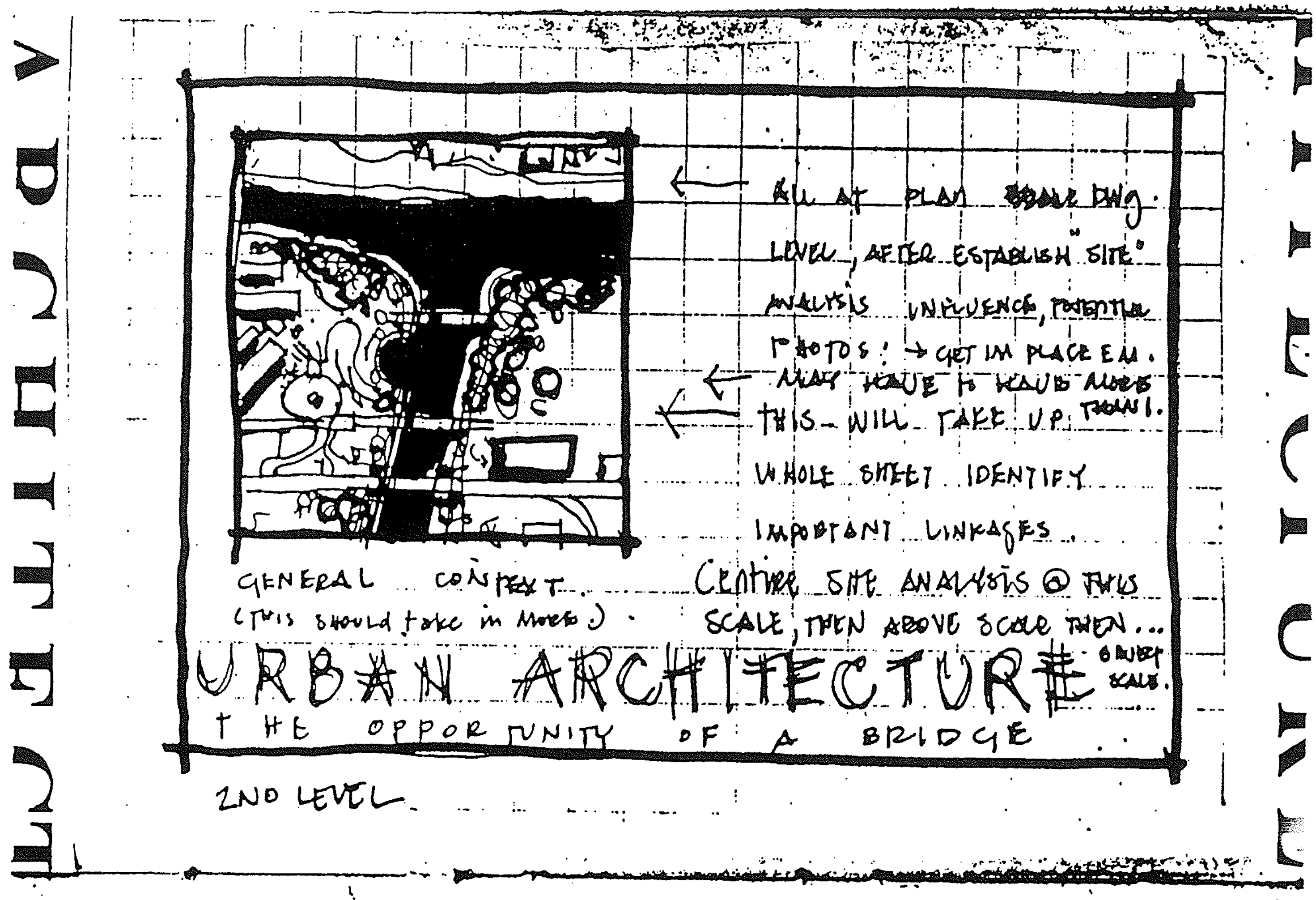


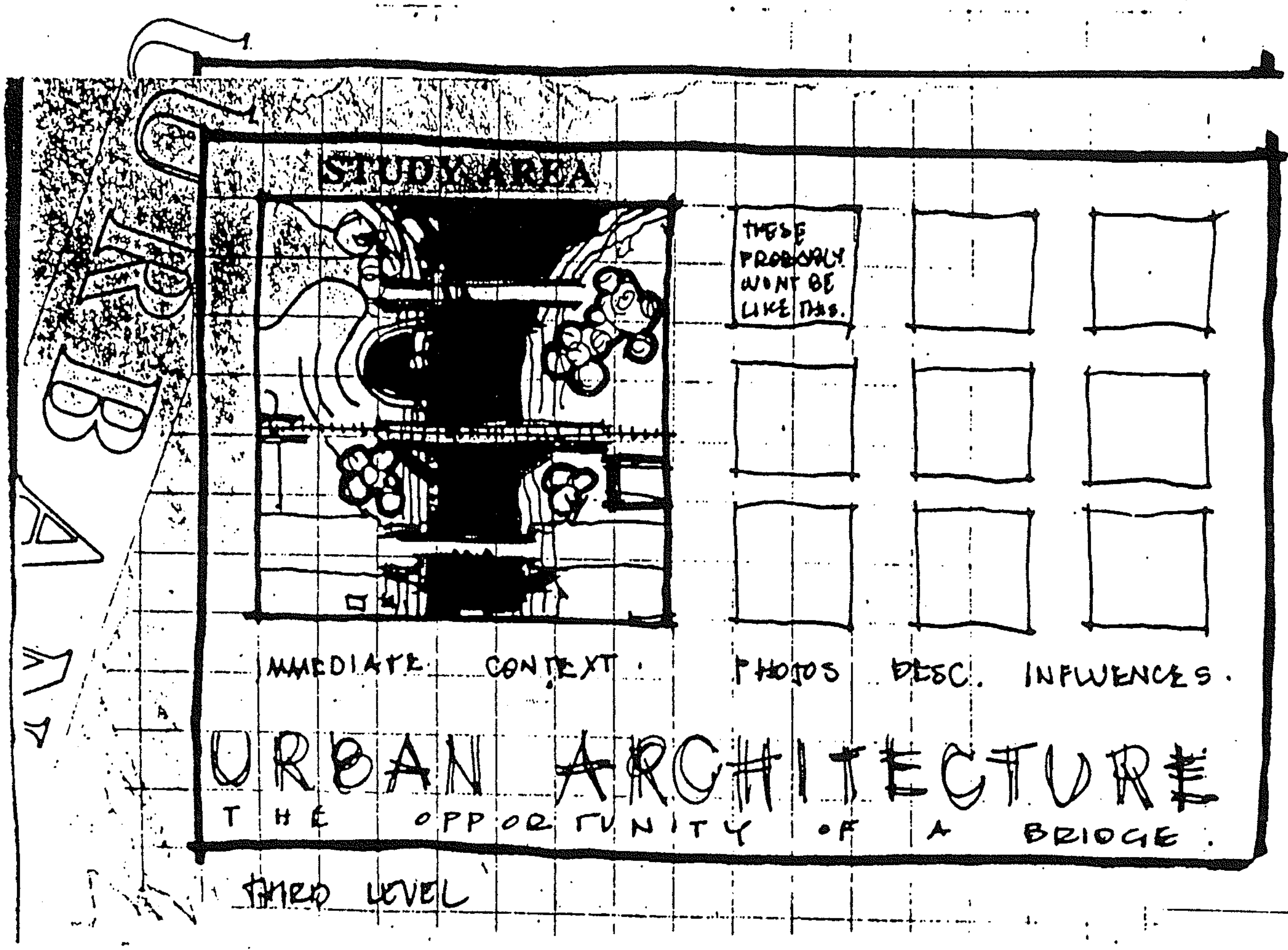
URBAN ARCHITECTURE

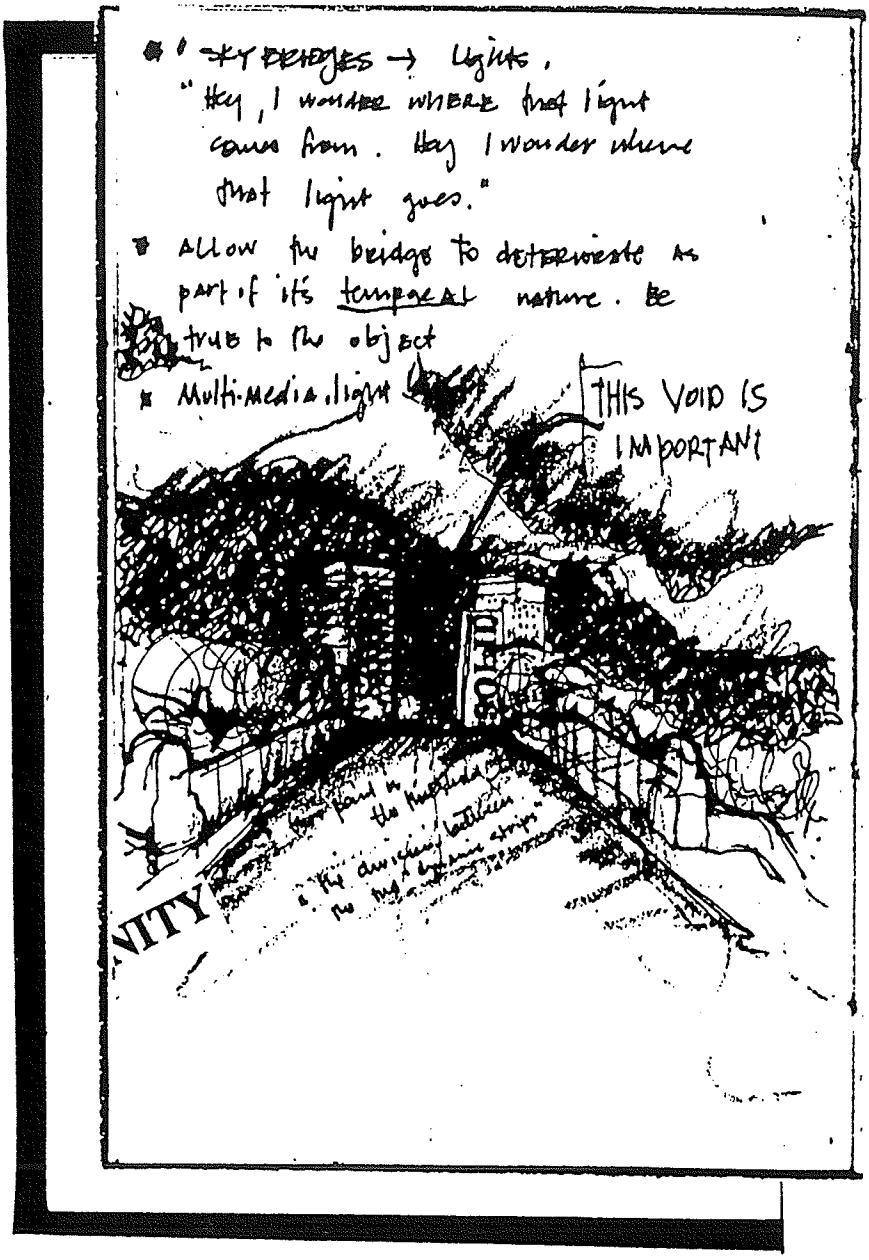
THE OPPORTUNITY OF A SITE ANALYSIS

GENERAL CONTEXT . 1ST LEVEL .

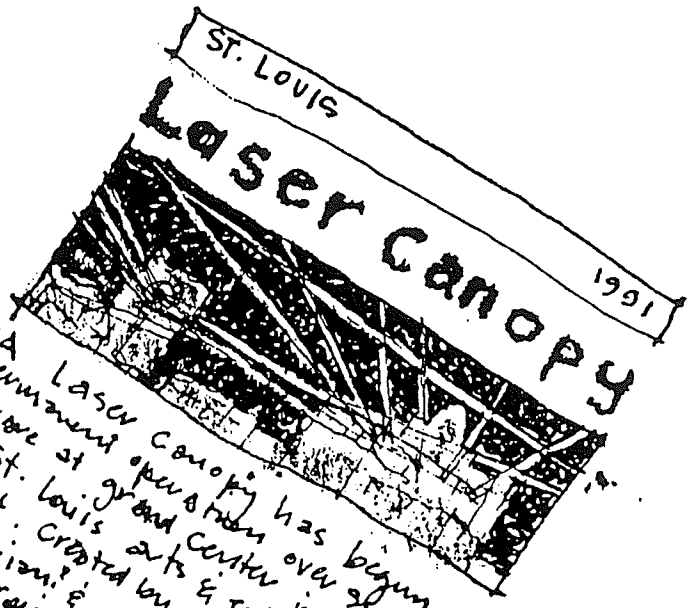

THE BRIDGE AS ARTIFACT.
BRIDGE.
FORT
PLACE IMAGES HERE, LIFE STUFF...
OF THESE MAY VARY.
ARCHIVAL / PHOTOGRAPHS CULTURAL STUFF IN HERE.
HISTORY / CULTURAL SIGNIFICANCE OF THE AREA ...
DOCUMENT THE BRIDGE TO ITS PRESENT STATE, FUTURE?
URBAN ARCHITECTURE
THE OPPORTUNITY OF A BRIDGE
SUBSIDIARY LEVEL


ALL AT PLAN SCALE DWG.
LEVEL, AFTER ESTABLISH "SITE"
ANALYSIS INFLUENCE, POTENTIAL
PHOTOS! → GET IN PLACE EA.
MAY HAVE TO HAVE MORE THAN 1.
THIS WILL TAKE UP
WHOLE SHEET IDENTIFY
IMPORTANT LINKAGES.
GENERAL CONTEXT
(THIS should take in More.)
Centre SITE ANALYSIS @ THIS
SCALE, THEN ABOVE SCALE THEN...
& BUILT SCALE.
URBAN ARCHITECTURE
THE OPPORTUNITY OF A BRIDGE
2ND LEVEL


STUDY AREA
THESE PROBABLY WON'T BE LIKE THIS.
IMMEDIATE CONTEXT
PHOTOS DESC. INFLUENCES.
URBAN ARCHITECTURE
THE OPPORTUNITY OF A BRIDGE
THIRD LEVEL

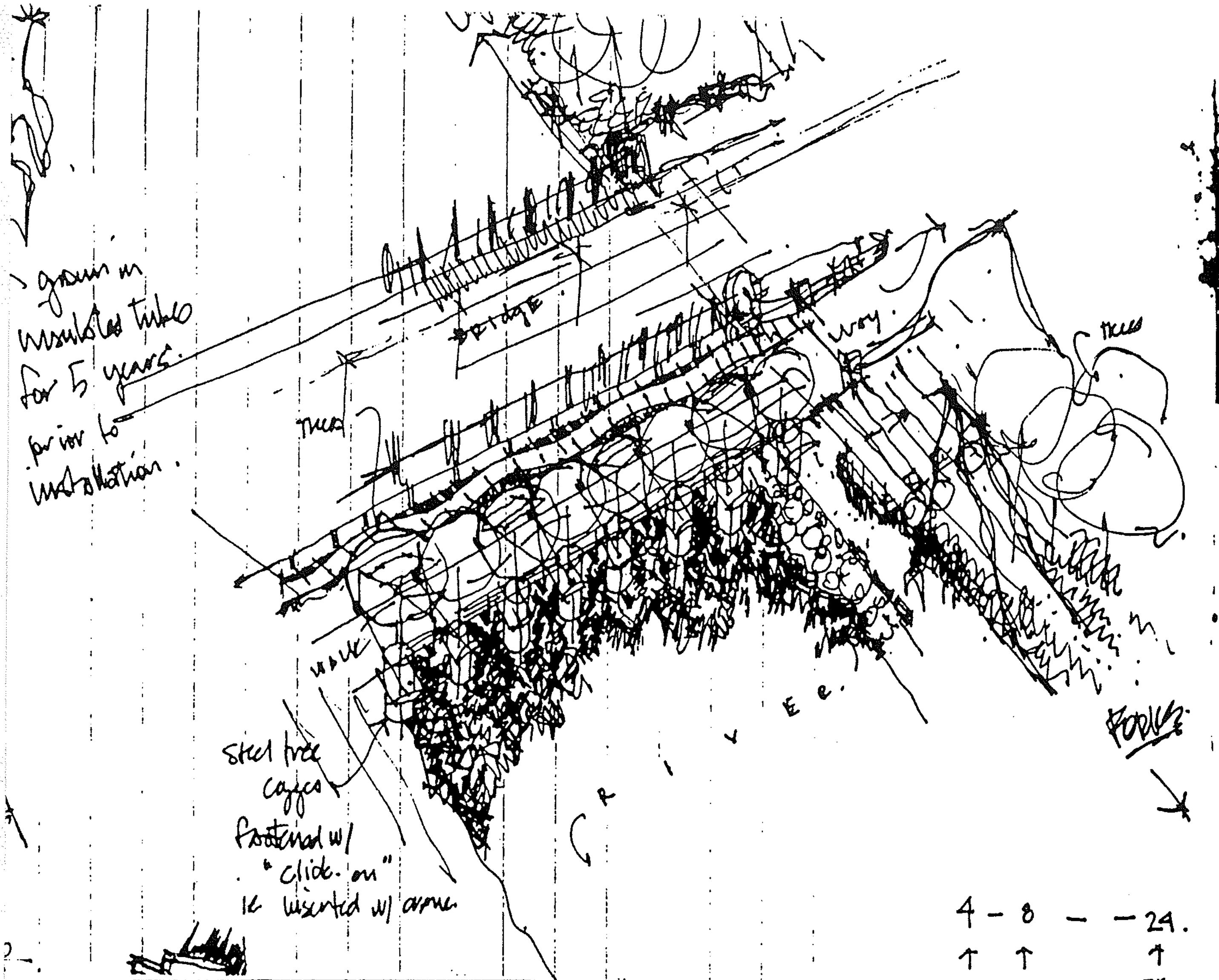

* ~~SKYBRIDGES~~ → Lights,
"Hey, I wonder where that light comes from. Hey I wonder where that light goes."
* Allow the bridge to deteriorate as part of it's temporal nature. Be true to the object
* Multi-Media. light
THIS VOID IS IMPORTANT

- CHAOS will RESULT IF THE MIND & body ARE SEPERATED FOR THE SAKE OF EXPERIENCE
- DN FIRE FOR STIMULATION → all & total EXPERIENCE for EVERY MOMENT.



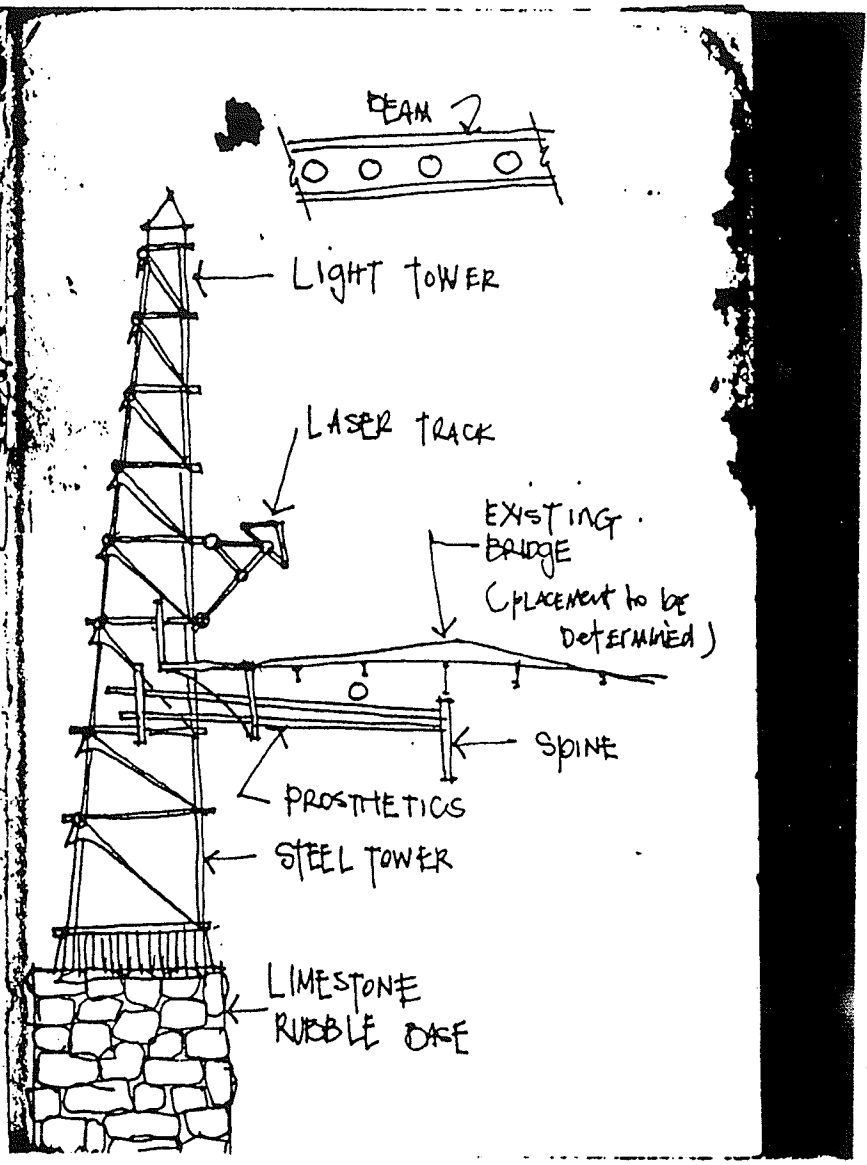
A Laser Canopy has begun permanent operation over a portion Square at Grand Center in the heart of St. Louis arts & entertainment district. Created by architect Robert Marquiniz & artist James Turrell, the environmental lighting design entitled "Drawing in the Sky" links significant St. Louis Buildings with lines of light drawn each evening at dusk 55-60 feet above the street. The project which encountered mechanical difficulties after its installation late last year is now running

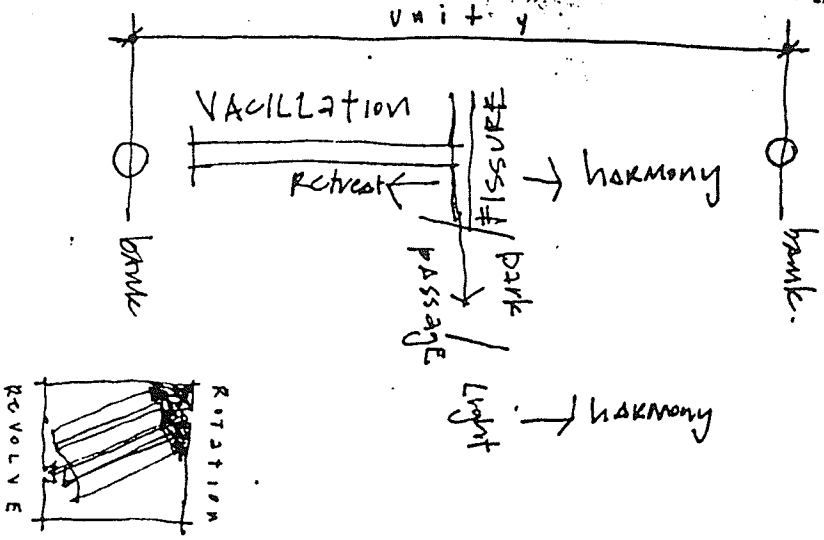
THE OPPORTU

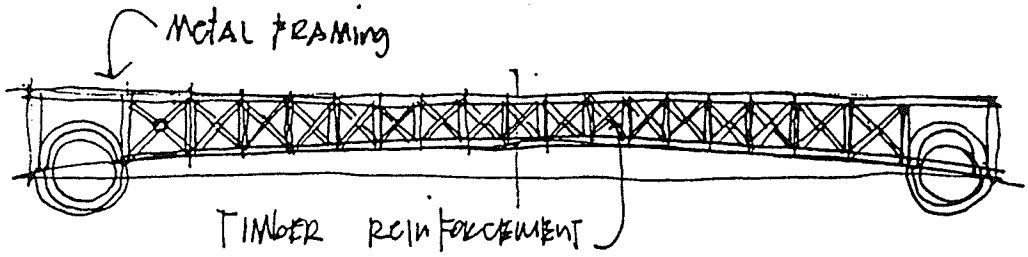

grown in insulated tubes for 5 years prior to installation.
bridge
way
trees
trees
walk
steel tree cages fastened w/ "click on"
R I V E R
FORKS
4 - 8 - - 24.

VANCOUVER

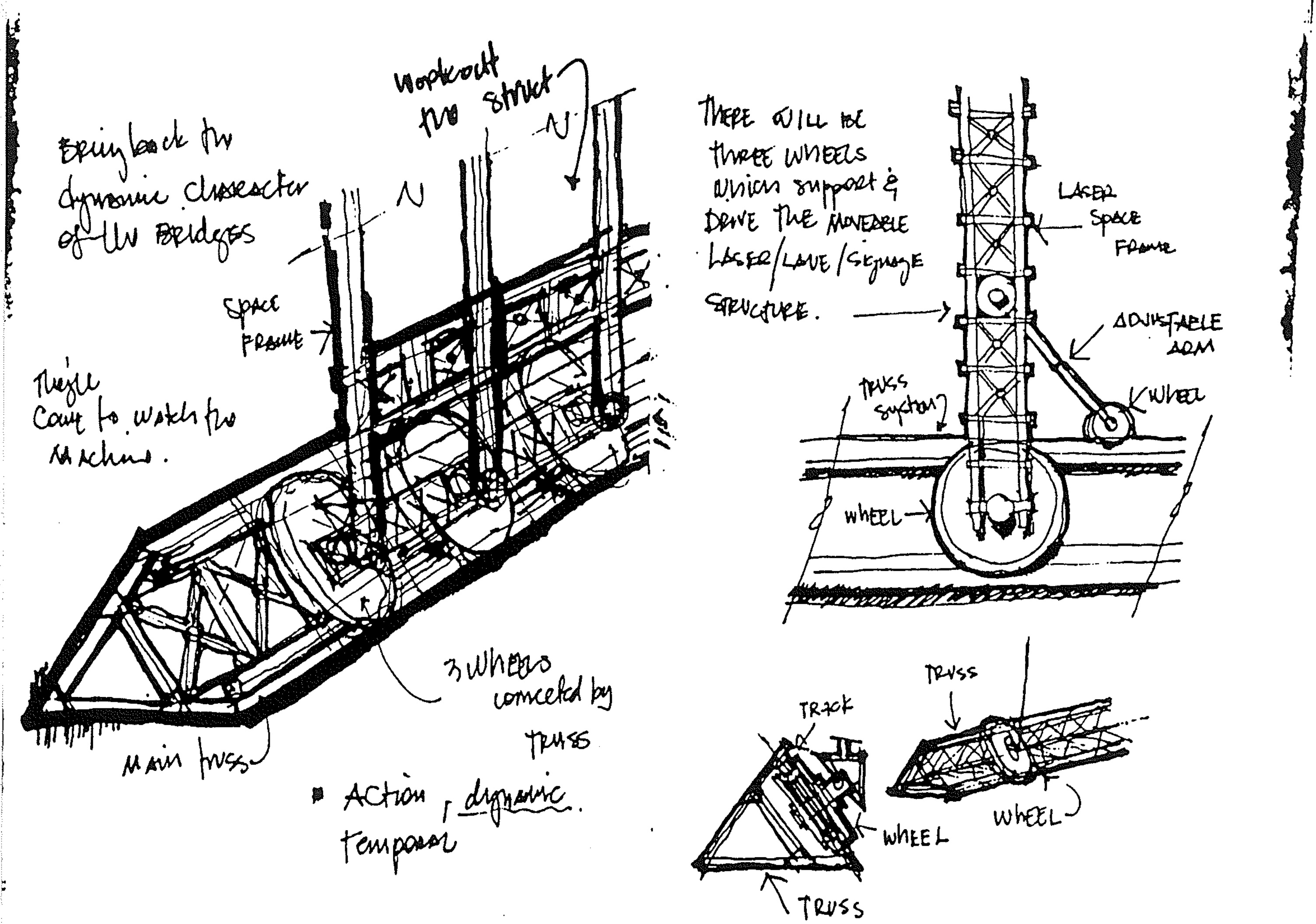
AESTHETICS



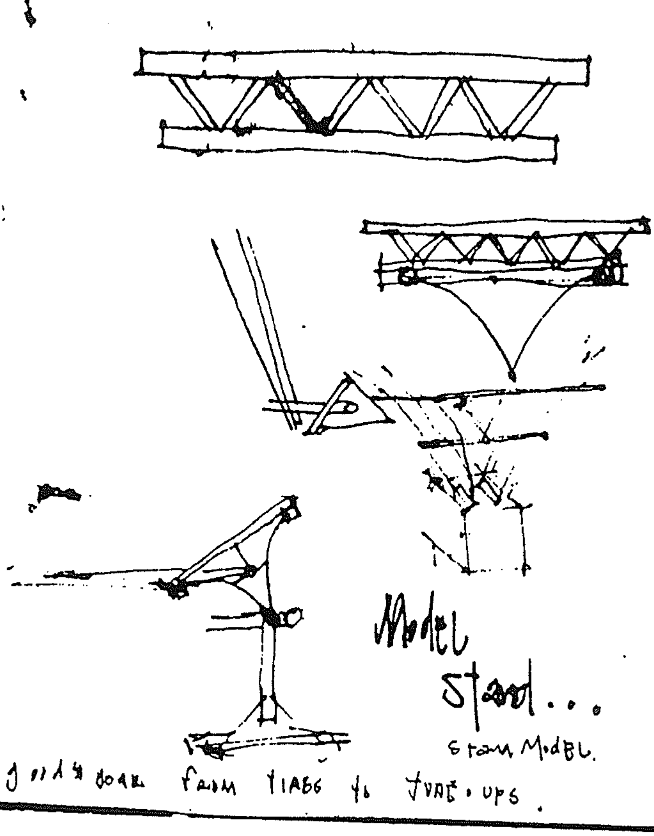




- playing Metal against timber, contrast.
- STEEL RELIES on timber to keep it functioning.
- CONTRAST MATERIALS, rustic, compromise, less permanent.


Bring back the dynamic character of the bridges
SPACE FRAME
MAIN TRUSS
3 WHEELS CONNECTED BY TRUSS
Action, dynamic, temporal
THERE WILL BE THREE WHEELS WHICH SUPPORT & DRIVE THE MOVEABLE LASER/LANE/SIGNAGE STRUCTURE.
LASER SPACE FRAME
ADJUSTABLE ARM
WHEEL
TRUSS SYSTEM
WHEEL
TRUSS
TRACK
WHEEL
WHEEL
TRUSS

← this used to be my hat.



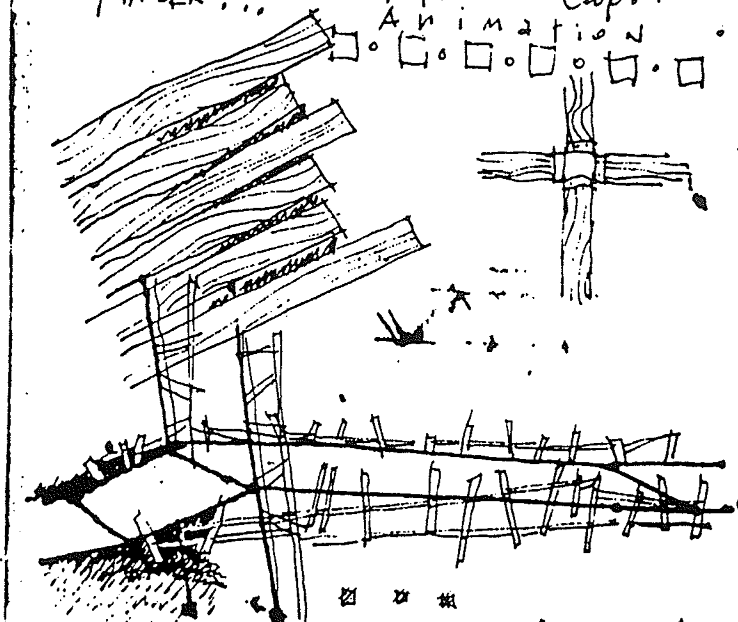
Model stand...

stand model.

going back from tires to tune-ups.

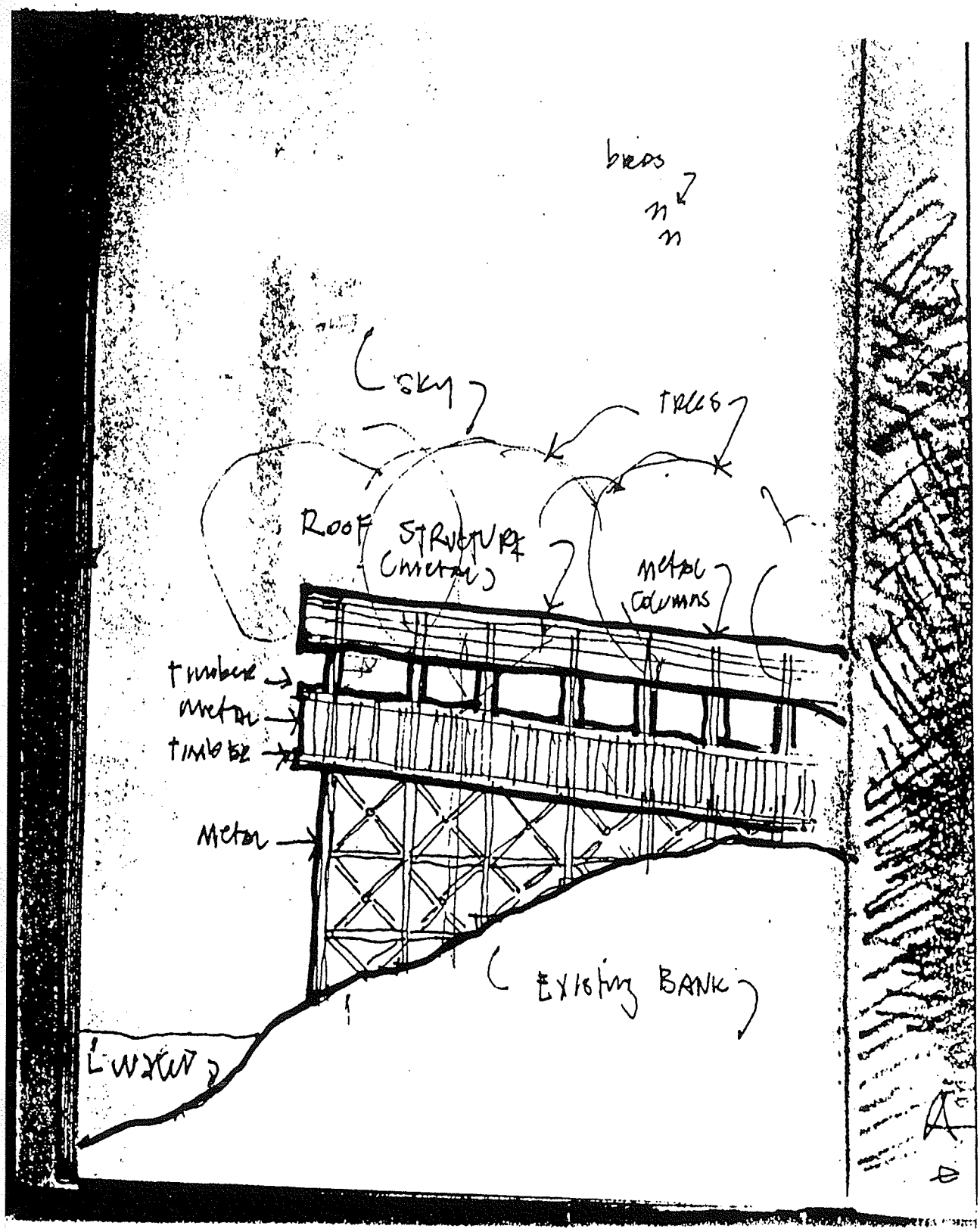
Maybe its all timber...

What about the pigeons... coops?

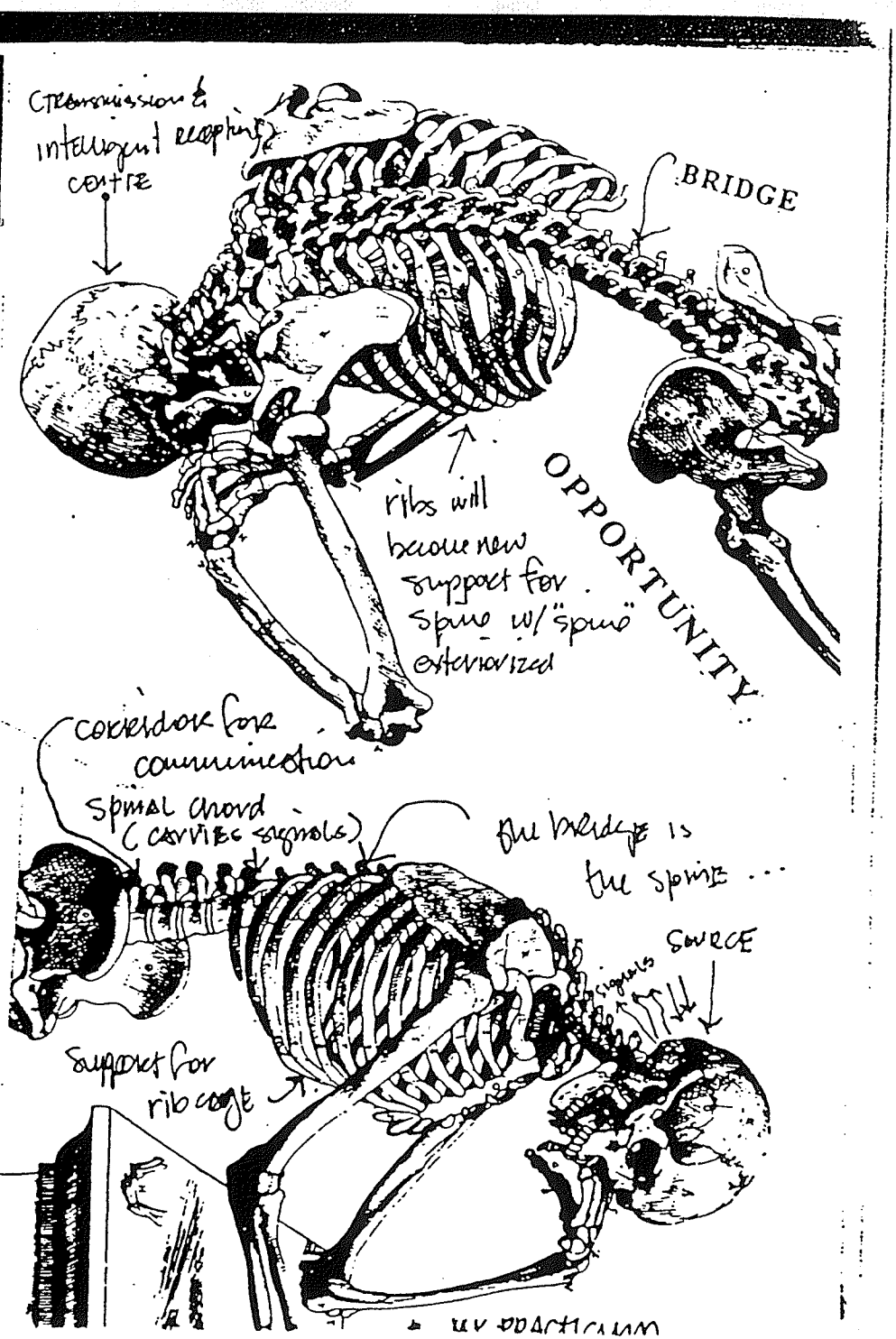


show the prosthetics instead of looking
show the wounds
show the scars.. temporary, it should be temporary...

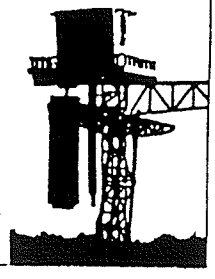
- A few solutions push yourself a bit but how do we pull this off.


birds
sky
TREES
ROOF STRUCTURE (Metal)
metal columns
timber
metal
timber
Metal
Existing BANK
LAWN


CHAIN
A PURPLE HOOK
MOUNTAINS BELOW
HYDRAULIC STABILIZER LEG
THIS IS A...
"PURPLE HOOK CRANE"


Transmission & intelligent coupling centre
BRIDGE
ribs will become new support for spine w/ spine exteriorized
OPPORTUNITY
corridor for communication
Spinal chord (carries signals)
the bridge is the spine ...
SOURCE
signals
support for rib cage

APPENDIX B
TECHNICAL DATA



MAIN STREET

City councillors jump in different directions

Local community committees approve capital budgets

By Susie Strachan

Assiniboine Park-Fort Garry and City Centre-Fort Rouge city councillors jumped on the idea of renovating Sherbrook Pool and Assiniboine Park roads while discussing the budget recently.

But they jumped in different directions.

The councillors from AP-FG community committee decided at their Nov. 8 meeting that they want money for new lighting along the bike paths extending into Assiniboine Park. And they've decided that since people from all over use the park, the city should fund it in 1991. They also voted to use part of the funding to fix up the park's roads to light the bike path.

"The Assiniboine Zoo and Park is regional because everybody in the city uses it," said Coun. Larry Fleisher (Assiniboine Park). "I move that we do the lighting on the bike path with $55,000 that we take out of the $720,000 set aside for the Assiniboine Park roadways."

To find more parks funding, the councillors took aim at the $1.5 million earmarked for the aging Sherbrook Pool in 1991.

"I think we're going to have to go to parks (protection, parks and culture standing committee) and argue with them about the Sherbrook Pool," said Coun. Dave Brown (Waverley).

City Centre-Fort Rouge councillors meanwhile, are determined to repair the pool. In fact, they are considering transferring 1992 funds from the Greenwood Park Place project — located on Wolseley — into the Sherbrook Pool renovations.

"I think we should transfer the $60,000 in 1992 from Greenwood Park Place over to the Sherbrook Pool, also in 1992," said Coun. Ernie Gilroy (Daniel McIntyre).

When looking over a list of budget cuts suggested by the city's chief commissioner, Robert Frost, the CC-FR councillors decided that the Assiniboine Park roadways looked ripe for the axe.

"I move that we concur with number one," said Coun. Glen Murray (River-Osborne). "Those roadways don't need to be fixed as badly as a lot of the residential streets elsewhere."

Cut number one included defering the resurfacing of the Assiniboine Park roadways and paving the Assiniboine Forest parking lot until 1993. The councillors also agreed with a suggestion to chop a budget item to construct a Garry Street exit from the Winnipeg Square parking garage.

The City Centre-Fort Rouge councillors suggested the following changes:

☐ To defer funding for the York Avenue/St. Mary Avenue street extension across Main Street to the Provencher Bridge until 1993.

☐ To defer funding for the Provencher Bridge twinning project until 1993.

☐ To invite design consultants to attend a community committee meeting to explain their plans for rebuilding the Main/Norwood Bridge, which is budgeted to start in 1991 and continue until at least 1996, with regard to aesthetics and bike path inclusion.

☐ To ask the works and operations standing committee to build in more flexibility on funding repairs to residential streets, instead of regional streets, and to increase funding for residential street repairs.

☐ To have the protection, parks and culture committee provide a comparison of the cost of using environmentally-friendly de-icers on streets to the cost of replacing boulevard turf with hard surface material, like cement or brick.

☑ To level the West End library branch in 1993 and build a bigger building on site. The William library branch would be merged with the West End branch at that time.

Both community committees approved their own 1991 and '92-'96 capital budgets. These contain the big ticket parks and works and operations projects over $50,000 such as residential and regional street renewals and sewer renewals, and renovations to community clubs and local parks.

The budgets now go on to the city's standing committees on parks, protection and culture, and works and operations for further discussion. Civic administration is hoping to wrap up the capital budgets by the end of the year, rather than in February like past years.

SUSIE STRACHAN

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THE playmobil

THE CITY OF WINNIPEG
STREETS & TRAFFIC

PEDESTRIAN COUNT

RECORD ANALYSIS

TIME 7.00 A.M.	CROSSING ON THE WEST SIDE OF MAIN ST. BRIDGE (PEDS) NB	SB	TOTAL	CROSSING ON THE EAST SIDE OF MAIN ST. BRIDGE (PEDS) NB	SB	TOTAL	CROSSING ON THE W/S OF MAIN ST. BRIDGE BIKES ON SIDE WALK NB	SB	TOTAL	CROSSING ON THE E/S MAIN ST. BRIDGE ON SIDE WALK NB	SB	TOTAL	ON RD WAY NB	SB	BIKE ON RD WAY TOTAL
7.15	5	4	9	2		2	1	1	2	4	1	5	1	2	3
7.30	4	7	11		1	1	2		2	4		4	4	4	3
7.45	18	2	20	2	1	3				10	1	11	3	2	5
8.00	21	1	22	9	1	10	1	1	2	7		7	5		5
8.15	25	2	27	4		4	1	2	3	2	2	4	1		1
8.30	23	4	27	6		6				4	1	5	5	1	6
8.45	11	4	15	5		5				2		2	2	2	4
9.00	6		6		1	1	1		1	2		2	1	1	2
10.00	16	6	22	5	1	6	4	1	5	1	1	2	4	2	6
11.00	4	2	6	12	6	18	6		6	2	2	4	9	6	15
12.00	9	11	20	5	8	13		2	2	3	2	5	6	4	10
1.00	27	20	47	17	25	42		4	4	3	2	5	5	2	7
2.00	32	16	48	10	5	15	3	1	4	3	5	8	4	2	6
3.00	5	17	22	5	9	14	1	6	7	7	3	10	5	5	10
4.00	6	56	62	10	8	18		8	8	4	2	6	4	6	10
4.15	6	33	39		6	6	1	1	2	1	3	4		7	7
4.30	9	13	22	1	7	8		2	2	1		1		3	3
4.45	9	39	50	4	3	7		8	8	4	2	6		6	6
5.00	7	26	33	4	7	11		9	9	2	1	3	2	5	7
5.15	6	21	27	3	3	6	3	1	4	1	1	2	1	5	6
5.30	3	21	24	2	3	5	2	2	4	3	2	5	2	2	4
5.45	2	12	14	5	1	6		2	2	1	1	2	1	2	3
6.00	2	10	12	5	3	8		1	1	1		1	5		5
7.00															
11 HR. TOTAL	256	327	583	116	99	215	26	52	78	72	32	104	70	69	173 ~~13[illegible]~~

TOTAL PEDS CROSSING;; 798 → 76%

TOTAL BIKES CROSSING::: ~~321~~ 251 } ~~[illegible]~~ 1049 ~~[illegible]~~ 24%

AVG HOURLY CROSSINGS ~~[illegible]~~ 95.36

	PED	(BIKES)		PED.	(BIKE)
WEST SIDE CROSSINGS	583 + 78 = 661		EAST SIDE	215 + ~~[illegible]~~ 173 = 3[illegible]	
	73%	~~29~~ 31%		2[illegible]%	~~[illegible]~~ 69%

WEATHER CLEAR
COUNTED BY ES AG
COMPILED BY AG

TEMPERATURE +15c +8c
DATE SEPT. 11PM SEPT. 12AM
DATE SEPT. 12,1985.

LOCATION	DAY	MONTH	YEAR
MAIN ST. BRIDGE (PEDS & BIKES CROSSING)	11-12	SEPT.	1985

↑ CHECK DAYS

73% OF PED USE WEST SIDE

31% OF CYCLISTS USE W. S. B

MAIN STREET (CROSSING ASSINIBOINE RIVER)

EXISTING BRIDGE PROFILE:

OWNER: City of Winnipeg

REGIONAL CONTEXT:
Major vehicular/pedestrian crossing over the Red River connecting the downtown area to a large regional population and a number of community districts.

DATE CONSTRUCTED: 1930-1931

FUTURE PLANS:
A new bridge span providing one way traffic flow northward towards the downtown area will be constructed east of downstream of the existing bridge span in approximately 1997-1999. The existing bridge span will then be replaced and it will provide one way traffic flow southward away from the downtown area. Estimated construction date 1999.

A rapid transit corridor bridge may also be built in the future and it is presently shown to be located immediately to the east or downstream of the new bridge span. If in fact this bridge is built there will be four bridge spans crossing the Assiniboine River within a distance of 110 metres, outside to outside of all structures.

BRIDGE TYPE:
Steel superstructure, set on concrete abutments and two piers, located within the waterway. Five vehicular lanes (centre lane is bi-directional depending on time of day) totally 17.5 metres width; pedestrian walks 2.45 metre width, each side of bridge. The sidewalks are elevated approximately 200 mm above the road surface.

BRIDGE LENGTH:
Approximately 140 metres
Pedestrian crossing time: 1 minute, 40 seconds

PEDESTRIAN/CYCLIST SURVEY SYNOPSIS:

A. WEEKDAY COUNT: (BASED ON 13 HOUR SURVEY)

Total pedestrian crossings 830
- 58% of users are pedestrians
- 66% of pedestrians use west sidewalk
- 34% of pedestrians use east sidewalk
- the time and direction of crossing indicates a large percentage of these users are commuting to work downtown.
- the large percentage of pedestrians using the west sidewalk would indicate that a number of these commuters are going to or coming from the Fort Rouge Community. Most people when leaving downtown would naturally be approaching the bridge on the west side of Main Street since this is where the commercial and business district population is located.

Total handicap crossings 0
- the fact that no handicap users were recorded on this bridge is probably reflected in the fact that the sidewalk decking is constructed from wood planks, which is very rough on the surface and not acceptable to handicap or elderly users.

Total cyclist crossing 588
- 42% of users are cyclists
- 55% of the cyclists use the west side of the bridge to cross and 64% of these cyclists ride on the sidewalk.
- 45% of the cyclists use the east side of the bridge to cross and 67% of these cyclists ride on the sidewalk.
- the time and direction of crossings indicates a large percentage of these users are commuting to work downtown.
- a large percentage of the cyclists ride on the sidewalk since the roadway is narrow and vehicular traffic is extremely heavy.
- cyclists riding on the bridge roadway could access with some difficulty, the bridge sidewalk, but the rider would have to disembark the bicycle.

Average summer, daytime crossing of the bridge by all survey groups is 109.3 persons/hour.

B) WEEKEND COUNT:
(Based on 9 hour survey)

Total pedestrian crossings 371
- 53% of users are pedestrians
- 61% of pedestrians use east sidewalk
- 39% of pedestrians use west sidewalk
- the weekend pedestrian use is approximately 45% of the weekday use.

Total handicap crossings 1

Total cyclist crossing 317
- 47% of the users are cyclists
- 52% of the cyclists use the west side of the bridge

to cross and 72% of these cyclists ride on the sidewalk
- 48% of the cyclists use the east side of the bridge to cross and 65% of these cyclists ride on the sidewalk.
- the weekend cyclist use is approximately 50% less than the weekday use.

LINKAGE ANALYSIS:

- The existing pedestrian/cyclist count of the Main Street Bridge has shown there is a strong need to provide pedestrian/cyclist crossing over the bridge, on both sides of the bridge, and in both directions.

- There are a number of developments which have recently been completed or are currently proposed in the immediate vicinity of this bridge and these developments warrant connection from the bridge crossing routes. The developments to which access should be provided are as follows:

On the North bank of the Assiniboine River:
- "The Riverwalk" pedestrian walkway
- "The Forks" Market Area
- "The Forks National Historic Park" and "Promenade" walkway
- "Bonnęycastle Park" which is presently being redeveloped.
- and commuter access at road grade, to the Downtown area

On the South bank of the Assiniboine River:
- The proposed "Forks Southpoint Development"
- under bridge access from the "South Point" to the west sidewalk of the southbound vehicular bridge and to the east sidewalk of the northbound vehicular bridge..
- and commuter access at road grade to the Fort Rouge and Norwood neighbourhood areas

linkage recommendations:

- all potential linkages addressed above and shown in figures should be incorporated into any future or existing bridge modifications.

- walks located on the bridge structure should be a minimum 3.0 metres wide.

- walkways located under bridges should be 2.4-4.0 metres wide.

- a provision for a cyclist lane located on the bridge roadway should be provided and this lane should be a minimum 1.5 metres wide.

- all linkages should be pedestrian/cyclist/physically handicap friendly.

- a more direct route of providing access under the bridge, via a series of steps, should be provided on both banks of the river to permit the physically mobile to transverse the under bridge crossing with the utmost convenience.

- on the North bank, the recently constructed "Assiniboine Riverwalk" provides a linear walkway along the Assiniboine River, at water level. An upper bank walk connection from the "Fork's Development" area, is proposed in the near future, to connect with the lower bank Riverwalk system, immediately east of the existing Main Street Bridge. Handicap accessibility to the lower "Riverwalk Area", will be achievable on the east side of the existing bridge, once this secondary upper bank/lower bank walk is constructed. On the west side of the existing bridge no allowance has been made for handicap accessibility to occur under the bridge or down to the "Riverwalk". This is partly due to the constraints placed on the design due to the steep riverbank slopes which are heavily vegetated and if this access were built it would have to be demolished at the time of the new bridge construction. However, when the new bridges are reconstructed a means of providing handicap accessibility from the Main Street road level down under the bridge connecting it to the "Forks" Development should be provided, on the west side of the bridge. This walkway will probably have to be an upper walkway, located close to the bridge abutment wall and just below the bridge superstructure in order to achieve permissible wheelchair ramp slopes, within a confined area.

- all existing people friendly linkages under the existing north bank bridge structure should be protected or enhanced when the new brides are built.

- On the South bank, there is presently no need to provide people access under this bridge, however once the "South Point" area is developed, access will be required under these bridges.

- When the new and existing bridges are rebuilt there should be access from both the northbound and southbound pedestrian walks and cyclists lanes down and under these bridges connecting to the South Point

area. Due to the steep slope of the riverbank in this area an upper bank walkway, which is structurally retained is recommended.

- An important linkage which must not be overlooked in the overall bridge design is the water linkage which is required for small and large pleasure boats to navigate up the Assiniboine River. Presently there are two existing bridges within a 110 metre distance, containing 5 in water bridge piers.
If the other two bridges contain the same number of water piers, these would be a total of 10 piers. Due to: the bend in the river; actual waternavigable channel; and size and number of proposed piers, the Assiniboine River may not be able to be navigated by large pleasure boats such as the River Rouge, and the safety of small river boats may be jeopardized. In addition the visual quality of this area would also be downgraded.
The boaters rights to navigate this river should be protected. The South Legislative Grounds and the Midtown Bridge area have just had docking facilities constructed, in order to promote and respond to the river usage by boats.

- It is highly recommended that when the new bridges and the existing bridge is constructed that all mid water piers be eliminated to provide a safe and visually unobstructed view along the Assiniboine River similar to Midtown Bridge span.

- The existing large commercial billboards located in the south bank area restrict access from the bridge sidewalk to the riverbank area. These signs should be removed.

desirable bridge views

The most important views which should be protected are the river/water views and heavily treed natural riverbank system. These views should be enhanced not only for the pedestrian but also for the vehicular users.

A number of secondary views which play an important role in the overall experience one obtains when crossing the bridge is as follows:
- the "Riverwalk" pathway along the north bank
- the distant view of the "Forks Market Observation Tower"
- the "Forks Boat Basin"
- the long westward river vista
- the natural landscaping which encloses around the southbound road approach to the bridge.
- the limestone balustrade and viewing areas which are located at the four corners of the bridge
- the "Bridge of the Old Forts" interpretive plaque
- the C.N.R. Bridge when trains are crossing on the sturcture.

UNDESIRABLE VIEWS

- the large number and size of the commercial advertising sign located on the south bank area.
- the proliferation of traffic signs, utility poles located by the south road approach area
- the lack of street trees and vegetation in the south road approach areas.
- the lack of visual separation of the curling club gravel parking lot area from the city sidewalk.
- the large unattractive curling club building
- the two pumping station buildings
- the large utility signs warning of underwater cable crossings.

Visual Recommendations:

- viewing and resting platforms should be incorporated into the bridge spans and the potential to provide interpretive information in these resting areas with regards to distant vistas should be explored.
- damage to the natural riverbank setting as a result of any new bridge construction should be minimized and restoration of the site should be compatible with the existing natural setting. Particular care should be undertaken to provide a suitable naturally landscaped transition zone between the proposed riverwalk trails and access points and the bridge structure and sidewalk approaches.
- the large billboard signs located around the south bank road approach area, which are located on city land, should be removed. If the signs have to remain the supporting structures should be replaced with more slender supports, thereby improving the access under these structures which will also improve the visual quality. The potential income earned by the City by leasing this land to the sign company is discussed in section--------.
- the signs or billboards which are located on private land, could be downplayed by planting trees on city property to reduce the scale of the signs and visually block out the main sign bodies.
- the two pumping station structures could be architecturally upgraded to be more aesthetically

pleasing, or a heavy landscape buffer of coniferous trees could be planted around the structure to visually block out the buildings.
- the proliferation of traffic signs and utility poles around the south bank road approach area should be removed when the new bridges and roadways are rebuilt. The utility lines should be buried and the most traffic signs should be reduced once a more organized structure of traffic flow is developed.
- the curling club will be demolished to make way for the new road approaches to the bridges and this move will open up the views towards the railway embankment. Consideration should be given to providing a heavy landscape buffer along side the railroad embankment, to reduce the scale of the embankment/barrier.

NORWOOD BRIDGE:

A pedestrian walkway was recently constructed underneath the Norwood Bridge on the south bank of the Red River. This walkway which was a separate design component of this study, has already been discussed in section------- of this report and therefore the following information will treat this walkway as part of the existing site components:

EXISTING BRIDGE PROFILE:

OWNER: CITY OF WINNIPEG

REGIONAL CONTEXT:

Major vehicular/pedestrian crossing over the Red River connecting the downtown area to a large regional population and a number of community districts.

DATE CONSTRUCTED: 1930-1931
Southbank Pedestrian Underpass - Constructed 1990)

FUTURE PLANS:

A new bridge span providing one way traffic flow northward towards the downtown area will be constructed downstream of the existing bridge span in approximately 1997-1999. The existing bridge span will then be replaced and it will provide one way traffic flow southward away from the downtown area. Estimated construction date 1999. The existing

- the utility warning signs indicating "buried underwater cables" should be replaced with more graphically pleasing signs. The utility companies should be encouraged to provide protection of their services via other means such as installing in rigid casing thereby eliminating the need for such signage.
- the C.N.R. Mainline Railway bridge which breaks up the bridge view eastward towards the "Forks" area could possibly be improved by painting sculptural train images on the existing steel girders. The existing colour of the bridge is desirable to keep since the bridge colour blends in with the existing riverbank vegetation. If images are painted on the structures these new images should be subtle in colour and be limited to the landward side of the bridge.

C.N.R. bridge overpass located immediately at the downtown (north) side of the Norwood bridge will be replaced approximately 1993-1994.

BRIDGE TYPE:

Steel superstructure, equipped with bascule span (now permanently closed) set on concrete abutments and five piers located within the waterway. Five vehicular lanes (centre lane is bi-directional depending on time of day) totalling 17.5 metres width; pedestrian walks 2.45 metre width, each side of bridge. The sidewalks are elevated 300-400 mm above the road surface.

BRIDGE LENGTH:

- Approximately 194 metres.
- pedestrian crossing time: 2 minutes, 10 seconds.

PEDESTRIAN/CYCLIST SURVEY SYNOPSIS:

WEEKDAY COUNT: (BASED ON 14 HOUR SURVEY)

Total pedestrian crossings 961
- 55% of users are pedestrians.
- 39% of pedestrians use west sidewalk.
- 61% of pedestrians use east sidewalk.
- the time of crossing indicates a large percentage of these users are commuting to work
- the large percentage of pedestrians using the east sidewalk would indicate that these additional people are probably commuting to the Norwood Business district or to the St. Boniface Hospital.
- the pedestrian crossing lights at Stradbrook Avenue

PEDESTRIAN CYCLIST COUNT

BRIDGE **MAIN STREET BRIDGE**

SURVEY DATES		FROM	TO	SKIES	TEMPERATURE
THURSDAY	27-Jul	7:30	16:00	Overc'st	COOL
WEDNESDAY	2-Aug	16:00	20:30	CLEAR	35

SYNOPSIS

1) 58% of user are pedestrians and 66% of pedestrians use west side, and 34% of pedestrians use east side of bridge.
2) 42% of users are cyclists.
3) 55% of cyclists use west side of bridge and 64% of these users ride on the sidewalk.
4) 45% of cyclists use east side of bridge and 67% of these users ride on the sidewalk.

TIME		Pedestrians / Handicapped Crossing on West Side of Bridge					Pedestrians / Handicapped Crossing on East Side of Bridge					Cyclists On West Side of Bridge					Cyclists On East Side of Bridge					TOTAL	TOTAL
		NORTH		SOUTH		TOTAL	NORTH		SOUTH		TOTAL	NORTH		SOUTH		TOTAL	NORTH		SOUTH		TOTAL	PEDES'NS	CYCLISTS
FROM	TO	Ped'n	Handi	Ped'n	Handi		Ped'n	Handi	Ped'n	Handi		walk	road	walk	road		walk	road	walk	road			
7:30	9:00	113	0	12	0	125	40	0	14	0	54	14	0	10	11	35	30	20	6	0	56	179	91
9:00	12:00	27	0	38	0	65	39	0	26	0	65	11	0	9	4	24	20	8	8	0	36	130	60
12:00	13:00	22	0	22	0	44	28	0	2	0	30	4	0	9	8	21	14	5	4	0	23	74	44
13:00	16:00	55	0	45	0	100	21	0	35	0	56	16	0	46	29	91	34	24	20	0	78	156	169
16:00	18:00	25	0	125	0	150	20	0	33	0	53	14	0	54	48	116	20	17	4	0	41	203	157
18:00	20:00	21	0	36	0	57	10	0	11	0	21	6	0	16	14	36	12	10	5	0	27	78	63
20:00	20:30	7	0	3	0	10	0	0	0	0	0	1	0	1	0	2	1	1	0	0	2	10	4
	Totals	270	0	281	0	551	158	0	121	0	279	66	0	145	114	325	131	85	47	0	263	830	588

TOTAL PEDESTRIAN CROSSINGS 830

TOTAL HANDICAPPED CROSSINGS 0

TOTAL CYCLIST CROSSINGS 588

TOTAL ALL GROUPS 1418

AVERAGE HOURLY CROSSINGS (ALL GROUPS) 109.3

PEDESTRIAN CYCLIST COUNT

BRIDGE **MAIN STREET BRIDGE**

SURVEY DATES		FROM	TO	SKIES	TEMPERATURE
SATURDAY	29-Jul	7:30	16:30		

SYNOPSIS

1) 53% of users are pedestrians and 61% of pedestrians use east side, and 39% use west side of bridge.
2) 47% of users are cyclists.
3) 52% of cyclists use west side of bridge and 72% of these users ride on the sidewalk.
4) 48% of cyclists use east side of bridge and 65% of these users ride on the sidewalk.

TIME		Pedestrians / Handicapped Crossing on West Side of Bridge					Pedestrians / Handicapped Crossing on East Side of Bridge					Cyclists On West Side of Bridge					Cyclists On East Side of Bridge					TOTAL	TOTAL
		NORTH		SOUTH		TOTAL	NORTH		SOUTH		TOTAL	NORTH		SOUTH		TOTAL	NORTH		SOUTH		TOTAL	PEDES'NS	CYCLISTS
FROM	TO	Ped'n	Handi	Ped'n	Handi		Ped'n	Handi	Ped'n	Handi		walk	road	walk	road		walk	road	walk	road			
7:30	9:00	7	0	4	0	11	18	0	6	0	24	3	0	5	4	12	9	3	2	0	14	35	26
9:00	12:00	22	0	18	0	40	27	0	36	0	63	16	0	16	17	49	17	7	8	0	32	103	81
12:00	13:00	8	0	6	0	14	12	0	8	0	20	7	0	7	7	21	6	5	0	0	11	34	32
13:00	16:00	32	0	38	0	70	58	0	40	0	98	22	0	37	18	77	38	22	7	0	67	168	144
16:00	16:30	4	0	6	0	10	9	1	12	0	22	1	0	8	0	9	17	4	4	0	25	32	34
16:30		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:00		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	73	0	72	0	145	124	1	102	0	227	49	0	73	46	168	87	41	21	0	149	372	317

TOTAL PEDESTRIAN CROSSINGS	371
TOTAL HANDICAPPED CROSSINGS	1
TOTAL CYCLIST CROSSINGS	317
TOTAL ALL GROUPS	**689**
AVERAGE HOURLY CROSSINGS (ALL GROUPS)	76.11