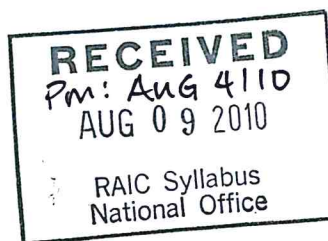


ROYAL ARCHITECTURAL INSTITUTE OF CANADA SYLLABUS

THESIS SUBMITTAL

JULY 2010

Adaptive Reuse: Benefiting the Urban Context by Returning to the Heart of the City



AMY MORIN

AB020008
CALGARY

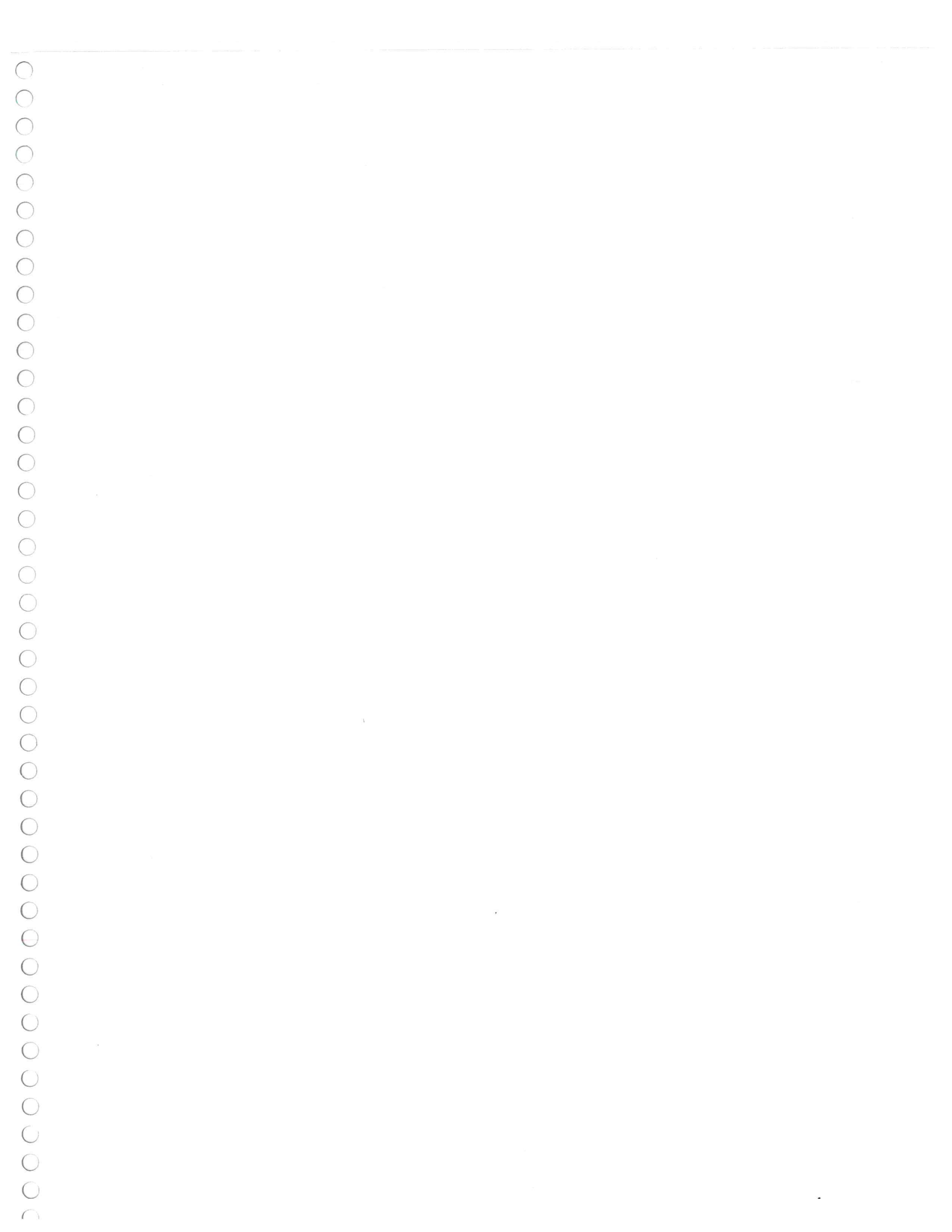


Table of Contents

Acknowledgements	4
------------------	---

Research

Abstract	5
Executive Summary	6
Thesis Statement	8
Introduction	9
Methodology	10
Part I: Benefits to the Urban Context	11
Part I: Conclusions	16
Part II: Integrating New and Old Construction	18
Case Studies	23
The Tate Modern Museum	24
California College of Arts and Crafts	26
The Royal Conservatory of Music Telus Centre	28
National Ballet School of Canada	30
Theatre Junction Grand	32
Part II: Conclusions	34
Part III: Movement in Architecture	36
Part III: Conclusions	39
Thesis Statement Summary	40

Building Programme

The Client _____	41
The Site _____	45
Site History _____	49
Zoning _____	52
Site Analysis _____	53
Parking _____	55
Programme _____	58

Schematic Design

Concept _____	65
Massing _____	67
Types of Connections _____	81
Massing Evaluation _____	90
Classical & Contemporary _____	94
Imagery _____	115

Final Development

Final Solution _____	122
Structural Concept _____	137
Mechanical Concept _____	139
Conclusion _____	140
Endnotes _____	141

Acknowledgements

Advisor: Linus Murphy, AAA, MRAIC, LEED AP

Mentor: Rodger Woods, AAA, MRAIC

Calgary Coordinator: Lloyd Ostrinsky, B.E.S., Dipl.Arch., MEDes

Alberta Coordinator: Garry D. Milton, FRAIC

Thank you to the above team,
I appreciate all the hard work each of you have put
into the Syllabus Program as well as this thesis.

Research

Abstract

This thesis examines if benefits are derived when heritage buildings are retained and integrated with new construction. This thesis project explores this statement through examination of two areas. The first is the principle of retaining historic structures, and by examining any benefits historic structures may have on the urban context in which they are located. The second area reviewed case studies of the relationship between new and old construction and the various methods of how these building techniques can be used together. A third area that developed due to the specifics of the building programme, was a general exploration of integrating movement of dance in architecture.

Keywords

Historic, heritage, urban context, sprawl, integration, adaptive reuse, dance, movement, architecture.

Executive Summary

This thesis research paper researches the benefit to the urban context of integrating historical and present day development in an adaptive reuse project.

The benefits to the urban context include:

- ❑ that of retaining a city's history or past,
- ❑ bringing together communities with a common goal of preservation,
- ❑ providing a more sustainable solution than traditional building methods.

The thesis research found:

- ❑ there are benefits to retaining historic structures,
- ❑ these benefits continue throughout the lifetime of the building,
- ❑ there has been very little research done on the financial benefit of adaptive reuse projects.



[Stephen's Avenue, Calgary, Alberta, Canada²]

The integration of new and old construction shows that the two elements can work together in harmony, whether being seamlessly integrated into one building, or developing two or more structures that juxtapose one another in the composition of the site.



[Royal Ontario Museum, Toronto, Ontario, Canada^{3]}

This thesis research concludes that based on the information collected, either solution is valid and can be explored further in design component of the thesis in the following term.

Movement of dance in architecture can be developed and integrated on many levels of the building project in terms of space, form and materials, as there are many similarities between the two artistic endeavors.

The thesis design project to follow in the next semester will incorporate each of these elements into the building design of the adaptation of the Nat Christie Centre here in Calgary, with the program being developed for the Alberta Ballet Company.

Thesis Statement

This thesis will explore whether there is a benefit to the urban context to retain heritage structures and integrate them with new construction.

“Some in the architectural community roughly define adaptive reuse as ‘the process that adapts buildings for new uses while retaining their historic features.’ A more accurate description of adaptive reuse is to prolong the period from cradle-to-grave of a building by retaining all or most of the structural system and as much as possible of other elements, such as cladding, glass and interior partitions.”⁴

Adaptive reuse is an intervention possible to improve the urban realm of our future cities. Looking into the heart of a city and examining areas that can be redeveloped adds vitality, enriching the layers of history upon a relatively new city. In terms of the architectural industry and the impact we have on the environment – especially here in Calgary – it is important to find ways to reduce consumption of resources and to reduce impact we have on the ecological footprint. The succession of buildings is a critical resource in developing sustainable environments and communities. In selecting an existing building, we can examine the principles of adaptive reuse; determine why reuse of sites is important and how to integrate new and old construction.

The thesis design project to follow in the next semester will use the adaptation of the Nat Christie Centre here in Calgary, developing a program for the Alberta Ballet Company. Movement of dance in architecture will further be explored as a design concept.

Introduction

Buildings evolve through various uses throughout their respective life cycles. This process is a form of adaptive reuse. The transformation that built spaces undergo defines the passage of time and changing needs of the people who occupy the building over its lifetime. Each building is designed with a specific use in mind. These uses evolve and change as the occupants change. The architecture often outlives the people who come to inhabit it, and in order to respond to the global call to be economically and environmentally responsible we must come up with new initiatives to deal with the use of the built world that becomes abandoned and disregarded.

“The World Heritage Convention establishes a formal obligation to adopt a general policy which aims to give the cultural and natural heritage a function in the life of the community.”⁵

Reusing and adapting structures is an answer to maintaining the links to our city’s past while accommodating the future.

“Our architectural landmarks are irreplaceable resources of our past and must be respected and protected in order to survive the demands of an ever-changing society.”⁶

Maintaining our history brings communities together and gives people the knowledge of their past, allowing them to pursue their future. The possibilities of exploration in development are vast, when the principles of the function of the building are incorporated into the architecture.

“Old buildings have a structural and artistic integrity which, in the light of our changed attitudes, must be respected.”⁷

Methodology

The methodology used in researching these thesis topics involved meeting with mentors, reading magazine articles, books and newspaper articles on the internet and library, and researching case studies. Information on the topic of integrating new and old construction was widely available, somewhat available for the topic of movement in architecture and scarce in terms of benefits to the urban context. It would be logical to conclude that such empirical data on land values, population increases, business economy rates, or other such information to show the effects of construction on a heritage site, has not yet been undertaken by many, and in the city of Calgary, none at all. Psychometric measures such as neighbourhood pride and community perception are also of importance to the research topic and have also not been properly assessed in the city of Calgary.

Part I: Benefits to the Urban Context

The urban context constitutes the fabric of the city that we inhabit. It is characterized by buildings, landscape, people, and everything that composes the streetscape. 'Architecture is the environment made visible.' This constitutes the social, technical, and artistic level of development at the time. This context creates the sense of community people have or miss, in any place in the city. The image of a city is reflected in the quality of the urban contexts that comprise the neighbourhoods and communities within the cityscape. In order for them to sustain healthy growth patterns, changes must occur. Returning to a city's roots and redeveloping that which has been left to waste is a step in the right direction for renewing neighbourhoods and returning people back into the city's heart from the sprawling suburbs.

The heart of any city is the centre focus for the residents and business alike. It provides the life, the enthusiasm and the loyalty to the meaning of a city by containing the active, vibrant areas that people and visitors are drawn to.

The heart of a city is important because it encloses a city's historic past and heritage, and can be drawn upon to lead the people of the city into the future. It creates a sense of knowledge about the city and can be used for a source of inspiration in developing a common goal and direction for growth.

Adaptive reuse is one way to return people to the heart of the city. Retaining a city's past can be accomplished by acknowledging the existing framework of streetscape that has been developed over time and renewing it through growth and redevelopment. In order to accomplish this buildings worth keeping must be retained and unsafe or unsightly buildings are either removed or improved upon.

Historical preservationist James Marston Fitch writes:

“The general tendency of urban redevelopment authorities has been to dismiss as romantic or sentimental the efforts to protect historical impediments to their special brand of progress. The comprehensive protection of such monuments and artifacts, and the scholarly examination of the theories and techniques which produced them, is of central importance to our cultural future.”⁸

Once a set of guidelines has been established often structures and buildings that have outlived their use can be reused, converted into a new occupant use that now address's the city's needs in the current context. Architect and author Arthur Cotton Moore writes:

“Freestyle adaptive reuse is often functionally preferable and far more widely applicable than restoration, and a new-old hybrid has the capacity to renew architecture and form the basis for whole new directions in design.”⁹

Older buildings that are of sound construction often outlive their original tenants. When they have no historical significance or cultural value “their main aesthetic value will be in the role they play in the streetscape.”¹⁰ This is important to understand as the streetscape is an important element of any neighbourhood and is part of the character, which the neighbourhood develops over the years. It creates a sense of the environment that establishes the identity of the people in the community.

There was a time in the early 1900's in the United States where the modernist movement brought upon a “battle to liberate building and landscape alike from aesthetic thralldom to what seemed to them a corrupt and ineffectual past.”¹¹ This battle of which Fitch speaks came at a time when things in the country were changing and the built environment was gaining momentum in terms of exploring new science and technologies, disregarding the way of times past.

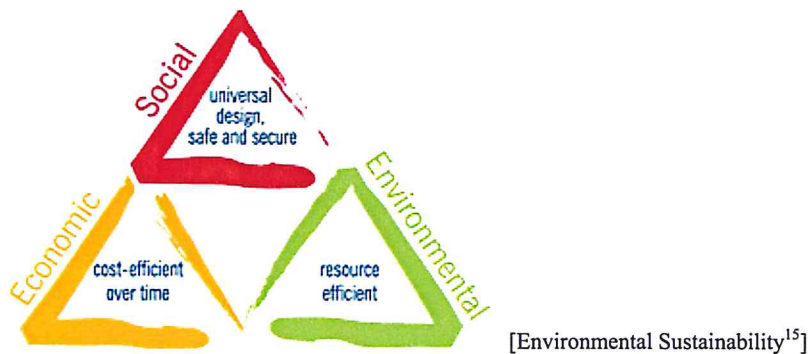
“As a consequence of such developments, especially since World War II, we now run the literal risk of losing all the past, man-made and natural – either piecemeal, to the bulldozer, or instantaneously, to nuclear weapons.”¹²

This led to mandates being set by authorities to change the way we think about reusing buildings and supports the thinking of sustainability today, as shown by the United Nations who issued ideals for sustainable human settlement. After researching trends and future directions of growth they outline goals such as:

“Improve the urban environment by ... the protection and/or rehabilitation of older buildings, historic precincts and other cultural artifacts.”¹³

Lawyer and heritage public speaker Marc Denhez agrees with setting sustainability principles and writes:

“The ultimate goal of the sustainable development movement is no less than (1) to encourage an economic climate in which people pursue this development not because they are guided by the State, but because it is the economically reasonable thing to do and (2) to ensure that such a scenario gets fair and even-handed treatment (legally and fiscally).”¹⁴



This kind of thinking has come about as the economic state of the earth has fallen in terms of abuse of resources and widespread disregard for historical integrity of existing structures. The

adaptive reuse of our heritage is a fundamental principle in renewing our urban fabric and revitalizing the heart of the city. As Denhez researches:

“The rehabilitation of the entire existing building stock is, in many respects, an environmentalist’s ideal sustainable industry. Not only does it extend the economic lifespan of existing investments, but it is a large employer that allows cities to enhance their own economic value (in many countries, residential renovation spending exceeds new construction) without a corresponding draw on natural resources, and without putting extra pressure on the urban infrastructure, including sewers, roads, refuse disposal, etc.”¹⁶

Although it can start to be seen that reutilizing our heritage structures will improve upon sustainability goals, there was no evidence thus far to whether or not neighbourhoods and urban contexts benefited in a concrete way. Information regarding land values of heritage sites, both past and present, information on population increases, improved business in the area of the heritage site and other such empirical data specific to the city of Calgary, was hard to come by. When contacting a local planner at the City of Calgary, in the Centre City Planning & Design, Land Use Planning & Policy Division, Mr. Martin Siddles emailed stating “I am not aware of a source of this type of information or if it has ever been collected by the City.”¹⁷ Elsewhere in Canada, Vancouver, British Columbia for example, there are organizations in place that have done some research in these areas, but are currently undergoing further examinations in order to verify the information found on the few structures that have begun to be regarded.

On the Vancouver Heritage Foundation Website a study was done to determine if the value of a home increases or decreases over time in regards to land value when designated as a heritage site.

“The VHF completed a research project comparing the assessed value of Heritage Register, designated heritage and non-heritage properties in four Vancouver neighbourhoods (Strathcona, Kitsilano, Mount Pleasant & Hastings Sunrise). Through tax roll information and neighbourhood drive-arounds, buildings were selected that were similar in size and included houses legally protected through VHF grants. The study showed that between 1999 and 2005 the Heritage Register and designated heritage houses increased almost the same (42.1% & 42% respectively), while non-heritage houses increased at a slightly slower rate (39%). The VHF will continue to research this topic by pursuing funding to examine the comparative market value of heritage and non-heritage properties.”¹⁸



[Vancouver Heritage Foundation¹⁹]

Part I: Benefit to the Urban Context Conclusions

The scarce amount of empirical data available indicates strongly the need for additional research in the area of objective benefit analysis for adaptive reuse projects – particularly in the Calgary area. The available research shows that it is indeed of some benefit to own a heritage designated house:

- “in general both designated and non-designated heritage homes increased more significantly in value than non-heritage homes”²⁰ (See Appendix 1)
- “some designated and non-designated heritage homes showed growth rates of 78% and 97% in just 3 to 4 years”²¹ (See Appendix 1)

The study was done in Vancouver, British Columbia, and there was no other data available to suggest similar trends in the city of Calgary, or in terms of business districts versus the residential study examined in Vancouver.

In Calgary numerous districts have established business revitalization zones. All concur that improving the appearance of buildings aids in improving the economy, and brings people into the district.

“The initiatives of Calgary’s nine BRZs are essential to the ongoing development of our city, and continue to support improvements in crime prevention, social issues and beatification. Each has its unique style and character yet collectively strive to improve the quality of life for Calgarians, and the experience for our many visitors, by providing exciting and attractive shopping districts. By visiting each of the BRZs you will find a part of what makes Calgary a great City.”²²

This would indicate numbers have been gathered to support this theory, but nothing is organized into any kind of document that is accessible to the public to view.

Historical preservationists and scholars agree that reusing buildings is important because of the responsibility we have to the environment when using energy and resources, as well as the respect we owe to the developed streetscape that has come about over the past centuries. The intricate relationships that have emerged from site to site, from adjacent facades, must be valued for the particular character they give to each and every block of history the city has. Whether or not the structure can viably be kept and reused is a question that must be answered on a case-by-case basis. Often a building may have no particular historical significance but the artistic integrity of the architecture is enough to emulate sympathetic ties from the community at large. The emotional connections, which are formed, can represent the heart of a city and the architecture is at the core of that heart. There are many factors that are attributable to the desire to perform restoration work. Cities often give tax incentives to such projects, in order to support the preservation of public history. There is general interest among scholars and builders to participate in this type of work as it is an interesting process, digging up the old and turning it into something new and useful for another user. As noted earlier, there is also sentimental value in buildings and neighbourhoods of our past, which drives people to become participatory in the restoration movement. A combination of these factors may be the reason behind a client taking on a restoration or adaptive reuse site for their project. This adaptive reuse is a needed intervention in the urban realm of our future cities without which we cannot maintain sustainable growth or a vital social structure.

Part II: Integrating New and Old Construction

“Adaptive Re-Use is the process of modifying an existing building so that it can be used for a new function.”²³

Historically buildings have been reused for centuries. People passed on businesses and homes to successors who then inherited them; lived and worked, creating new uses from previously held owners. This pattern underwent cycles within itself, where technology and science moved thinking forward and progression was seen as an ultimate goal, where new construction took precedence over heritage and preservation. In the early part of this century the modernist movement resulted in the demolition of many structures in Canada, which has a relatively young history to begin with. Along with the recklessness of architects and developers, there were also natural forces that caused the destruction of great structures such as fire and flood. As of recently, the tide has turned back in favour of the environment and adaptive reuse of buildings has become much more widespread. As historical preservationist James Marston Fitch states,

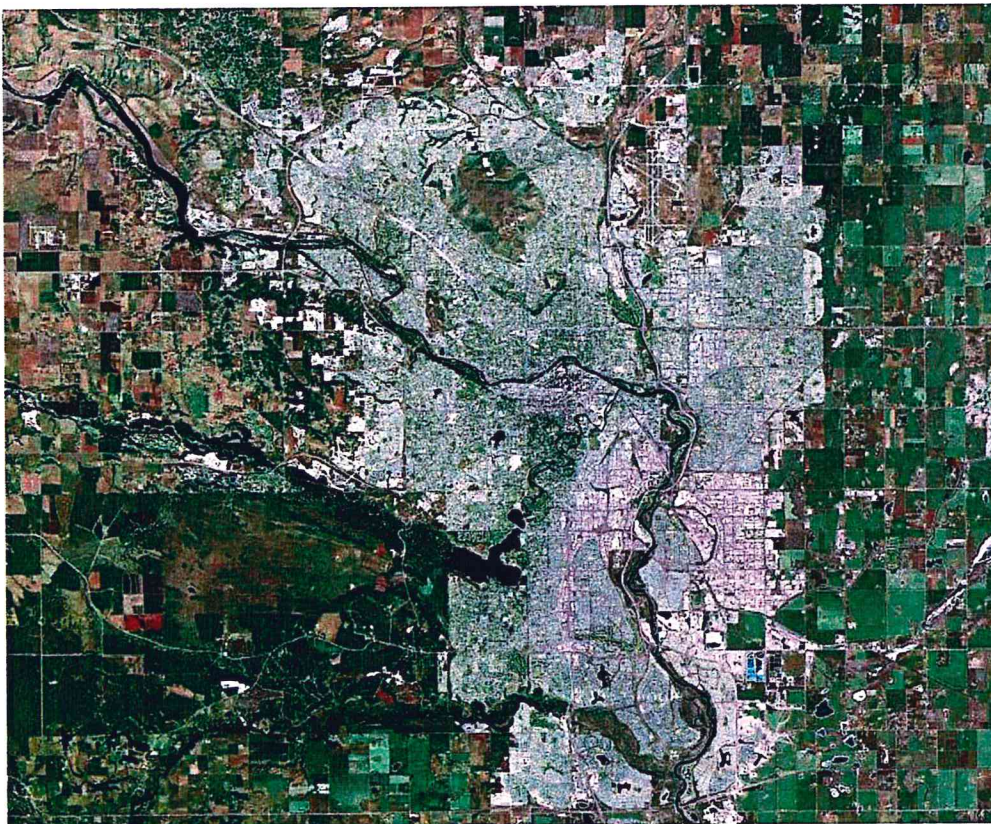
“Only within the past fifteen years have the economic scales begun to tip again in favour of retrieval and recycling as opposed to demolition and/or new construction. Here again fundamental economic forces are at work. For now it is apparent that adaptive reuse of old buildings is more economic not only in general terms (e.g., the conservation of energy represented by the built environment), but absolutely (i.e., relative costs of old and new built space).”²⁴

Figures have shown that utilizing as much of an existing structure as possible ensures less material will be used, less labour is required, and less waste is contributed to our landfills. Another preservationist consultant researches,

“Approximately one-third of all landfill materials in a country like Canada are composed of ‘used construction material.’ The re-use of buildings therefore becomes important for an entirely non-cultural reason, namely to avoid an impending garbage crisis.”²⁵

The infrastructure costs to city development are particularly a problem here in the City of Calgary. The pace of growth of the city in the last couple years has grown at an exponential rate and can no longer be considered sustainable.

“In 1981, Calgary’s built-up area (developed urban land) was approximately 273 km². In 1991, that figure had grown to 346 km², an increase of almost 27%. By 2001, Calgary had grown by another 26%, with built-up lands totaling approximately 435 km². In just 20 years, Calgary’s built-up area expanded by more than 160 km² and consumed a significant amount of habitat now largely unavailable for wildlife.”²⁶



[Calgary, Alberta, Canada²⁷]

Flourishing economics have enabled us to expand the city borders at an alarming rate and only now, after years of unharnessed growth, have we begun to examine the system that allows this. The reason why this growth is alarming is it has put pressure on infrastructure systems, created more pollution, created a shortage of civil servants to service these new areas, put a strain on roadways with the creation of more vehicles on the road, and a strain on the environmental footprint and ecosystems of the city. As well, Calgary's past needs to be recognized, saving what little we have left of existing heritage structures.

"We are beginning to see that the protection of the artistic and historic heritage against the ravages of uncontrolled technology is a fundamental aspect of the curatorial management of the environment as a whole. The two environments, natural and artificial, are actually complementary halves of the human biosphere."²⁸

The adaptive reuse process utilizes the stored energy enveloped within the structure that was captured during original construction. The demolition and reconstruction of buildings wastes more energy and materials than reusing those elements that remain structurally and architecturally sound. With little evidence researched to support the theory, it has been thought that,

"Compared with new construction, adaptive use offers many advantages. Not only do recycled projects generally require less capital to start and take less time to complete, meaning less money tied up for a shorter period before rents start coming in, but they are by nature labour-intensive projects, relying less on expensive heavy machinery and costly structural materials. Beyond the benefit to the developer, these factors produce social benefits by conserving resources and employing proportionately greater numbers of workers."²⁹

The effects of construction on the built landscape last for centuries. Even in young cities such as Calgary, people relate to the past of the built environment and take responsibility for the future that they will inherit. The successful urban context is never a completely planned out and structured environment; the evolution of spaces over time creates the diversity of space that is essential to characterize the aesthetic of a neighbourhood. The new constructions that are indeed necessary to continue the cycle of development can be sensitive to the environment in which they are placed. The regard that is held for new construction is not without merit, “but the juxtaposition of old and new buildings can often lead to exhilarating new passages in the cityscape.”³⁰



[Calgary, Alberta, Canada³¹]

There have been many examples of integration of new and old construction as more and more architects, owners, and developers are seeing the benefit to utilizing existing structures and working with them instead of tearing down and starting afresh.

“The remodeling of old buildings continued to be a common practice until after World War II when, due to a number of changed circumstances, it began to fall into disrepute. The first was that the reworking of any old fabric is labour-intensive, and the cost of labour was high and rising. To this economic deterrent was added a series of federal income tax provisions, which permitted a capital tax loss on demolished buildings and important tax incentives on the cost of new construction. Together with the prestige of

the new and up-to-date, these circumstances gave irresistible support to the theory that it is always cheaper 'to tear it down and start over'.”³²

This attitude of destruction was a current in Calgary that swept over the city. The movement was so swift that the majority of the historical sandstone buildings from the early days of Calgary were torn down to make way for such buildings as the Glenbow Museum, Bankers Hall and the Calgary Tower. This rapid development in Calgary's core opened people's eyes to the view of their city's past disappearing and as a result heritage foundations were formed to re-evaluate the situation at hand, such as the Heritage Advisory Board and the Stephen's Avenue Heritage Area Society. The people of Calgary became the driving force behind this switching of attitude toward rapid development, as they had a vested interest in retaining the remaining links to the city's past. The government responded to this tide of development and the subsequent public reaction with monetary funding to preserving our built heritage, and in some districts, even tax incentives. Designing around existing buildings requires decisions to be made on what features to incorporate, and what to rework. Additions to heritage structures can tie into the existing architectural language or completely contrast the intentions and materials that remain. Below are four examples where there were existing conditions to take into account for new ownership of the property.

Case Studies

The Tate Modern Museum

London Bankside, United Kingdom
on the Thames River

Original Building

Architect: Sir Giles Gilbert Scott

Year Built: two stages between 1947 and 1963

Use: Bankside Power Station

Power Station closed in 1981.

Renovation

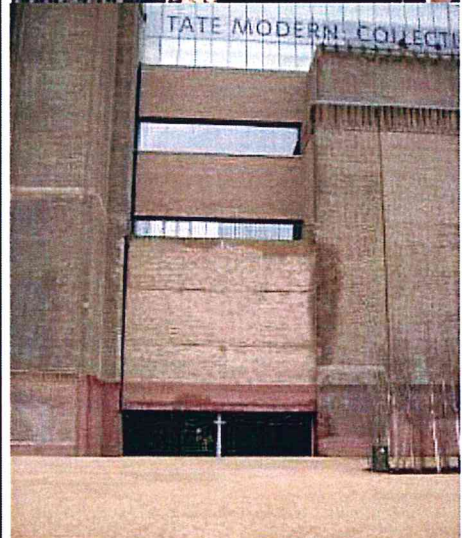
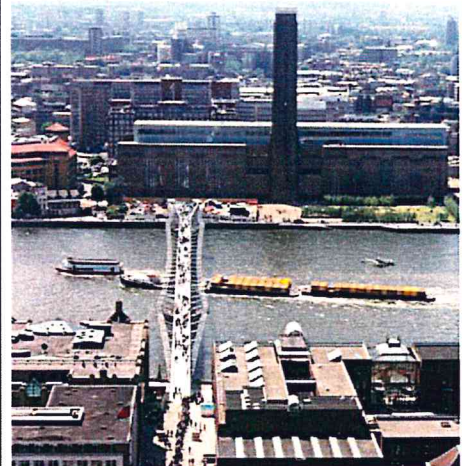
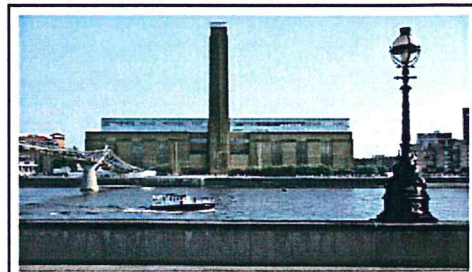
Architects: Jacques Herzog and Pierre de Meuron

Year Renovation Complete: 2000

Use: Art Gallery

Highlights:

“The Turbine Hall, which once housed the electricity generators of the old power station, is seven storeys tall with 3,400 square metres of floor space. It is used to display specially commissioned work by contemporary artists. This series was originally planned to last the gallery's first five years, but the popularity of the series has led to its extension until 2008.”³³



[34]

“For the restoration, builders added 3,750 tons of new steel. The industrial-gray Turbine Hall runs nearly the entire length of the building. Its 115 foot high ceiling is illuminated by 524 glass panes.”³⁵

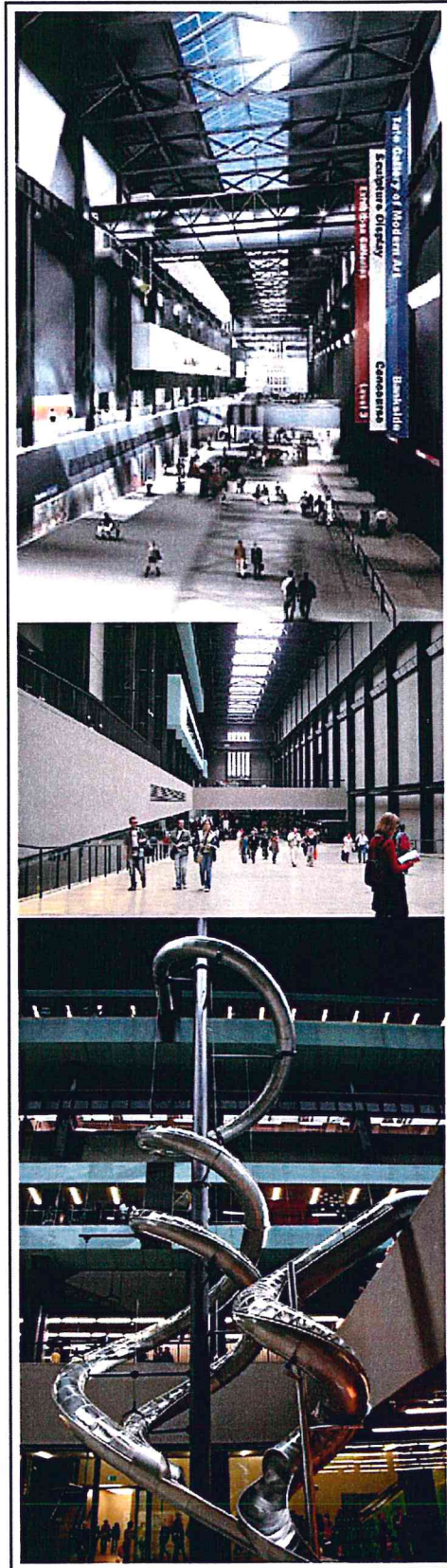
“In its design for the Tate Modern in London, the firm illustrates one of its principal interests: the integration of public and private space into the broader cultural experience. The building exemplifies the ways the museum is to become a central place in the urban structure, one that attracts people and makes possible a host of experiences.”³⁶

“Visitors in 2000: 6,734,000

Visitors in 2006: 12,700,000”³⁷

Architect’s Strategy:

“And when you don’t start from scratch, you need specific architectural strategies that are not primarily motivated by taste or stylistic preferences. Our strategy was to accept the physical power of the massive mountain-like brick building and to even enhance it rather than breaking it or trying to diminish it.”³⁸



[34]

California College of Arts and Crafts

San Francisco, California

Montgomery Campus

Original Building

Architect: Skidmore Owings and Merrill

Year Built: 1951

Use: Greyhound Bus maintenance facility

Renovation

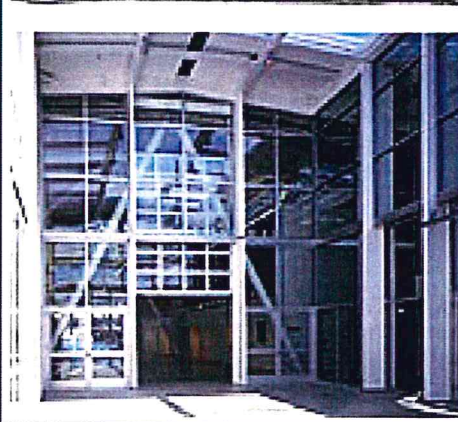
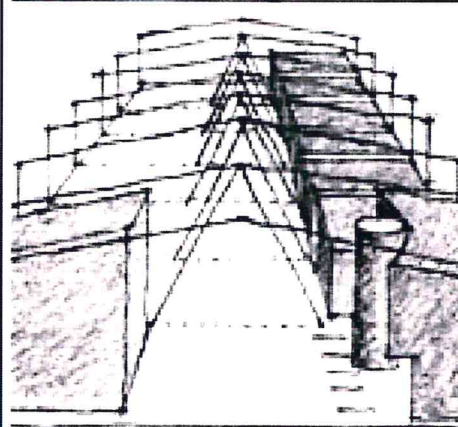
Architects: Tanner Leddy Maytum Stacy Architects

Year Renovation Complete: 2000

Use: College of Arts and Crafts

Highlights:

“An aging bus repair shop may seem an unlikely place for a progressive art school. But when the shop is a classic monument to mid-20th century industrial architecture, and when the school is eager to marry art and pragmatism, the result works beautifully. The transformation of this dramatic 60,000 square-foot (5600 square-meter) industrial building into a new educational environment is noteworthy as a successful

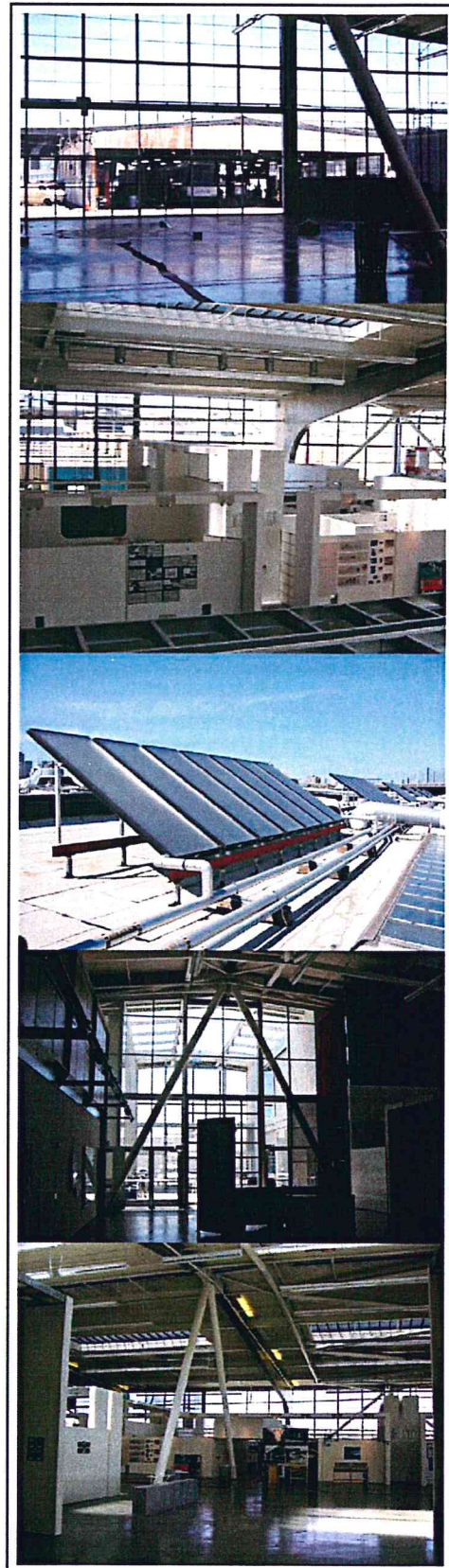


[39]

model for the preservation of industrial urban fabric, the reuse of existing built resources, and the integration of sustainable design strategies. The adaptation of this space respects its unique character, fostering a dialogue between its past and present uses, and clearly distinguishing new construction from old. Light, steel frames sit within the massive concrete structure but respect its rhythm and organization. Circulation paths move around and under the massive concrete columns. And relics of the former garage are incorporated in the new spaces. These include explosion-proof light fixtures and a small crane in the student cafe. The monumental concrete structure is left unpainted in contrast to the new elements of construction, preserving a patina of use.”⁴⁰

Architect’s Strategy:

“The program is interdisciplinary, so they wanted it to be very flexible and evolve, because they rewrite their course schedule every semester. It just became a building within the building. Then we had to create a seismic upgrade to complement the building, rather than get in the way.”⁴¹



[³⁹]

The Royal Conservatory of Music Telus Centre

for Performance and Learning

Toronto, Ontario, Canada

Original Building

Architect: Langley, Langley & Burke

Year Built: 1881

Use: Toronto Baptist College

Renovation

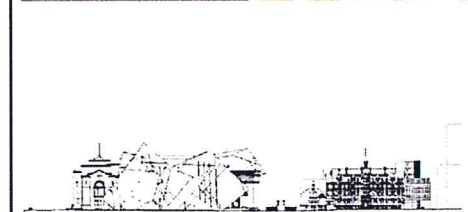
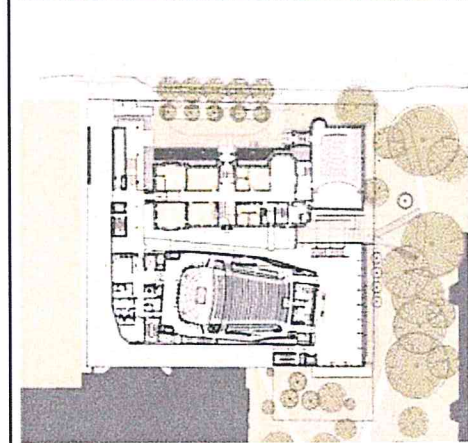
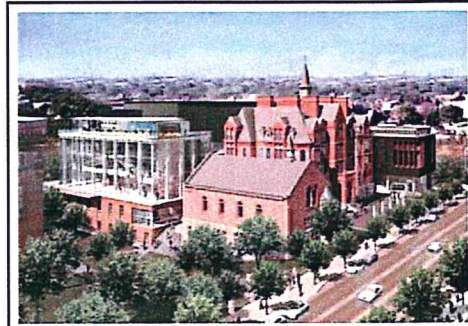
Architects: Kuwabara Payne McKenna Blumberg

Year Renovation Complete: 2007

Use: Royal Conservatory of Music

Highlights:

“The restoration of McMaster Hall and the construction of the new Telus Centre for Performance and Learning will create a total of 190,000 square feet of new academic and performance space including a 1,100-seat concert hall, studios and classrooms, a media centre, library and rehearsal hall. The RCM project will define a new cultural precinct for the city in concert with Daniel Libeskind's transformation of the Royal Ontario

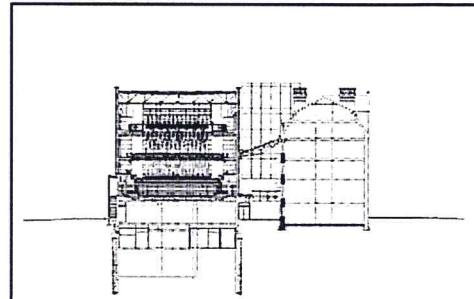


[42]

Museum and the expansion of the Gardiner Museum of Ceramic Art by KPMB on Queen's Park. The new additions act as a backdrop against which the existing heritage buildings are featured on Bloor Street. The space between the historic and new buildings is enclosed to create a sky lit pedestrian court extending from the Bloor Street entrance to the Concert Hall and Lobby. A series of bridges traverse the upper level, facilitating circulation between the upper levels of the old and new buildings. Contemporary glazing systems for the new additions provide dynamic counterpoints to the polychromatic facades of the heritage buildings.”⁴³

Architect's Strategy:

“The new additions are assembled around the Conservatory's heritage building and scaled to respect the heritage context. The concept is structured around creating great rooms for music performance and brings together three concert spaces – the existing Mazzoleni Hall, the new Siemens Hall, and the new 1,140-seat Michael and Sonja Koerner Concert Hall.”⁴⁴



[42]

National Ballet School of Canada

Toronto, Ontario, Canada

Original Building

Year Built: 1856

Use: Northfield House

Addition

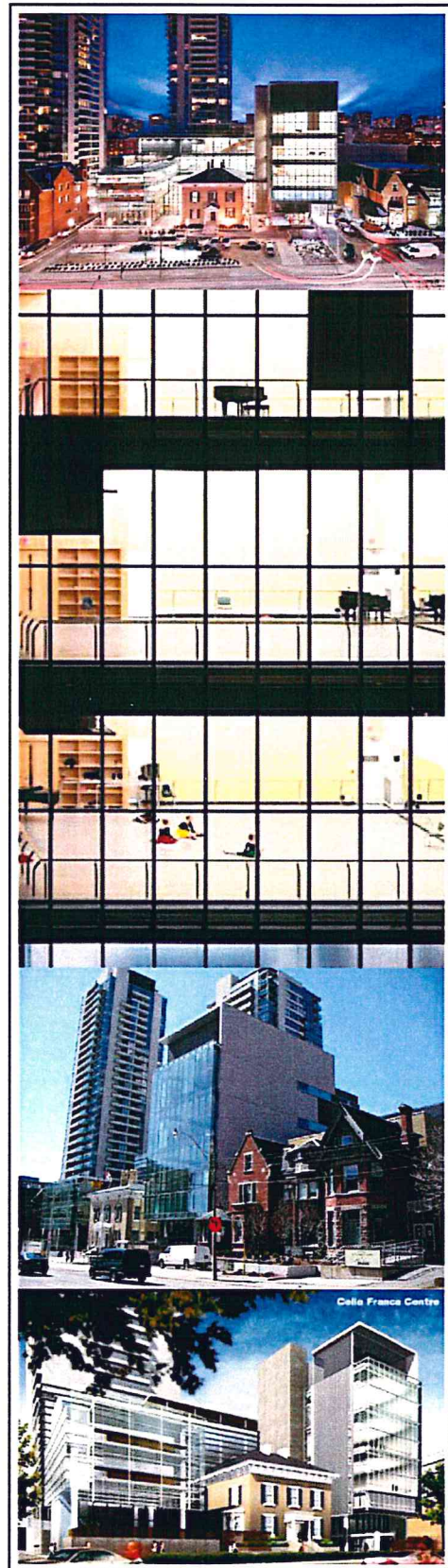
Architects: Kuwabara, Payne, McKenna, Blumberg

Year Addition Complete: 2005

Use: National Ballet School of Canada

Highlights:

“Three new buildings are organized into a U-shaped configuration around a historic residence, Northfield House. The new buildings contain vertically stacked dance studios and are articulated as elevated glass volumes on recessed bases. The space between the studio buildings and Northfield House is defined as a three-storey atrium to form the social heart of the campus. The studios are designed to mimic the dimensions of an actual stage, and, with their floor to ceiling glazing, situate the city as both backdrop and conceptual audience to the dancers in training.”⁴⁵

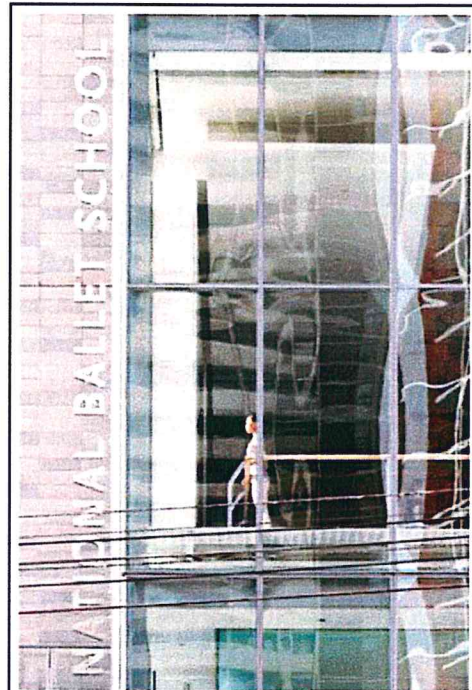


[46]

“With its blend of solid historical buildings and transparent contemporary pavilions, Project Grand Jete reflects the twin philosophies underpinning Canada’s National Ballet School – a respect for the traditions of the past and a zest to embrace the innovations of the future.”⁴⁷

Architect’s Strategy:

“Our buildings are often made up of a lot of parts and volumes. It is the notion of an ensemble or an assemblage. It is additive, not carved. It is volumes that are placed or composed relative to each other. Our work suggests a composite assemblage of urbanism. The presence of the point towers by Peter Clewes from architects-Alliance that are part of the overall development are fundamental to the success of our built component to the project. Our composition is both figure and ground relative to the heritage buildings as well as to the base of the towers. There is also a whole scaling thing in relation to the other buildings along Jarvis Street. It is interesting to see how the whole project which included new dance studios, heritage buildings and two point towers came together. I consider the project to be a remarkable mix of residential and institutional architecture that speaks to what the city is as we live it today.”⁴⁸



[46]

Theatre Junction Grand

Calgary, Alberta, Canada

Original Building

Architect: L.R. Wardrop

Year Built: 1912

Use: Theatre

Renovation

Architects: Sturgess Architecture

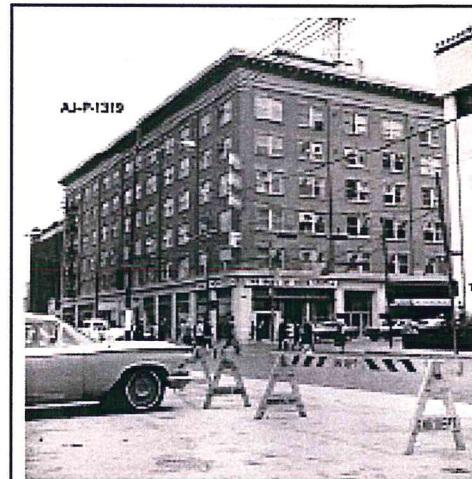
Year Renovation Complete: 2006

Use: Theatre

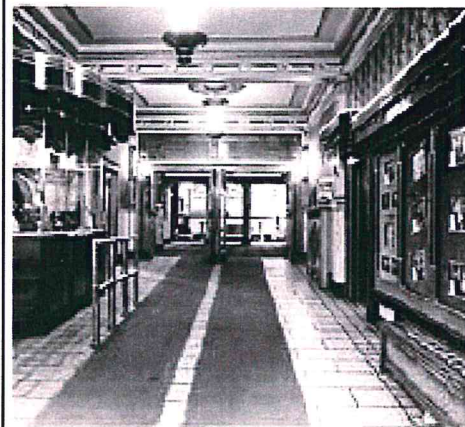
Highlights:

“Theatre had a seating capacity of 1,500 and one of the largest stages in the country. Elaborate interior design; brass rails, velvet curtains, two tiers of private balcony boxes and ornate plaster work. The Lougheed Block was built as a multi-purpose commercial building, accommodating retail stores, offices, living quarters and on the ground floor, the Sherman Grand Theatre.”⁴⁹

“The existing raked theatre is to be gutted, and replaced with a flat-floor flexible space, designed to



[50]



[51]



[52]



[51]

accommodate an infinite variety of stage configurations through the use of moveable seating stages.”⁵³

Architect’s Strategy:

”In the ’70s it was turned into a movie house, and everything was gutted; very little remains of historic value,’ says Jeremy Sturgess. Remaining are only pieces of the theatre’s grandeur, like bits of the gold leafed ceiling, or single cornices. However, this ‘scar tissue’ will be left intact, like an archaeological dig. ‘We’re going to preserve them in an ‘as found’ state,’ he explains.”⁵⁴

“Sturgess’ design calls for exposing and cleaning the concrete, as well as steel ceiling beams, where possible, and incorporating them into the venue’s overall look, which will contrast the new and the old. ‘All the new things we use will be as contemporary as possible,’ he says. ‘The box office and bar will be encased in thick glass, that will enclose small or fragile pieces that we find during the demolition. On the mezzanine, the new floor we’re using is a high-tech, highly polished plastic. The theatre seats will be as contemporary as we can afford, like a coloured gel material.’”⁵⁵

Part II: Integrating New and Old Construction Conclusions

Integration of new and old construction can be done in many ways. The elements can be incorporated so that the addition is seamless and the aspects of each are combined, or they can be juxtaposed to highlight the contrast between the new and the old. The feasibility of integrating a new building with an existing structure can be beneficial to the context as well as economically.

- The first case study of the Tate Modern Museum in London kept the exterior shell of the powerplant building and reworked the interiors to accommodate gallery spaces for the museum. The solution is successful in that it incorporates the entire existing structure, greatly reducing costs, and uses the design of the massive structure to provide a framework for gallery displays. Attendance to the museum has doubled since it reopened in the new location, and already has plans to expand, indicating success of the project. The architects utilized the massive masonry structure to emphasize the volume for the interior gallery space as it was the main feature of the existing structure of the powerplant.
- The California College of Arts and Crafts in San Francisco also kept most of the existing structure and framework of the large maintenance facility and reworked the interiors to accommodate the school. It uses the industrial setting to its advantage to inspire the artistic vision of the students and the mission of the educational program.
- The Royal Conservatory of Music in Toronto restored the existing heritage structure of the college and added new facilities to the site. This was possible as the existing building had similar programmatic requirements to the music school, and the site allowed for expansion. Scale was a factor as the building is located in a dense urban fabric. The additional space

was treated with a light transparent building envelope that contrasted the historical masonry buildings surrounding it. This resulted in a completely different kind of space, allowing variety to the occupants. Marianne McKenna, of KPMB Architects describes, “The wonderful part of the Royal Conservatory project is the opportunity to overlay so many aspects of music, from the teaching and practicing of students to the performance of faculty and musicians from across the city and around the world. The buildings, both the historic stone fabric and the more contemporary fabric stretched across the site, become a crucible for amazing musical variations.”

- The study of the National Ballet School of Canada also in Toronto was important to examine as its program is similar to the program that will be looked at in the next phase of this thesis project. There are several existing heritage buildings on the site of the ballet school, the most notable being the Northfield House that is located along the main street of the site. The architects configured the new buildings to contrast this structure in a dynamic way, utilizing scale, materials and light to juxtapose the new and old structures. The design solution also considered the surrounding context to be a major component to the design as new residential towers are being constructed adjacent to the site. The large scale of the towers compared to the existing school buildings is buffered by the new structure designed.
- Theatre Junction Grand is a local project that took a heritage building in Calgary and restored it to its former glory, meeting the functional needs of a growing theatre community in the city, while at the same time taking ownership of an existing site that had gone to waste over years of abandonment. The original theatre structure was solid enough to build upon and the historic character of the building was recognized and cherished in the reconstruction process, providing a source of inspiration to the revitalized building program.

Part III: Movement in Architecture

“Dance and Architecture have much in common. Both are concerned with practices of space. For a dancer the act of choreography as a writing of place occurs through the unfolding of spatial dimensions through gesture and embodied movement. For the architect space is the medium through which form emerges and habitation is constructed.

For both, the first space we experience is the space of the body.”⁵⁶

Enabling the occupants to experience their own purpose in the environment in which they practice is an attainable goal in the architecture of a dance facility. Architect and professor Mack Scogin has held research seminars at Harvard Graduate School of Design examining the relationship between the art of dance and the art of architecture. His conclusions have stated:

“It can be argued that dance, more than any other art form, more closely resembles the fundamental characteristics of architecture. As in architecture, it:

1. Traces space, time, and movement, relies on light, content, context, structure, and timing for order.
2. Is constructed of the human figure and occupied by the human spirit.
3. Involves a relentless struggle with the natural forces of gravity and the individual limitations of human physicality.
4. Employs the illusionary effects of procession, perspective, point-of-view, color and light.
5. Demands precise technique and craft.
6. Requires knowledge of its traditions, history, and theory for substance and orientation.
7. Stimulates an awareness of the reciprocal line between the body and mind.

More importantly, like architecture, dance as movement is a central feature of human existence, a medium through which inner attitudes are displaced, learning is achieved and by which experience is enlarged. Both dance and architecture are performances.”⁵⁷

There is diversity in architecture, in terms of building types, as there also is in type of dance. This diversity then opens the door to interpretation when discussing how movement in architecture can be expressed. One specific building type is the Hindu Temple. This has been researched and assessed by several dance and art historians at Roehampton University of Surrey. Their conclusions were drawn to how people see the relationship of the two elements:

“Discussion of movement in architecture seems usually to be about people moving through buildings – performing rituals, or simply experiencing. Links between dance and architecture tend to be seen from this perspective, focusing on buildings as the spatial setting for dance, and on dance movements in relation to this setting. Discussion of architectural rhythm tends to relate to the movement of the eye and mind over or through the architecture: more analogous to music than dance, though approaching dance when the actual or imagined bodily experience of such rhythm is considered.”⁵⁸

It is interesting to think of architecture in this way, where one room or space can be related to in any manner, at any time, during any performance. The spaces ideally must be able to morph into the appropriate setting to the particular piece. Typically dance studios are rectangular and box-like. This provides a blank canvas to paint with the body, but not an interactive one. The space could instead move with the dancers, transforming the experience, moving it onto a grander scale.

“Architecture, unlike dance, is not a ‘performing art’: nevertheless, at least where it is made by hand, it has an element analogous to performance, an element of interpretation.

As with dance, an overall structure may be fixed, yet, in the character that comes through detail, very different expressions of that structure are created at different times and places by different human minds and bodies.”⁵⁹

Part III: Movement in Architecture Conclusions

Dance is an artistic medium about body, space and form. Architecture embodies these same elements. Therefore architecture can amalgamate this fluidity and movement, reflecting the significance of the artistic integrity in the surroundings. The building design can be flexible in order to accommodate the variety of dance and the amount of people in the space at any given time. Small classes can feel intimate and large classes open and airy. The tone of the space can be set for different performances, enabling the audience to experience the space in their own way, how they move through it and how the performers they are viewing respond to the surroundings.



The use of material, light and texture will be important components in incorporating the artistic integrity of the movement of dance into the design of the building, as well as principles of pattern, symmetry, harmony and balance. The planning of space must consider the goal of flexibility of the users and allow for different volumes of space to be created when desired.

Thesis Statement Summary

This thesis was to explore whether there is a benefit to the urban context to retain heritage structures and integrate them with new construction.

- ❑ It has been concluded that the limited data available suggests that there is a benefit to retaining heritage structures in terms of land value increases.
- ❑ The conclusions of historical preservationists also support the belief that there is benefit in terms of economics and in terms of community history.
- ❑ The research also shows that there is a need to conduct such studies on the benefits of adaptive reuse projects, especially in the city of Calgary, in order to support the current knowledge.

It has been concluded that integrating new and old construction can be done in a variety of ways, and that strong design solutions result from the utilization of as much existing elements as possible. The use of materials, light, texture, and building form all contribute to the control of the space and in the case of architecture and dance can really ensure the user goals are being met as the specific needs of the client in this building type have identified the importance of engaging people into the space on a more physical level than in other building types.

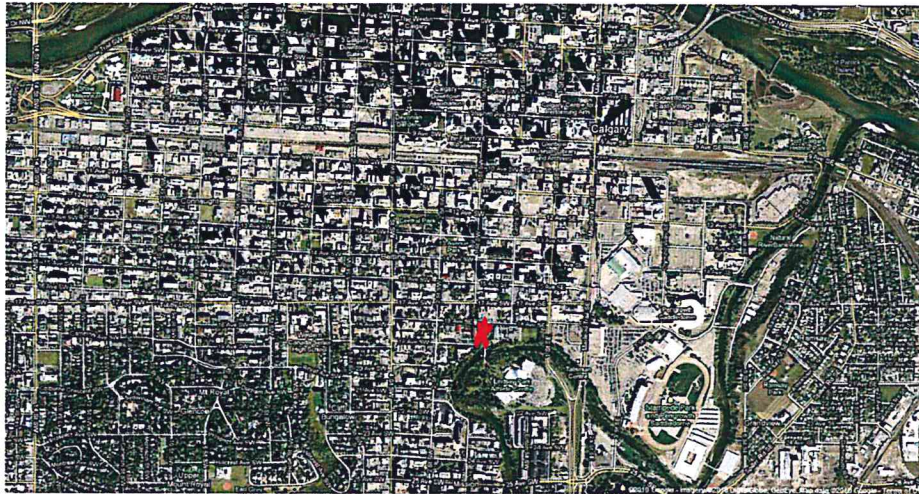
It has been concluded that movement of dance in architecture is very possible to express, and can be done to the benefit of the programmatic function of the buildings.

The research completed supports the thesis that benefits to the urban context can be derived from integrating historical and present day development in an adaptive reuse project.

Building Programme

The Client

The client and site for this design thesis project is the Alberta Ballet which currently occupies the Nat Christie Centre in the beltline area of Calgary.



This client was selected because they best suit this thesis project:

- ❑ The Alberta Ballet Company was considering an expansion of their current facilities;
- ❑ The Alberta Ballet Company currently occupies the Nat Christie Centre which is a viable urban heritage structure for integration with new construction;
- ❑ The Nat Christie Centre is a historic building (originally the Parish Hall of the Roman Catholic Church and later sold to the Canadian National Railway) on a generous site area sufficient to accommodate the program expansion needed by the Client; and
- ❑ The Alberta Ballet School currently occupies space on another site also in downtown Calgary, and the Client was looking to incorporate this part of the organization to the Nat Christie Site.

“Alberta Ballet, a not-for-profit charitable organization, is Canada’s third largest dance company and it is in its 43rd season.”⁶² The Alberta Ballet Company currently has 30 professional dancers, and the School has more than 500 students enrolled in both their pre-professional and recreational programs.

There is a board of directors for the Alberta Ballet, which consists of 8 officers and executive committee, 12 directors, and 4 ex-officio members which include the current directors of both the company and the school. The Alberta Ballet Company and Alberta Ballet School are separate entities although they have many ties. The school feeds directly into the company and they are governed by the same board of directors.

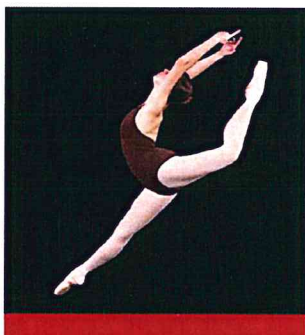
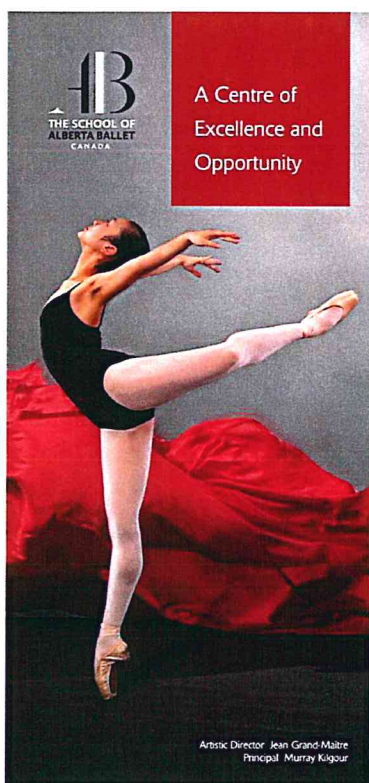


The Alberta Ballet also has a Foundation to support its funding needs, which was “founded in 1994 by former members of the Board of Directors of Alberta Ballet. Its purpose is to foster the long-term financial stability of Alberta Ballet by the creation of an endowment fund. Income from the fund will be used by Alberta Ballet to create new repertoire, develop new audiences and provide educational programs.”⁶³

During the programming process, interviews were conducted with personnel from both the Alberta Ballet Company and the Alberta Ballet School. Both groups were extremely generous with their time and lots of good information and ideas were generated. Interviews were held with Michele Stanners, General Director of the Company at the time, and at the School with both Tamara Ross, Administrative Coordinator at the time, as well as Murray Kilgour, Principal Dance Coordinator. In these interviews it was stated that both sides of the organizations are proud to call Calgary their home and the buildings that house their facilities must represent the face of their organization to the city that supports them. As stated by the Calgary Economic Development organization, “The arts are an integral part of Calgary's social fabric creating jobs, diversifying local economies and strengthening community spirit and pride.”⁶⁴

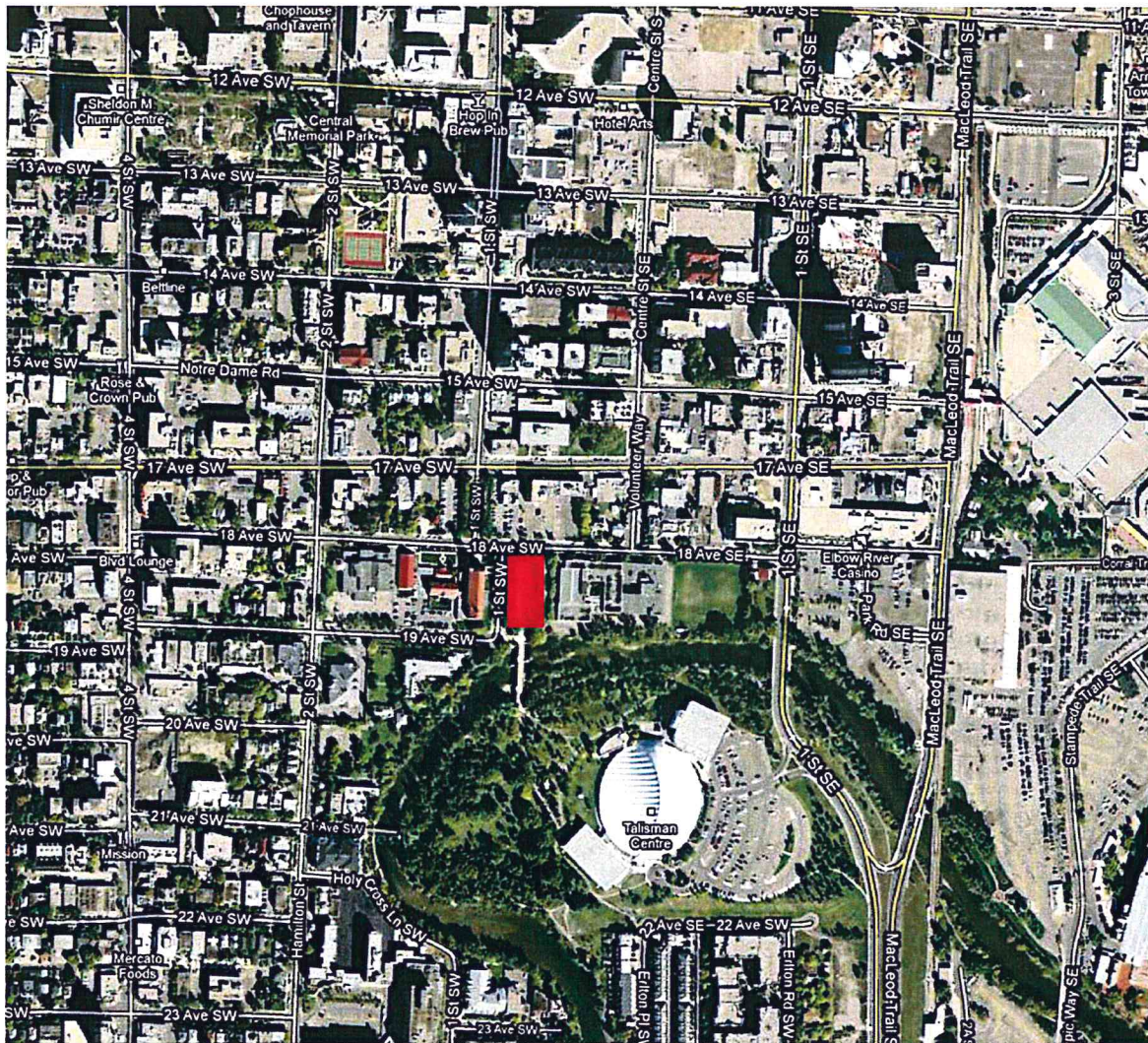
The company image that Alberta Ballet presents to the community, they believe, needs to have a street presence to those who pass by the site, providing a welcoming face while integrating with the surrounding inner city context. It was also clearly stated that the image of the facility needed to represent what they were, that they were a public theatrical dance group who presented themselves to the city for our benefit and cultural growth.

Specifically, artistic director Jean Grand-Maître has said he “wants to shape Alberta Ballet as a contemporary ensemble with an innovative repertoire and dancers who are powerful communicators. He references traditional dance but also incorporates contemporary, full-body movement.”⁶⁵

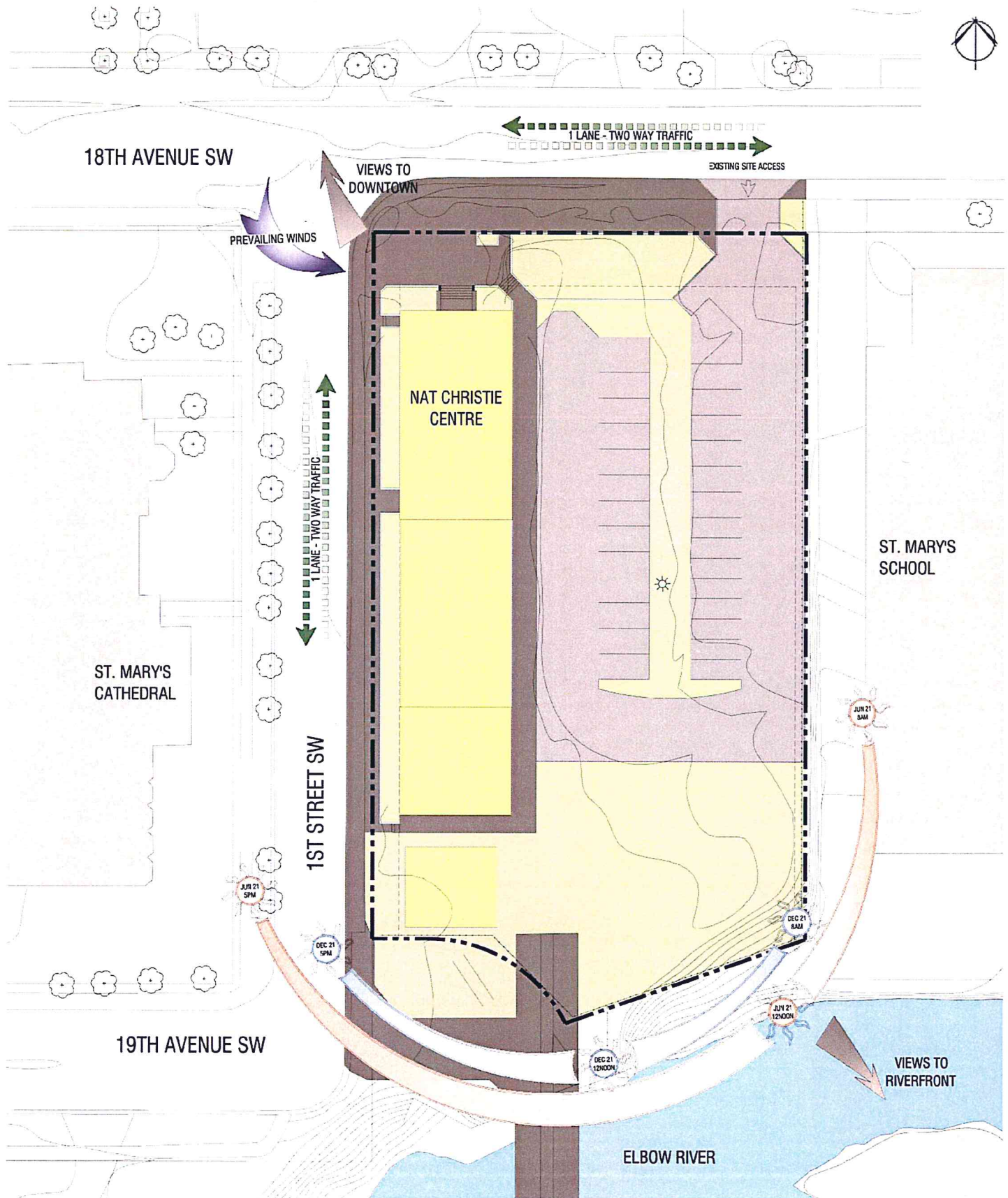


The Site

The site of this thesis project is the Nat Christie Centre, located at 1st Street & 18th Ave SW, in Calgary Alberta.



The Nat Christie Centre is designated a provincial historical resource. This designates the building of value for its historic, cultural and aesthetic interest, and the intention is to preserve the historical nature, look and location.



Site Plan

The site is located within the community of Mission. The site is approximately 4,100 square meters, or 44,000 square feet. The site is roughly 80 meters (262 feet) long and 49 meters (161 feet) wide.

The site is bound:

- On the North by a french restaurant called La Chaumiere (zoned C-COR 2: Commercial Corridor 2 District);



TO THE NORTH

RESTAURANT & OFFICE

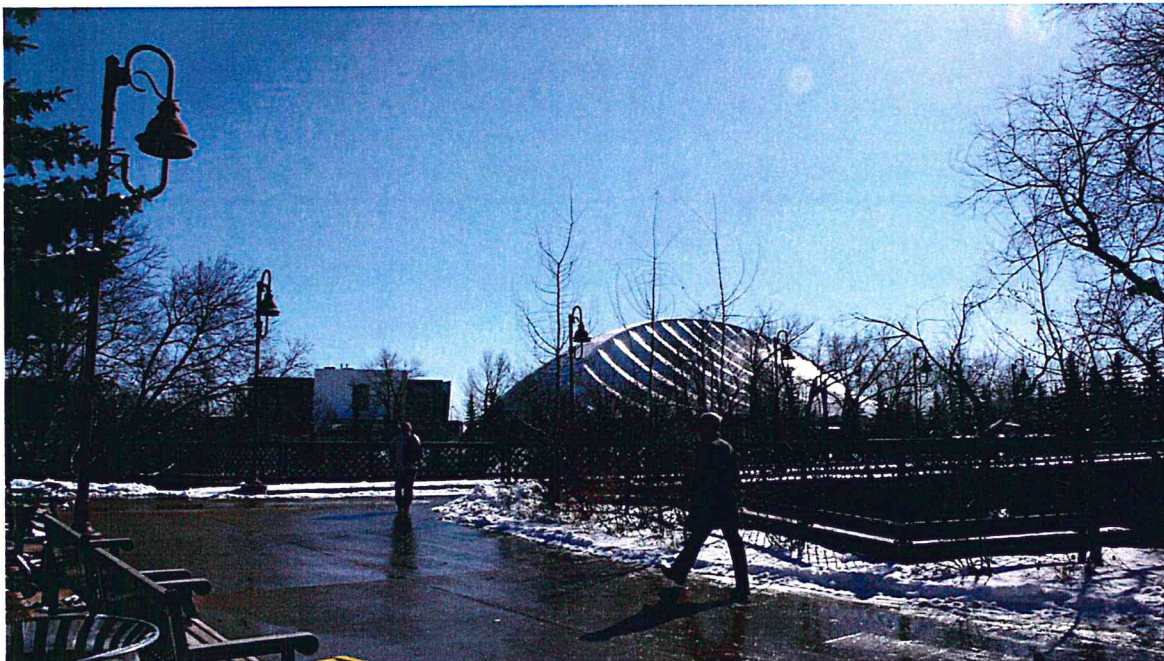
- On the East by St. Mary's Catholic High School (zoned M-C2: Multi-Residential Contextual Medium Profile);



TO THE EAST

ST. MARY'S SCHOOL

- On the South by the Elbow River (zoned S-R: Special Purpose Recreation District);



TO THE SOUTH

TALISMAN CENTRE & ELBOW RIVER

- ❑ On the West by St. Mary's Catholic Church (zoned M-C2: Multi-Residential Contextual Medium Profile)



Site History

The Nat Christie Centre was built in 1905 by architect James J. O'Gara (who also designed St. Mary's School, Lacombe Home and a section of Holy Cross Hospital). The main construction material is locally quarried sandstone. The architectural style of this building is referred to as "boomtown Baroque", with classical elements.



NAT CHRISTIE BUILDING

The Nat Christie Centre building was built on Oblate property in the Mission District where the first Roman Catholic Cathedral, schools and convent were erected. This three storey (plus basement) sandstone structure was erected as a parish hall for the neighbouring St. Mary's Roman Catholic Cathedral.

During the real estate boom in 1911 the church sold the Parish Hall to Canadian Northern Railway. After renovations to transform the building into a train station, the first train arrived in 1913. In 1916, on the south side, there was the addition of brick express structure (in railway architectural tradition) and a wooden canopy extending entire length of the east side.



ADDITIONS TO THE NAT CHRISTIE BUILDING (1916)

The train system ran for many years, until 1971 when the station permanently closed.

In 1979 the City acquired the hall and additional property in the Lindsay Park area. The building was designated a Provincial Historic Resource in 1981. In 1984 the City's proposal call for appropriate re-use was awarded to the Calgary City Ballet. A fire gutted the structure in August 1985 and major renovations were completed in 1987. Two large dance studios were constructed in the original Parish Hall and the ballet's wardrobe department was then housed in the 1916 brick addition. At that time the building was re-named the Nat Christie Centre. Since 1991 it has remained home to Alberta Ballet.⁶¹

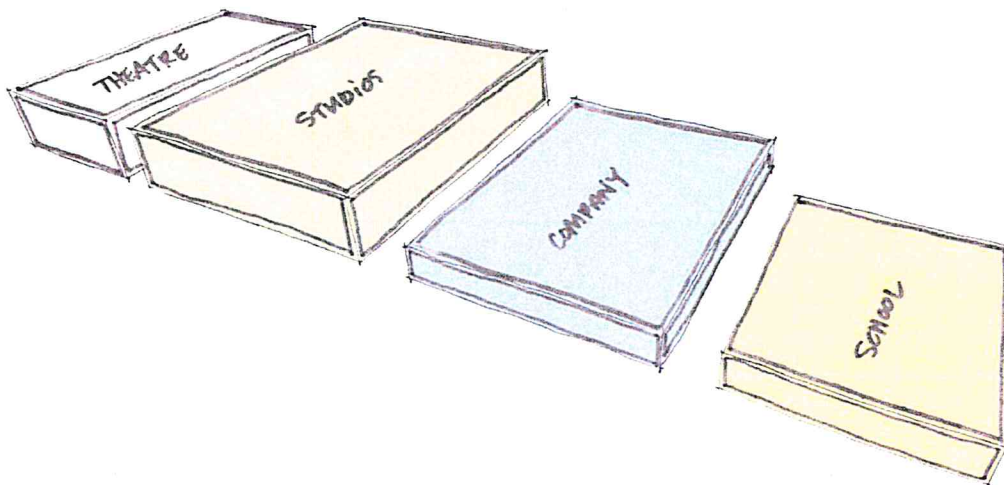
Zoning

The site is currently zoned S-CI District (Community Institution). This zoning is intended to accommodate a cultural society such this client group occupying the building on the site.

The bylaw also states that in terms of design guidelines, all restoration work of existing heritage structures shall ensure that the character, appearance and materials of the original development are maintained. In other City guidelines such as the City Centre Plan, and the Municipal Development Plan, development of the rest of the site also has to be consistent with the context of the neighbouring streets.

In meeting with the Alberta Ballet a functional and space needs analysis and programme was developed. In terms of the overall space requirement, there is a need for:

- ❑ 430 square metres of school space (4,600 square feet)
- ❑ 705 square metres of company space (7,600 square feet)
- ❑ 1,205 square metres of studio space (13,000 square feet)
- ❑ 840 square metres of stage to emulate the Southern Alberta Jubilee Auditorium (9,100 square feet)



What is important about this is that there is a very large amount of physical space needing to be allocated to a site which has no F.A.R. (Floor Area Ratio) requirements. Therefore it was known that the building design will virtually cover the site and be within the permitted F.A.R. requirements, and it was also known that large expanses on the site for parking or for landscaping would not be available.

Site Analysis

Next, assessment of the site: sun, pedestrian access, building frontage, neighbourhood context, and the like. What is notable about the site is it's proximity to the footbridge and it's connection from the south footbridge to the north park as well as it's connection between St. Mary's Church on the west and the school on the east. In some way, the site itself is a connector of pedestrians (north/south) and of culture (east/west). While not critical, it is none-the-less, very interesting and resonates with the design and with this thesis.

The next thing to look at was the existing buildings on the site. First off there was the Nat Christie building, which is in good repair, and sits at a footprint of around 300 square meters (3,300 square feet). It is three stories tall, plus basement, at an overall height of 10 meters. It is clad in locally quarried sandstone structure, and as mentioned previously, is a provincially designated historic building.

The first addition to the original structure was a wood frame structure clad in brick. This structure is in decent repair and has the railroad character. This part of the building is not a historically designated building and therefore could be torn down if determined not to be appropriate to the design. Alternatively it also may be utilized in the design. The same goes for

the second addition, which was also wood frame but clad in wood siding. This structure is also in decent repair with railroad character design. There is also a small house on the site, circa 1950 which is non-descript and in a very bad state of disrepair. It is not a historical building and may be torn down.

The site has southern exposure to sun, and northwest exposure to wind. The site is relatively isolated from major traffic street noise on 17th Avenue to the north. On its south boundary it is adjacent to the Elbow River and a tranquil park setting.

There is clear pedestrian movement past the site. The north-south connection between Lindsay park and St. Mary's Church park brings people directly along the west side of the site, and it connects the river pathway system with the east-west auto and bus system on 17th Avenue SW. Access to the north-south Calgary Transit Train System is located 3 blocks east of this site. The east-west connection to St. Mary's Church & St. Mary's School brings people directly along the north side of the site. The proximity to the 'theatre district' of Calgary (located along 9th Avenue SW in downtown Calgary) is a feature of this site as it is just south of the theatre district which is a relationship that clearly justifies the continued use of this site in that the Alberta Ballet maintains its presence in the Calgary artistic community.

The site is also laid out to really highlight the distinct building frontage of the Nat Christie Centre. This façade has been part of the neighbourhood landscape for over a hundred years, it is constructed of locally quarried materials, and it is located on a highly accessed pedestrian corner as the adjacent plaza and park opens up the views to this particular site quite well.

The neighbourhood context is a mix of a variety of building types and materials. There is everything from the historical sandstone of Nat Christie and the Christian Learning Centre to the south, to the brown brick of both the school and church buildings to the east and west, to the

stucco and metal of the restaurant and office buildings to the north, to the sleek tent & curtain wall structure of the Talisman Centre to the south.

There are incredible landscape vistas surrounding the site, from the street trees aligning the street, to the adjacent urban parks, to the lush riverbank area.

In terms of sustainability, the Alberta Ballet does not wish to achieve any kind of LEED certification, but would like to be a good community member and so would like to incorporate best practices in the design and construction that will indeed follow sustainable initiatives. They are not looking to be an example, but rather a participatory member in general sustainable building practices.

Parking

The current vehicular site access exists on the north side off 18th Avenue SW. There is no parking allowed along this side of the street. Along 1st Street SW there is no parking allowed on the west side, parking is only currently allowed on the east side. Because this site is relatively small for the scope of the programme needing to go on it, it was clear that parking could be a significant design factor so from there the parking requirements were the next element to be examined.

Under the City of Calgary Bylaw guidelines, a Performing Arts Centre requires a parking study at the time of application. Based on general parking requirements of office, schools, and like program it was determined that a minimum of 50 stalls was necessary for the program requirements, in addition to 5 drop-off stalls.

The site can accommodate this number of stalls at grade but with the amount of building area required, there was consideration of where the stalls would fit best. Parking options included:

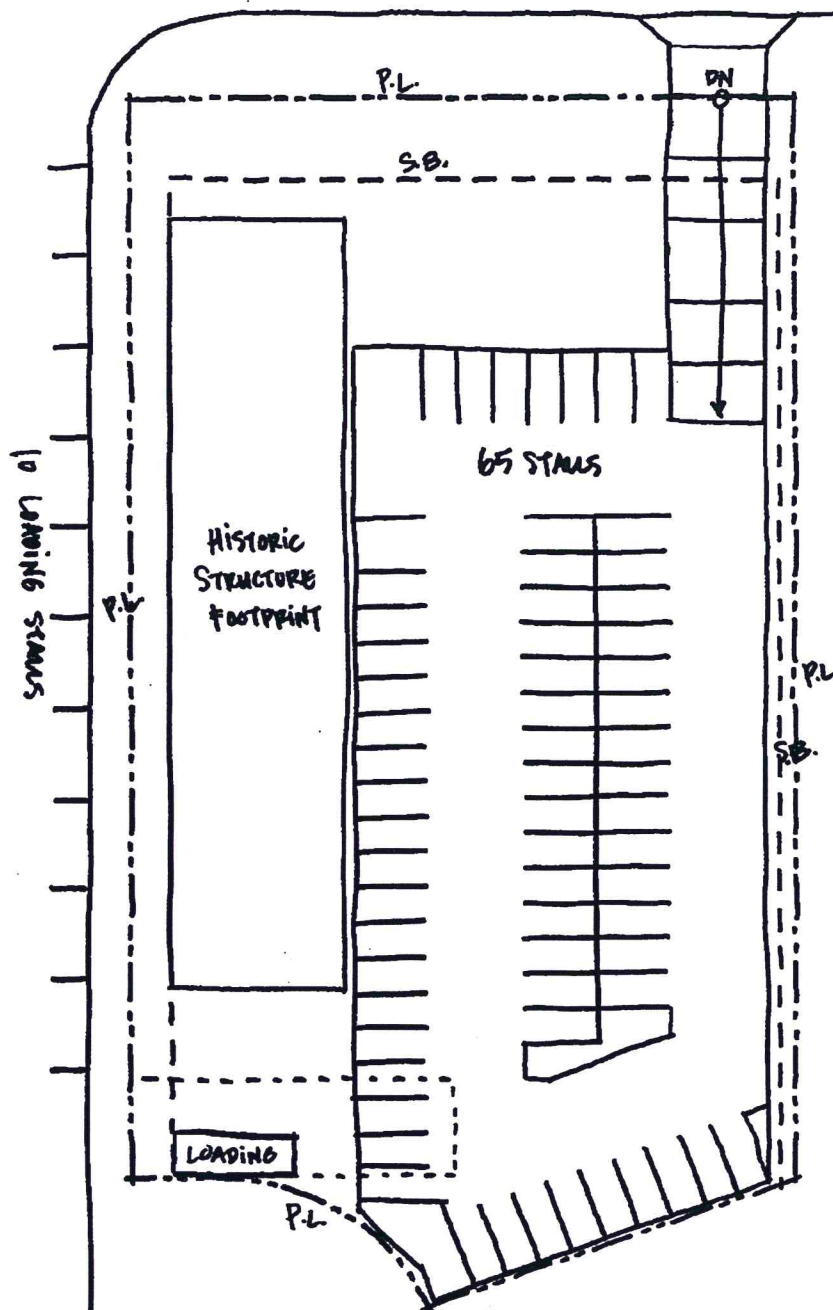
- ❑ Parking on grade and build the building above the parking;
- ❑ Parking below grade; or
- ❑ An above grade parking structure.

This theoretical project was therefore reviewed with the City of Calgary Transportation Department, who very clearly said they would only support either on-surface parking or below grade parking. Because the on-surface parking would result in a building mass which would likely be too high, as well as result in extreme challenges to the building frontage and massing, the underground parking option was the obvious choice to next examine. What was found was that the site can accommodate up to 60 or so stalls quite comfortably, without encroaching on the footprint of the historic structure. In terms of vehicular access, the Transportation Department said they would likely not support a vehicular access off of 1st street, near the south side of the site as it was too close to the adjoining intersection to 19th Avenue, as well as too close to the pedestrian footbridge connecting to the river pathways and so they would like to avoid additional vehicular traffic to this area. This recommendation would result in the underground parkade access being kept in its original location off 18th Avenue, on the north side of the site.

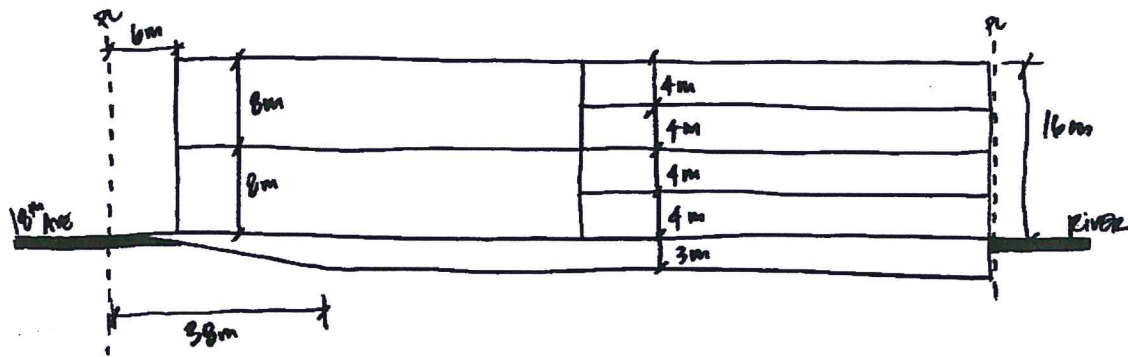
As there is no parking currently allowed on 18th Avenue, and there is no parking on St. Mary's side of 1st Street, it appears that the existing street parking on the client's side of the street could be replaced by the drop-off area. Along the west of the site, approximately 10 drop-off stalls can be accommodated in this length of space. To evaluate the parking options (above, below, or on surface) a study was done to assess the impact of the parking on the building programme. Surface parking at grade appeared to severely restrict the planning of the main floor functional

requirements. Above grade parking created more of an impact on the functional programming so the only option was to incorporate underground parking.

There was one loading stall required, which could be accommodated towards the south end of the site, it could be accommodated underground if necessary.



Underground Parkade Sketch



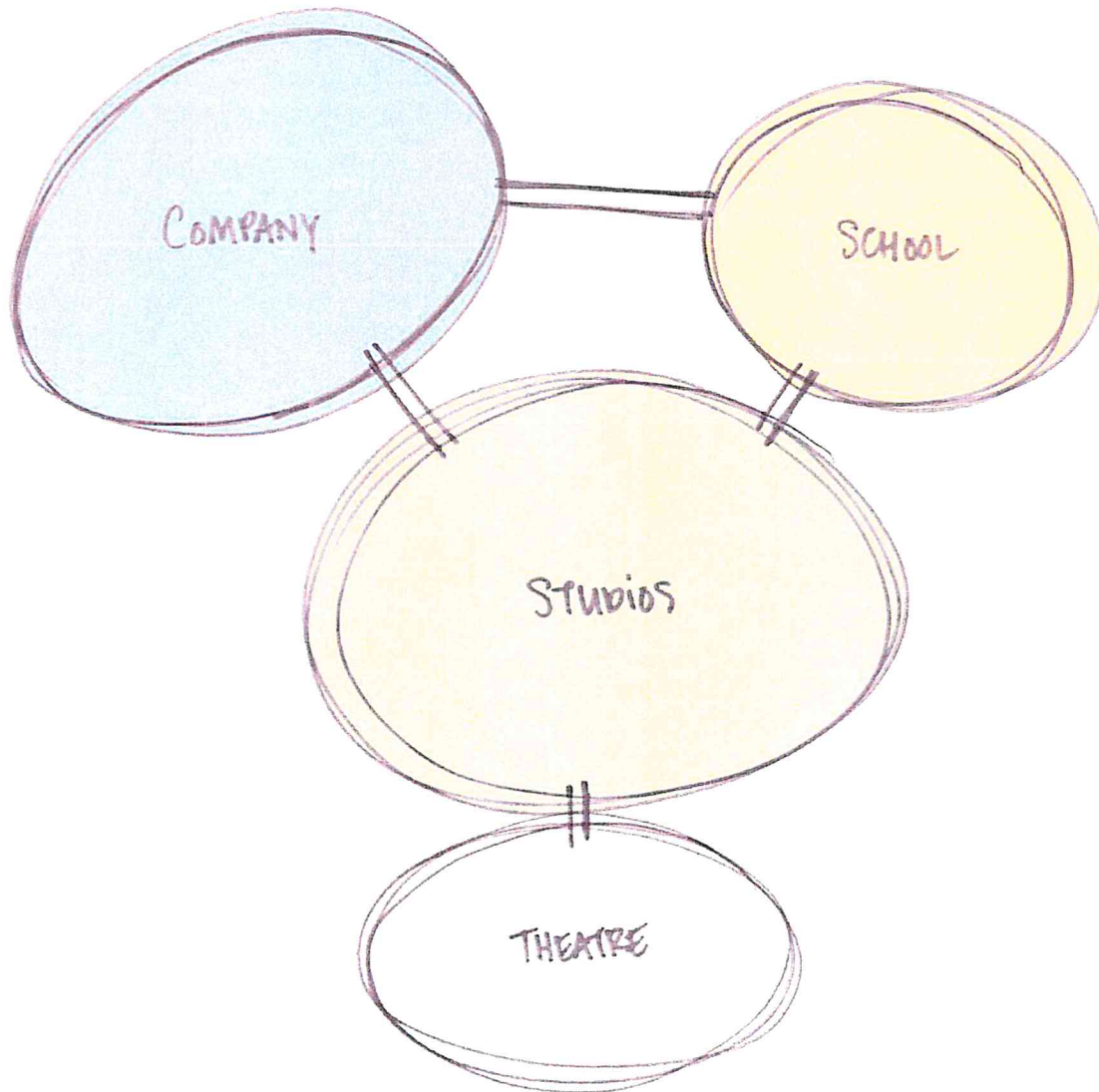
Building Section Sketch

Programme

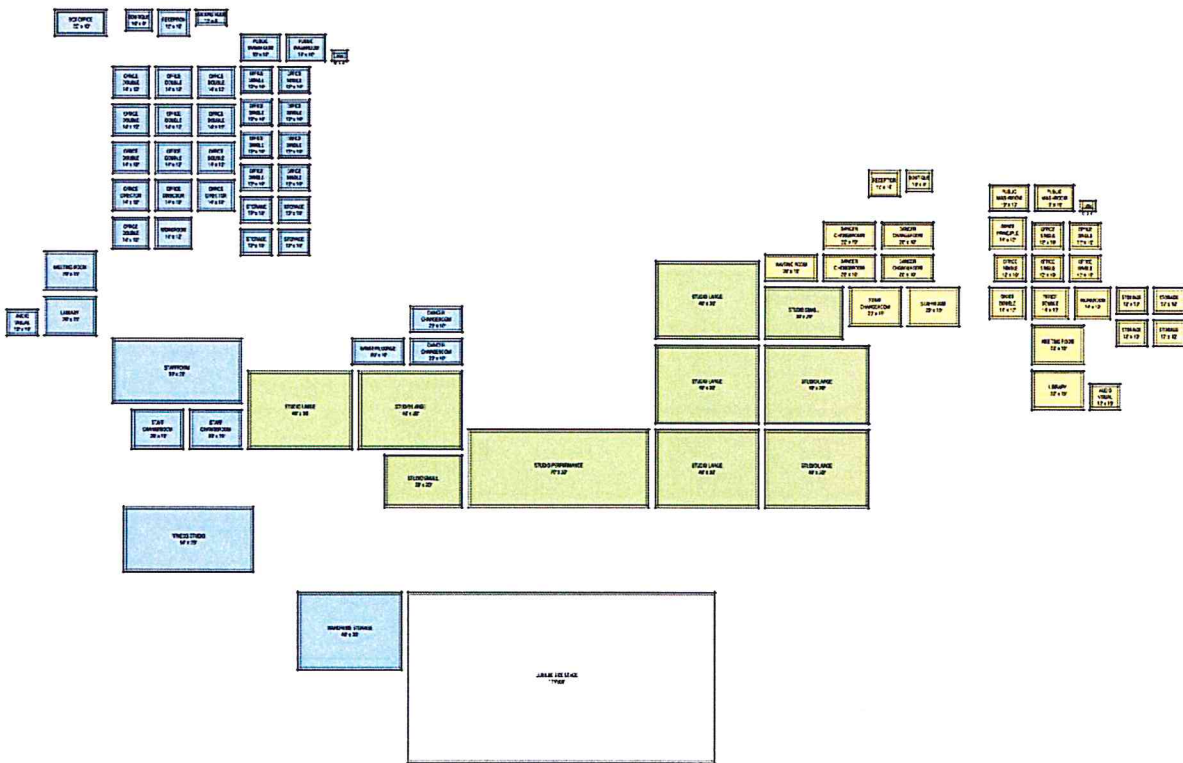
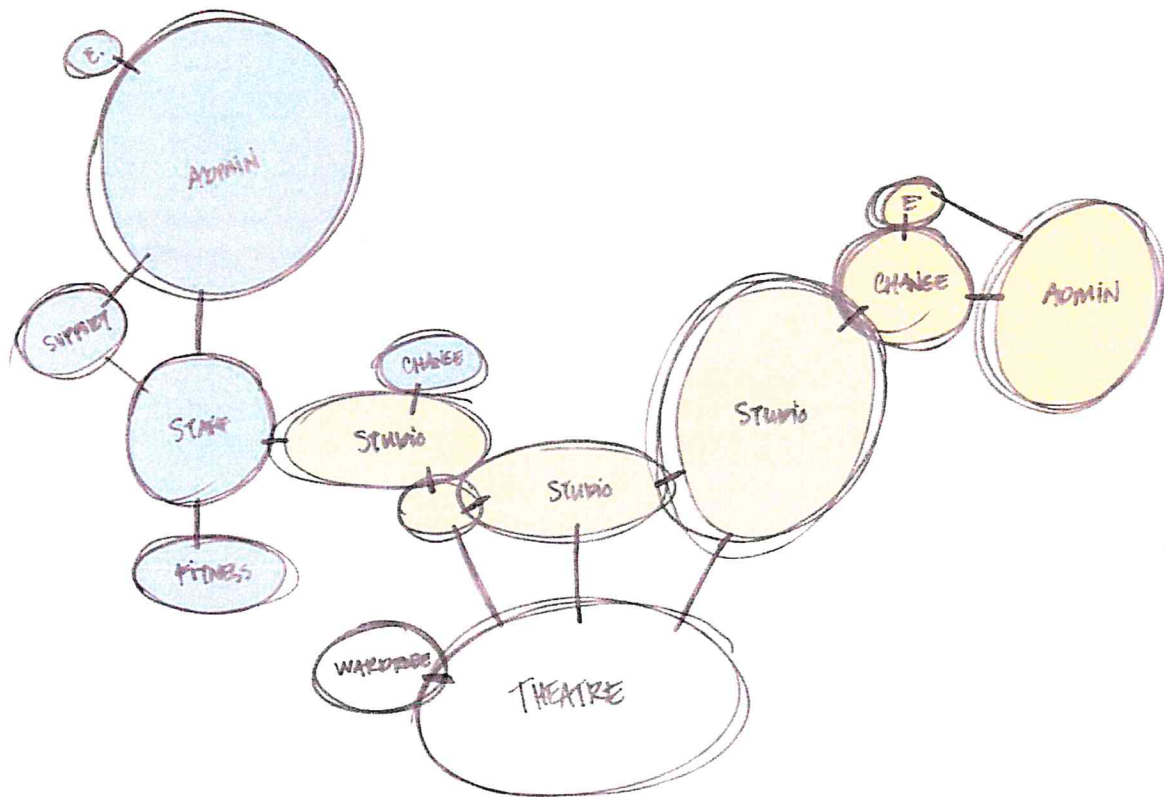
After completing interviews with both the Alberta Ballet Company and the Alberta Ballet School, a programme chart was drawn up to organize the space needs of both groups.

SPACE	FLOOR	NUMBER REQUIRED (QUANTITY)	DIMENSIONS REQUIRED (feet)	AREA REQUIRED (EACH)	TOTAL AREA	CIRCULATION (35%)	TOTAL AREA (USABLE + CIRCULATION)	PRELIMINARY FURNITURE / EQUIPMENT REQUIREMENTS	ADJACENCIES	NOTES
PROFESSIONAL COMPANY										
RECEPTION		1	10	12	120	42	162	RECEPTION DESK, STORAGE	MAIN ENTRY, WAITING ROOM	
BOUTIQUE		1	8	10	80	28	108	DISPLAY CASE, LOCKED	RECEPTION	
BOX OFFICE		1	10	20	200	70	270			
WAITING ROOM		1	6	12	72	25	97	SEATING		
DANCERS LOUNGE		1	10	20	200	70	270	KITCHENETTE, SEATING	MAIN ENTRY, PUBLIC WASHROOMS	
DANCERS CHANGEROOM		2	10	20	200	140	540	LOCKERS, BENCHES	STUDIOS, DANCERS CHANGEROOM	
PUBLIC WASHROOM		2	10	15	150	300	450		STUDIOS	
OFFICE - DIRECTORS		3	12	14	168	176	680	WORKSTATION, SEATING	RECEPTION, WAITING ROOM	
SINGLE OFFICE		8	10	12	960	336	1,296	WORKSTATION, SEATING		NOT SEEN DIRECTLY BY PUBLIC
DOUBLE OFFICE		10	12	14	168	588	2,268	2 WORKSTATIONS		
WORKROOM		1	12	14	168	59	227			
JANITOR		1	4	6	24	8	32			
STAFF CHANGEROOM		1	25	50	1,250	438	1,688	KITCHENETTE, SEATING	STAFF CHANGEROOM, OFFICES, STUDIOS	
STORAGE		2	15	20	300	210	810	LOCKERS, BENCHES	STAFF ROOM	
AUDIO/VISUAL ROOM		4	10	12	120	168	648	WORKSTATIONS, STORAGE	OFFICES	
LIBRARY		1	10	12	120	42	162	WORKSTATIONS, TABLES, SHELVING	LIBRARY, OFFICES	
MEETING ROOM		1	15	20	300	105	405	SEATING FOR 12	AUDIO/VISUAL ROOM	
TOTAL					7,758		10,473		OFFICES	
SCHOOL										
RECEPTION		1	10	12	120	42	162	RECEPTION DESK, STORAGE	MAIN ENTRY, WAITING ROOM	
BOUTIQUE		1	8	10	80	28	108	DISPLAY CASE, LOCKED	RECEPTION	
WAITING ROOM		1	10	20	200	70	270	SEATING	MAIN ENTRY, PUBLIC WASHROOMS	NO VIEWING INTO STUDIOS
DANCERS CHANGEROOM		4	10	20	800	280	1,080	LOCKERS, BENCHES	STUDIOS	
PUBLIC WASHROOM		2	10	15	150	300	405		RECEPTION, WAITING ROOM	
OFFICE - PRINCIPAL		1	12	14	168	59	227	WORKSTATION, SEATING		NOT SEEN DIRECTLY BY PUBLIC
SINGLE OFFICE		5	10	12	600	210	810	WORKSTATION, SEATING		
DOUBLE OFFICE		2	12	14	168	118	434	2 WORKSTATIONS	STAFF CHANGEROOM, STUDIOS	
WORKROOM		1	12	14	168	59	227		STAFF ROOM	
JANITOR		1	4	6	24	8	32		OFFICES	
STAFF CHANGEROOM		1	15	20	300	105	405	KITCHENETTE, SEATING	LIBRARY, OFFICES	
STORAGE		1	15	20	300	105	405	LOCKERS, BENCHES	AUDIO/VISUAL ROOM	
AUDIO/VISUAL ROOM		4	10	12	120	168	648	WORKSTATIONS, STORAGE	OFFICES	
LIBRARY		1	10	12	120	42	162	WORKSTATIONS, TABLES, SHELVING		
MEETING ROOM		1	15	20	300	105	405	SEATING FOR 12		
TOTAL					4,596		6,205			
STUDIOS										
STUDIO - PERFORMANCE		1	30	70	2,100	735	2,835	PIANO, STEREO, CABINET	CHANGEROOMS, LOBBY	MIRRORS, BARS, NATURAL LIGHT, SPRUNG FLOOR
STUDIO - LARGE		7	30	40	8,400	2,940	11,340	PIANO, STEREO, CABINET	CHANGEROOMS, LOBBY	MIRRORS, BARS, NATURAL LIGHT, SPRUNG FLOOR
STUDIO - SMALL		2	20	30	600	420	1,620	PIANO, STEREO, CABINET	CHANGEROOMS, LOBBY	MIRRORS, BARS, NATURAL LIGHT, SPRUNG FLOOR
FITNESS ROOM		1	25	50	1,250	438	1,688		CHANGEROOMS, LOBBY	
TOTAL					12,950		17,483			
THEATRE										
THEATRE STUDIO		1	66	119	7,854	2,749	10,603	MUSIC & LIGHTING HELD/HALF	LOBBY, WARDROBE	
WARDROBE		1	30	40	1,200	420	1,620		INLAINE	
TOTAL					9,054		12,223			
BUILDING TOTAL					34,358		46,383			

In terms of the Alberta Ballet Company's functional needs, the following 'bubble diagrams' show basic relationships and their connections:



Major Building Programme Components Sketch



Sub-Component Building Programme Bubble Diagrams

What is important about this is the need to provide, within the design, both very private learning spaces but also very public presentation spaces. What also came out from this very interesting review was the interplay between the students and the professionals – the Company wants a slight separation between the students and the professional dancers, but they do want a significant amount of inter connectivity between the two groups. The school tends to feed directly into the company, and they see dancers evolving over years from student to professional to instructor/choreographer and therefore they would like the spaces to allow this interaction to occur naturally.

At this stage, the space needs and functional programme were revisited and the areas were analyzed spatially and qualitatively – an understanding of what the spaces needed to be from a height & feel point of view needed to be determined.

- There is a studio component, to be shared by both the school and the professional company. The studio spaces are comprised of 5 large studios, and 3 small studios. All the studios must have high ceilings, dance floors, good acoustics and natural light would be preferred. The studios are the heart of the facility where all the creative process is facilitated, where all the learning and teaching happen. These spaces, where the work is done, are to be in proximity to the public face of the building, as the Alberta Ballet would like to draw the community into the dance world more than ever before, and would like this renovation to aid in showcasing their art to the city. The studios will take up about 13,000 square feet.
- The next component is a theatre space that has the same stage size as the Southern Alberta Jubilee Theatre space which houses Alberta Ballet productions. This space is to be used for accurate stage rehearsal space, as well as for informal productions, recitals

and special events. The theatre area must also have high ceilings, good acoustics and no direct natural light. The space is to feel more formal than the daily studio spaces, and resonate the essence of performance as this space may be the only performance space some of the children at the Alberta Ballet School will ever experience. The theatre space will take up about 8,000 square feet.

- The third component is comprised of support spaces for the Alberta Ballet professional company. This includes the administration and director offices, work rooms, meeting rooms, library and audio visual spaces, staff rooms, change rooms, reception and a box office. These spaces need regular office height ceilings, lots of natural light, and good proximity to the rest of the facility. This area is where the structure of the organization is maintained and is very important in supporting the production of the art. The support spaces for the company will take up about 9,000 square feet.
- The last component is the support spaces for the Alberta Ballet school. They are similar to the support spaces for the company, just on a smaller scale. The support spaces also need regular office height ceilings, lots of natural light, and should be adjacent to the support spaces of the company, as although they are separate entities, they are complimentary to one another, with similar functions and investment in the facility. These spaces will take up about 4,600 square feet.
- Outside of these four main components are some other important aspects of the building programme. One is the circulation spaces. One of the driving factors of this addition and renovation is to bring the school and company in closer proximity. It is important to both sides to have the students of the school have some controlled interaction with the professional dancers. The students feed directly into the company and it is important to

allow them to visualize what lays ahead in observing the older generations. There needs to be space allowed for where this interaction can take place in a social atmosphere outside of the training done in the studios. The space needs to feel lively and engaging, comfortable and open. It should be central to allow both users to enter into it and facilitate positive synergy.

- Another important aspect is that of the public use of the building. The public is welcome to utilize the facility for specific uses of business, whether it be to buy tickets at the box office, to enquire about training for their child, if they have been invited to attend an informal performance, or are a guest choreographer, musician or performer. The public entrances need to be controlled, so there are no safety issues within the facility, but they must also feel welcome and directed once they enter.
- One last important aspect of the facility is the image that it will project to the community, how this building, in this urban context is perceived. The building addition must respect the existing historical building on the site. The building must adequately represent the face of the Alberta Ballet. The building must be visible to the community, and engage the community within which it lies, respecting its historical neighbours of St. Mary's Church and St. Mary's School. This building imagery as developed with the Alberta Ballet when discussing their vision for their new facility.

Schematic Design

Concept

At this point in my design process:

- ☐ The client and site were selected and were found to be very appropriate for the thesis;
- ☐ A detailed functional programme was complete;
- ☐ A space needs assessment was complete;
- ☐ Rigorous site analysis was complete;
- ☐ The client's design drivers and image concerns were determined;
- ☐ The quality of spaces and what needed to be evoked and derived from that quality of space had been assessed and understood;
- ☐ The City was consulted on access and egress and the restrictions and opportunities for the site were determined;
- ☐ A zoning review of the site was completed;
- ☐ The existing buildings were reviewed and assessed for their viability for re-use;
- ☐ The client's programme and functional needs were determined to be easily accommodated on the site if underground parking was provided.

At this point in time, a review of the information that had been attained so far was:

- ☐ Research which supported the connection of older buildings with newer buildings;
- ☐ Research which supported the use of older buildings for newer functions;
- ☐ A site which connects an older neighbourhood with a relatively newly developed public space of the elbow river paths and the Talisman Centre;
- ☐ A site which contains an historic building and also allows new building growth;

- ❑ A client who interconnects classical dance with contemporary dance;
- ❑ A client who wants to connect with the community;
- ❑ A client who wants to foster a better connection between the students and the professionals;

From this, a rather obvious and simple commonality emerged which resonated strongly with this thesis research, this client, and this site:

it was the connection between **classical** and **contemporary**.

In beginning to look at this design, the idea of connection between classical and contemporary was central to many of the elements, and to this whole thesis. The research was about connecting classical buildings with new buildings and about the importance of the connection between old and new that strengthens our communities and our lives.

The client, the Alberta Ballet Company fit perfectly within this idea – they are about new students learning with experienced professionals. They are about contemporary dance in conjunction with classical dance. They are about older professionals teaching younger professionals. They are about the growth of dance and culture in Calgary through the connection to classical dance and contemporary movement.

Therefore this building design must be about **the connection between classical and contemporary design**.

This concept resonates throughout all aspects of this thesis project. It mirrors the theme of the ballet being developed on the site, where the foundation of the dance performed has classical

roots, but they still explore new and creative movement in the contemporary style. In terms of the architectural component there is the existing classical structure that has to be considered with the new contemporary addition. In both these facets, the connection between classical and contemporary is the important factor to be considered and developed in the concept.

Massing

There is an overall height requirement of the building to be within 16.0 meters. This equates to 4 stories slab-to-slab of 4.0 meters each, which should suit all of the general program requirements except for two specialty spaces, the dance studios and the performance theatre. These two spaces will be in the range of 6.5 meters - 8.0 meters tall, and so can still be stacked at least two levels high.

The existing historic structure can fit approximately 915 square meters or 10,000 square feet. The two additional existing structures can fit approximately an additional 400 square meters or 4,600 square feet.

The company's requirements are about 705 square meters (7,600 square feet), the school's requirements are 430 square meters (4,600 square feet), there is the joint studio requirement of 1,205 square meters (13,000 square feet) and the performance theatre is around 840 square meters (9,100 square feet) of primarily stage area.

One of the first connections this analysis reveals is that the space requirements of the company fit nicely in the historic building. It is also appropriate that the established company, with the senior members, be in the classical building as they have the foundations formed both in their dance and in the company. This would put the studios and school functions in the contemporary

space, which is also fitting as the children are the vision of the future of the company, and the studio spaces is where the new ideas of movement and creativity are explored.

The next step was to come up with various solutions to the massing on the site, both in rough massing model and computer generated 3D modelling form.

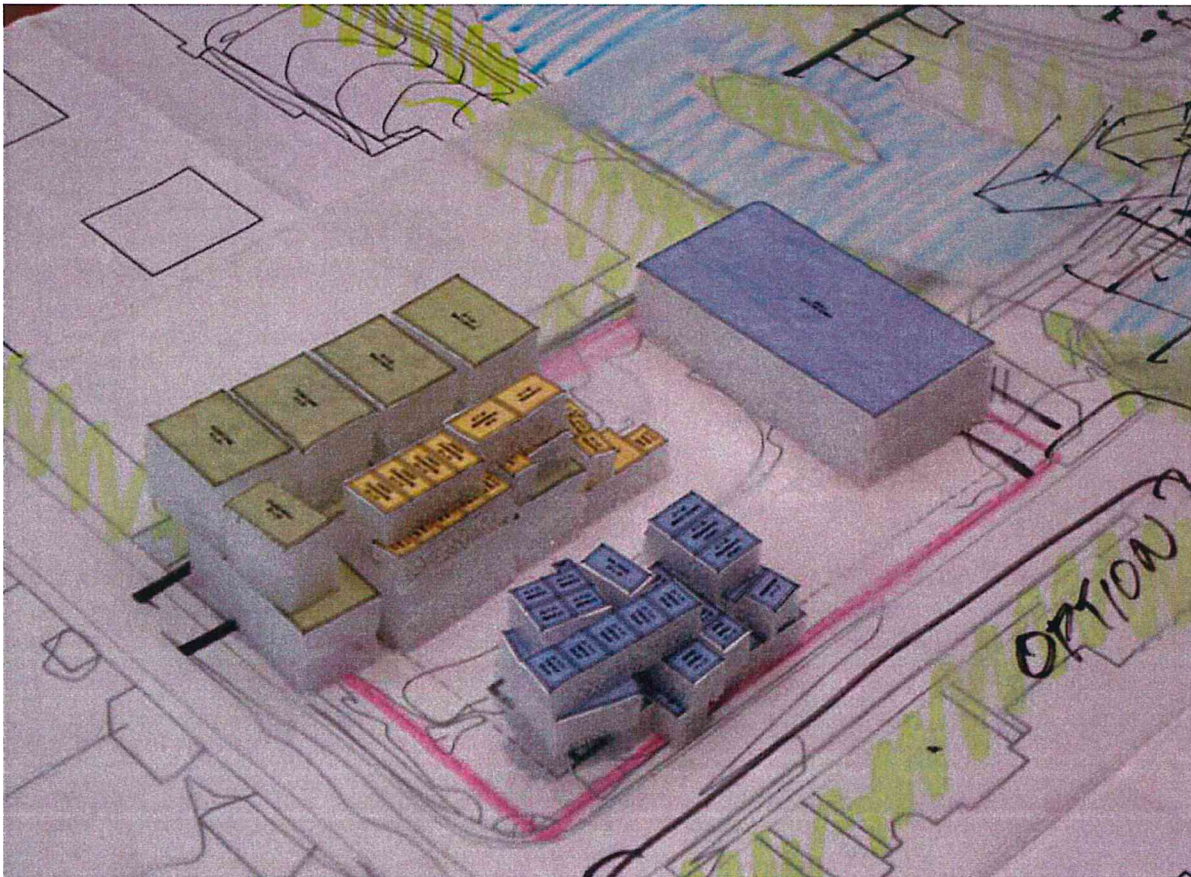
In completing this analysis, it led to the question of: is there another way to connect the classical and the contemporary spaces besides through circulation? And how can that be expressed? In the later options various connections were examined, such as:

- ❑ possibly 'nothing',
- ❑ 'no building', where the two buildings are completely detached,
- ❑ through a 'function' such as a special space, or a particular room or lounge,
- ❑ through 'no space', where the two buildings are right up next to each other without circulation running through the centre, or
- ❑ 'intersection' where the two buildings embrace one another.

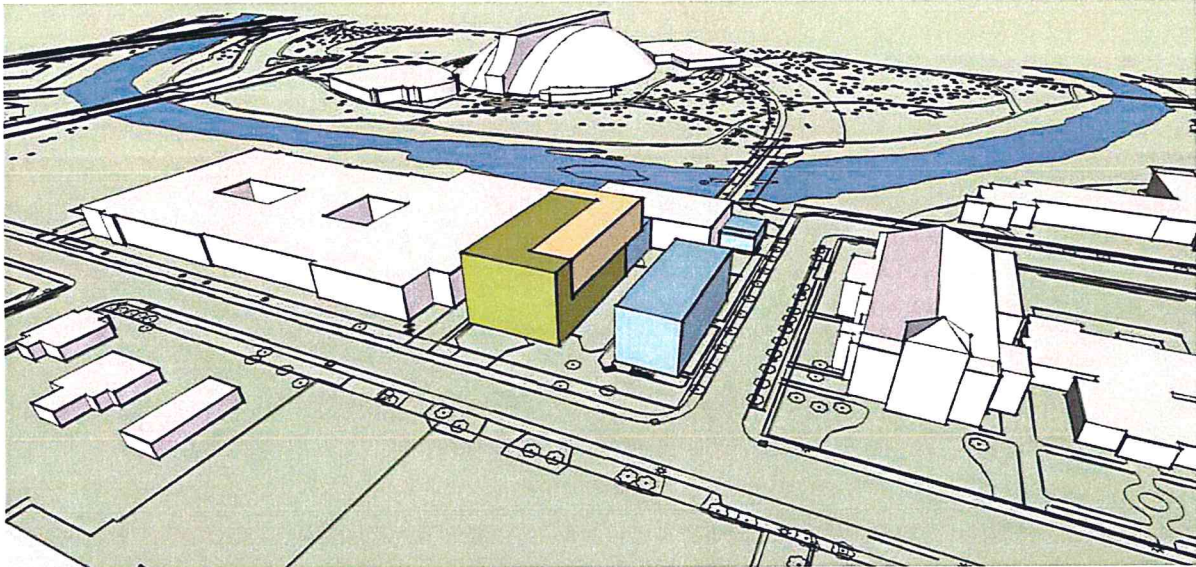
In exploring each of these options, circulation, general structure, & parti sketches were all further examined.

OPTION 1

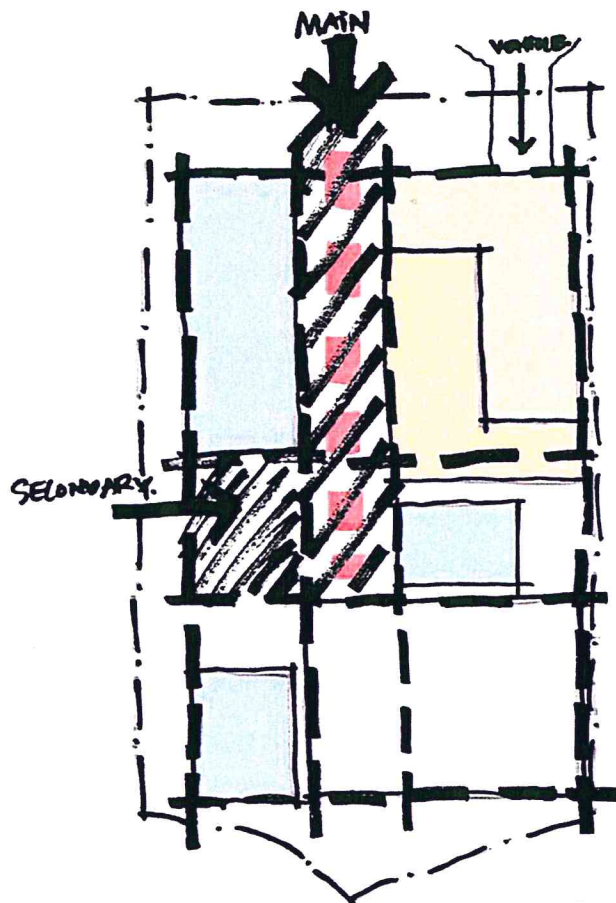
- EXPLORES INTEGRATING STUDIO + SCHOOL SPACES
- CLEAR CIRCULATION TO DESTINATION (THEATRE) ✓
- BLOCK FOOTBRIDGE X
- STUDIO SPACE TO PUBLIC ✓
- STRUCTURAL GRID ✓
- BLOCK RIVERVIEWS X



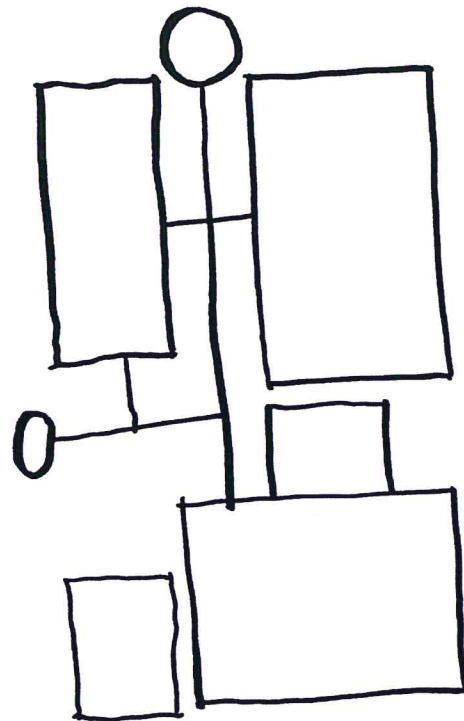
Option 1 - Physical Massing Model



Option 1 - 3D Massing Model



Option 1 - Plan Analysis

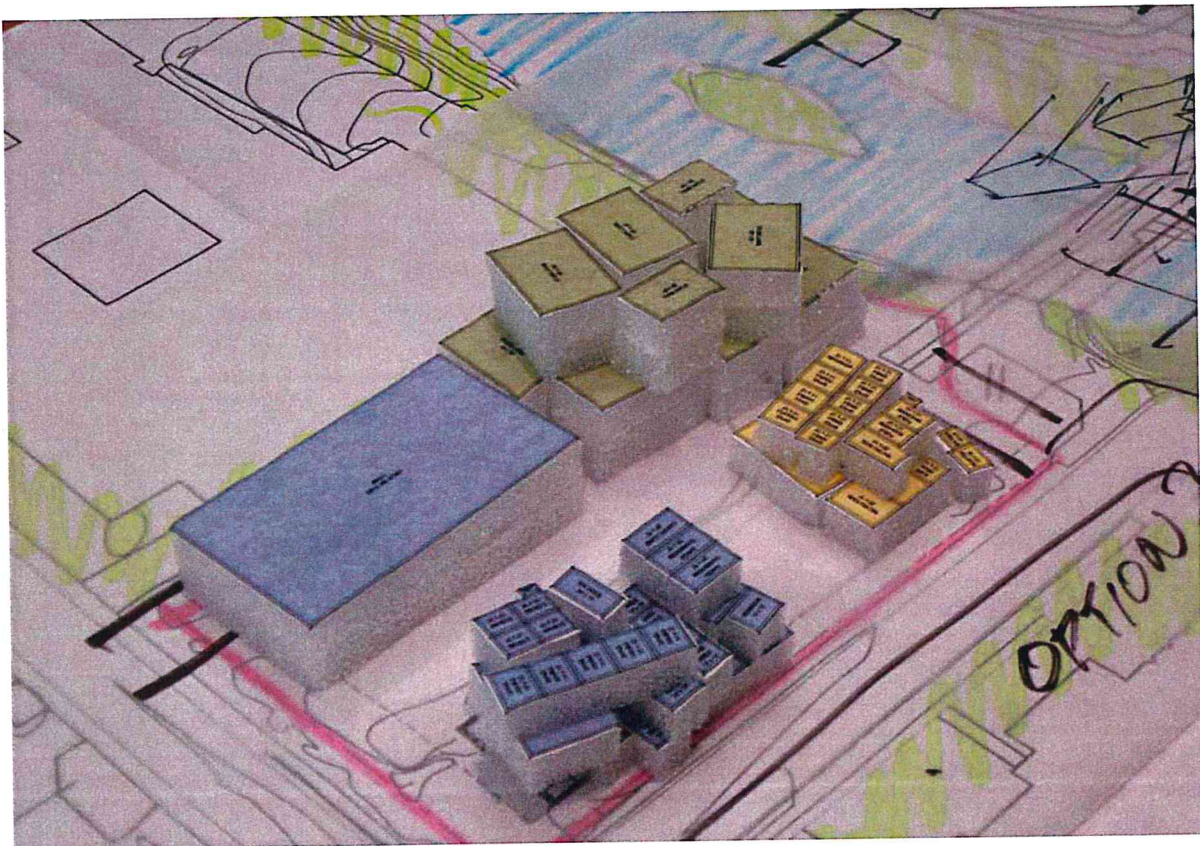


Option 1 - Parti Sketch

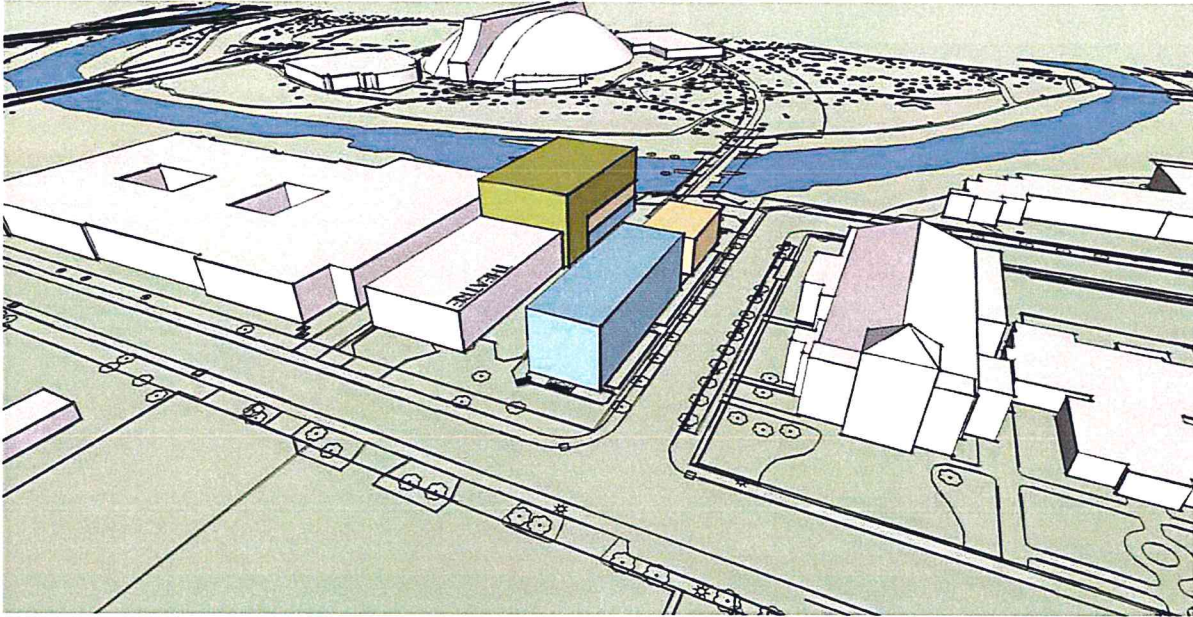
option 1

OPTION 2.

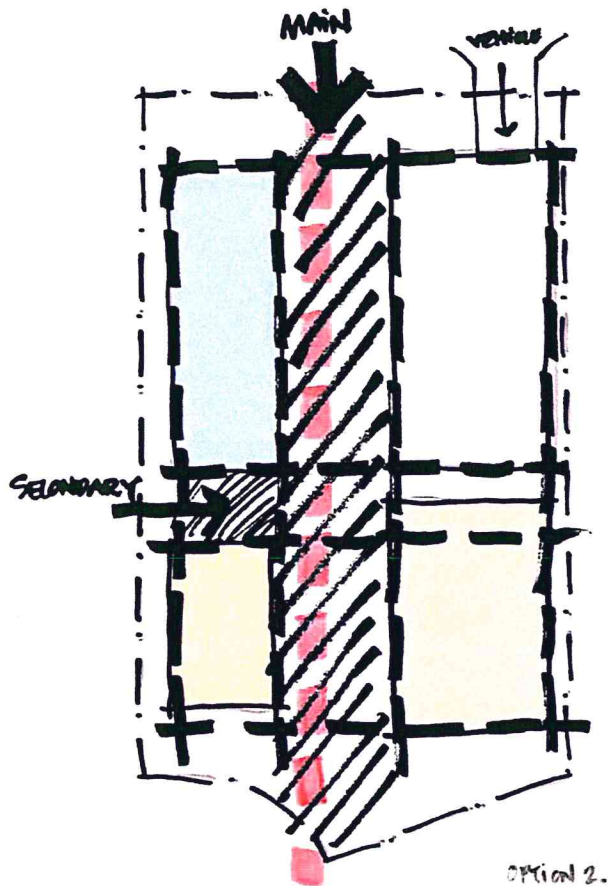
- EXPLORES THEATRE
FACING TO PUBLIC
- CLEAR CIRCULATION TO ✓
CONNECTION TO FOOTBRIDGE
- STUDIO VIEWS TO RIVER ✓
- STRUCTURAL GRID ✓
- PERFORMANCE SPACE
TO PUBLIC X



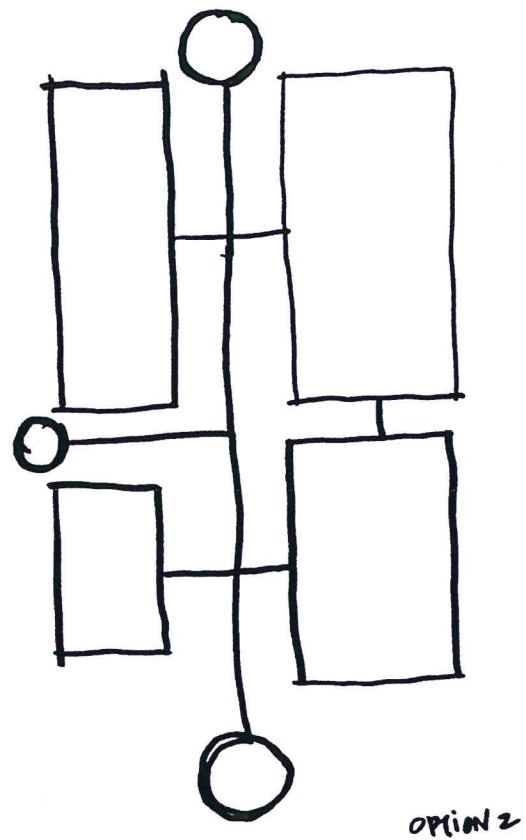
Option 2 - Physical Massing Model



Option 2 - 3D Massing Model



Option 2 - Plan Analysis



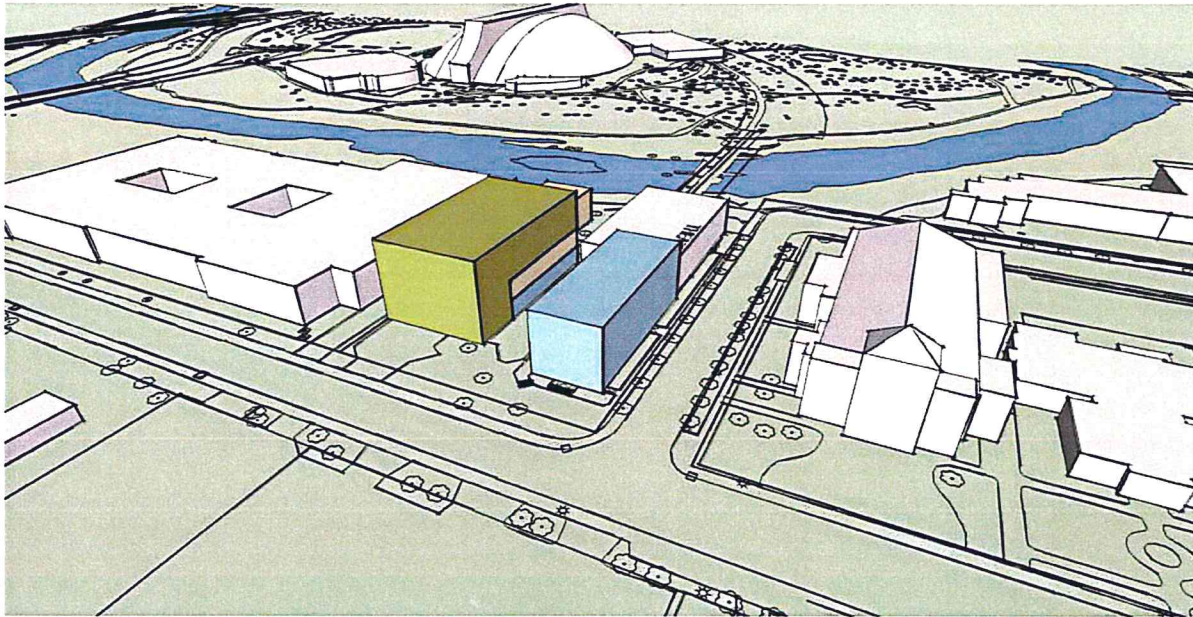
Option 2 – Parti Sketch

OPTION 3

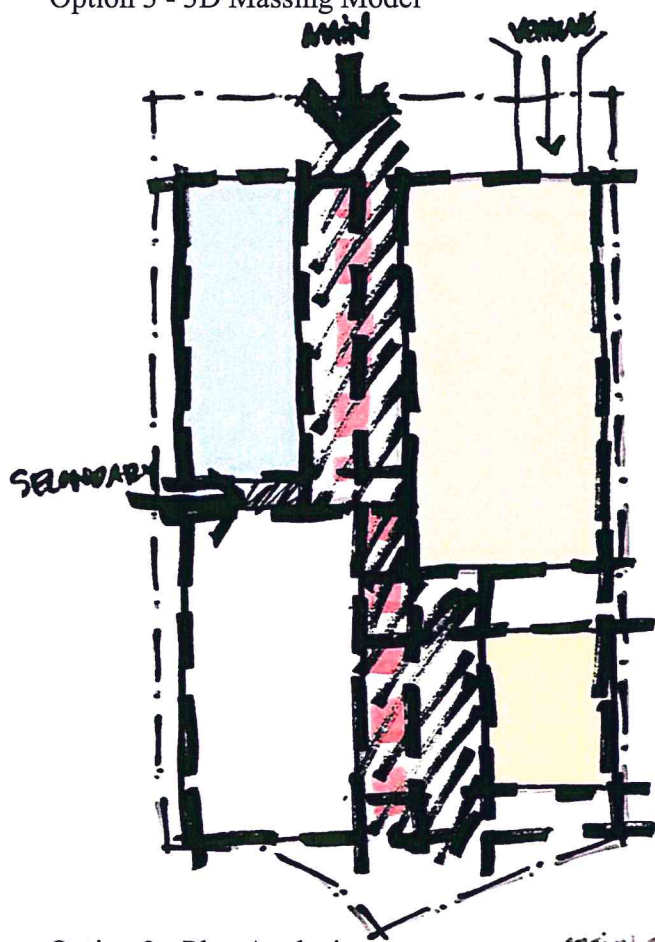
- EXPLORES THEATRE ALLEYS OFF 1ST STREET + TUCKING SCHOOL IN BACK
- JAGGED CIRCULATION X
- BLOCK FOOTBRIDGE X
- STUDIO SPACE TO PUBLIC ✓
- SCHOOL VIEWS TO RIVER ✓
- STRUCTURAL GRID ✓



Option 3 – Physical Massing Model

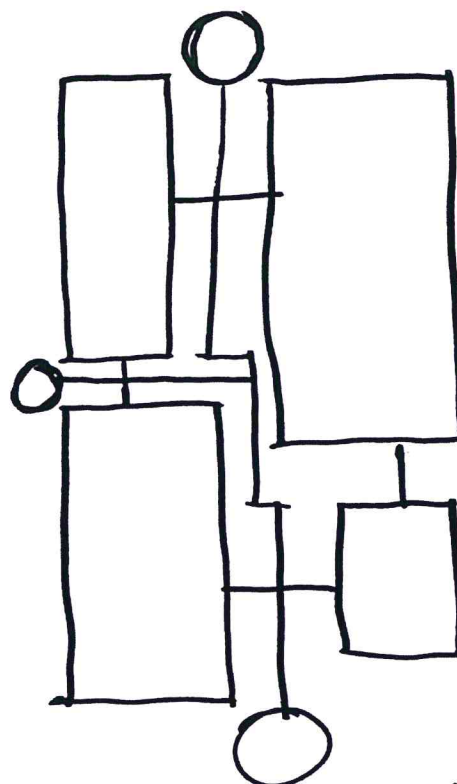


Option 3 - 3D Massing Model



Option 3 - Plan Analysis

OPTION 3.

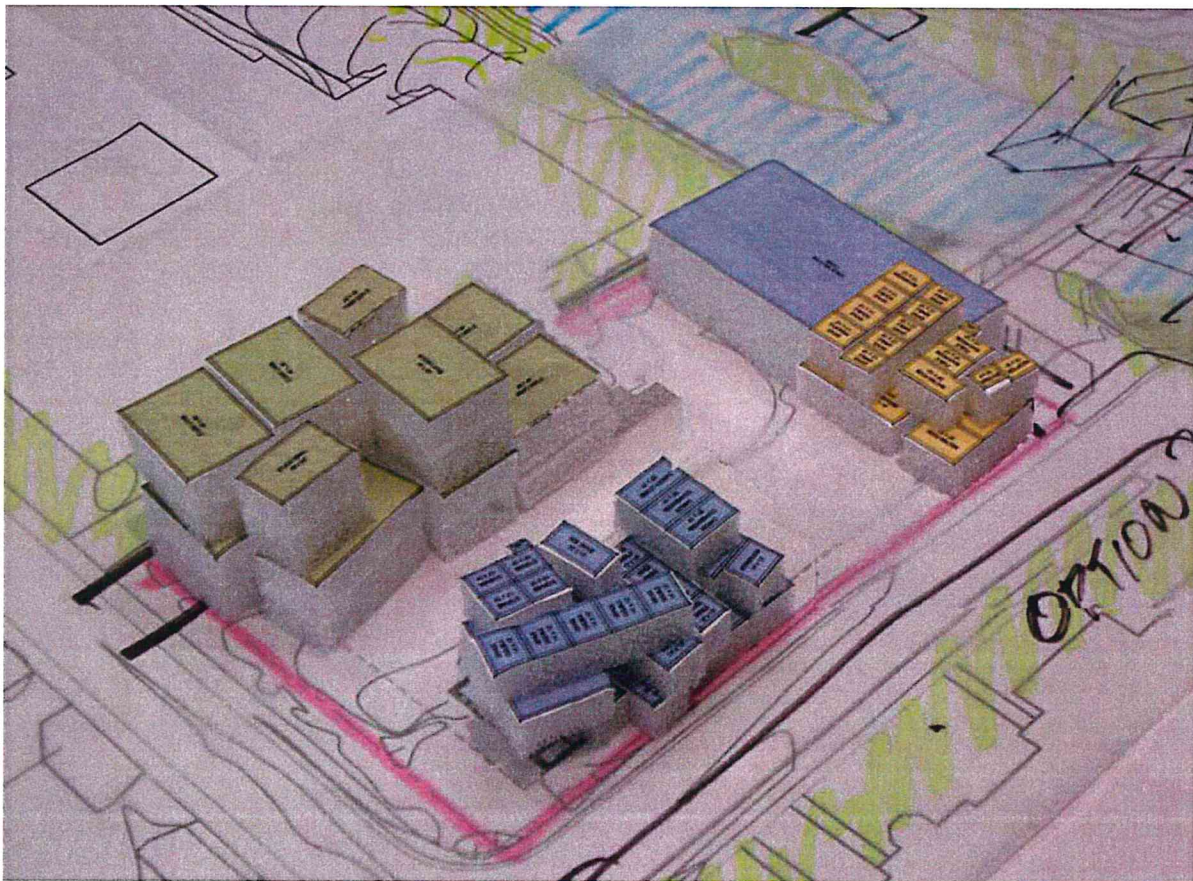


Option 3 - Parti Sketch

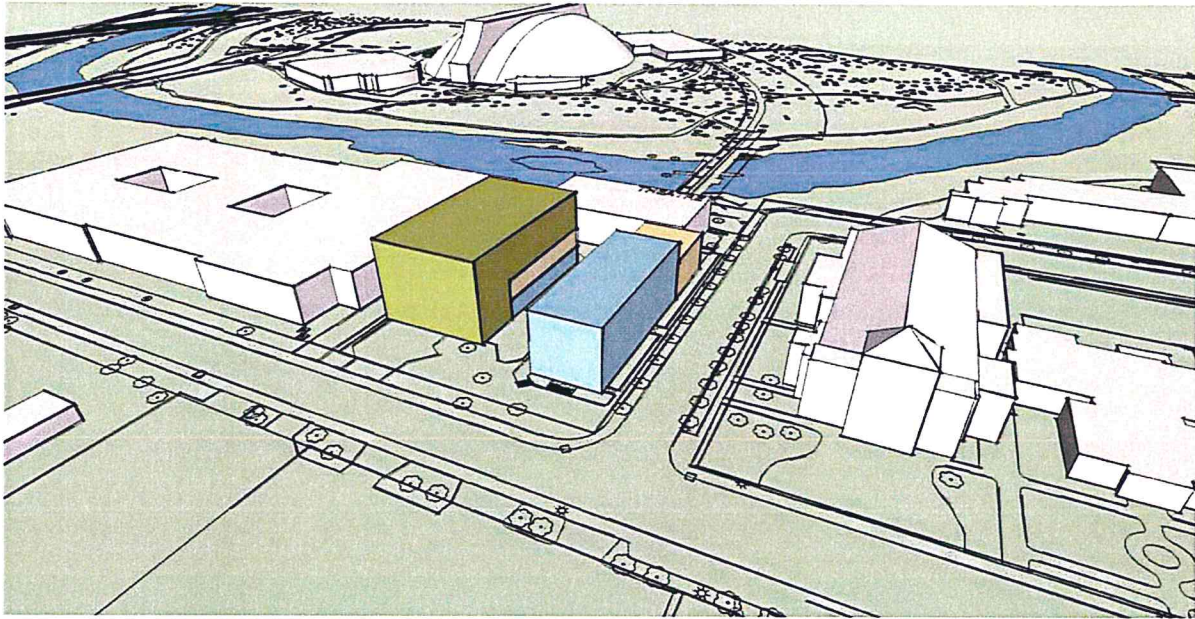
option 3

OPTION 4

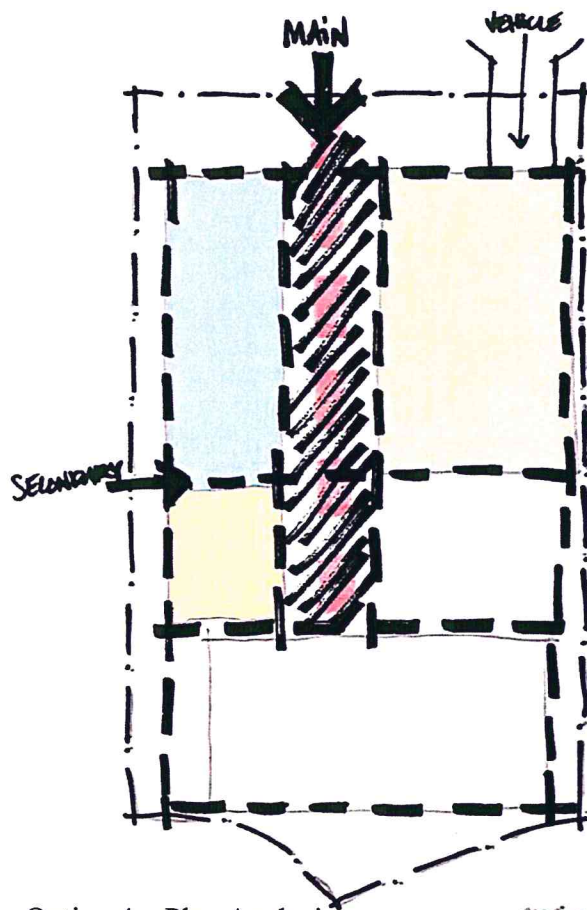
- EXPLORES THEATRE AT
END OF CIRCULATION PATH
AS DESTINATION
- CLEAR CIRCULATION TO
DESTINATION ✓
- BLOCK FOOTBRIDGE X
- STUDIO SPACE TO PUBLIC ✓
- STRUCTURAL GRID ✓
- BLOCK RIVER VIEWS X



Option 4 – Physical Massing Model

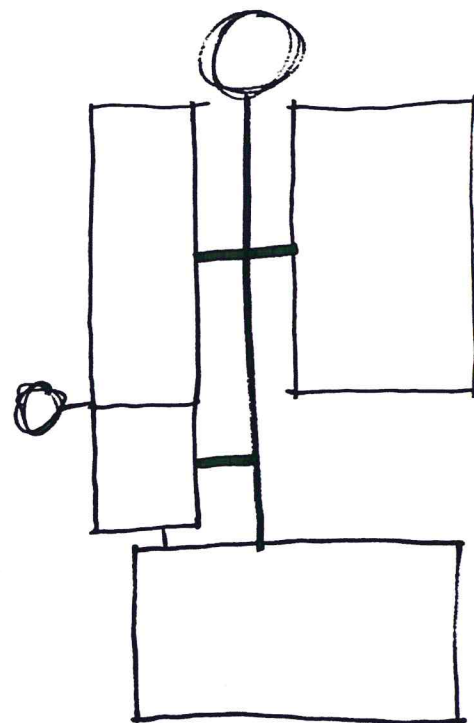


Option 4 – 3D Massing Model



Option 4 – Plan Analysis

Option 4.

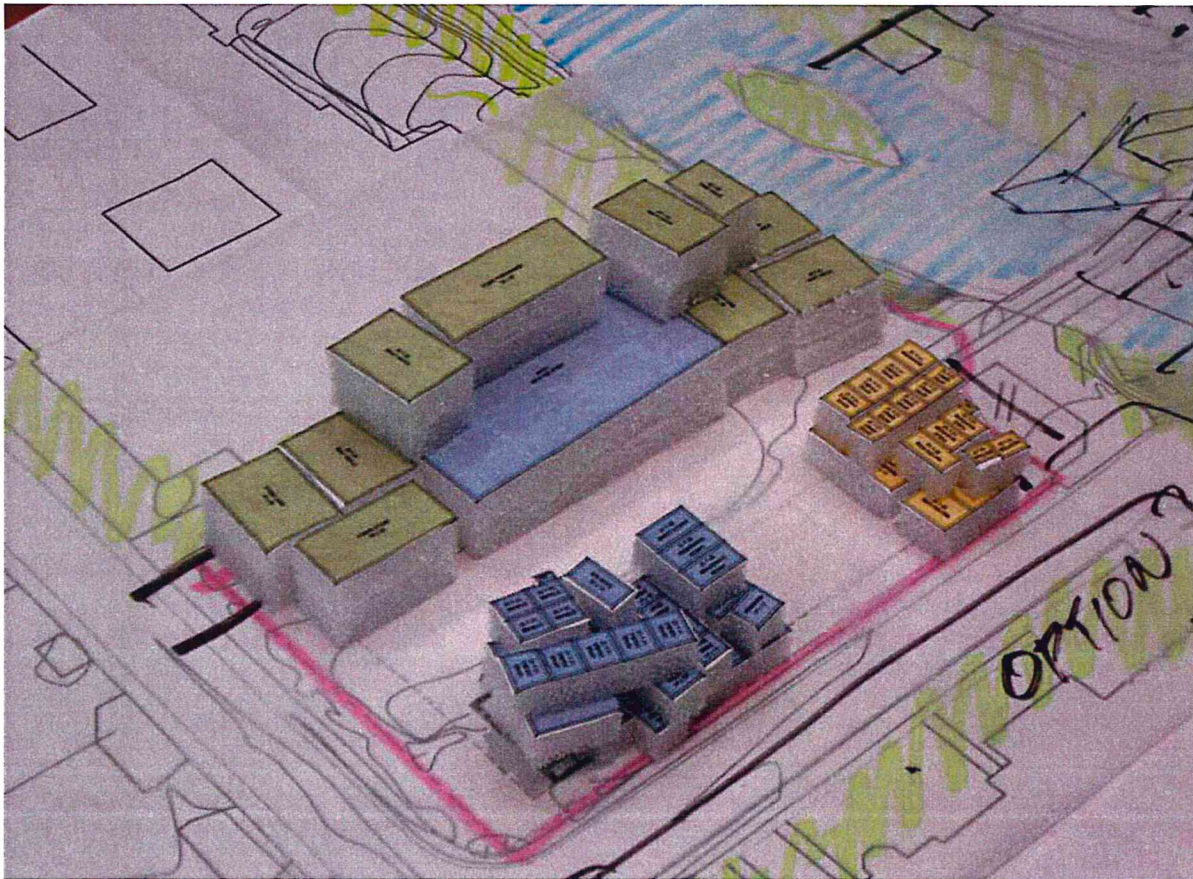


Option 4 – Parti Sketch

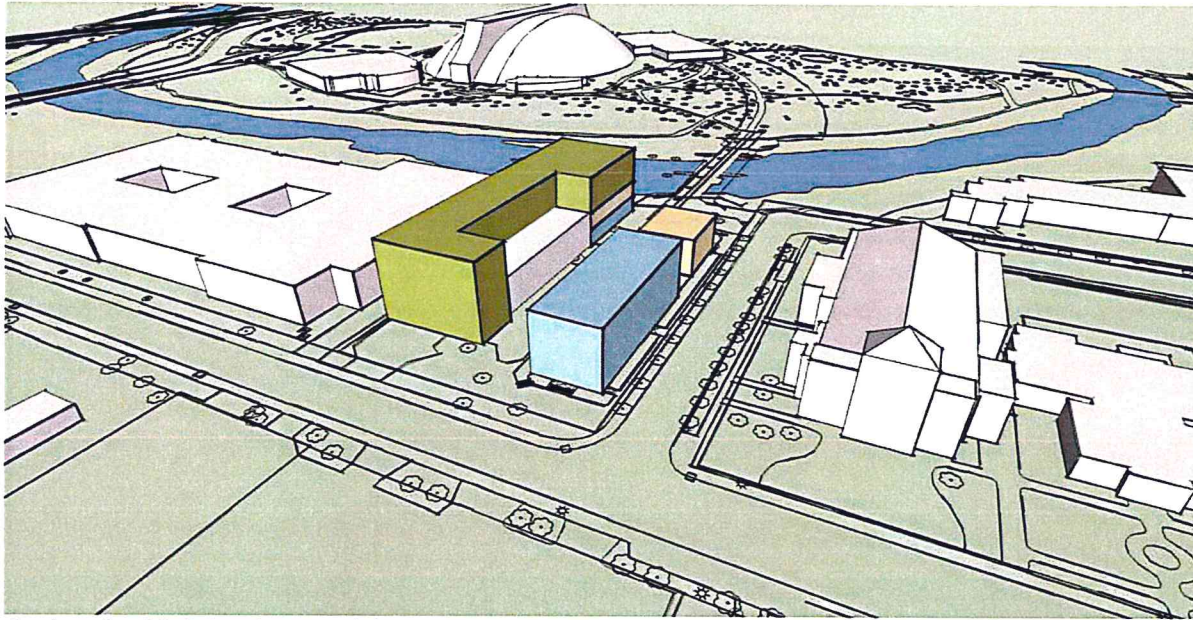
Option 4

OPTION 5.

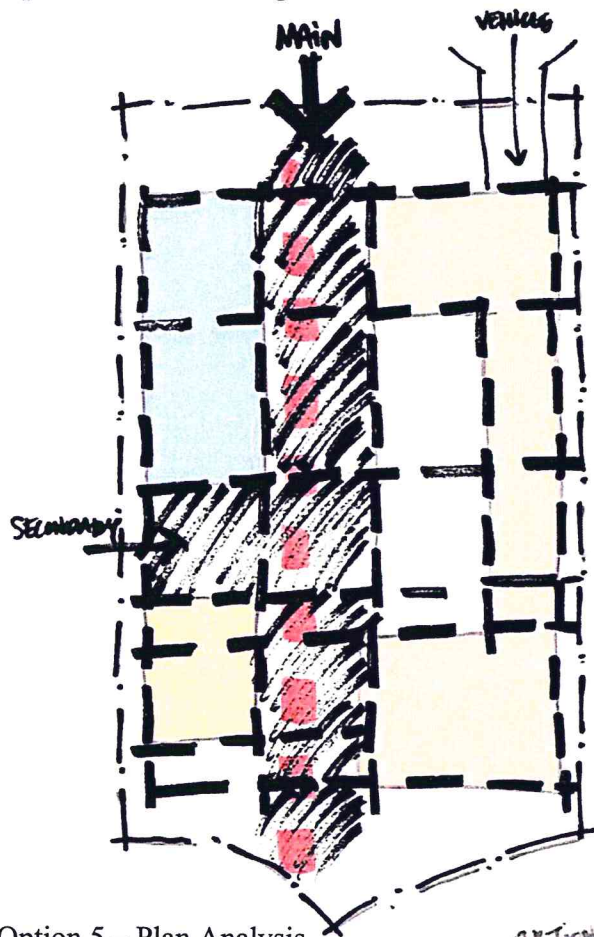
- EXPLORES CENTRALIZED THEATRE WITH STUDIOS WRAPPING ALL AROUND
- STUDIO SPACE TO PUBLIC ✓
- CLEAR CIRCULATION ✓
CONNECTION TO FOOTBRIDGE
- LAYERED FUNCTIONS +
STRUCTURE X
- STUDIO VIEWS TO RIVER ✓



Option 5 – Physical Massing Model

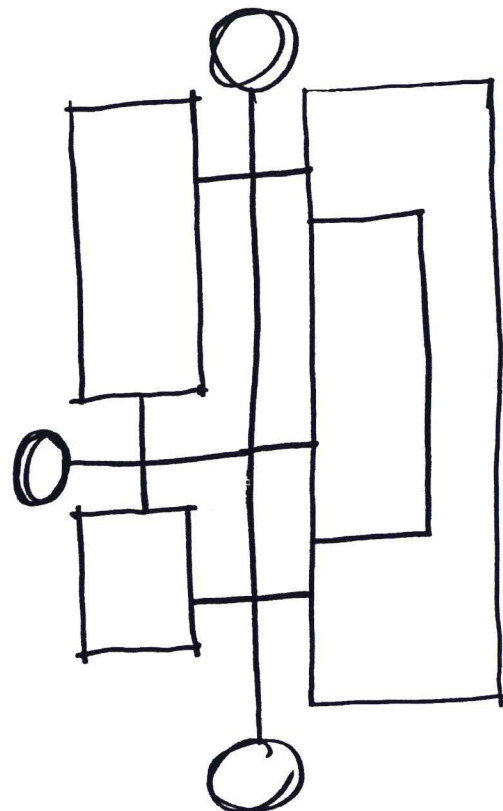


Option 5 – 3D Massing Model



Option 5 – Plan Analysis

OPTION 5

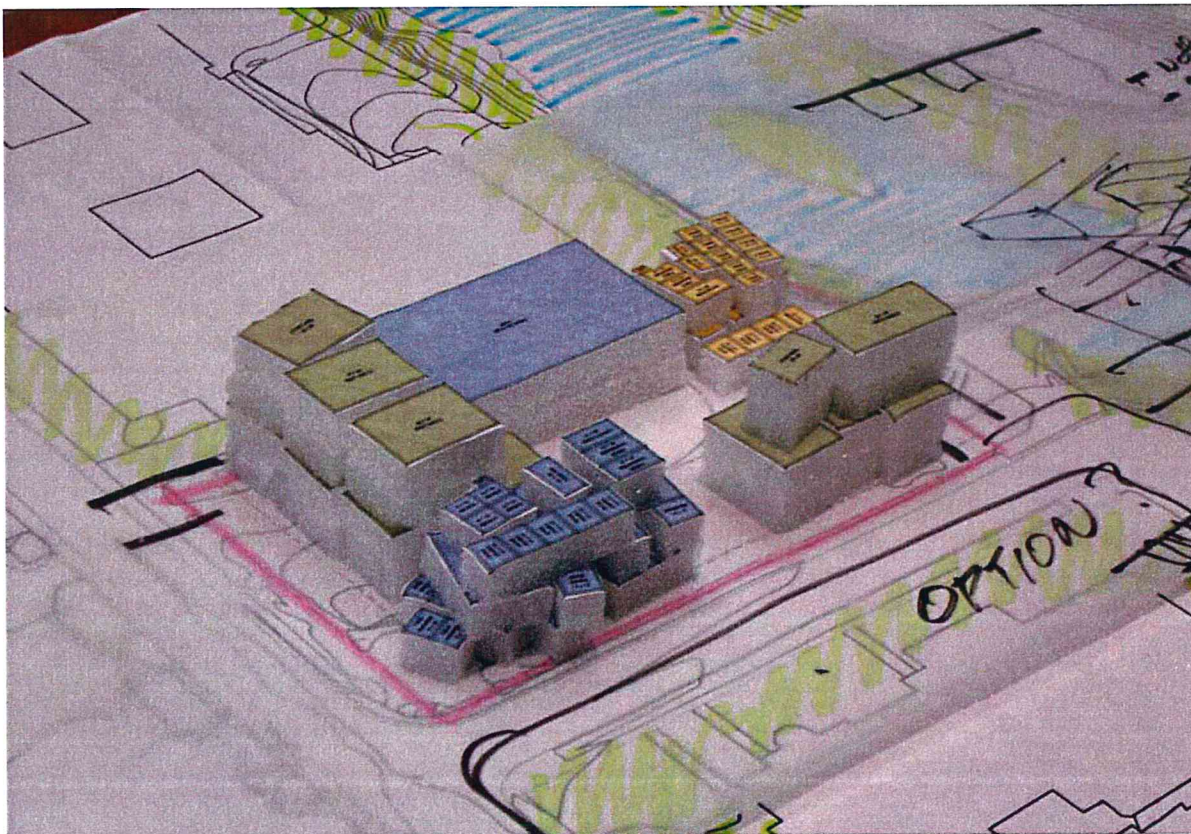


Option 5 – Parti Sketch

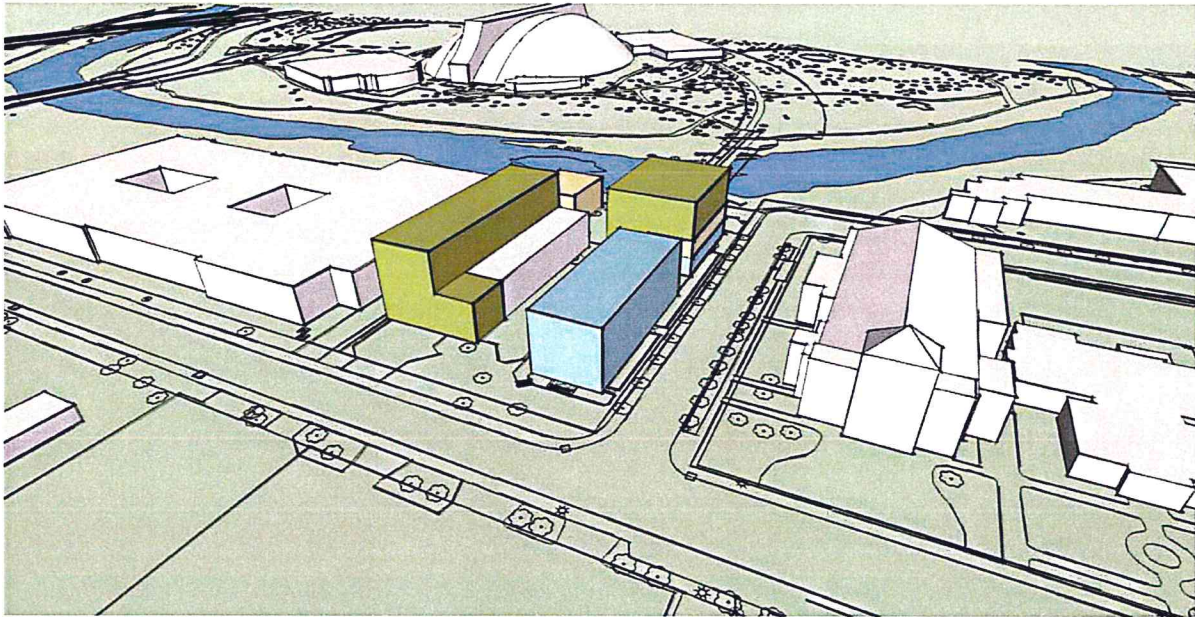
OPTION 5

OPTION 6

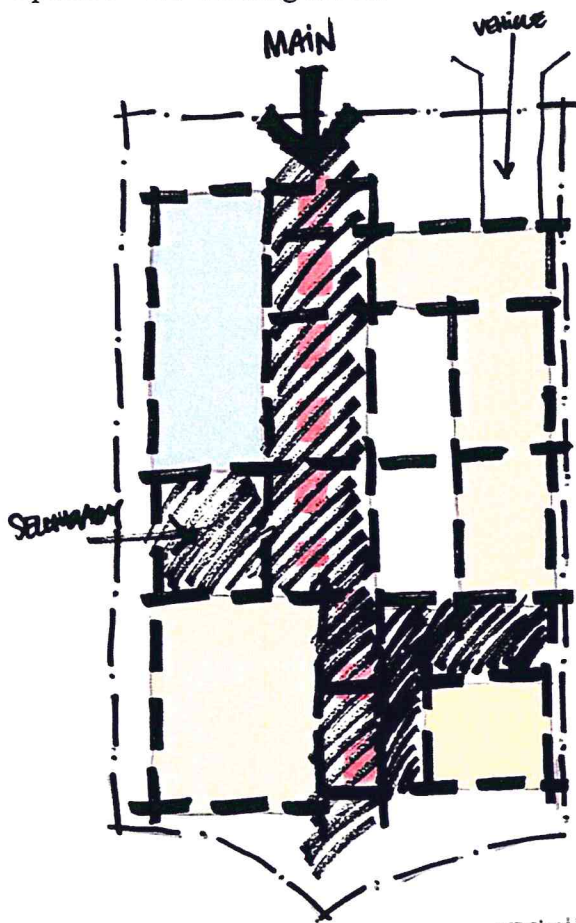
- EXPLORES DIVIDING UP STUDIO SPACE TO ALLOW TUCKING OF SCHOOL IN BACK
- JAGGED CIRCULATION X
- BLOCK FOOTBRIDGE X
- SCHOOL VIEWS TO RIVER ✓
- STUDIOS LAYERED + SEPARATED X
- STRUCTURAL GRID X



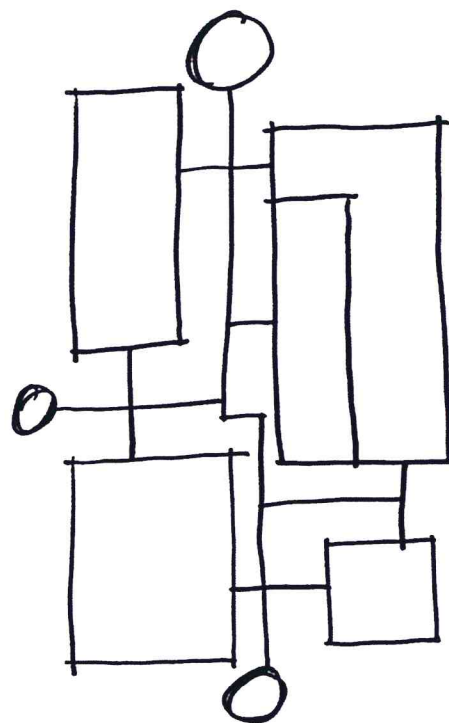
Option 6 – Physical Massing Model



Option 6 – 3D Massing Model



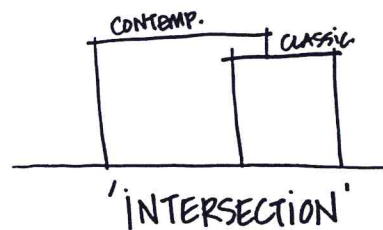
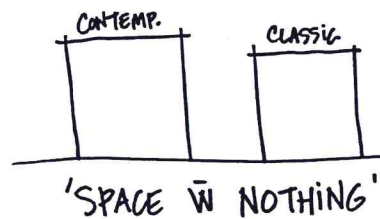
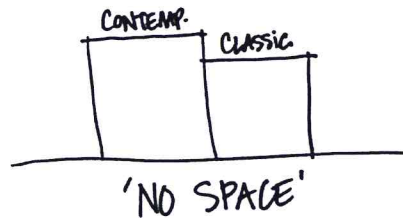
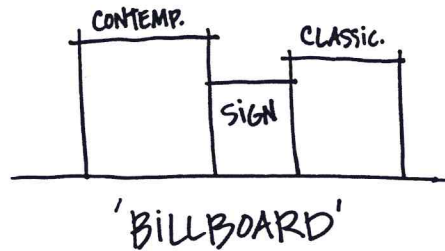
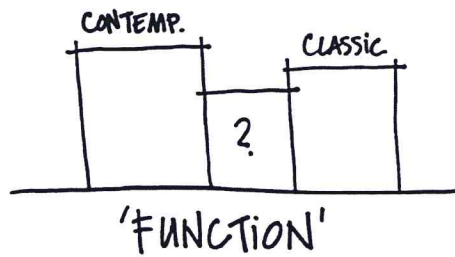
Option 6 – Plan Analysis



OPTION 6

Option 6 – Parti Sketch

TYPES OF CONNECTIONS:



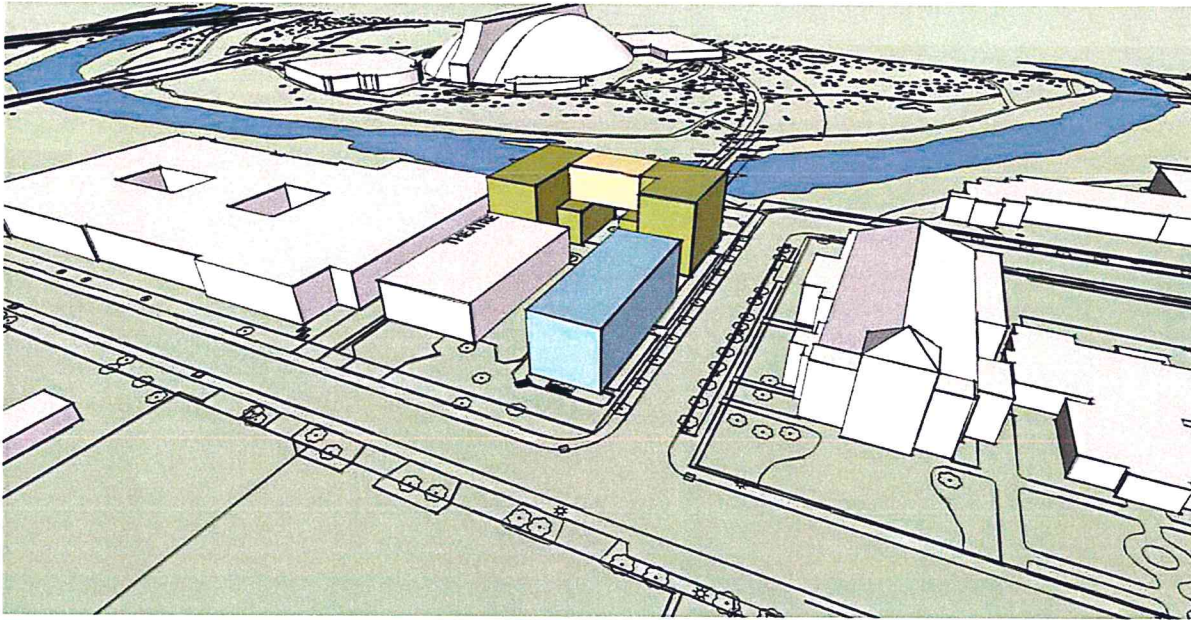
OPTION 1

- EXPLORES 'SPACE WITH NOTHING'

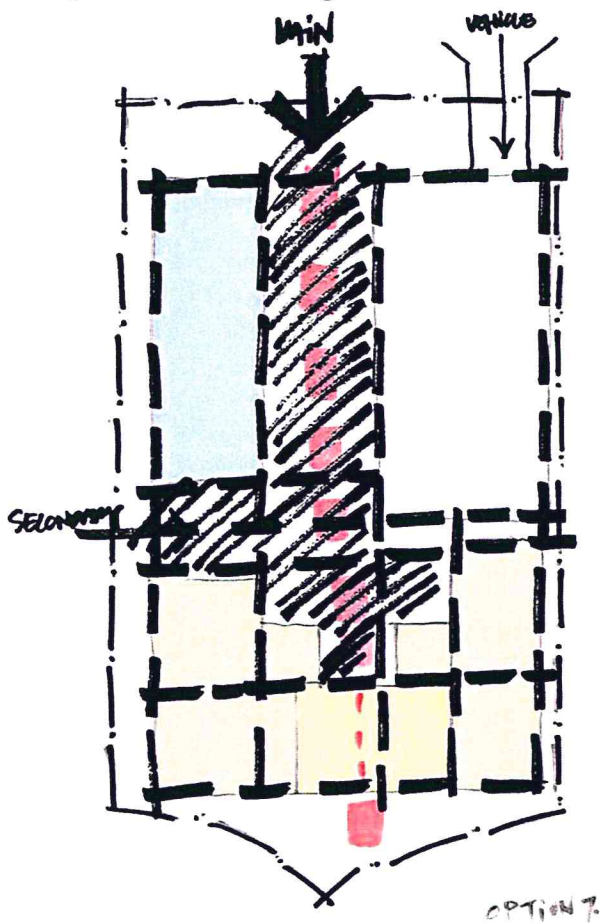
- PERFORMANCE SPACE TO PUBLIC X
- DEFINITE SEPARATION FROM CLASSICAL X
- STUDIO VIEWS TO RIVER ✓
- BLOCK FOOTBRIDGE X
- STRUCTURAL LAYOUT ✓



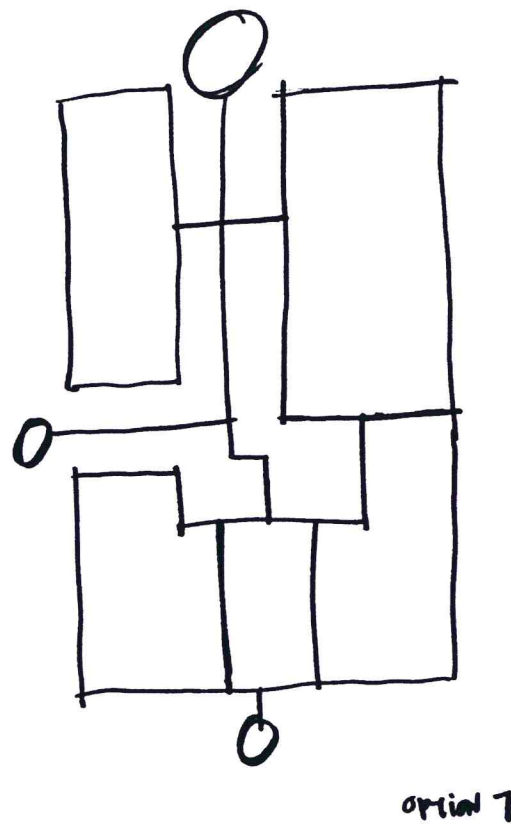
Option 7 – Physical Massing Model



Option 7 – 3D Massing Model



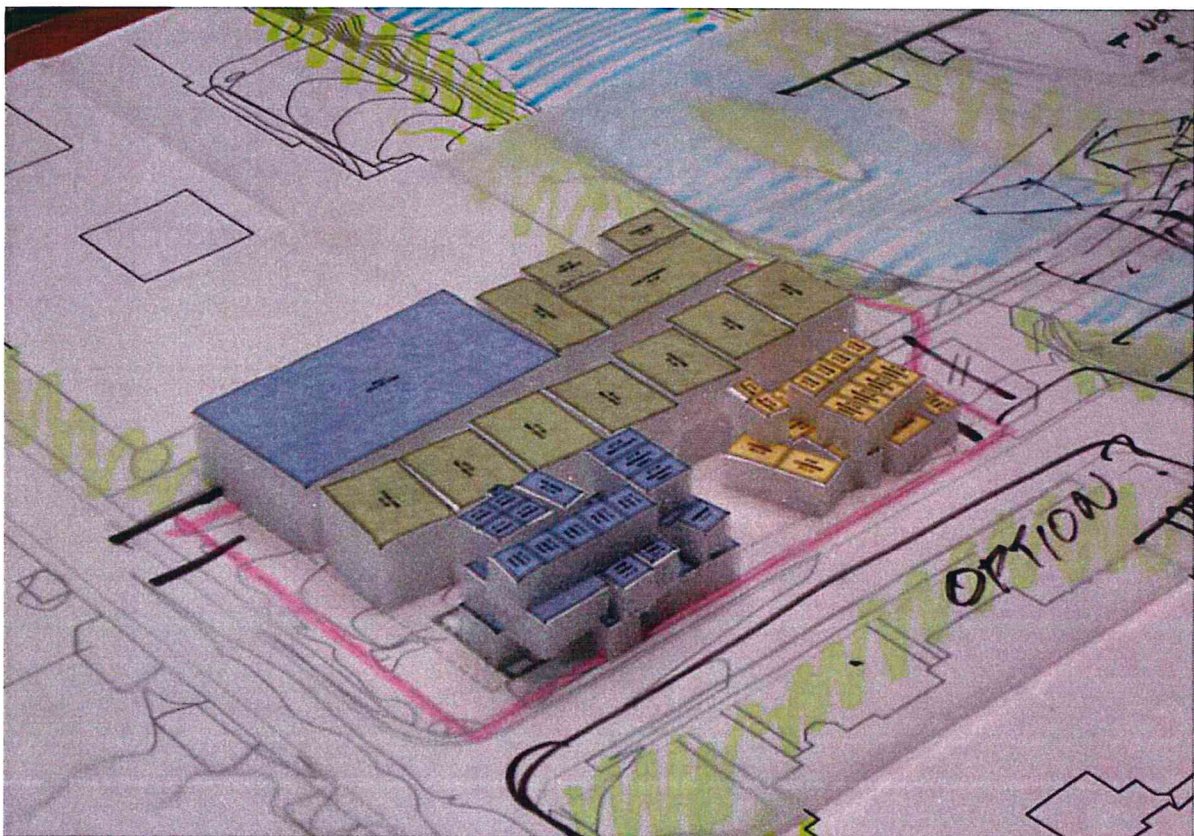
Option 7 – Plan Analysis



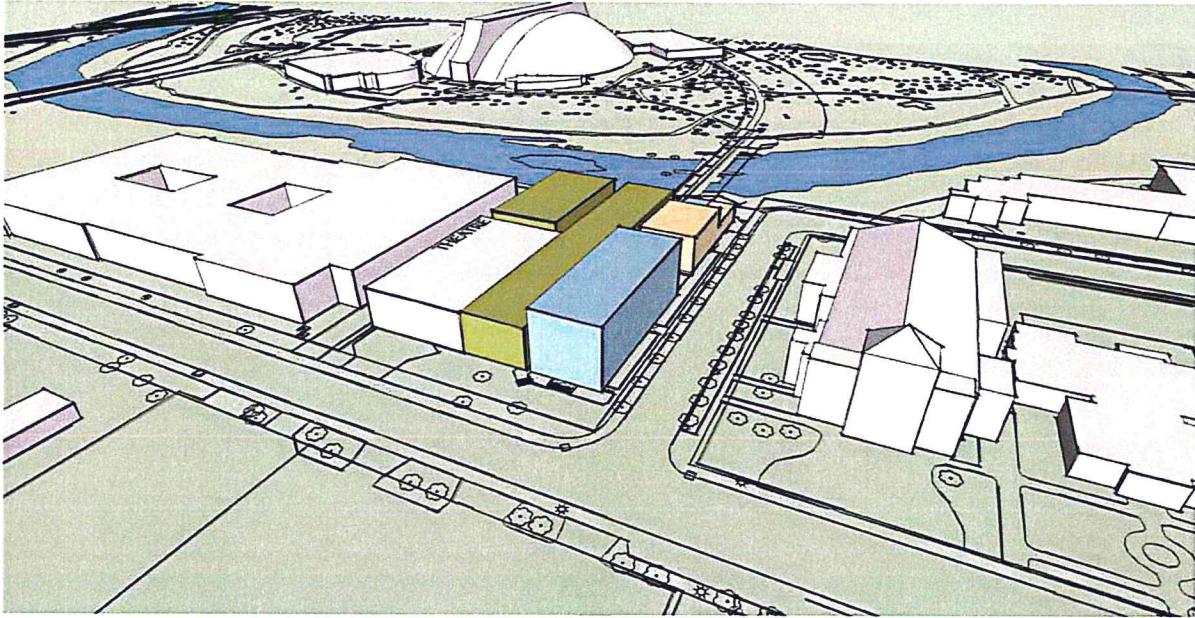
Option 7 – Parti Sketch

OPTION 8.

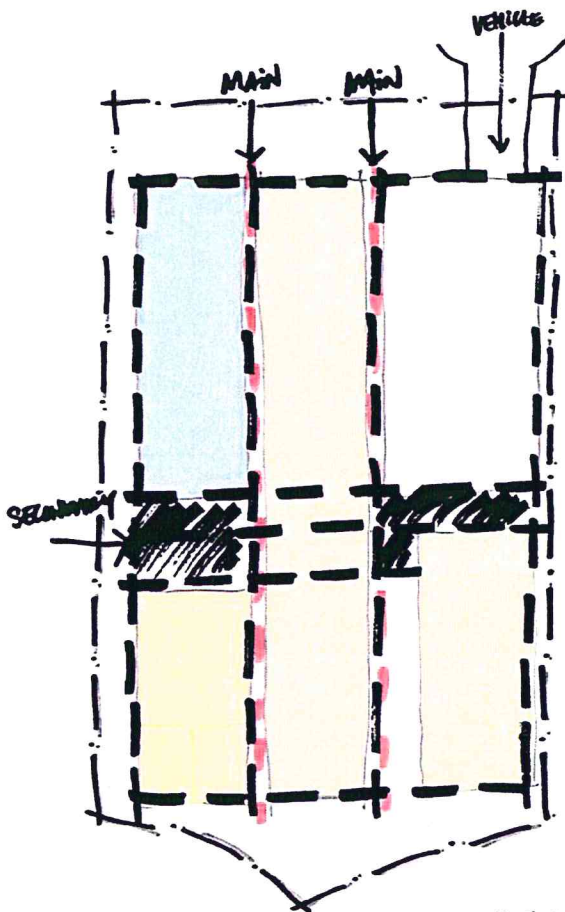
- EXPLORES 'NO SPACE'
- DUAL CIRCULATION PATHS^X
- BLOCK FOOTBRIDGE^X
- STUDIO VIEWS TO RIVER[✓]
- STRUCTURAL GRID[✓]
- COMPETING/BUSY^X
ELEMENTS TO PUBLIC



Option 8 – Physical Massing Model

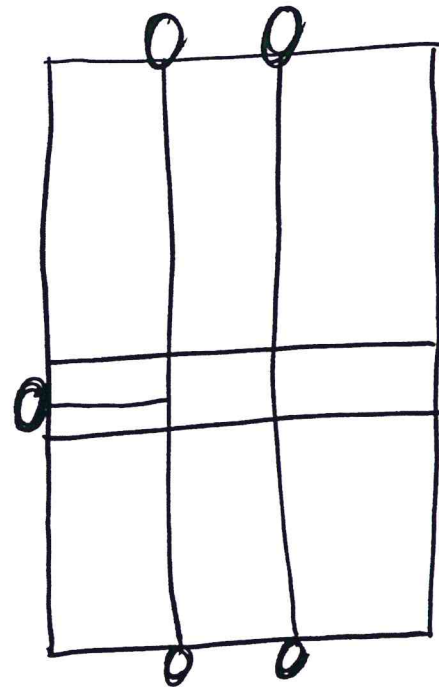


Option 8 – 3D Massing Model



Option 8 – Plan Analysis

OPTION 8

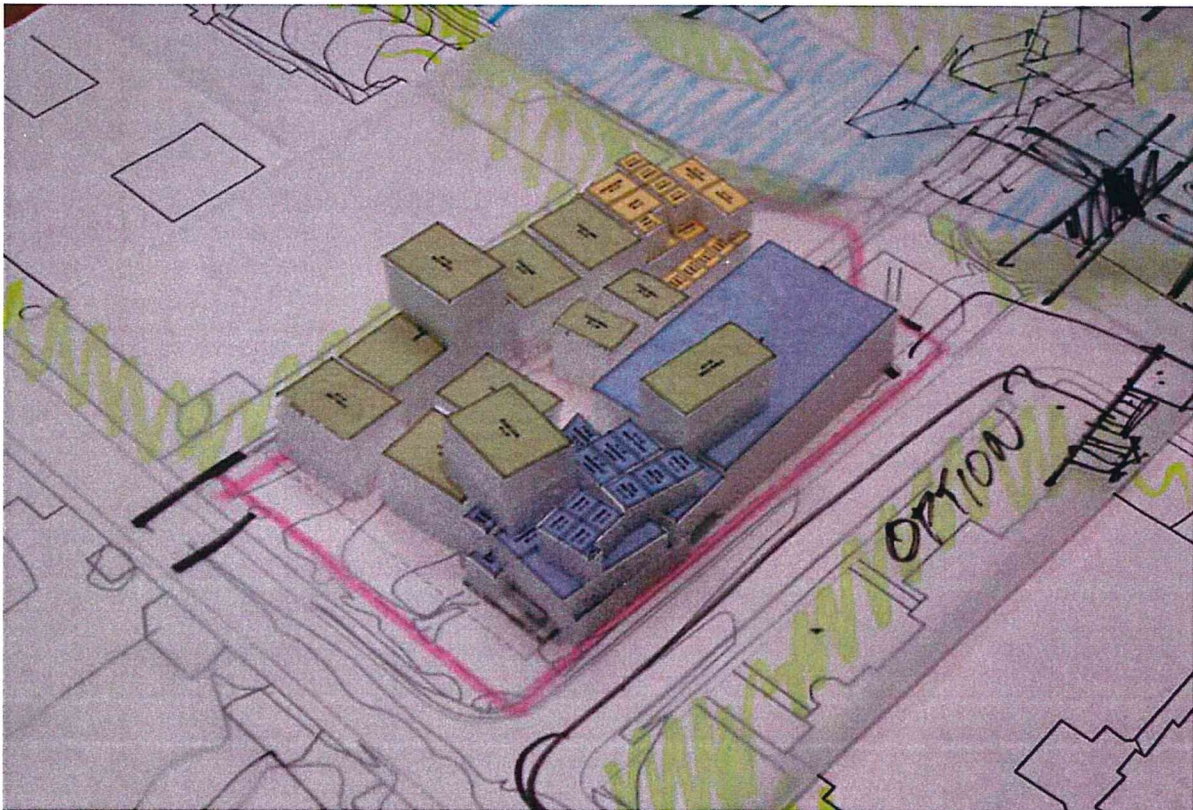


Option 8 – Parti Sketch

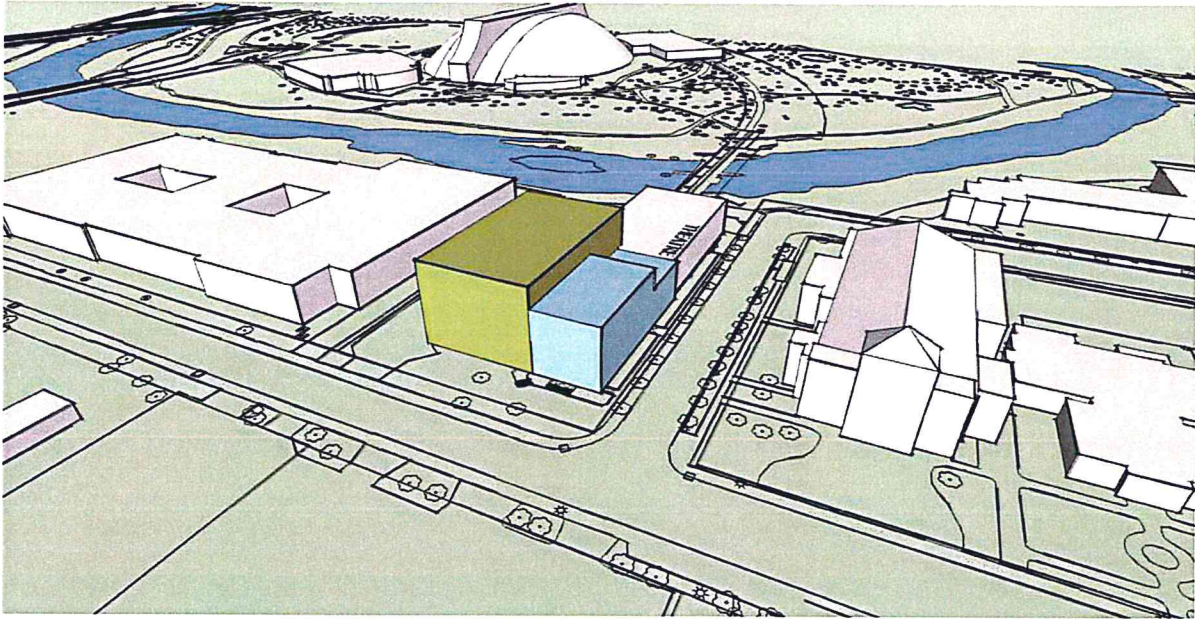
OPTION 8

OPTION 9

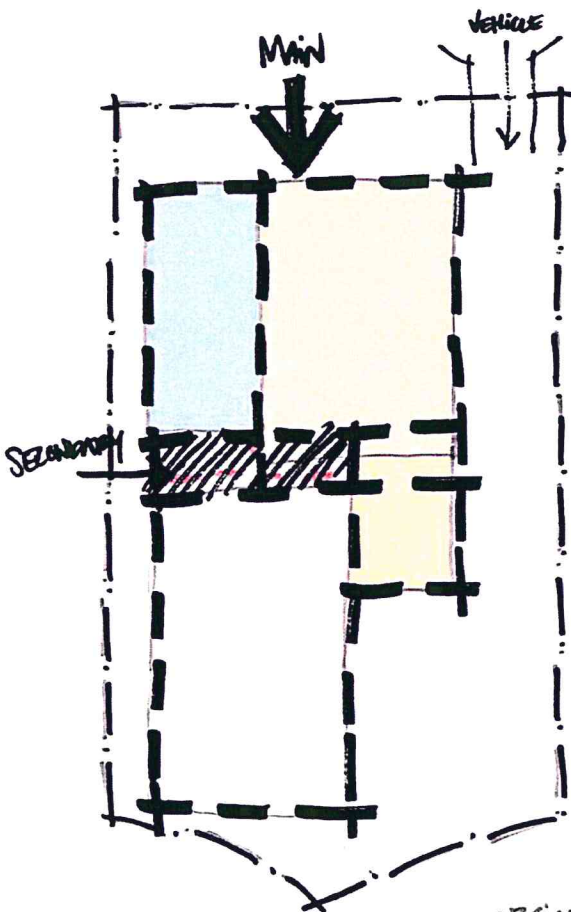
- EXPLORES 'INTERSECTION' (LEAVE OLD STRUCTURE)
- INTERLOCKING STRUCTURE^X
- STUDIO SPACE TO PUBLIC ✓
- BLOCK RIVER VIEWS X
- BLOCK FOOTBRIDGE X
- MUDDLED CIRCULATION X



Option 9 – Physical Massing Model

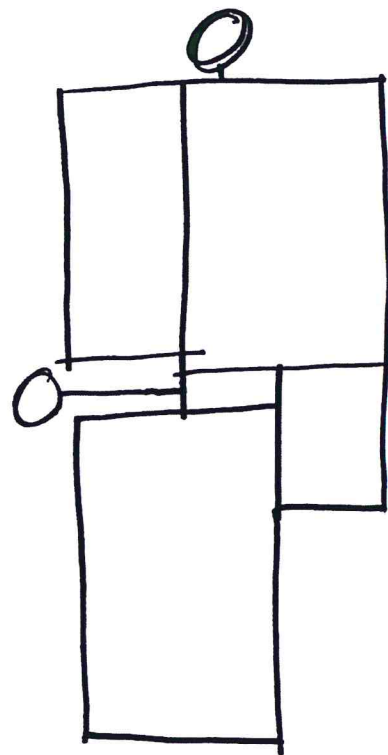


Option 9 – 3D Massing Model



Option 9 – Plan Analysis

option 9.

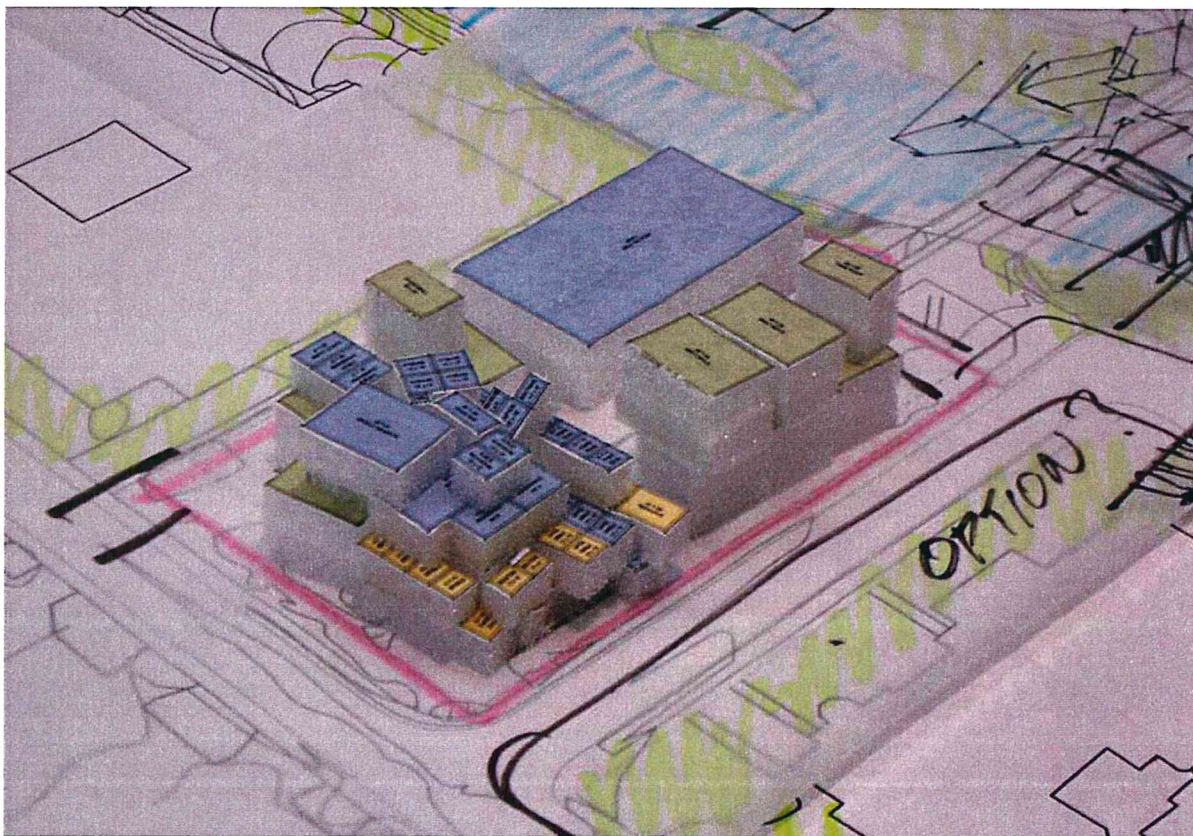


Option 9 – Parti Sketch

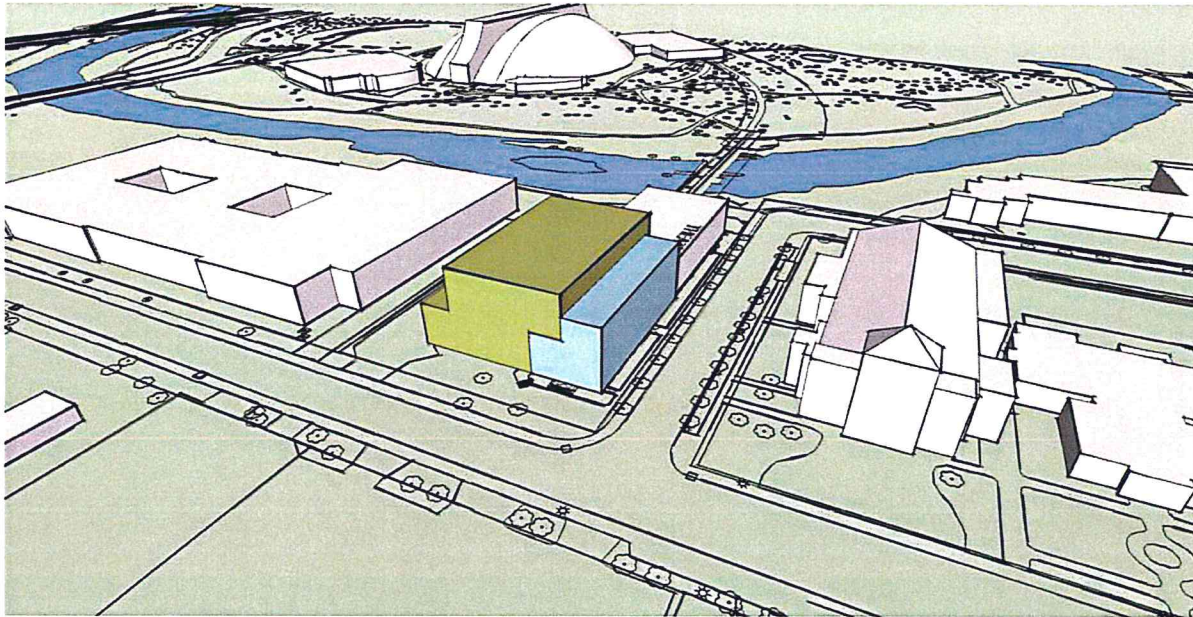
option 9

OPTION 10

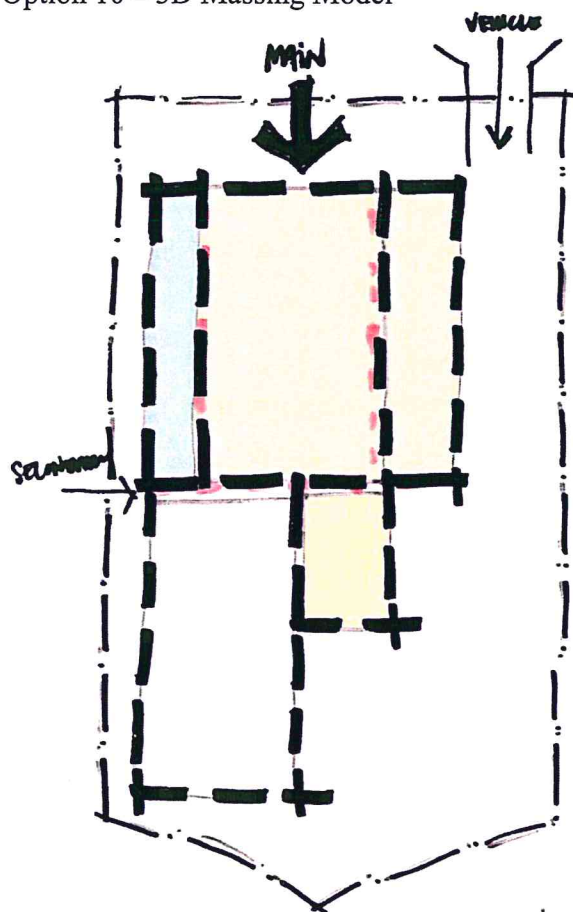
- EXPLORES 'INTERSECTION'
(CHANGE OLD STRUCTURE)
- INTERLOCKING STRUCTURE X
- STUDIO SPACE TO PUBLIC ✓
- BLOCK RIVER VIEWS X
- BLOCK FOOTBRIDGE X
- MUDDIED CIRCULATION X



Option 10 – Physical Massing Model

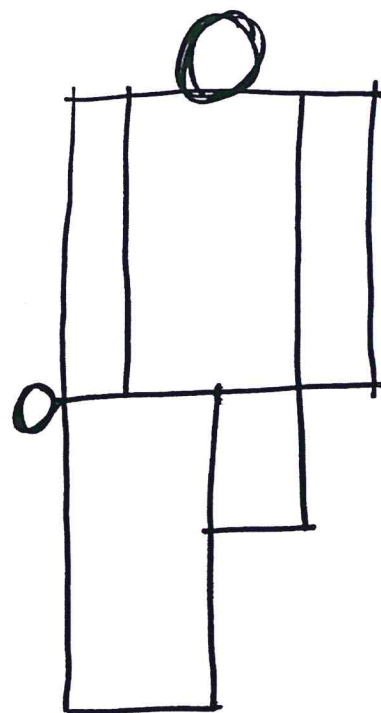


Option 10 – 3D Massing Model



Option 10 – Plan Analysis

option 10.



Option 10 – Parti Sketch

option 10

Massing Evaluation

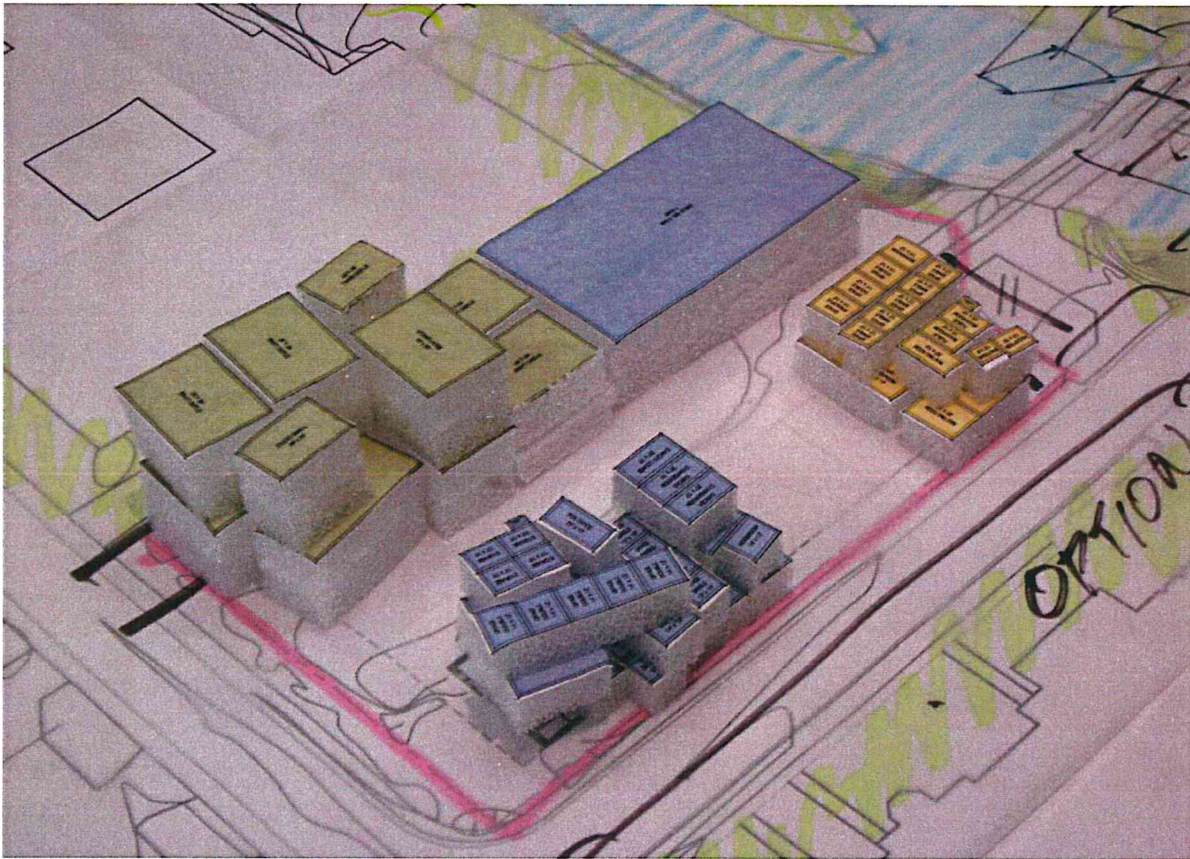
From the massing studies done above, it was determined that there were three scenarios that came together with stronger direction than the rest. These three options were then explored in more detail in order to arrive at a general site layout that seemed to make sense.

- ❑ The first option that stood out clearly was option 5, as it explored a centralized theatre with studios wrapping all around. The positive features of this option were that the studio space was facing the public boulevard on 18th Avenue, allowing the public to see the company and school at work, in their creative atmosphere, and it is one of the most highly utilized spaces in the building. Another positive feature of this option is that there is a clear path of circulation that connects through the building on the same axis as the pedestrian footbridge coming from the Elbow River pathways. Having clear circulation is good because there are a lot of different people to direct around the facility. In this option the river views have additional studio spaces facing this direction, this is a fantastic view and will be seen by those using the adjacent studio spaces, but it is not the best use of this side of the site as the studio focus is more inward toward the work being done there and not outward toward the surroundings.
- ❑ The second option that had a lot of merit was option 3, which explored the theatre facing 1st Street, allowing the school support spaces to be tucked into the back of the site. The placement of the theatre space in this location allowed for easy loading of sets and wardrobe, and allowed office, lounge, and staff spaces to take advantage of the excellent river views. The studio spaces facing 18th Avenue allowed again, that connection of the work to the public, which is something that has been important to the Alberta Ballet. The

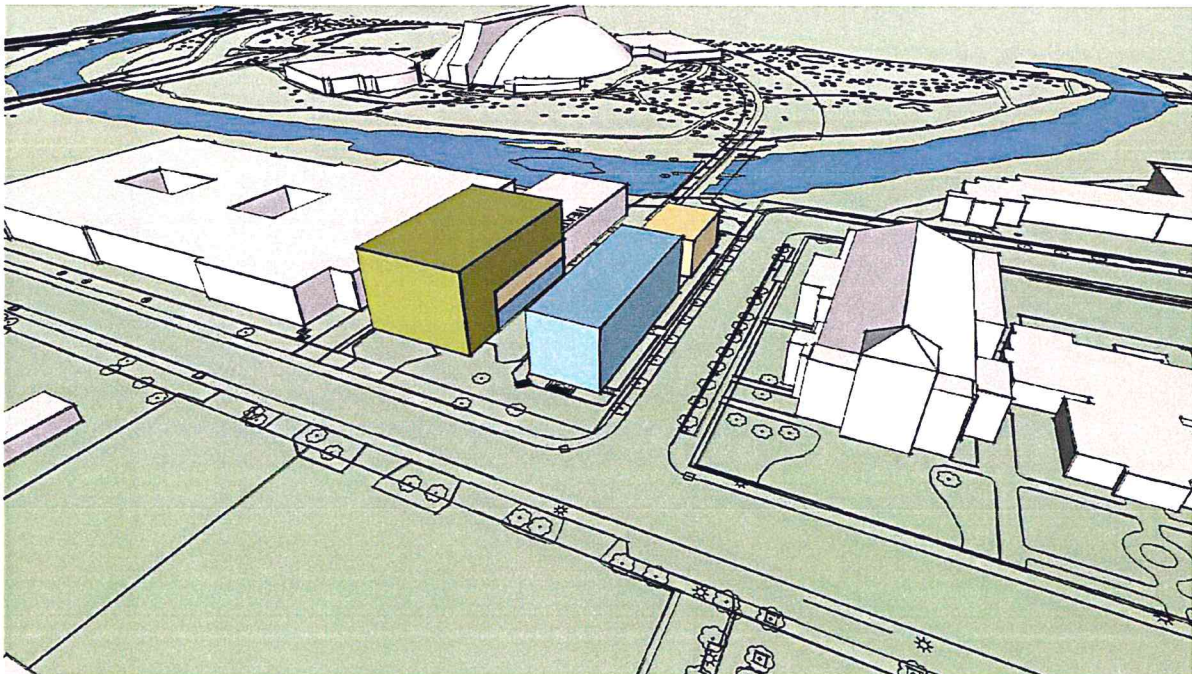
circulation path is not as straightforward in this option and allows more for the discovery of spaces and a meandering sort of movement throughout the building. The connection of the pedestrian footbridge through the site is somewhat lost, as it is interrupted by an important element that is the performance space where the culmination of the work is displayed.

- The third option that appeared strong, was option 4, which explored the performance theatre space as a destination at the end of the circulation path. This option again supported the studio spaces being located along the streetfront on 18th Avenue, and intentionally interrupts the connection with the pedestrian footbridge for an element that is specific, a destination, within the facility.

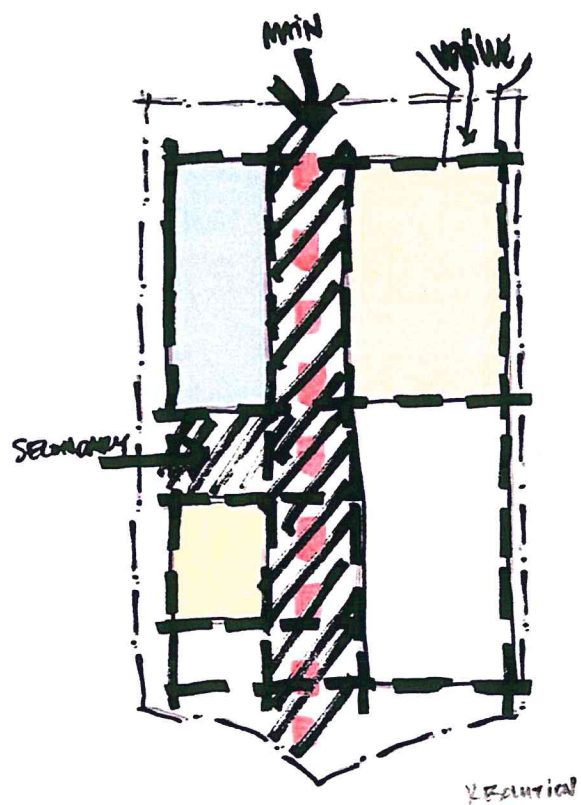
From these three options a resolution layout was achieved, which aimed at bringing together each of the positive features of these three options. The studio spaces remained at the front of the site, anchoring on the 18th Avenue thoroughfare. The company office and support spaces remained in the historical building footprint, and the school office and support spaces were placed directly adjacent to the south in order to maintain the relationship necessary between the two. The theatre space was placed in the back corner, allowing for circulation spaces around which look out upon the river, as well as allowing a clear visible connection between the main street and the river pathway. A secondary access off of 1st Street appears as well between the two office areas, allowing for possible staff or student entry.



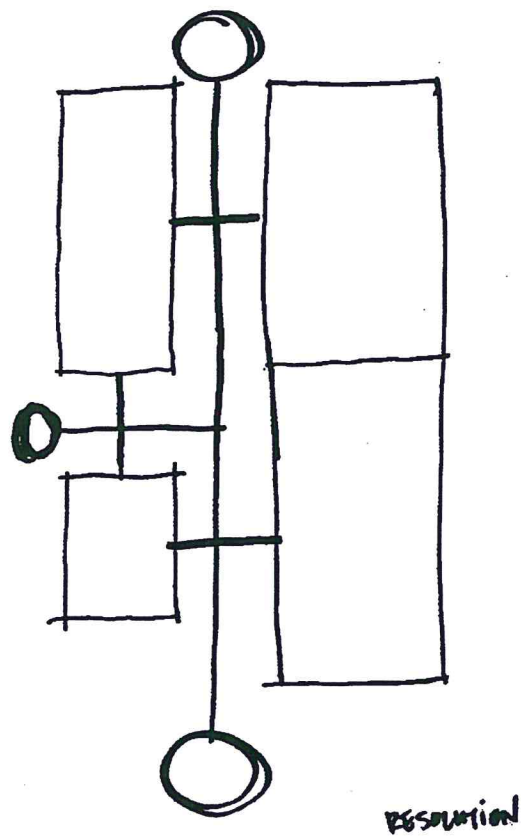
Resolution Option – Physical Massing Model



Resolution Option – 3D Massing Model



Resolution Option – Plan Analysis



Resolution Option – Parti Sketch

Classical & Contemporary

After determining the best potential site layout and massing, the next step was to start to look at the buildings themselves. In looking at the classical building that exists on the site, it is fairly simplistic, with classic lines, equal column spacing below the pediment, and specific datum lines that balance the proportion of the façade with the small windows.

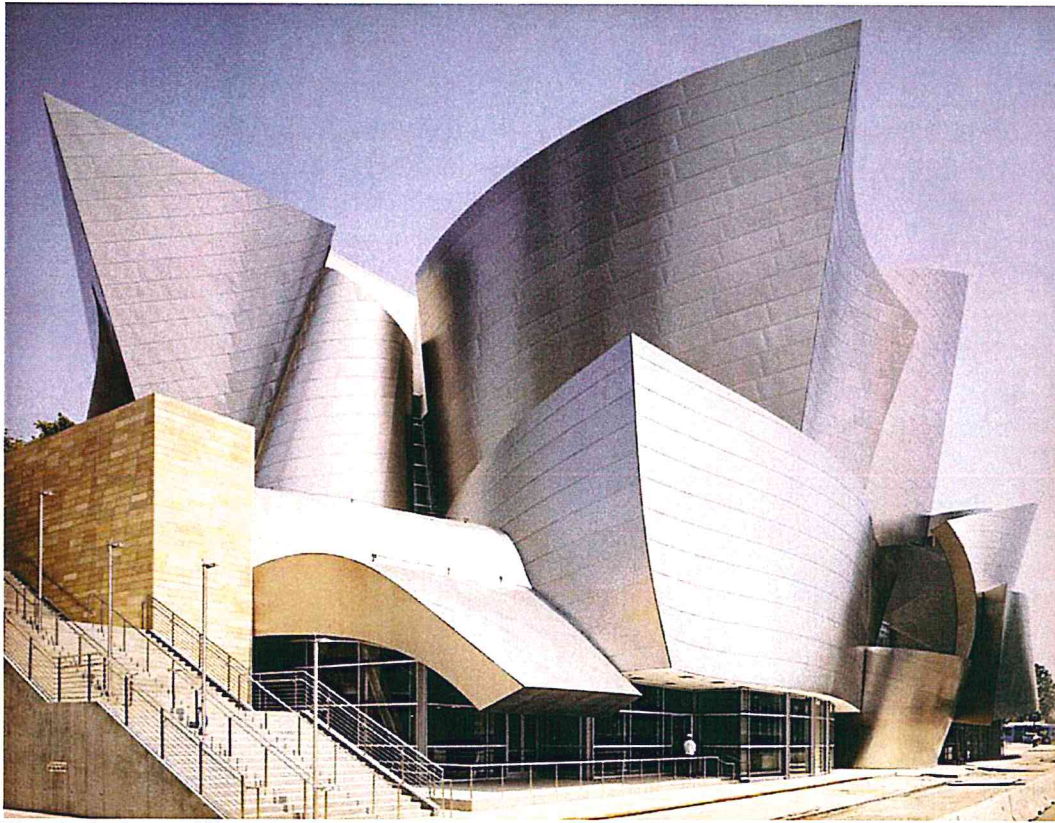


Nat Christie Center

The definition of contemporary architecture that is the most agreed upon is architecture that is of its present time. In examining contemporary architecture across the globe, a few examples were brought forward to grasp the imagery they offered.



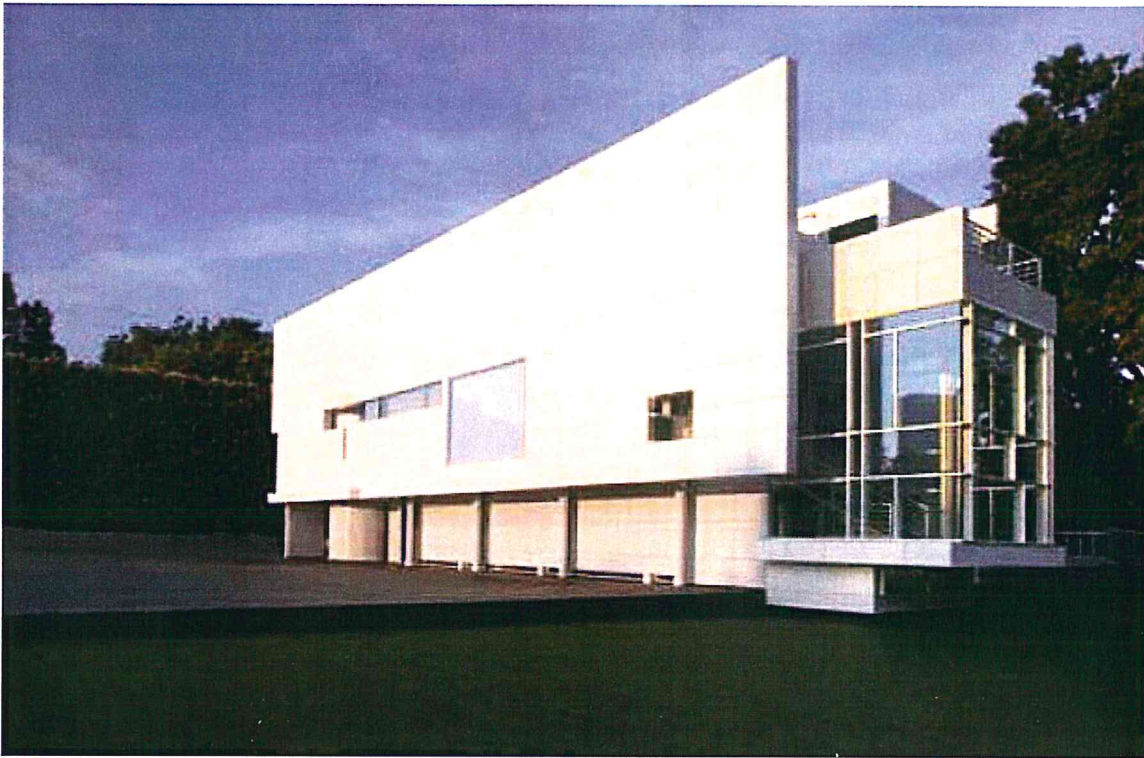
Gottfried Bohm, Cologne Germany



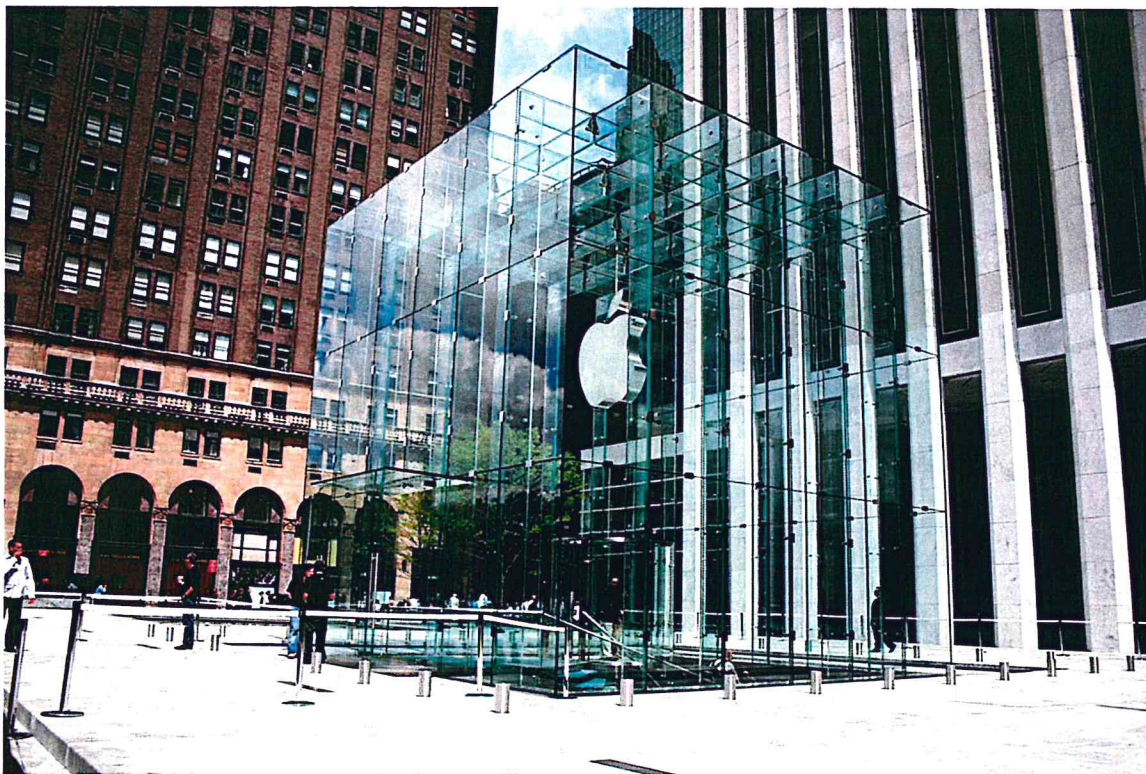
Frank Gehry, Bilbao Spain



Daniel Libeskind, Berlin Germany



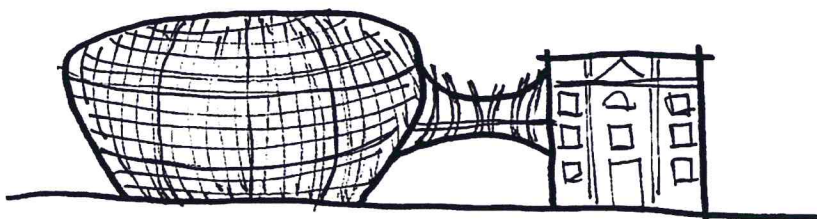
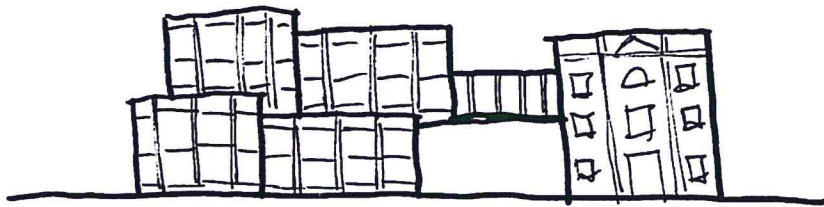
Richard Meier, Dallas United States of America

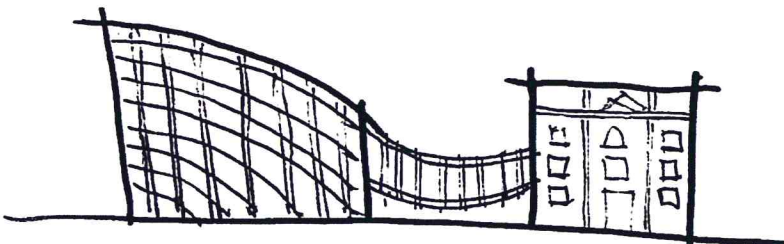
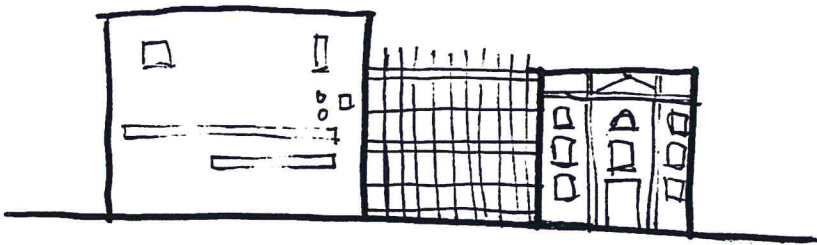
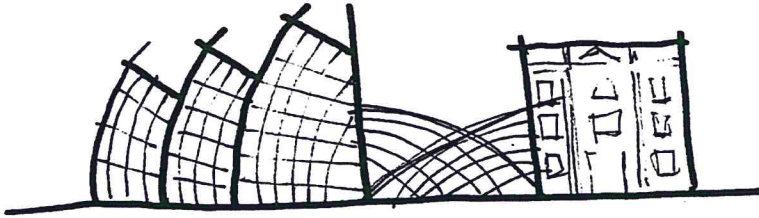
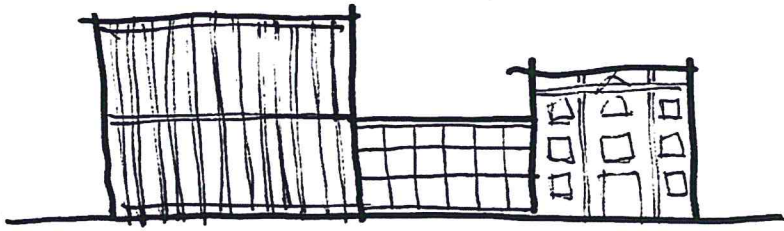


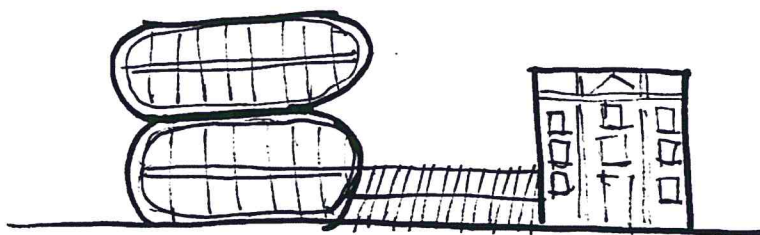
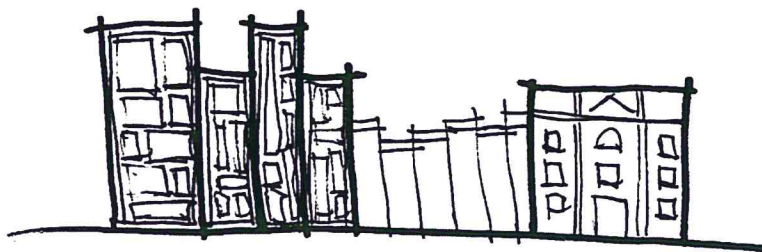
Bohlin Cywinski Jackson, New York United States of America

Each of the above buildings had something significant that depicted a building of its time. The use of the computer to design, could only be done now, with the technological advancements that have made new forms and the ability to technically put them together possible. Materials that are treated in new ways, that push the limits of structure and form, depth and span, can only be used in such ways now that technology has enabled them to be used this way.

From this examination of imagery and case studies of a variety of potential contemporary solutions, sketches were generated of the general massing of the two buildings, the contemporary, in relation to the classical, to begin to get a feel for the architecture of the site.





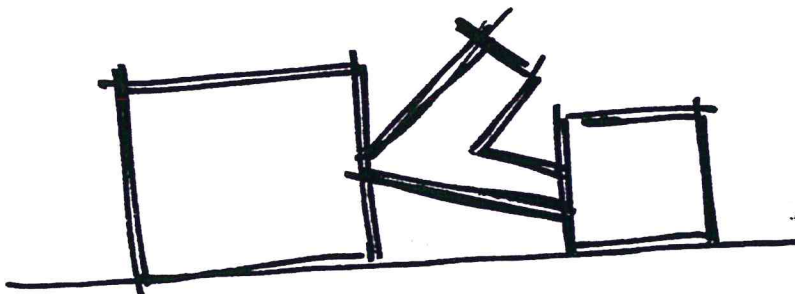
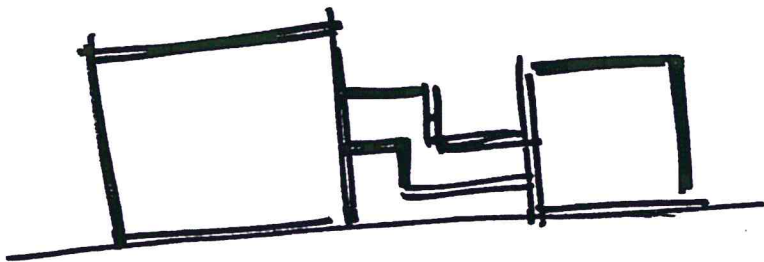
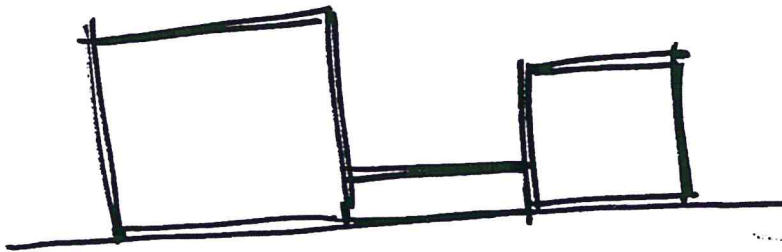
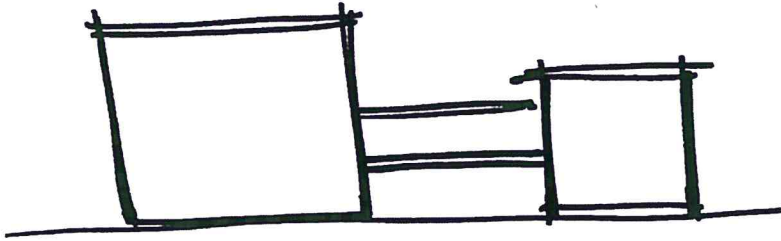


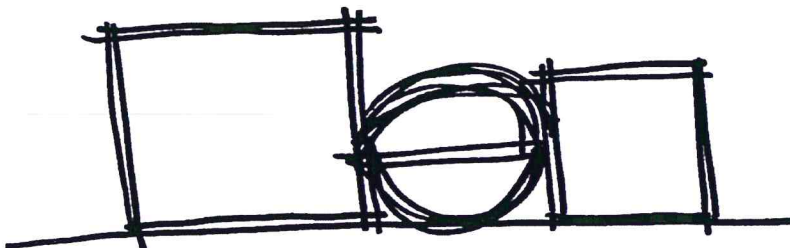
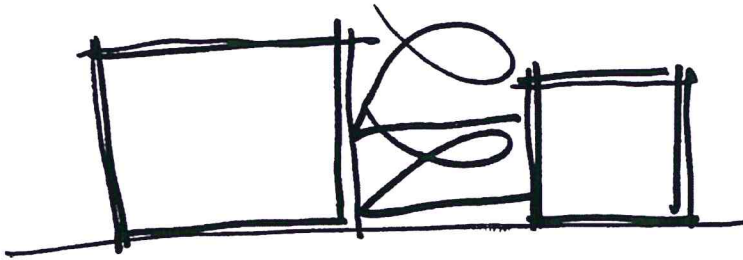
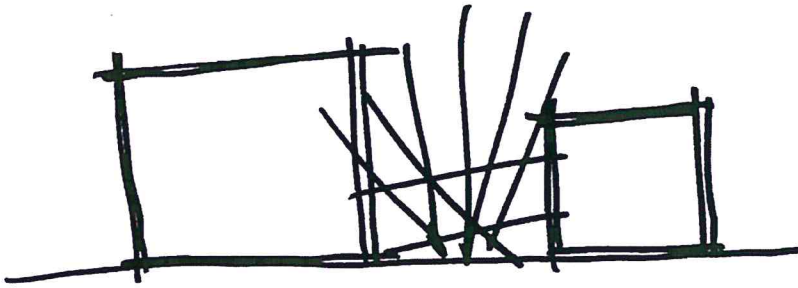
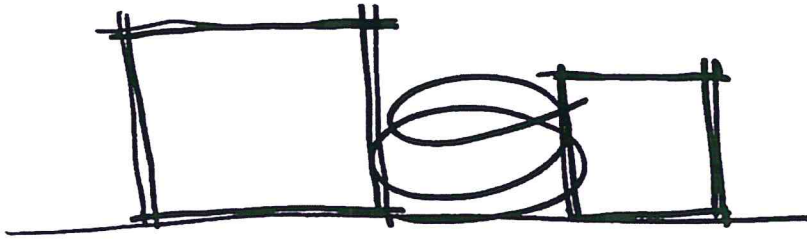
In order for the two buildings to not compete with one another and to provide a balanced, single site as requested by the client, the new, contemporary building needs to reflect the simplicity of the classical building, while incorporating appropriate materials and elements.

The two masses are of equal importance, as the classical and contemporary elements of dance are. They therefore need to be architecturally reflected as such, creating a unified presentation to the community. This will reflect the desire of the client to present both elements as equals.

In creating this balanced and unified site, the key element then becomes the connection between these two masses. This connection space not only physically connects the architecture, but also acts to connect the dance company with the dance school and connects the building with the community. Additionally, this connection acts as the main circulation and social space, highlighting and celebrating the relationships between staff, members, students and community.

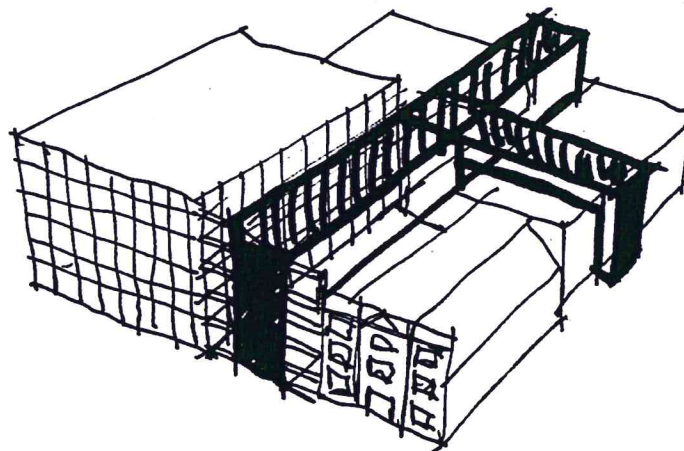
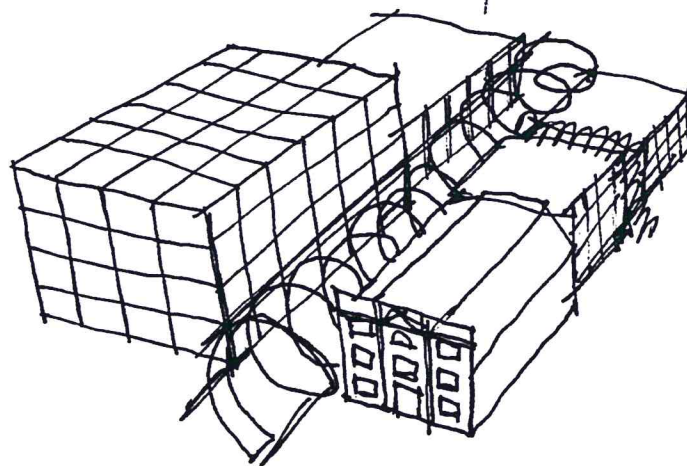
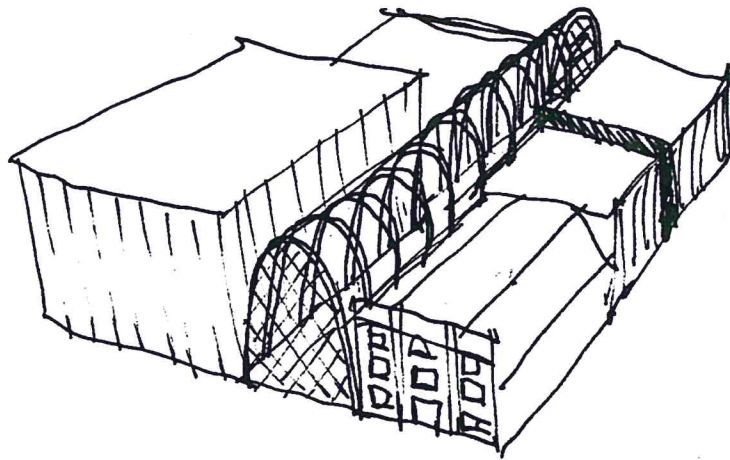
This special element will be distinct in the specific application of materials and form, reinforcing the concept of the connection between the classical and the contemporary.

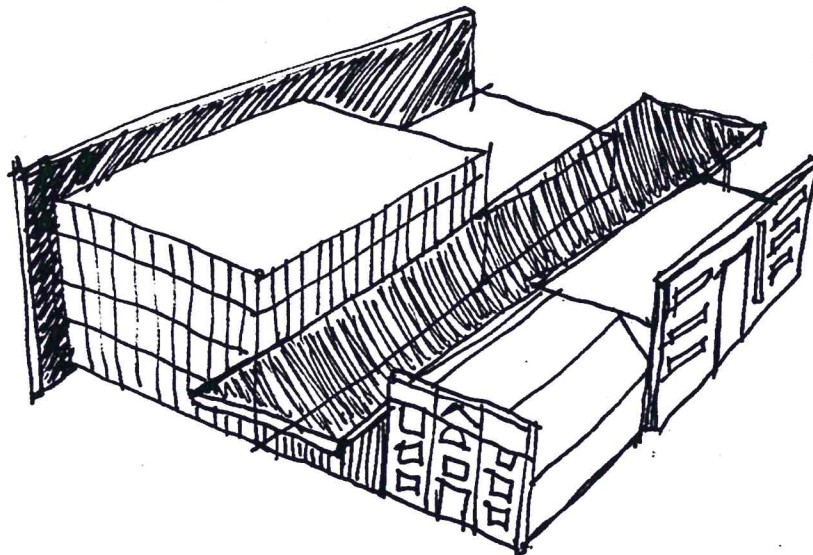
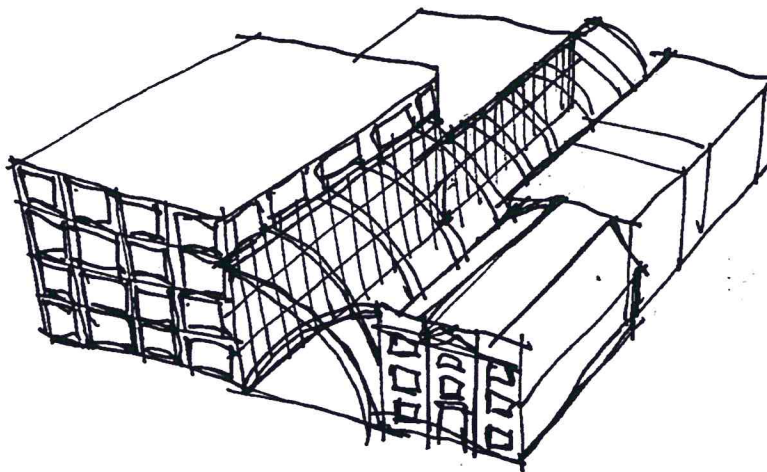
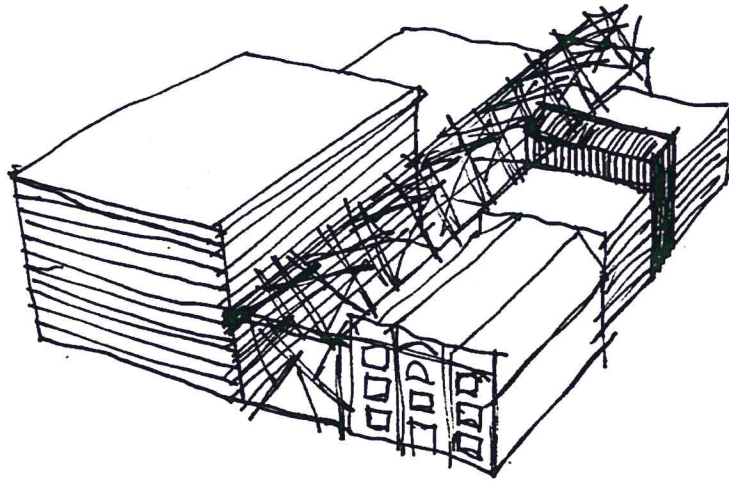


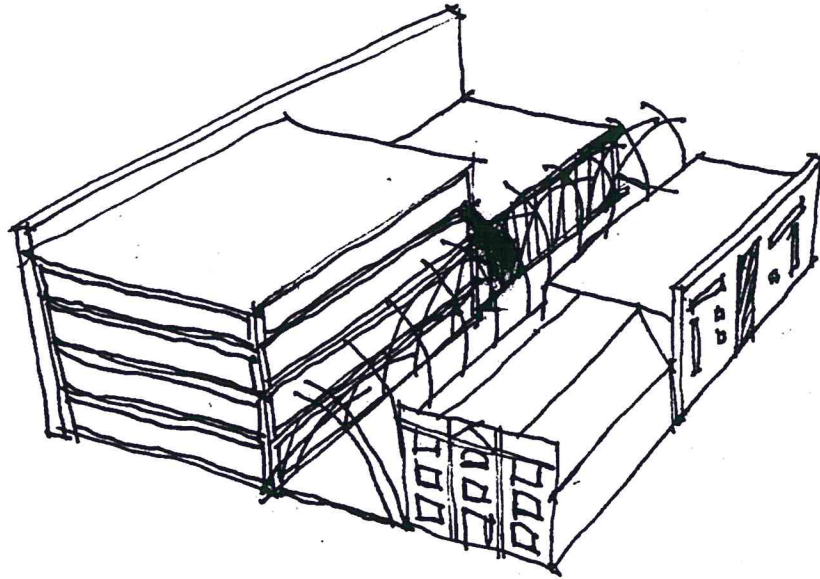


The expectation was to want to minimize the connection and it was interesting to find that the connection itself was much more important than previously thought, it wanted to be celebrated

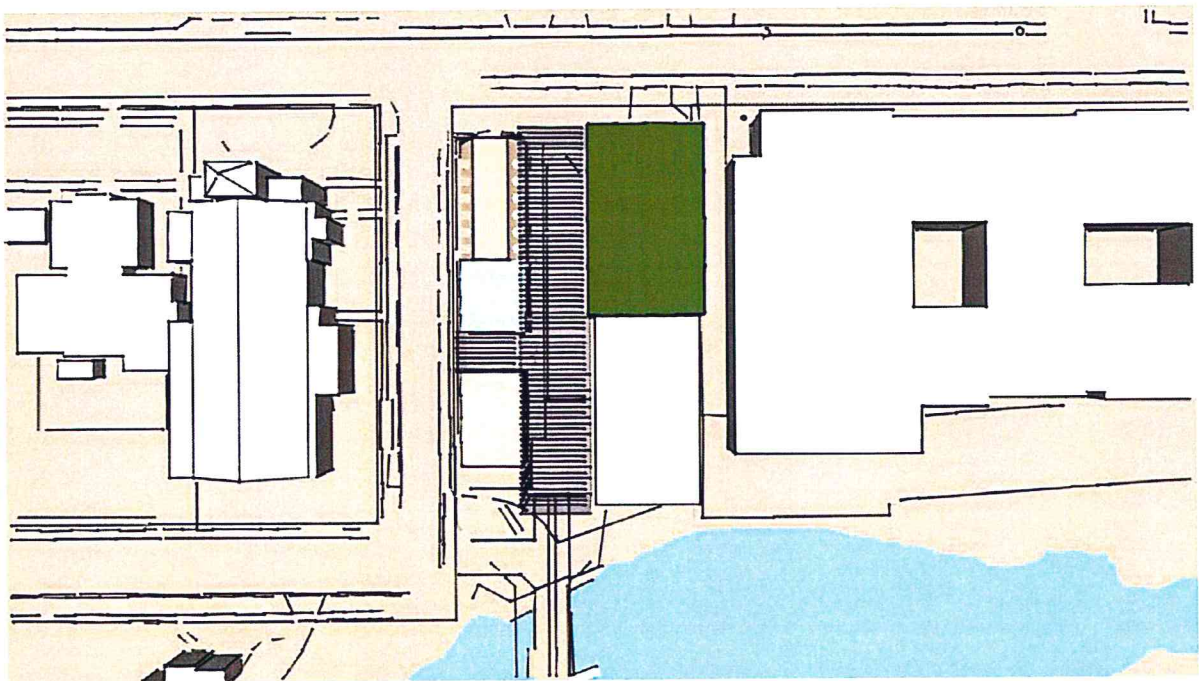
and highlighted. In looking to imagery from the functions of the space, development of how the circulation pieces in this building might start to take shape began.



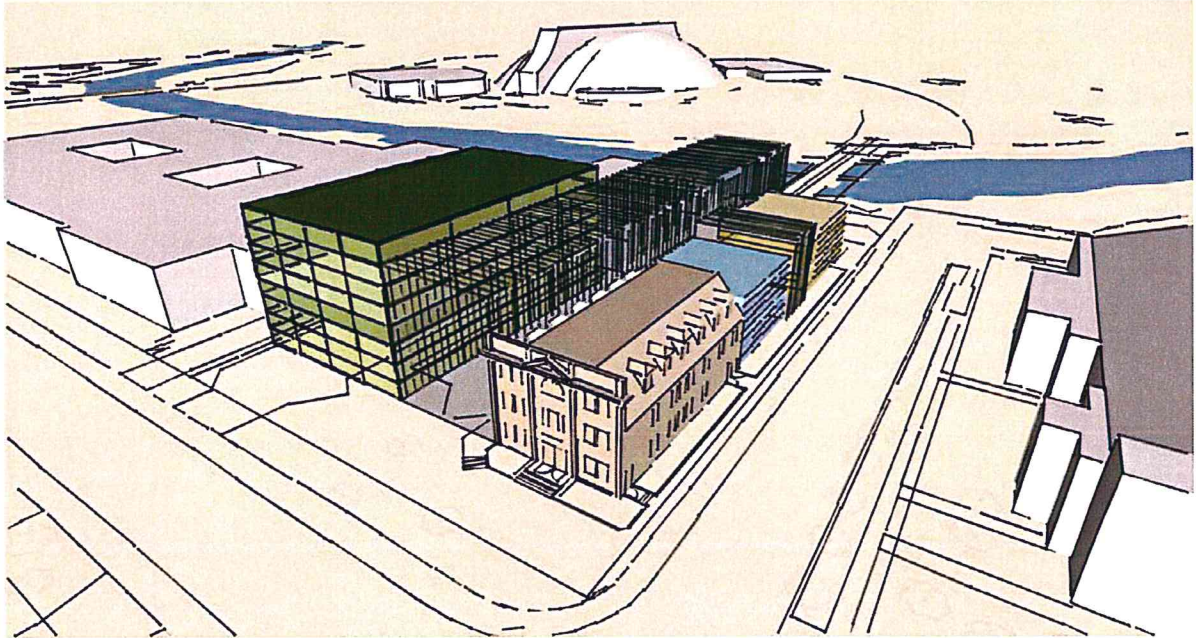




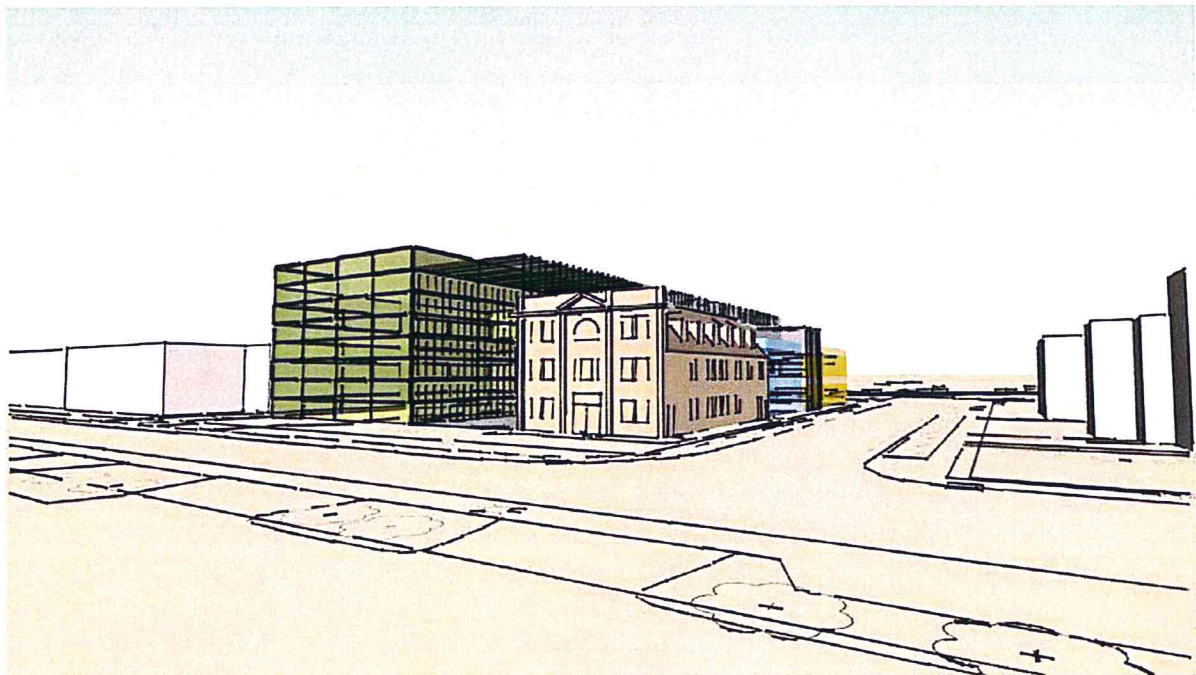
From this exploration of sketches, the next step was to use the computer to develop a rough 3D massing model to get a feel for the volumes and relationships within the site.



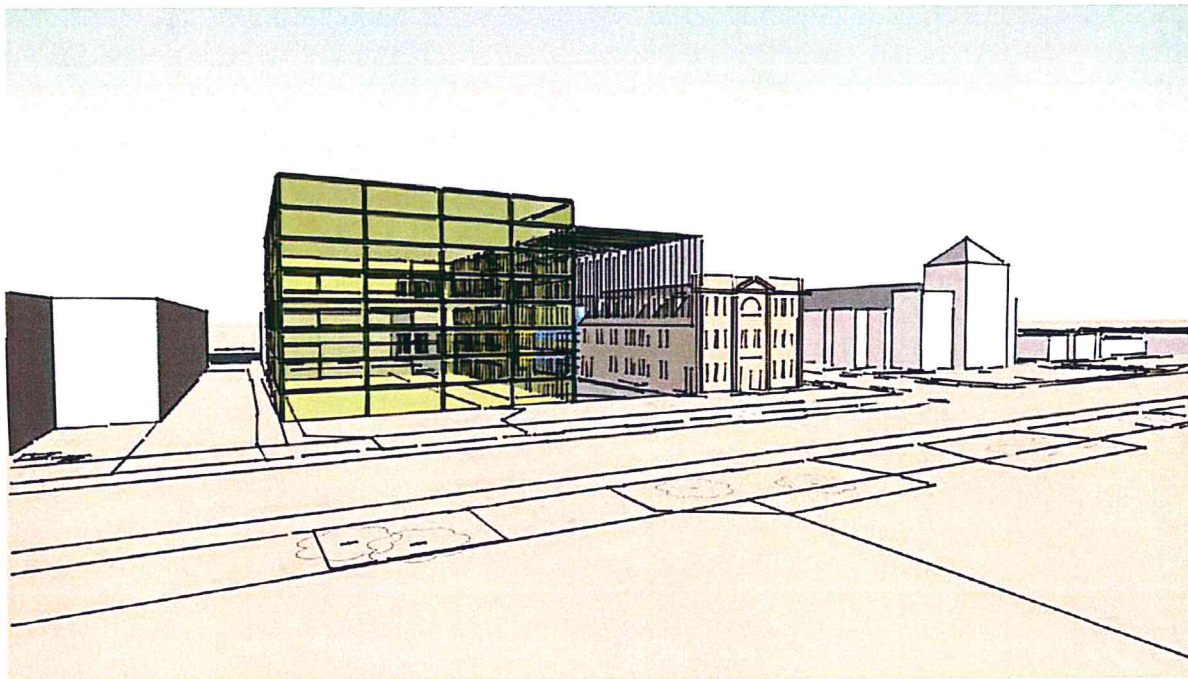
Site Plan Massing



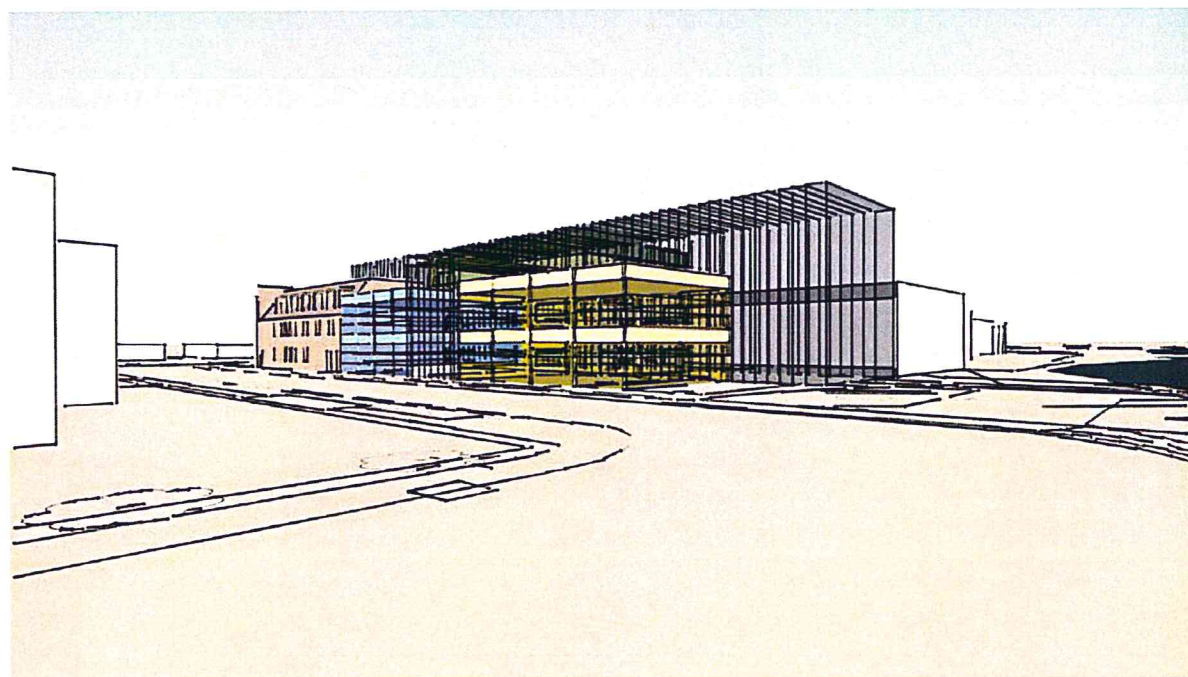
View to the northwest corner of the site from above.



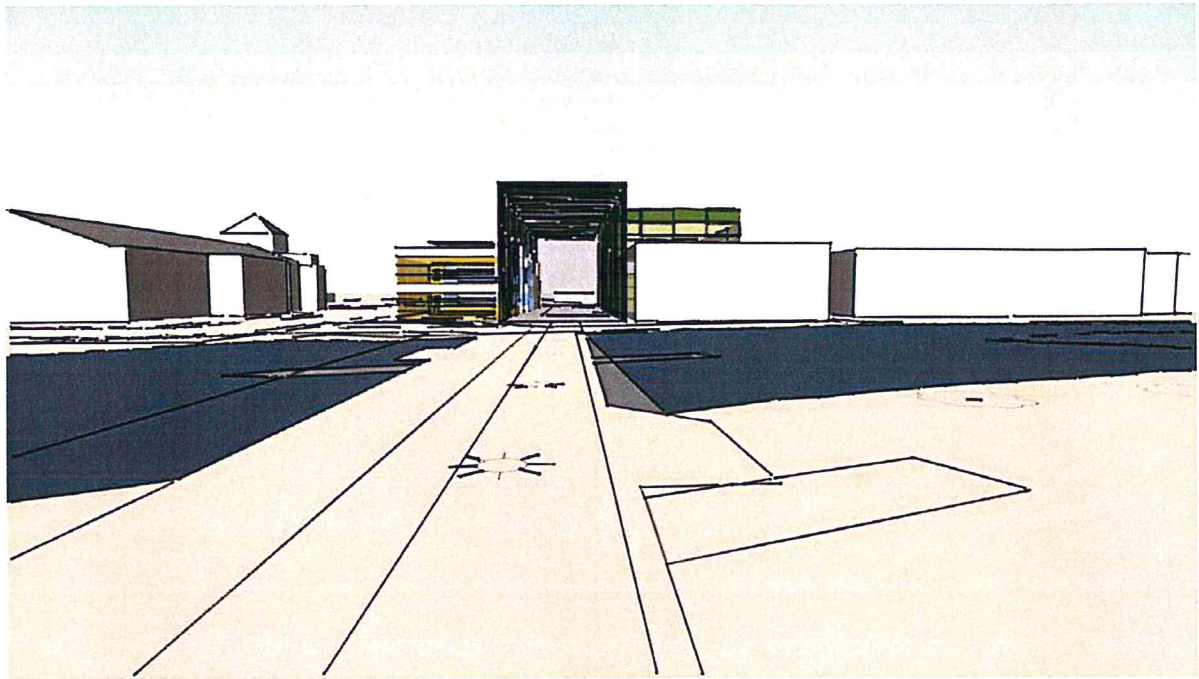
View to the northwest corner of the site from the street.



View to of the north elevation of the site.



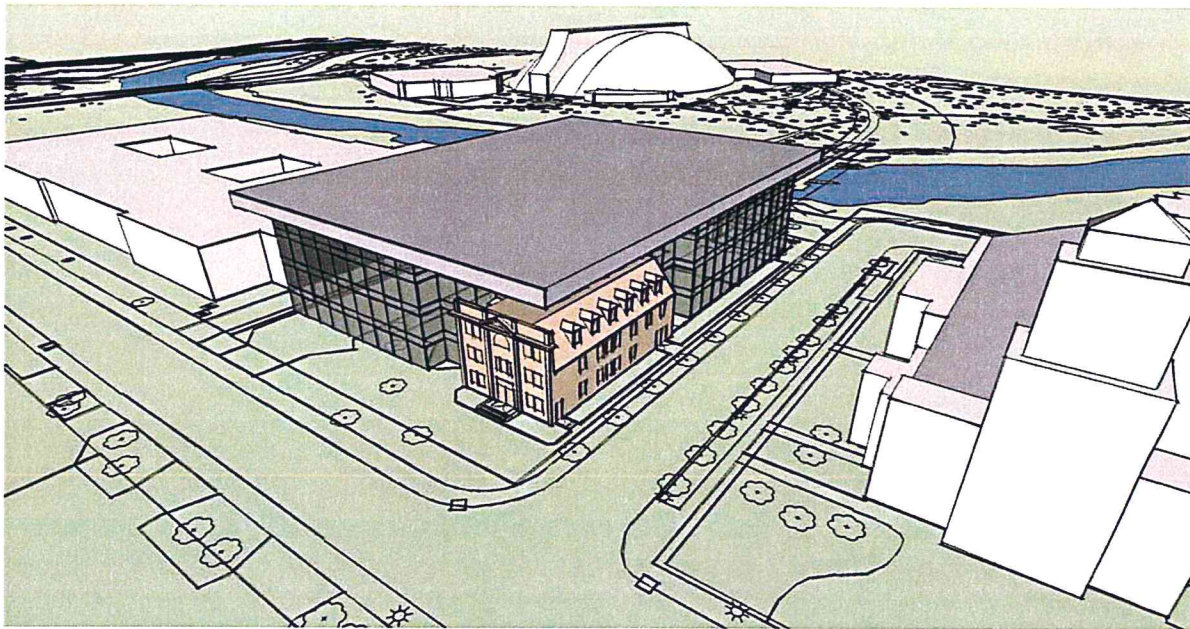
View to the south west corner of the site.



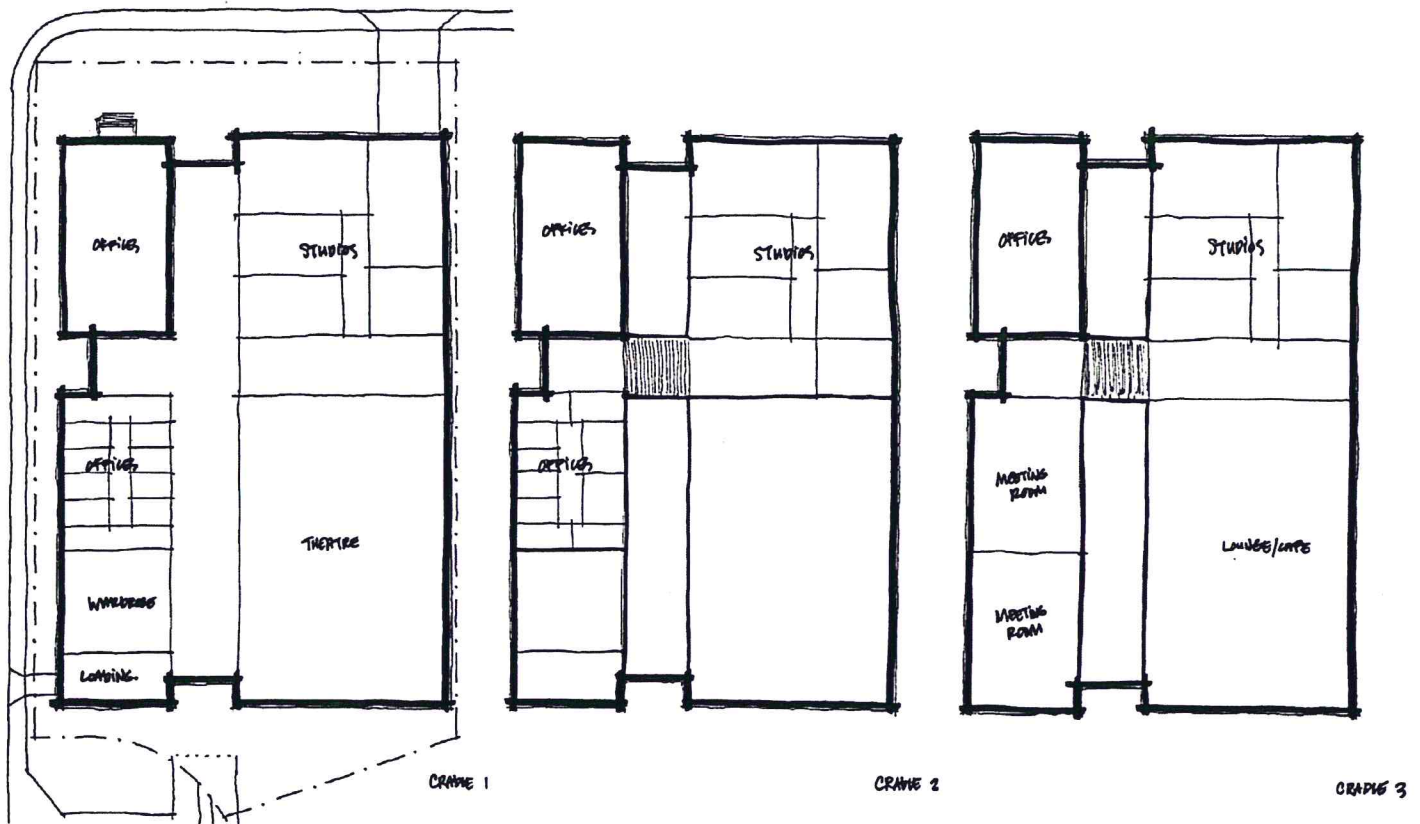
View of the south elevation of the site.

From this exploration of massing on the computer ideas were generated to refine the building layout and expression within the overall concept of **the connection between classical and contemporary design.**

The first idea was to explore 'cradle'. In this idea the contemporary building would cradle the classical building, wrapping completely around it. The roof would be one solid piece that covered the entirety of the buildings on the site.

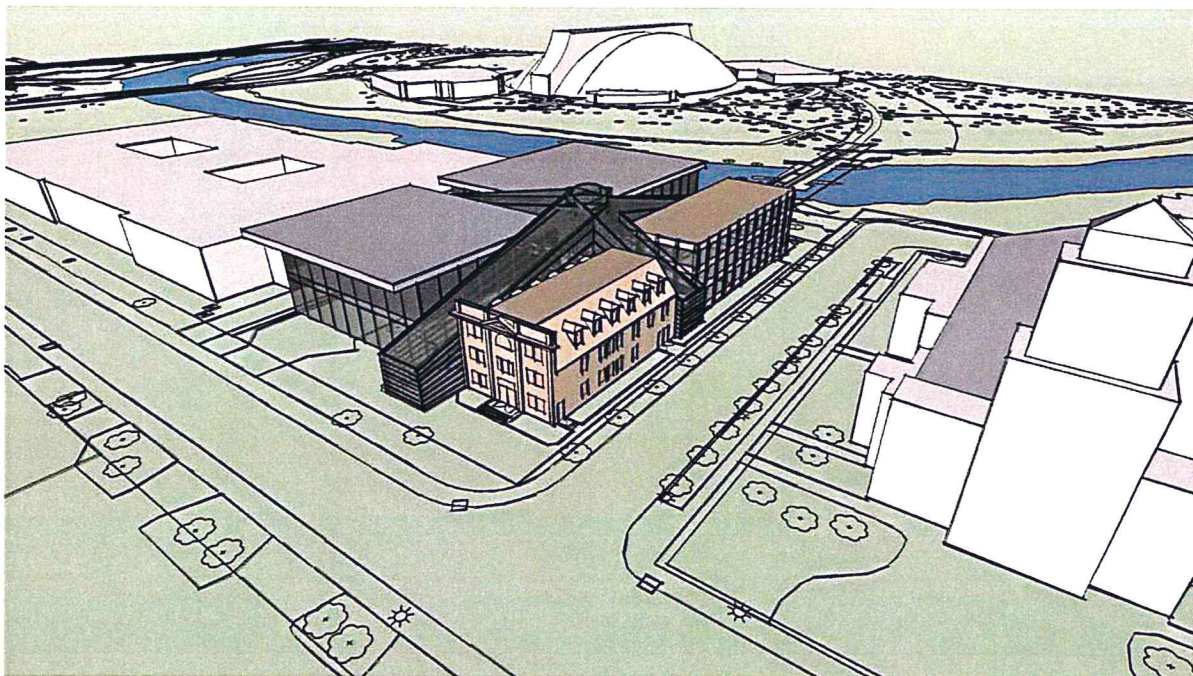


Massing – Cradle

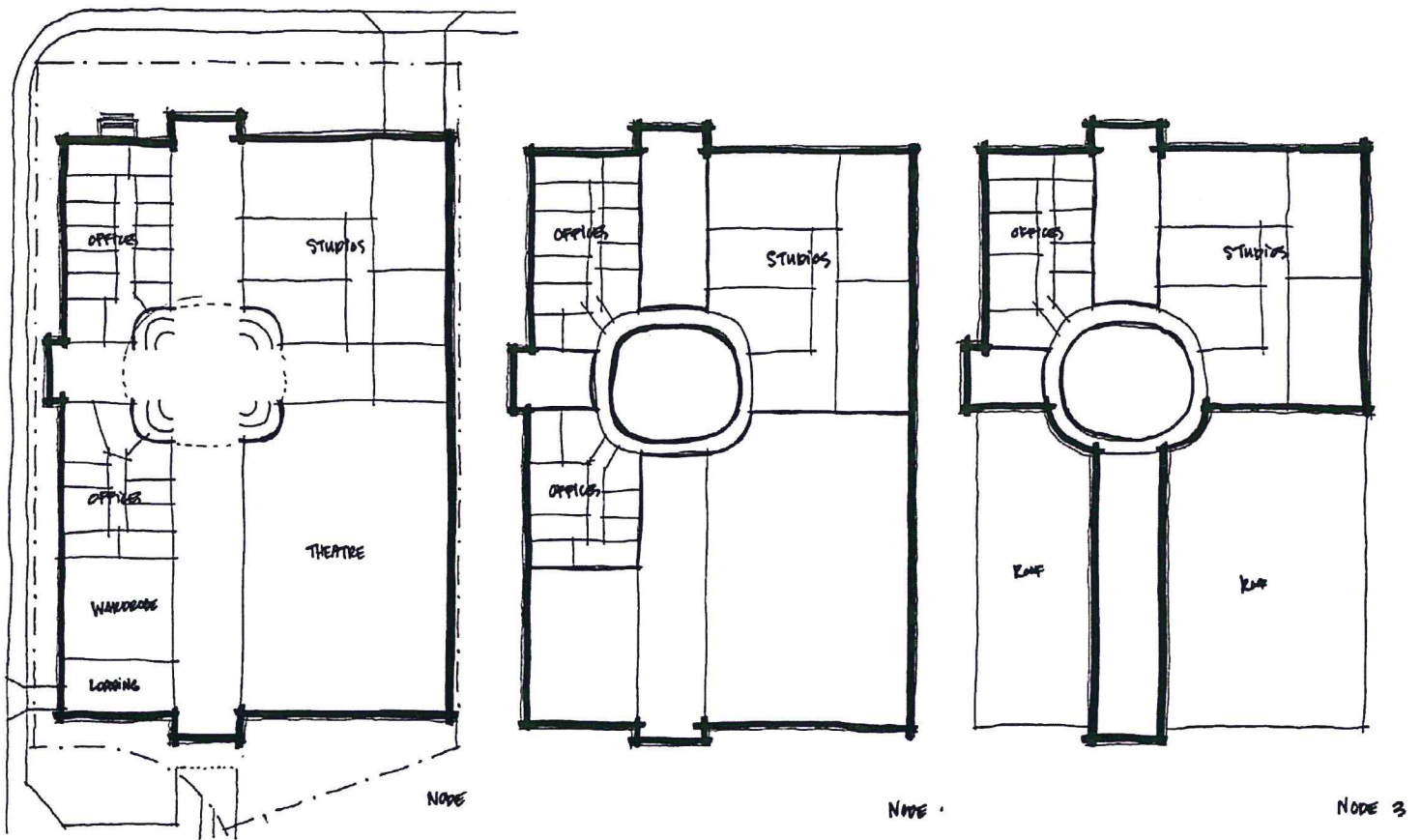


Floor Plans – Cradle

The next idea was to explore 'node'. In this idea the main circulation spaces would run along both a north-south and an east-west axis, cumulating in a node area. This node would be highlighted from the exterior and visible from all approaches. The interior of these circulation spaces is quite important in that it provides the atmosphere for interaction between the professional dancers of the company and the younger students of the school. It allows for a direct visual connection to the pathway systems of the Elbow River as well as to the Talisman Center where the company spends time using the fitness and physiotherapy facilities.

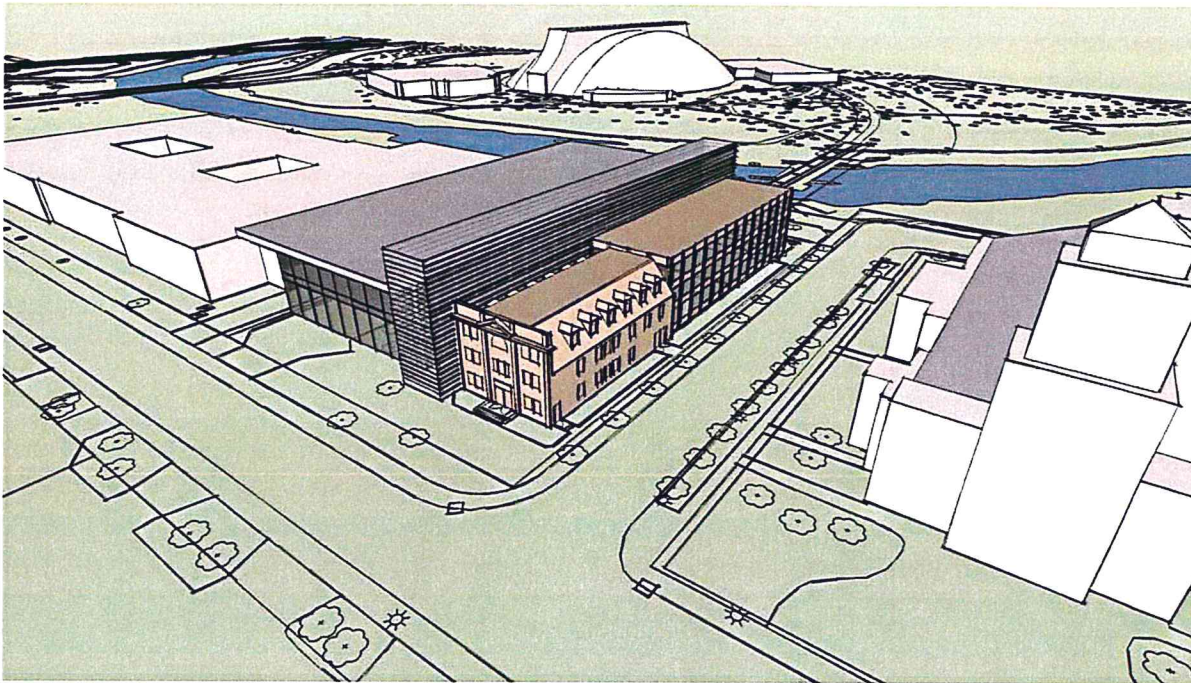


Massing – 'Node'

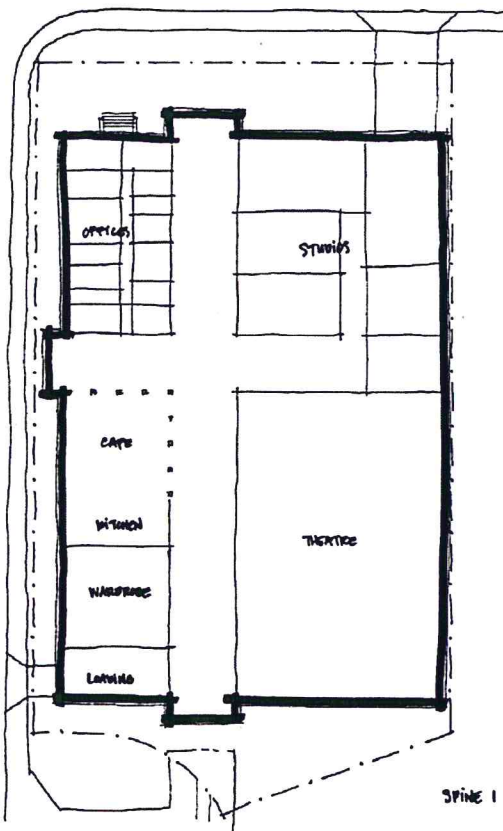


Floor Plans – ‘Node’

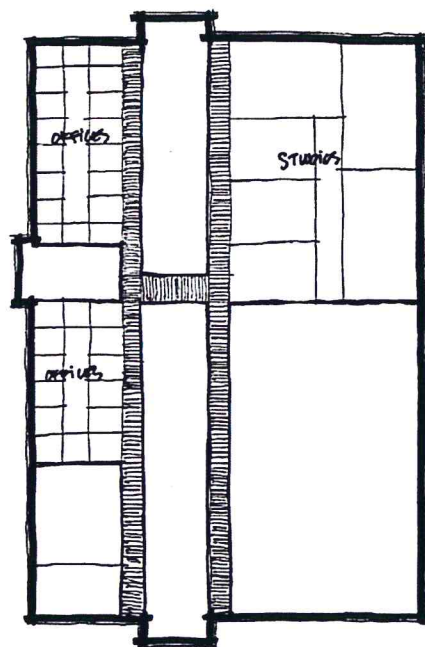
The third idea was to explore ‘spine’. In this idea there would be only one main circulation space that would run along the north-south axis. This node would be highlighted from the exterior and visible from all approaches as well. The interior of this circulation space is quite important again, in that it provides the atmosphere for interaction between the professional dancers of the company and the younger students of the school. It behaves differently than ‘node’ in that the ‘spine’ is not one central space, but rather a continuous area that is more structured and direct, evoking a completely different feeling in the space. The ‘spine’ completely separates the two sides of the site into classical and contemporary, which leads to strong architectural elements on both sides of the site.



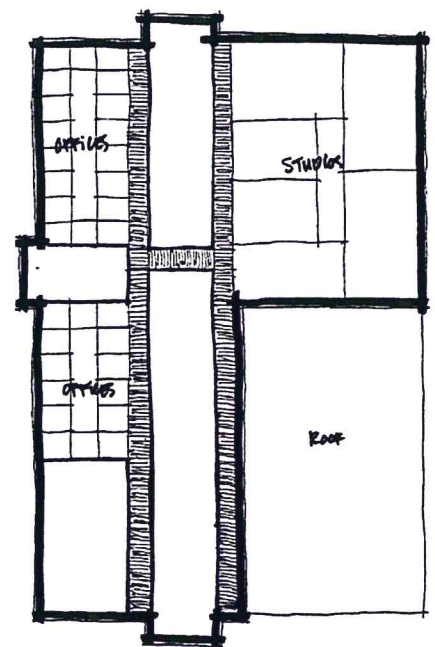
Massing – 'Spine'



SPINE 1



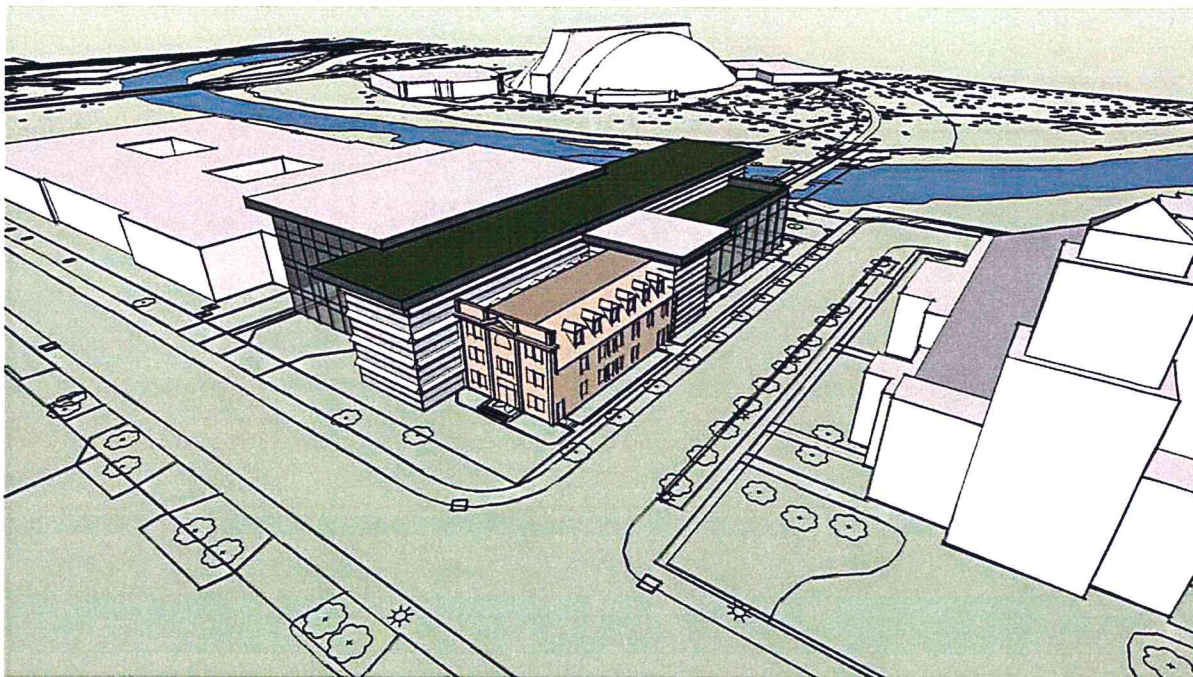
SPINE 2



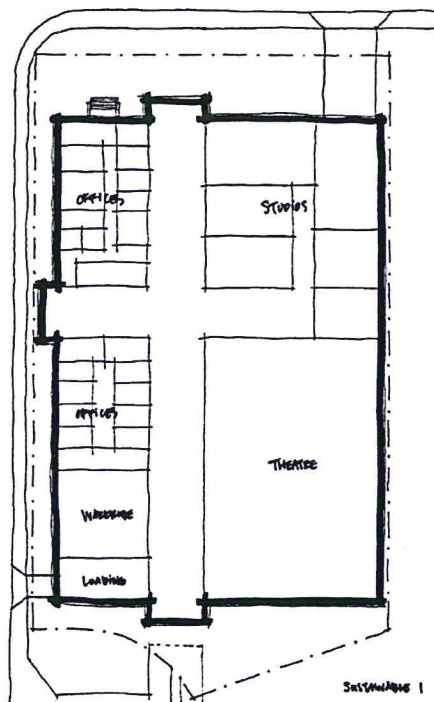
SPINE 3

Floor Plans – 'Spine'

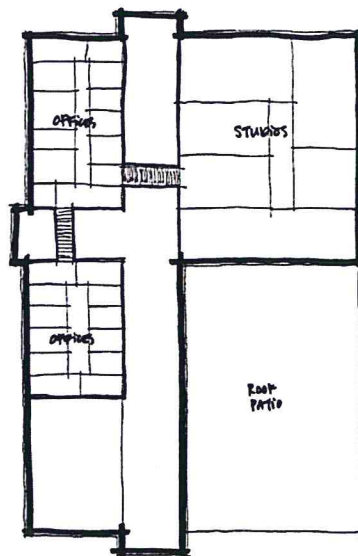
The next idea was to explore 'sustainable'. In this idea the building would appear visually sustainable, easily recognizable to people. Even though the client in this case has decided not to count LEED points, they are still concerned about good building practices and where it makes sense would like to follow sustainable principles. This concept shows large expanses of flat roof that can become green roofs, an open area to the southeast corner of the site that can sustain a large area of rooftop landscaping and vegetation in conjunction with patio space, sunshading devices on the curtainwall, day-lighting to all office areas, operable windows for natural ventilation, energy efficient fixtures, solar thermal panels on the south elevation, etc.



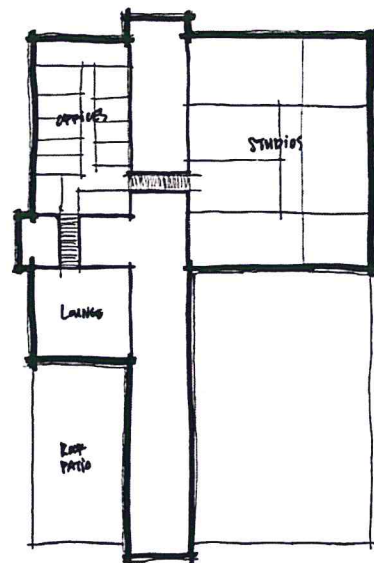
Massing – 'Sustainable'



Sustainable 1



Sustainable 2

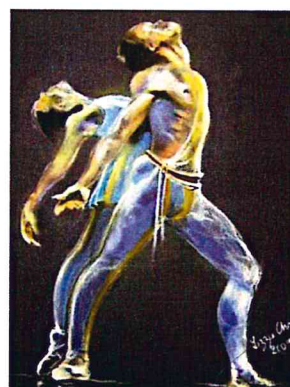
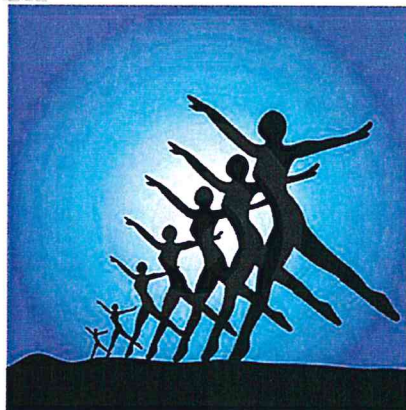


Sustainable 3

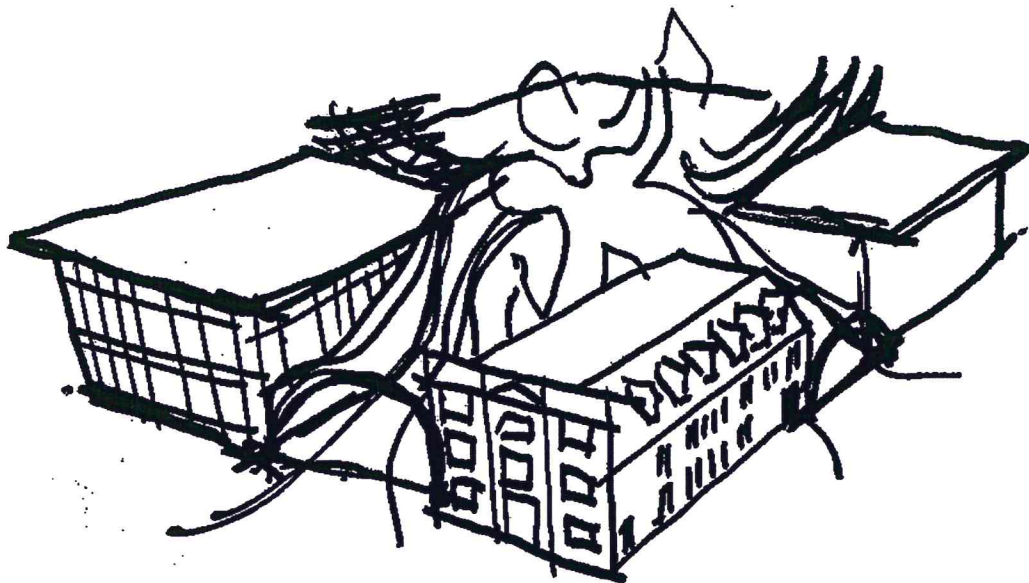
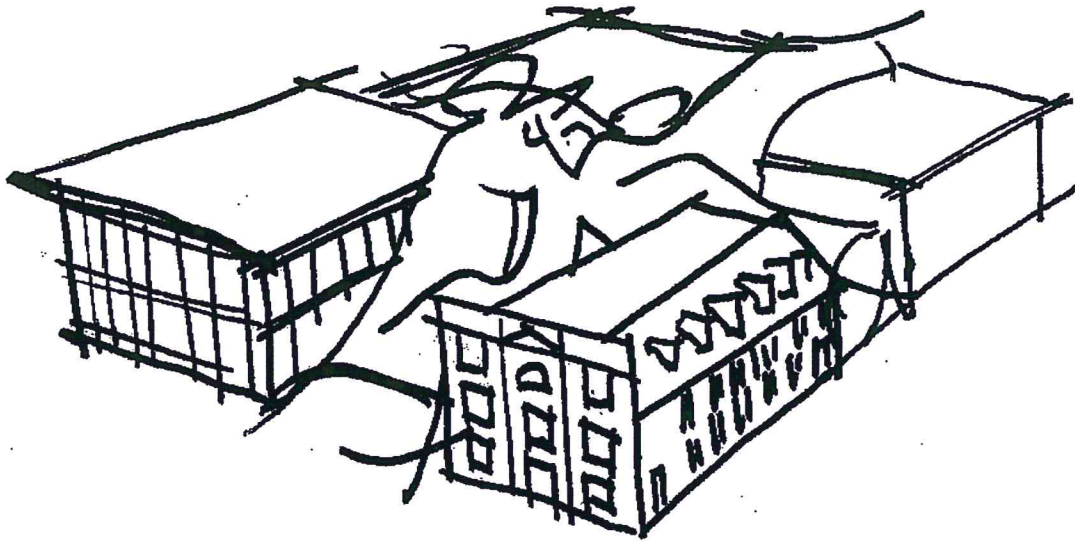
Floor Plans – 'Sustainable'

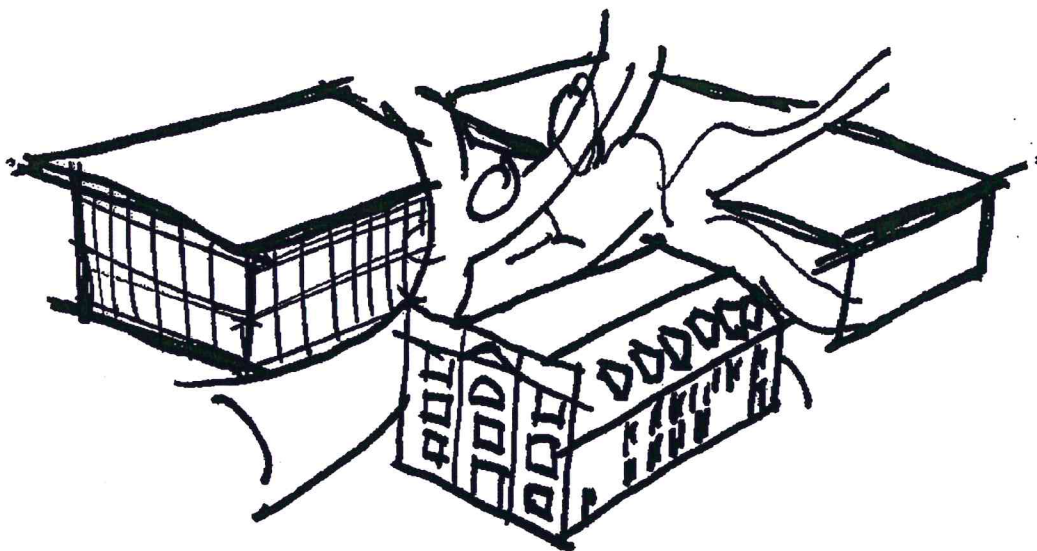
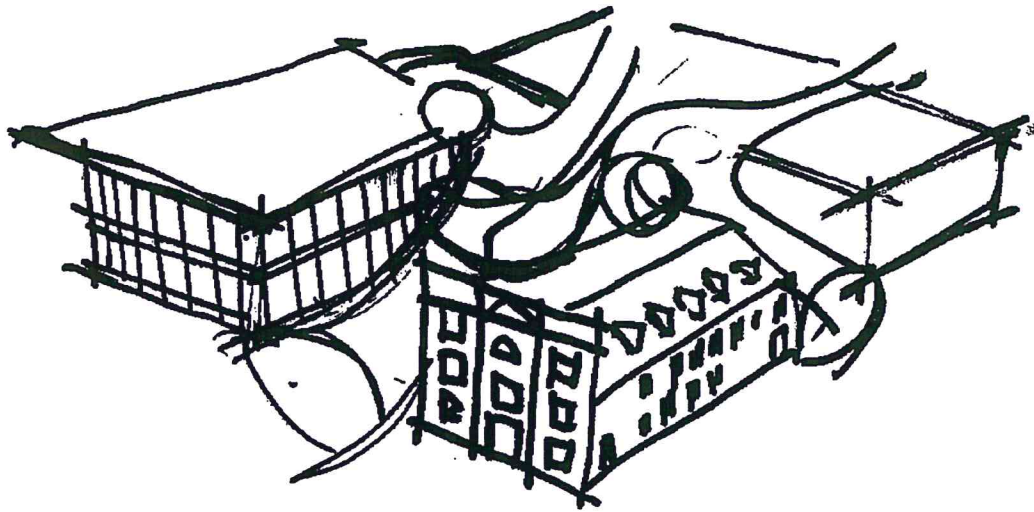
From these explorations, each solution was examined to determine the strengths and challenges of each layout and massing. The 'node' option appeared to be the strongest solution for a number of reasons. The circulation paths provided clear access to and through the site. These areas were a natural director of people and spaces. They support the Alberta Ballet's need for interaction spaces between users, and create a natural space in which people can flow, gather, linger, orient and communicate. The node allows for an anchor point to the facility where a special and important space appears. This space can have many uses and can be further developed within the design. As this node idea began to develop, imagery that related to dance and movement was examined to see if that could inspire the form that the connection might take. Some of the images that stood out are as follows.

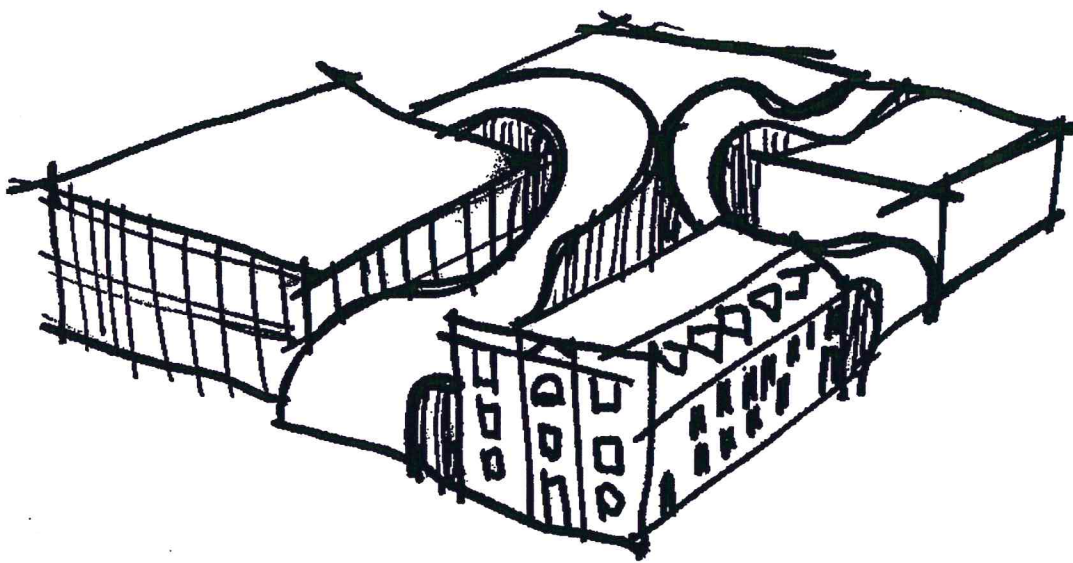
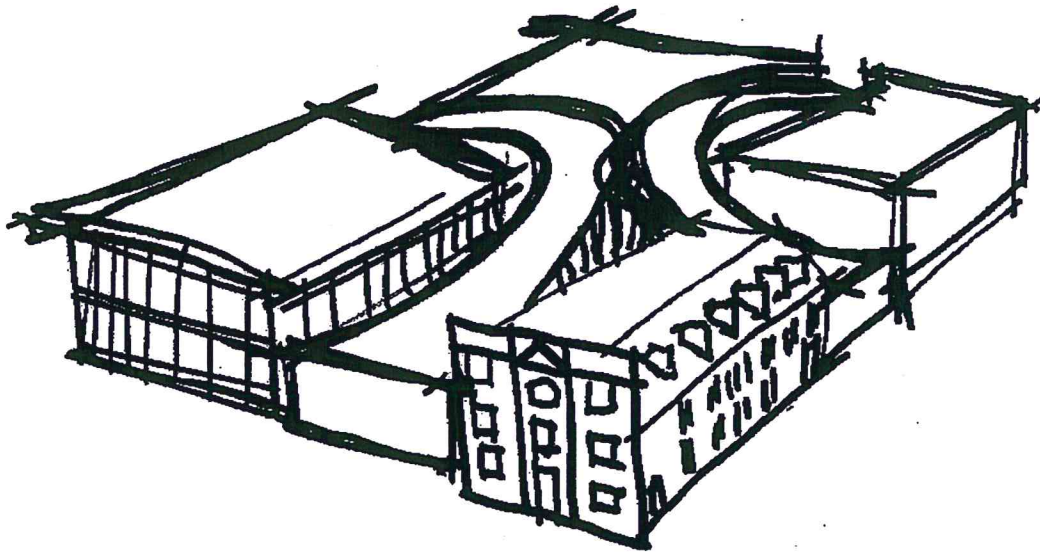
Imagery



After the imagery search, hand sketches were done to generate ideas on how this imagery would relate to the built form of this project.

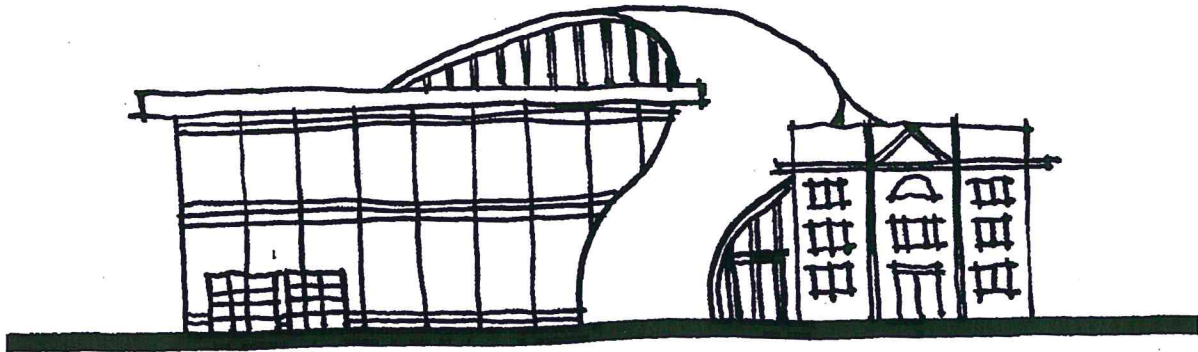




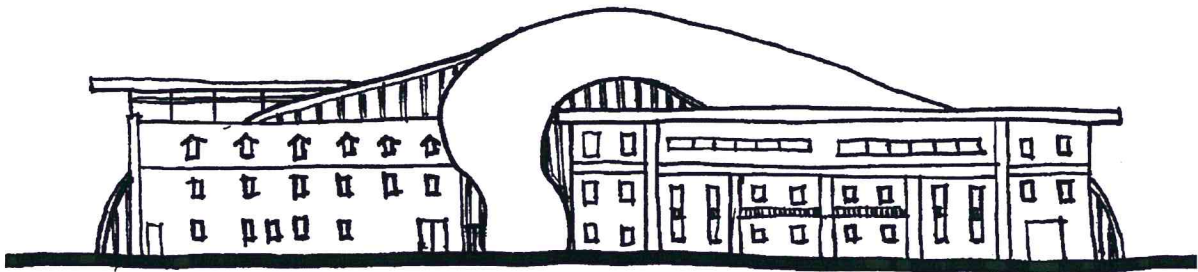




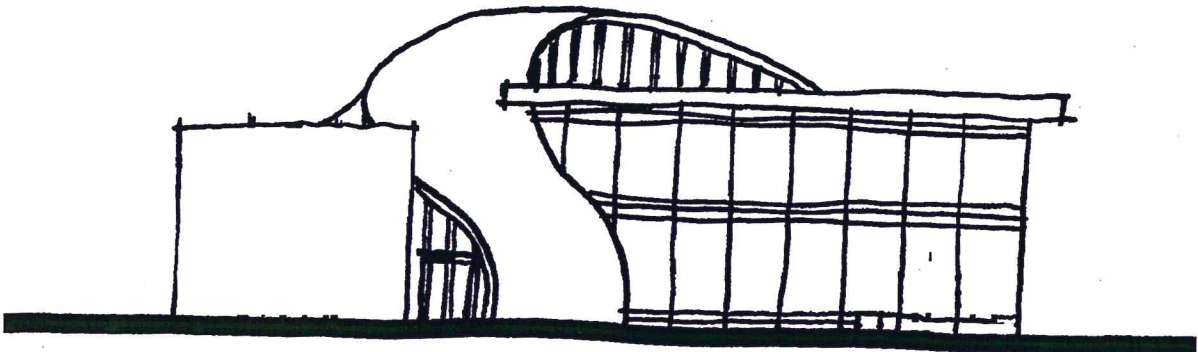
These sketches allowed the essence of the function of the space to really emerge. The connection spaces between the classical and contemporary buildings wrapped around, soaring from the entry points up to this culmination node that centers and grounds the building. From there a floor plan and set of elevations was laid out, beginning to form part of the final solution.



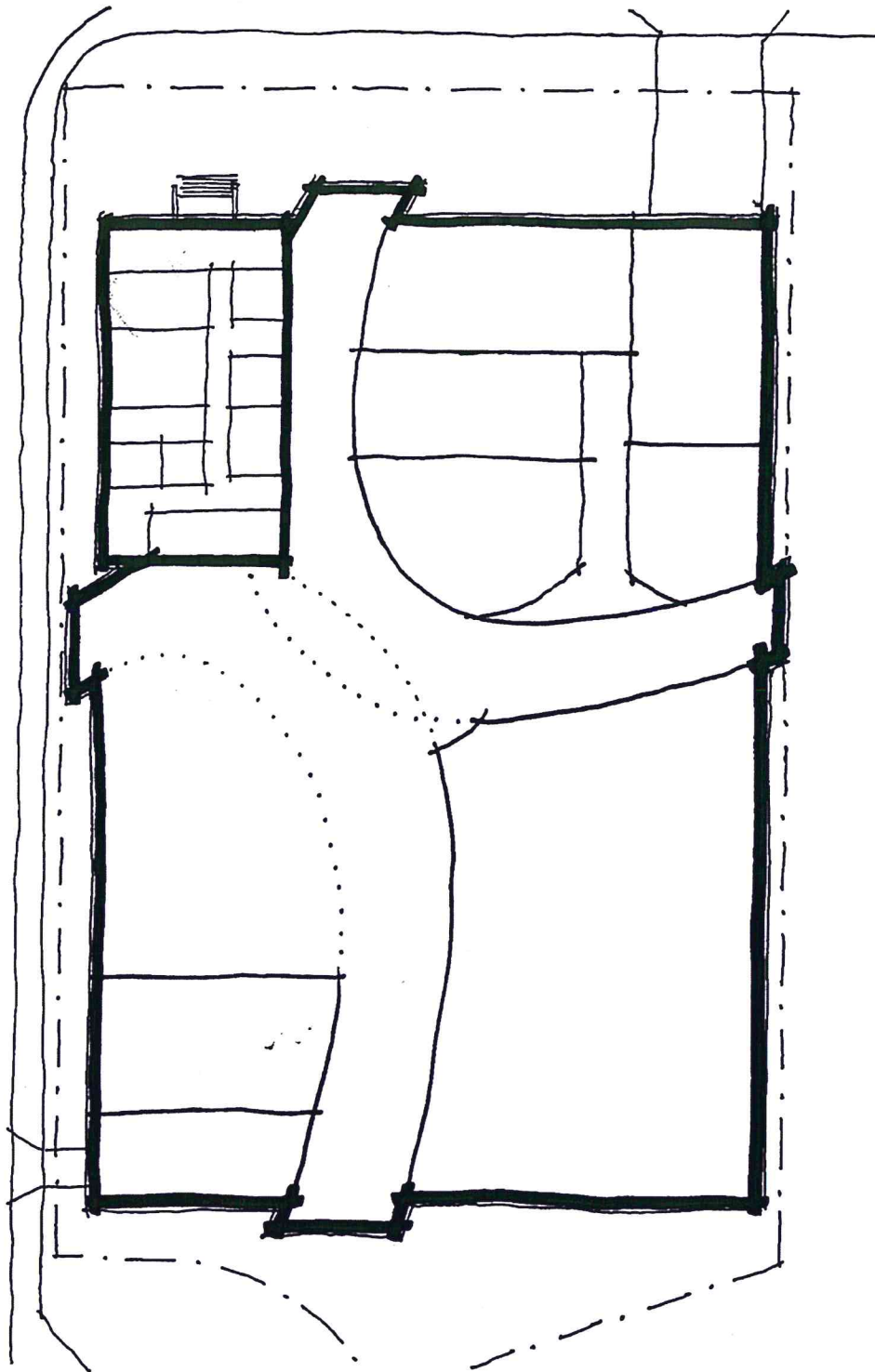
North Elevation



West Elevation



South Elevation



Main Floor Plan

Final Development

Final Solution

For the remainder of the term, this concept solution was developed further with the aid of the thesis committee.

Parkade Plan – the site access from 18th Avenue allows for a parkade ramp to go directly down to the underground parkade. There are 58 parking stalls provided without going into the footprint of the historical structure, and there is lots of service space available on this level.

Service Plan – in the development of the theatre space, which is sunken from the main floor plan, it was discovered in section that there could be a service level underground between the parkade floor plan and the main floor plan. This will serve as access for the dancers from the stage area to washrooms, changerooms, a green room space, plenty of wardrobe storage, set storage, and other service spaces.

Main Floor Plan – the main floor is accessed in many ways. If people are coming to the facility just off the street, the front door is on the north, from 18th Avenue, and leads them to the main circulation space to the facility. If people are arriving by the parkade, there are two elevator locations to bring them up to the main level. If there are parents or students coming from the drop-off zone, there is a side access off of 1st Street. Any way you enter the main floor you are immediately part of the main circulation path through the building, which is encased in the geodesic glass structure, that soars from the entryways upwards.

The company office spaces are located in the Nat Christie structure, in the northwest corner of the site, and the exterior walls will be kept intact as they are in good condition and contrast the sleek glass element wrapping around. The studios are located on the north side of the building, facing 18th Avenue, and they are double height spaces, highly visible from the main road.

There is a boutique where the Alberta Ballet sells miscellaneous items and showcases their current works just to the south of the Nat Christie Centre structure.

The main theatre element is tucked back in the southeast corner, it opens up off the main hallway and becomes an interactive creative space where informal recitals and productions can be given, as well as regular classes or between class impromptu practicing can take place.

The loading space for garbage and recycling is located midway through the site, off of 1st Street, and it is also a double height space to allow for proper servicing. There is a café in the back southwest corner, which looks out onto the pedestrian connection to the river, as well as soft landscaping.

The main stair located at the axis of the two curving circulation paths, it is a grand stair that opens up as it ascends, and leads you up to the second level viewing platform for parents. It acts as a gathering point, a place to pause and capture different views of the facility from into the theatre space, over to the historic façade, into the outdoor area.

Second Floor Plan – the second floor contains mostly administrative functions, the company in the northwest space and the school in the southwest space. At the top of the main stair is a viewing platform for parents and visitors. This space looks into the studios, allowing visual access without distraction to the people using the space down below.

Third Floor Plan – the second level of studio spaces is here, as well as more administrative functions, and the connection to the outdoor area of the facility. Having the outdoor area located on the roofdeck of the theatre space allows for controlled secure outdoor space for the Alberta Ballet. The design of the roofdeck allows for some mechanical space, as well as additional informal outdoor performance space where galas can be held, fundraisers, performances and parties. The axis of the space is designed to align with the footbridge, the river, and connection

down to the lower floor via the exit stair in the southeast corner. The elevated views south to the river and park area around the Talisman Centre are quite spectacular and provide a serene relaxing environment for things as simple as a quick outdoor lunch or between class study space.

Elevations – the two main materials are sandstone and curtain wall. In each elevation each piece of the building was thought out in its own unique function and design, while tying together with each of the other elements in order to construct one cohesive whole structure. The glass used in each specific massing varies slightly in form, size and colour, to distinguish individual elements. The windows in the studio spaces are large and inoperable, acting like a backdrop to the movement occurring within. The glazing colour used here is contrasting to the sandstone façade that stands opposite on the site, allowing each to represent differently the classical and the contemporary. The windows to the school support spaces are smaller in scale, and are operable. The windows glide straight out, which results in the façade varying throughout the day and year as individual pieces are pushed and pulled back and forth allowing individual room control. The colours of the glass in this section reflect the subtle tones of the sandstone structure, and the element of the classical building. The east façade is a solid mass, appearing as a large plane that the rest of the building is set upon. It begins rooted in the ground, growing from the theatre backdrop, claiming the entire east side of the building. This plane is intentionally left blank in order to allow the opportunity for a billboard element on the site, that is visible from the east approach, the school next door and parts of the river path.



NAT CHRISTIE CENTRE



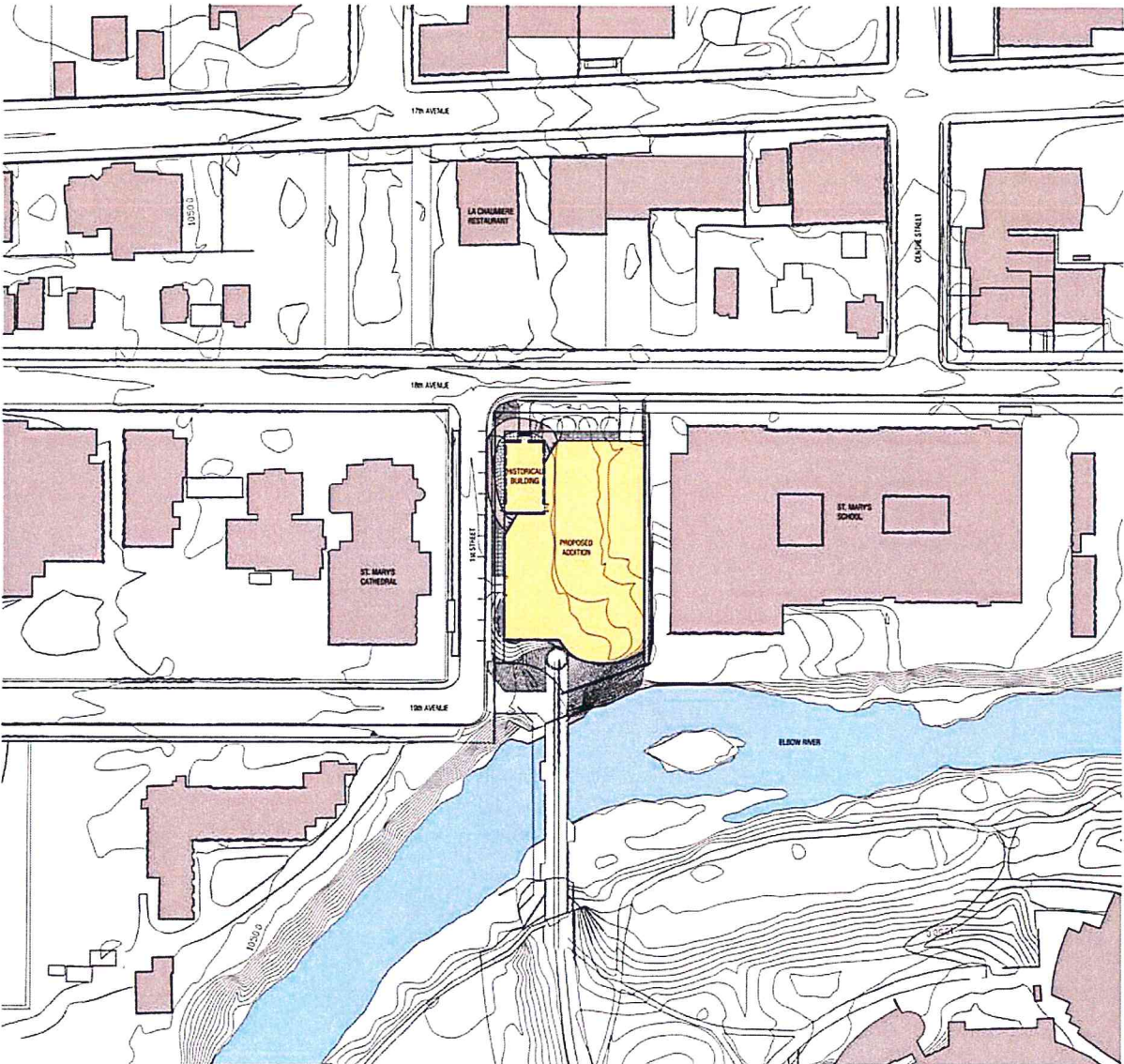
SHED 1



SHED 2



HOUSE



TO THE WEST ST. MARY'S CATHEDRAL



TO THE NORTH LA CHAPELLE RESTAURANT

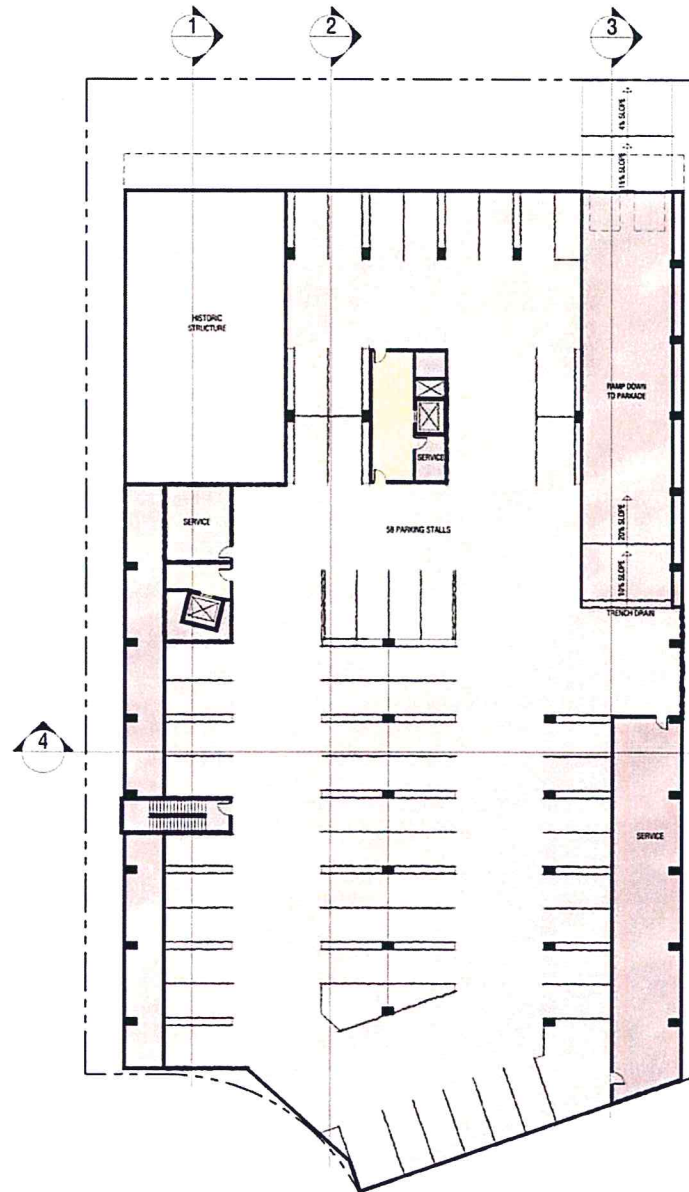


TO THE EAST ST. MARY'S SCHOOL

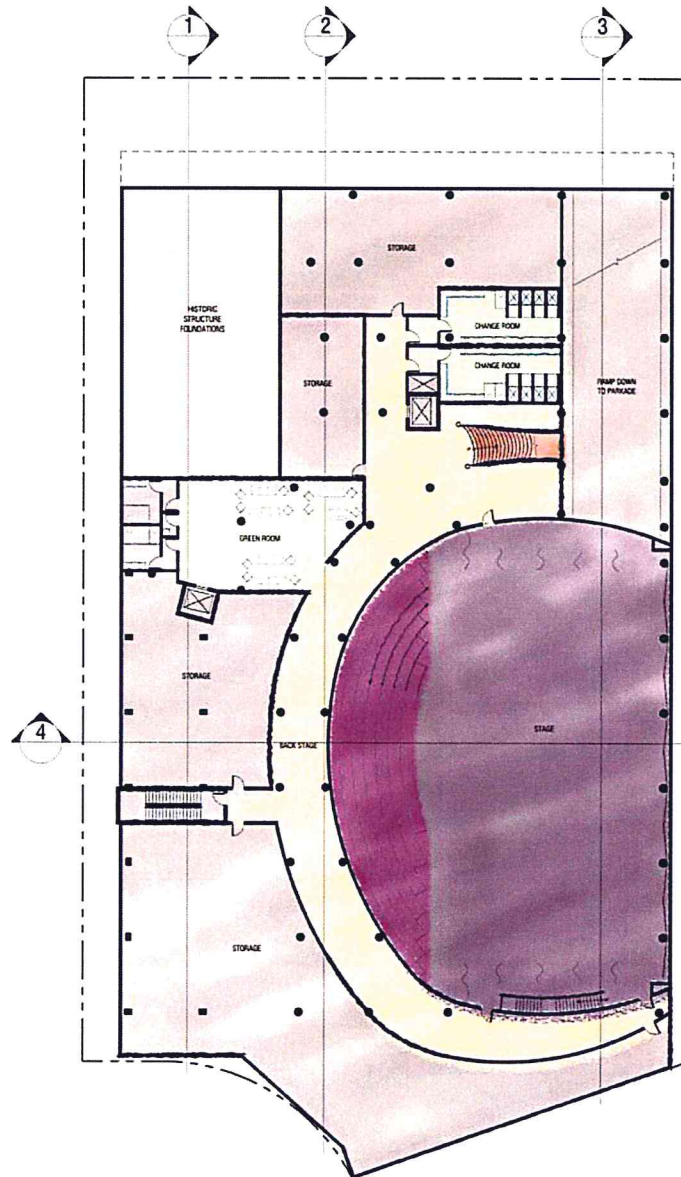


TO THE SOUTH ELBOW RIVER ELBOW RIVER CENTRE

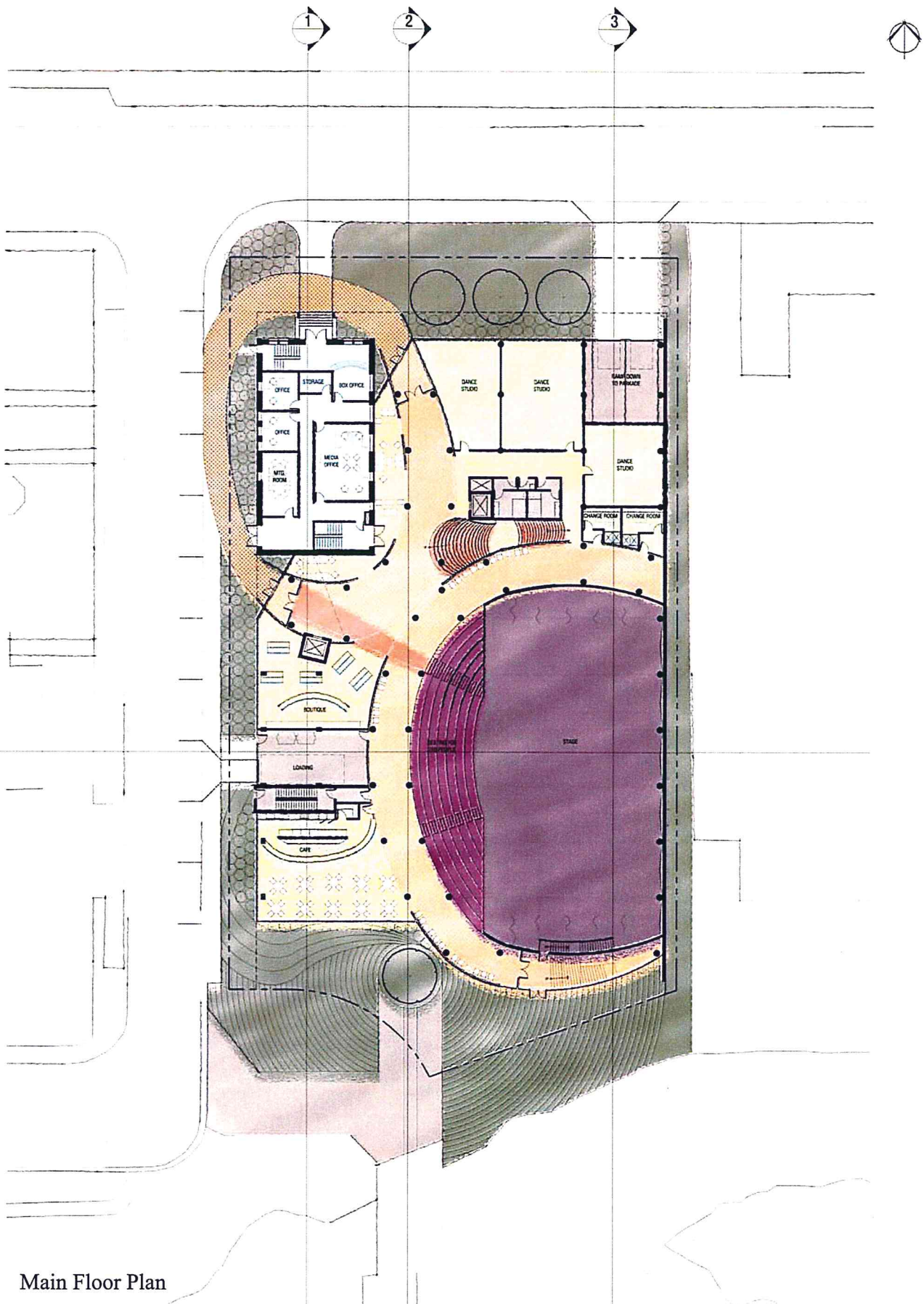
Site Plan



Parkade Plan



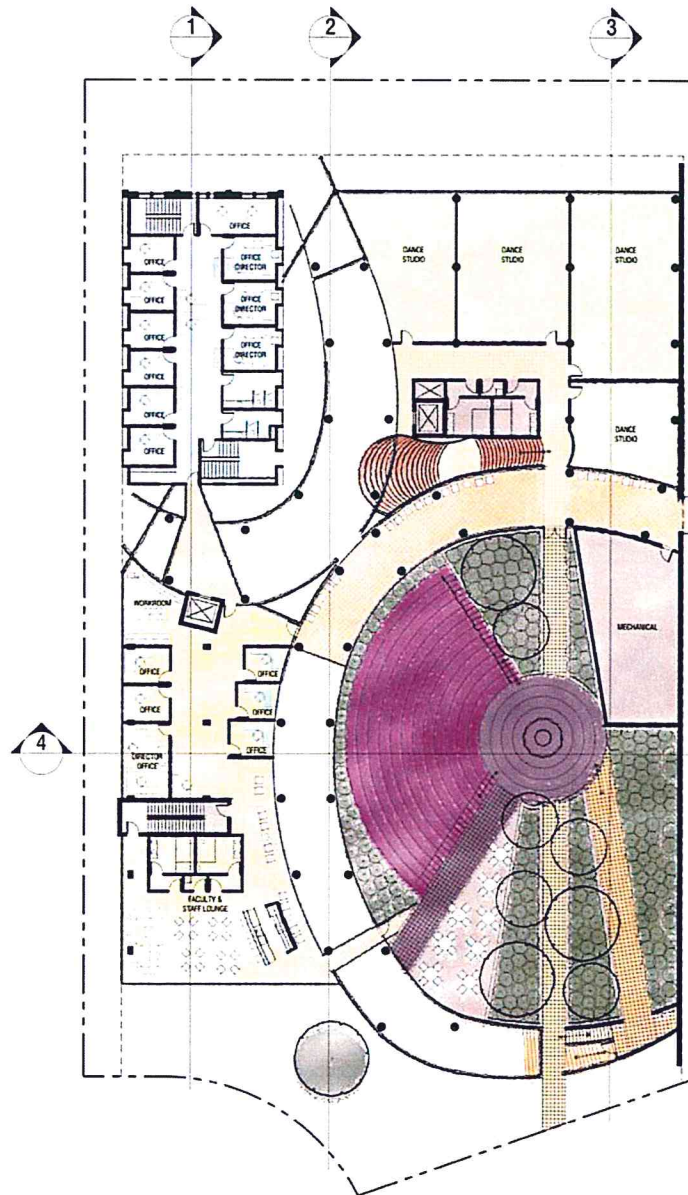
Service Floor Plan



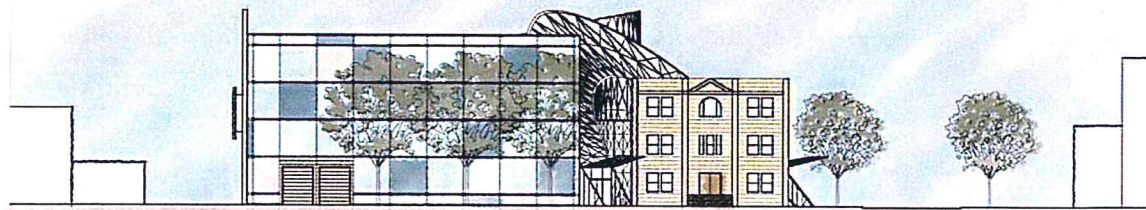
Main Floor Plan



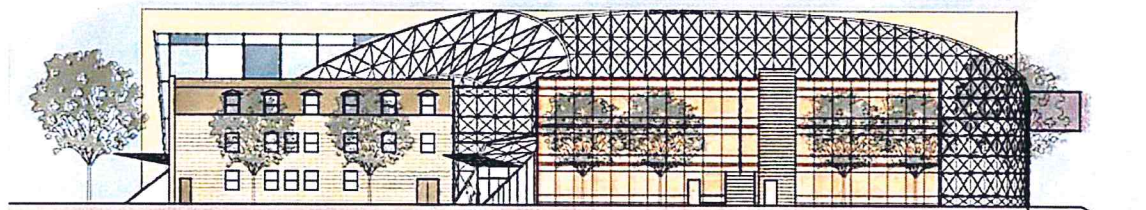
·AMY MORIN - RAIC SYLLABUS·



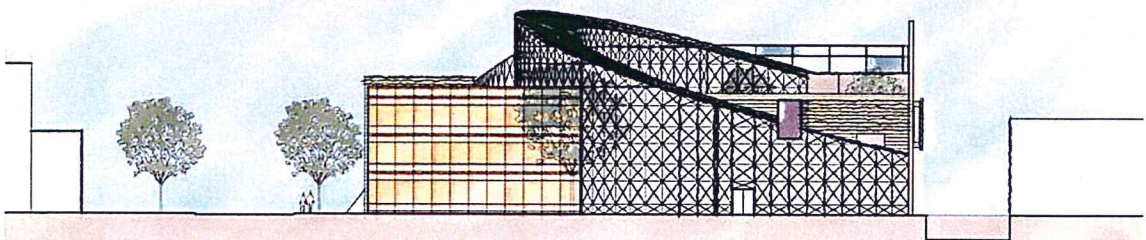
Third Floor Plan



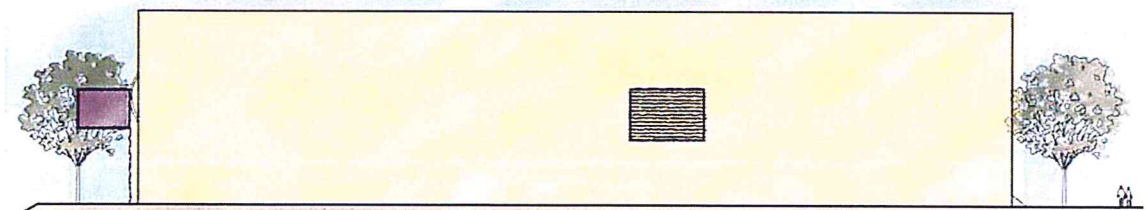
NORTH ELEVATION



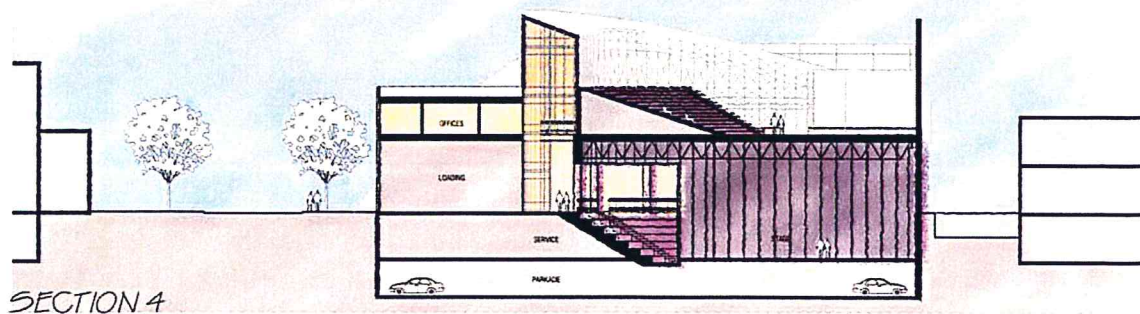
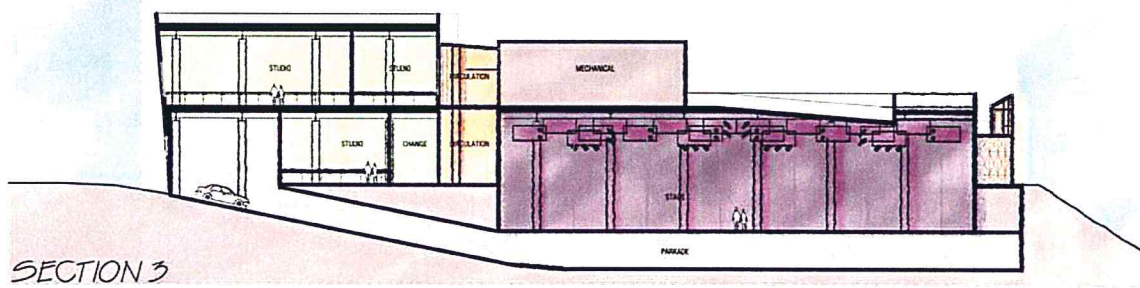
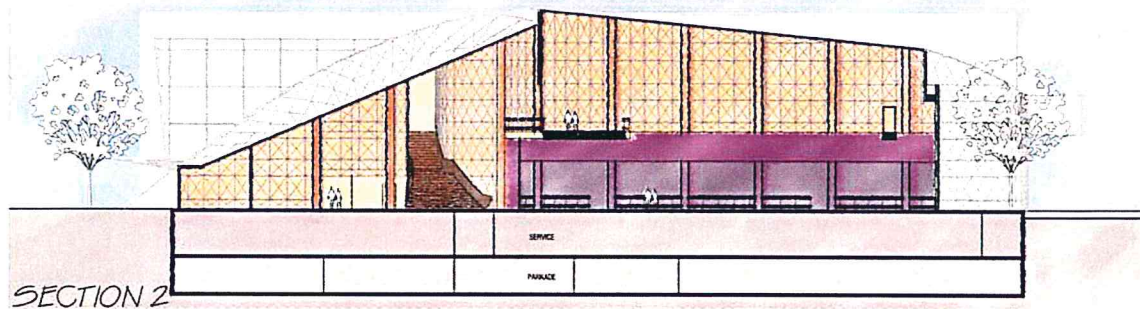
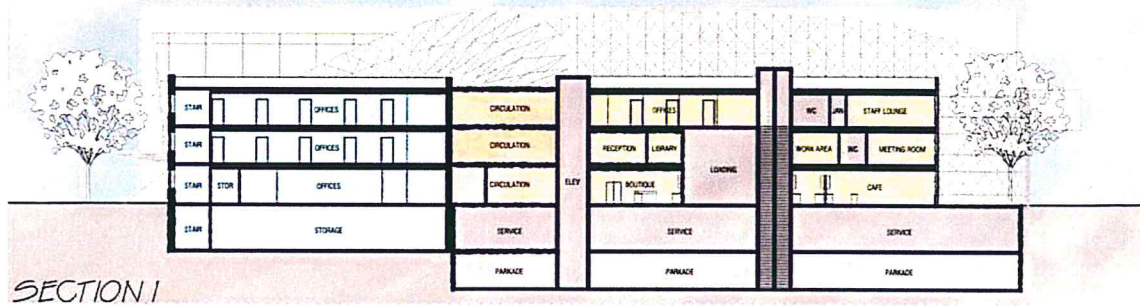
WEST ELEVATION

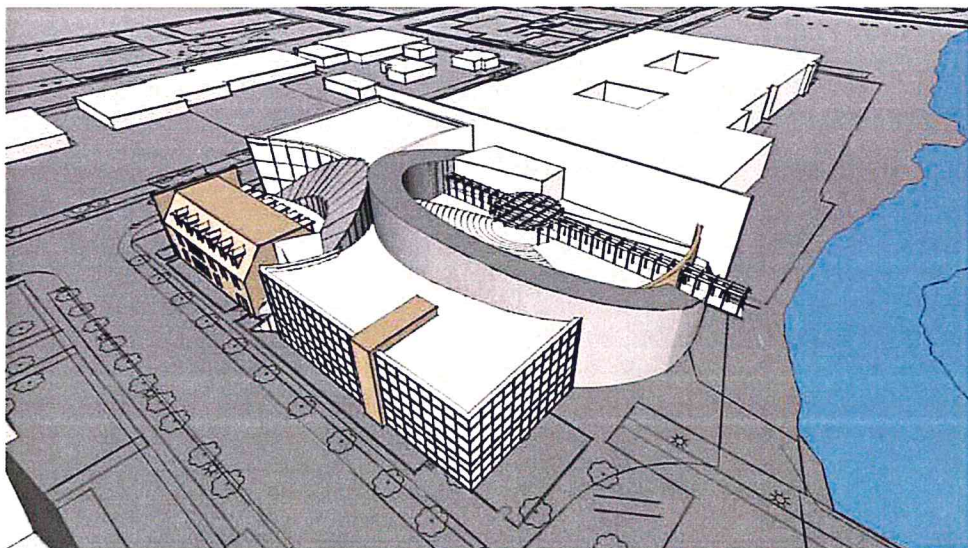
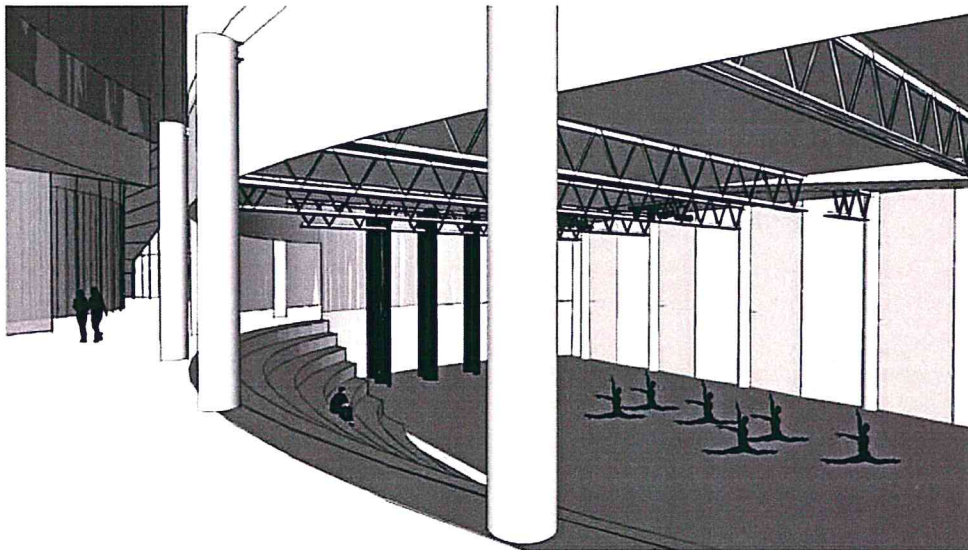
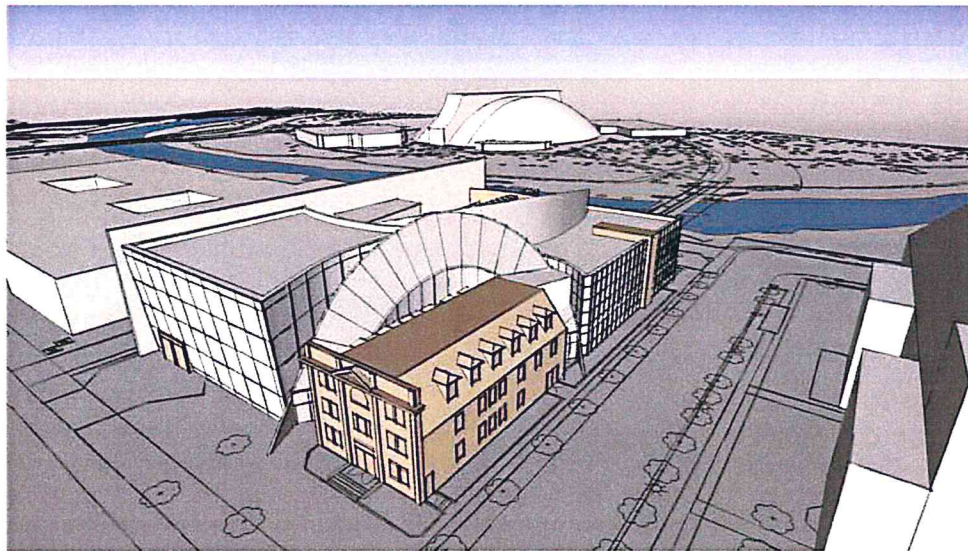


SOUTH ELEVATION

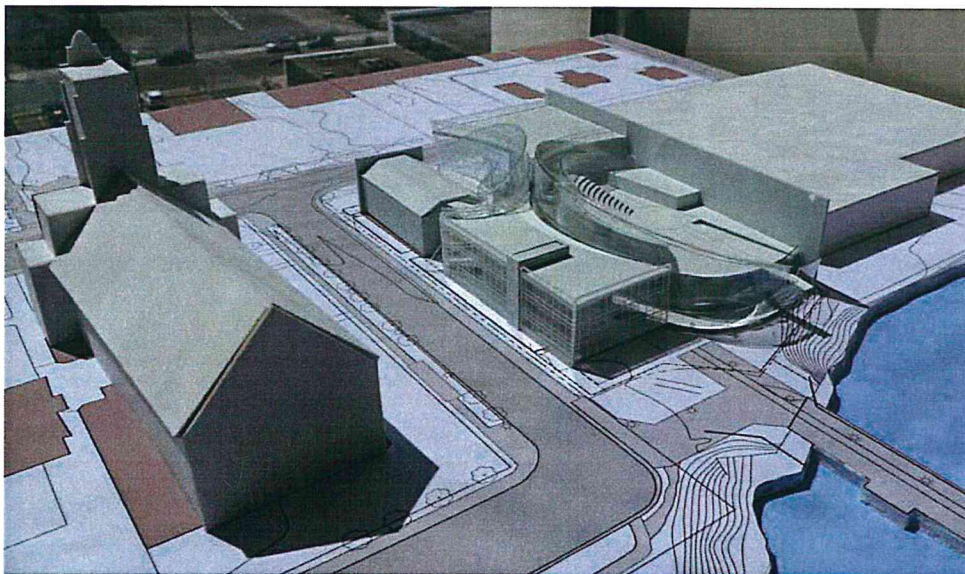
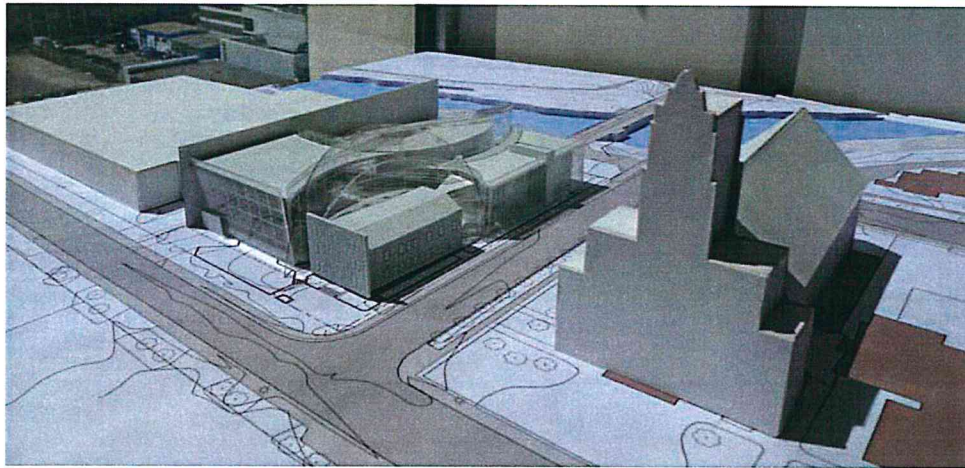


EAST ELEVATION

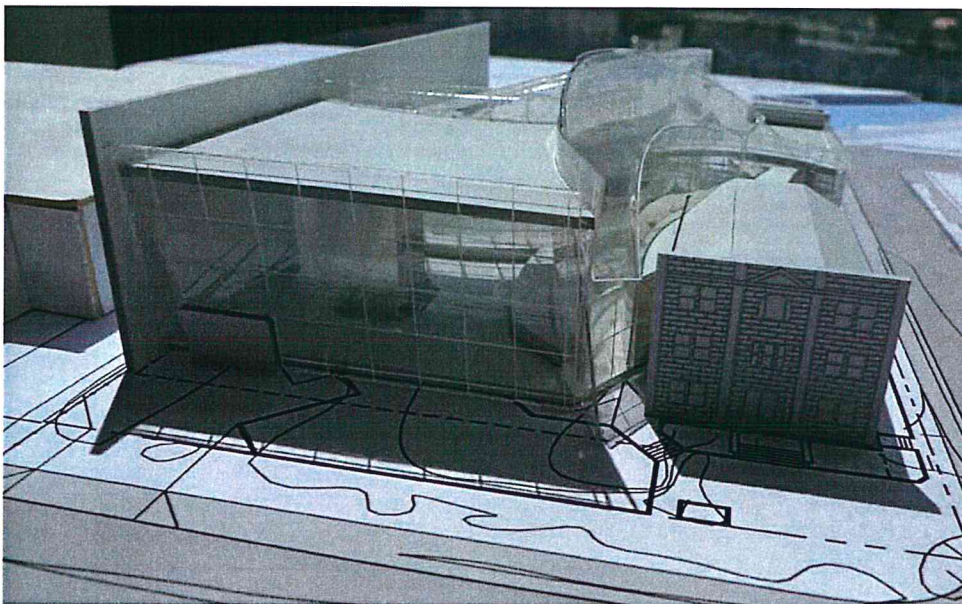
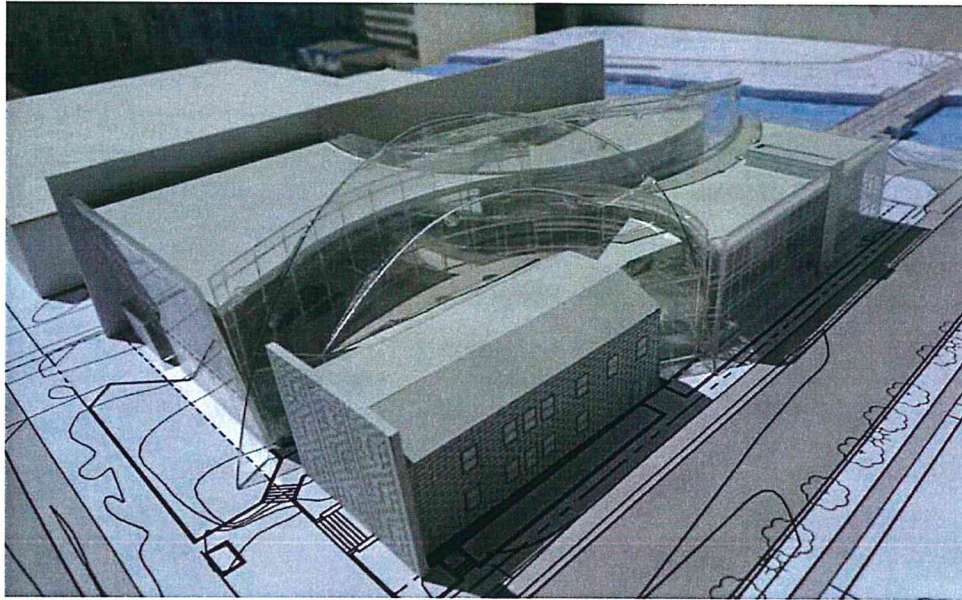




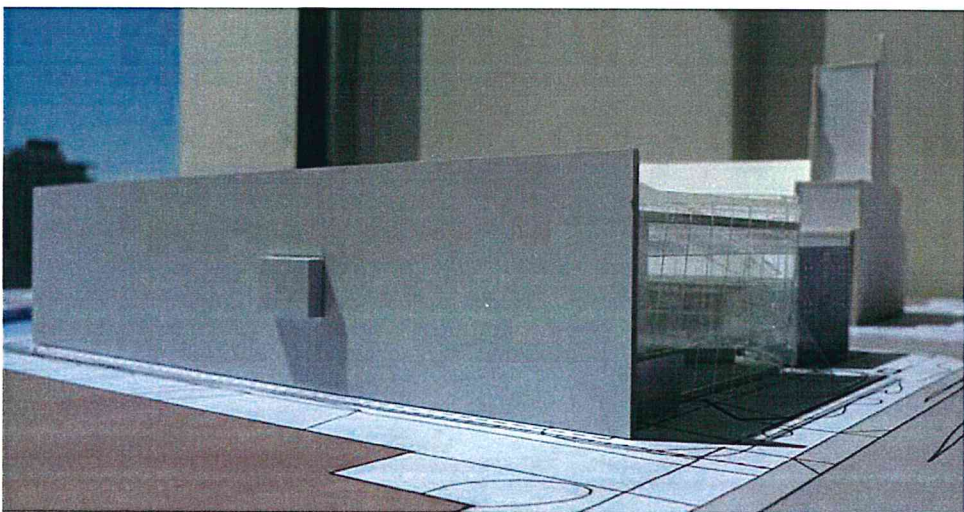
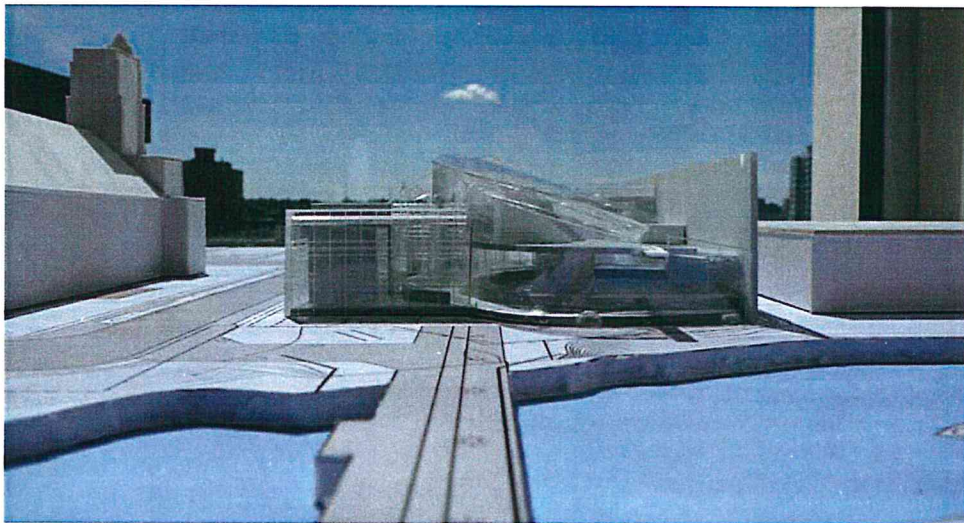
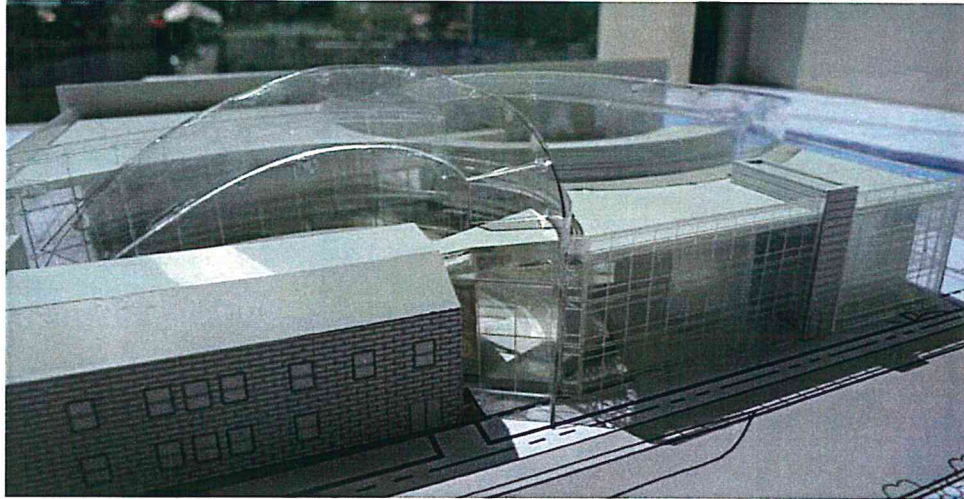
Perspectives



Final Model



Final Model



Final Model

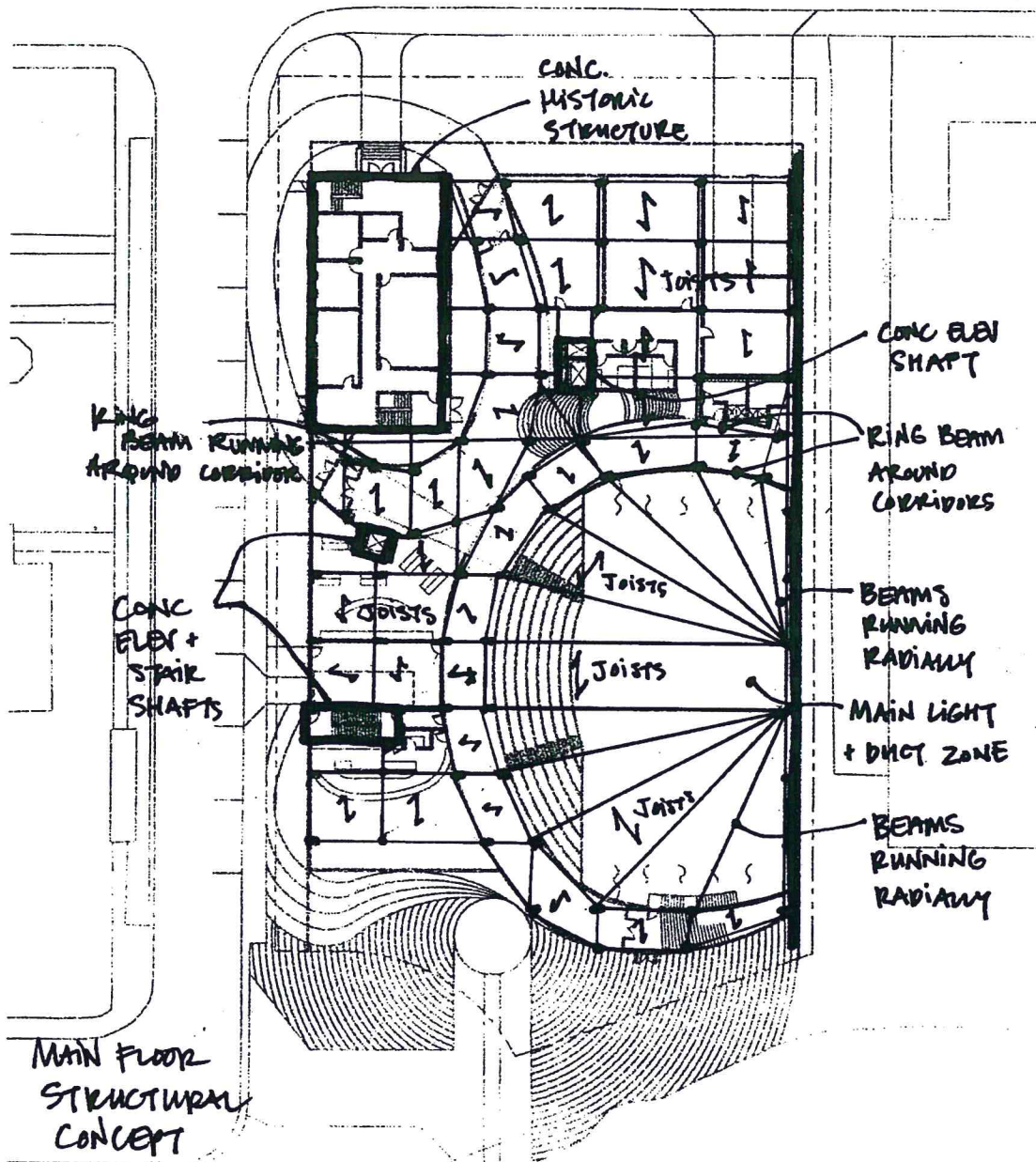
Structural Concept

The location of this site is close to the riverbank area. Because the site is likely to be into the water table a 'bathtub' foundation scenario would be the most likely to be successful. A piled foundation system consisting of dynamically cast-in-place concrete piles founded in a stiff clay till layer would be suitable. Perimeter walls would be supported on reinforced concrete grade beams spanning between piles.

The roof over the theater area would consist of steel roof deck supported on approximately 700mm deep open web steel joists. The open web steel joists would be supported by steel roof beams approximately 1400mm deep, and steel columns. The studio areas would be similar to this. The floor structure for the office and other areas would consist of a two-way flat slab with the minimum slab thickness running around 200mm deep.

The exterior walls of the new building would primarily consist of structural curtain wall, and the circulation areas are constructed of geodesic glass that is self supporting and structural, tying into the beam system around it. This system is lightweight, durable, and strong, allowing for wide open clearspan spaces in the main circulation areas of the building.

The steel columns will be designed to be artistic and sculptural as well, allowing reflection of the vast dance imagery examined earlier in the process. The human form lends itself to quite beautiful support structures that reach out echoing the dancing forms within the spaces.



Mechanical Concept

Heating in this building will be a combination of a forced air system and a radiant heating system. Some heat will be generated with high efficiency boilers located in the mechanical rooms on the roofdeck as well as the basement. Each boiler will have its own circulation pump. Heated water will be circulated through the radiation piping distribution system. Perimeter radiation will be in radiant ceiling panels located throughout the building, including the entrance vestibules. Heated water from the boilers will also be used for the ventilation air for the basement washroom, locker room and showers. Heating for the theatre area will be in-slab hydronic radiant heating.

Air will be ventilated and air-conditioned for the building via a central air-handling unit located in the mechanical room on the roof. Supply air will be distributed throughout the building with low velocity ductwork. The ceiling plenum will be used as a return air plenum with a common shaft at the building core to be return air back to the central air-handling unit. The ductwork will run along the main structure to the circulation space, exposed between the joists.

Conclusion

In conclusion, the building that has been designed meets the functional requirements of the Alberta Ballet, as well as giving them the informal social environment that allows the spontaneous interaction between dancer and building, between student and teacher and between peers. The integration of the historical building with the new construction invigorates the neighbourhood as the new addition respects the history of the site and embraces the historical element that stands so proudly on the same corner that it has for over 100 years. The materials that wrap around the stone clad structure are highly contrasting and draw the facility into the current time. The development of this facility will bring more people into this area of the neighbourhood and perhaps introduce them to the existing community fabric that they have not yet discovered. Being able to keep this facility in proximity of the downtown and to the cultural district of the city will reinforce the importance of the city culture and anchor the dance community as an important neighbourhood element.

Endnotes

¹ (Watermark) Vanita & Joe Monk's Monastery, Dancer January 2006,
<<http://www.monastery.nl/gallery/various/dancer.html>>.

² Simpson Roberts Architecture and Interior Design, Telus Convention Centre, Stephen Avenue Mall Streetscape Calgary, Alberta, Canada, 2000,
<<http://www.simpsonroberts.com/projectsa.htm>>.

³ Studio Daniel Libeskind, Renaissance ROM, Extension to the Royal Ontario Museum: The Crystal Toronto, Ontario, Canada, February 2002,
<<http://www.daniel-libeskind.com/projects/pro.html?ID=45>>.

⁴ Massachusetts Institute of Technology, Adaptive Reuse
<<http://www.archinode.com/lcaadapt.html>>.

⁵ Marc Denhez, The Heritage Strategy Planning Handbook (Toronto: Dundurn Press, 1997) 16.

⁶ Karen Russell, ed. Guidelines for the Rehabilitation of Designated Historic Resources 2nd Edition (Edmonton: Alberta Community Development, Historic Sites and Archives, 1993) 4.

⁷ James Marston Fitch, Historic Preservation: Curatorial Management of the Built World (New York: McGraw-Hill Inc., 1982) 169.

⁸ Fitch 23.

⁹ Arthur Cotton Moore, The Powers of Preservation (New York: McGraw-Hill Companies Inc., 1998) 217.

¹⁰ Fitch 44.

¹¹ Fitch 23.

¹² Fitch 23.

¹³ United Nations Department of Economic and Social Affairs, Division for Sustainable Development, Agenda 21: Chapter 7, Promoting Sustainable Human Settlement Development Section 7.20 (b), 15 Dec. 2004,
<<http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter7.htm>>.

¹⁴ Denhez 41.

¹⁵ Queensland Government, Smart Housing: Environmental Sustainability 29 Jul. 2005,
<<http://www.housing.qld.gov.au/initiatives/smarthousing/elements/environmental/index.htm>>.

¹⁶ Denhez 42.

¹⁷ Martin Siddles, Planner, Centre City Planning & Design, Land Use Planning & Policy Division, City of Calgary: Personal email, 23 Nov. 2006.

¹⁸ Vancouver Heritage Foundation, Research Project 2003, <<http://www.vancouverheritagefoundation.org/projects/research.html>>.

¹⁹ Vancouver Heritage Foundation, 2004 VHF Annual Report 2004, <<http://www.vancouverheritagefoundation.org>>.

²⁰ Kelsey Singbeil, Study of the Comparative Value of Heritage and Non-heritage Houses in Vancouver (Vancouver: Vancouver Heritage Foundation, 2005) 8.

²¹ Singbeil 9.

²² City of Calgary, About BRZs <<http://www.calgary-inglewood.com/about.htm>>.

²³ Gary Duguay, Heritage Notes: Definitions of Preservation Terms 1st Edition (Edmonton: Department of Culture and Multiculturalism: Historic Sites and Archives, 1992) 6.

²⁴ Fitch 169.

²⁵ Denhez 37.

²⁶ Jesse Row, et al., Overcoming Barriers to Sustainable Urban Development: Toward Smart Growth in Calgary (May 2006) 8.
<http://www.calgarycommunities.com/FCCServices/fcc_communityplanning.php>.

²⁷ Google Maps, Calgary, Alberta, Canada <<http://www.google.ca/maps>>.

²⁸ Fitch 80.

²⁹ Fitch 179.

³⁰ Fitch 81.

³¹ Athen Tech Imaging, Calgary, Alberta, Canada <<http://www.athentech.com/contact.html>>.

³² Fitch 165.

³³ Wikipedia Online Encyclopedia, Tate Modern <http://en.wikipedia.org/wiki/Tate_Modern>.

³⁴ Wikipedia.

- ³⁵ Jackie, Craven, Great Buildings: The Tate Modern 2006,
<<http://architecture.about.com/library/blherzog-tate.htm>>.
- ³⁶ Walker Art Centre. Herzog & de Meuron: In Process <<http://hdm.walkerart.org/>>.
- ³⁷ Tate Modern Museum, <<http://www.tate.org.uk/modern/>>.
- ³⁸ Architecture Week, Herzog and de Meuron Pritzker Prize Apr. 2001,
<http://www.architectureweek.com/2001/0404/news_1-2.html>.
- ³⁹ Architecture Week, California College of Arts and Crafts Jul. 2000,
<http://www.architectureweek.com/2000/0712/building_1-2.html>.
- ⁴⁰ Architecture Week, Industrial Facility Turns to the Arts Jul. 2000,
<http://www.architectureweek.com/2000/0712/building_1-1.html>.
- ⁴¹ Brian Libby, California College of Arts San Francisco Campus Commentary 2004,
<http://www.greatbuildings.com/buildings/CCA_SF.html>.
- ⁴² KPMB Architects, The Royal Conservatory of Music Telus Centre
<<http://www.kpmbarchitects.com/index.asp?navid=30&fid1=51&fid2=13&fid3=32&minyearx=&maxyearx=>>>.
- ⁴³ Canadian Architect, The Royal Conservatory of Music Telus Centre for Performance and Learning December 2005, <http://www.cdnarchitect.com/issues/ISarticle.asp?id=170972&story_id=120782101923&issue=12012005>.
- ⁴⁴ The Royal Conservatory of Music, Architect's Vision 2004,
<http://www.rcmusic.ca/ContentPage.aspx?name=kpmb_vision_statement>.
- ⁴⁵ KPMB Architects, Canada's National Ballet School (Project Grand Jete, Stage 1)
<<http://www.kpmbarchitects.com>>.
- ⁴⁶ KPMB Architects, National Ballet School of Canada
<<http://www.kpmbarchitects.com/index.asp?navid=30&fid1=51&fid2=12&fid3=32&minyearx=&maxyearx=>>>.
- ⁴⁷ Project Grand Jete, The Project: Introduction <<http://www.grandjete.ca/en/project.htm>>.
- ⁴⁸ Ian Chodikoff, "A Conversation With Bruce," Canadian Architect Aug. 2006,
<http://www.cdnarchitect.com/issues/ISarticle.asp?id=177932&story_id=162954170519&issue=07022006>.
- ⁴⁹ Calgary Public Library, Grand Theatre (Lougheed Building) 2 Aug. 2005,
<http://calgarypubliclibrary.com/calgary/historic_tours/corner/grthea.thm>.

- ⁵⁰ Calgary Public Library, Lougheed (Grand) Building 21 Jul. 2005, <http://calgarypubliclibrary.com/calgary/historic_tours/com/com63.htm>.
- ⁵¹ Glenbow Archives, "A Grand Revival," Where Calgary Mar. 2006, <http://www.where.ca/calgary/article_feature~listing_id~74.htm>.
- ⁵² Upfront, From Golf to Grand <http://www.building.ca/archive05/dj05/dj05_upfront.htm>.
- ⁵³ Sturges Architecture, Projects: Theatre Junction 2001, <<http://www.sturgesarchitecture.com/web/nav.html>>.
- ⁵⁴ Upfront.
- ⁵⁵ Upfront.
- ⁵⁶ Carol Brown, Dance-Architecture Workshop Oct. 2003, <<http://www.carolbrowndances.com/docs/dancearchitectureworkshop.doc>>.
- ⁵⁷ Mack Scogin, Doing and Dancing: Rudolf Laban and the 'Dance Farm' Spring 1998, <http://www.gsd.harvard.edu/cgi-bin/studios/details.cgi?project_id=562>.
- ⁵⁸ Adam Hardy & Alessandra Lopez y Royo, Dance and Architecture: Form and Transformation 28 Nov. 2002, <<http://www.arch.nus.edu.sg/danceweb/Dance/dancearchi.html>>.
- ⁵⁹ Hardy & Royo.
- ⁶⁰ Mal Jones, Dancer Sketch <http://www.maljones.com/yay/dance_sketch.jpg>.
- ⁶¹ Alberta's Arts Heritage. Nat Christie Centre. 2003. http://www.abheritage.ca/abarts/performing_arts/performing_n_c_centre.htm
- ⁶² Alberta Ballet. An Historical Look at Alberta Ballet and School of Alberta Ballet. November 2009. <http://www.albertaballet.com/page/company-and-school-history/1000552>
- ⁶³ Alberta Ballet. Alberta Ballet Foundation. November 2009. <http://www.albertaballet.com/page/alberta-ballet-foundation/1000552>
- ⁶⁴ Calgary Economic Development. Live Work Play Arts & Culture. 2006. <http://www.calgaryeconomicdevelopment.com/liveWorkPlay/Play/artsAndCulture.cfm>
- ⁶⁵ Crabb, Michael. Dramatic moves: Jean Grand-Maitre's theatrical flair has boosted Alberta Ballet to a new level. Dance Magazine. FindArticles.com. November 2006. http://findarticles.com/p/articles/mi_m1083/is_8_79/ai_n15340977/