

APPENDIX H

**– FEASIBILITY STUDY TO RELOCATE THE ST. JAMES ASSINIBOIA 55+ CENTRE
TO THE ST. JAMES CIVIC CENTRE**

– PREPARED BY 1X1 ARCHITECTURE INC. – SEPTEMBER 21, 2012

FEASIBILITY STUDY TO RELOCATE THE ST. JAMES ASSINIBOIA 55+ CENTRE TO THE ST. JAMES CIVIC CENTRE

Winnipeg, Manitoba
September 21 2012



DRAFT

Prepared for
The City of Winnipeg

Prepared by

| x | architecture inc.

Prime Consultant:	1x1 architecture inc.
Structural Consultant:	Lavergne Draward & Associates Inc.
Mechanical Consultant:	Epp Siepmann Engineering Inc.
Electrical Consultant:	Nova 3 Engineering Ltd.

| x | architecture inc.

travis cooke MAA
glen gross MAA
jason kun MAA
markian yereniuk MAA

421 Mulvey Avenue East
Winnipeg MB R3L 0R6
204 318 2010

www.1x1architecture.ca

ACKNOWLEDGMENTS

The Consultants would like to acknowledge the generous help and assistance provided by the City of Winnipeg and the St. James Assiniboia 55+ Centre staff and volunteers.

Respectfully submitted to the City of
Winnipeg, September 21, 2012

Cover Image - St. James Civic Centre

This report was prepared by 1x1 architecture inc. The contents are a result of our opinions based on visual inspection and information provided to us by a number of parties. The document is for the private use and benefit only of the Client for whom it was prepared. Without express written permission from 1x1 architecture inc., Any use of this report by a third party is not permitted without the express written consent of 1x1 architecture inc.

TABLE OF CONTENTS

Executive Summary

1.0 THE PROCESS

2.0 THE USER AND THE FACILITY

1.1 St. James Assiniboia 55+ Centre

1.2 St. James Civic Centre

3.0 BUILDING ASSESSMENT

3.1 Site and Zoning

3.2 Building Code and Life Safety

3.3 Accessible Design

3.4 Exterior / Interior Finishes and Fixtures

3.5 Structural Assessment

3.6 Mechanical Assessment

3.7 Electrical Assessment

4.0 FUNCTIONAL REVIEW

5.0 DESIGN RECOMMENDATIONS

5.1 Option One

5.2 Option Two

5.3 Option Three

5.4 Option Four

5.5 The Selected Option

5.6 Architectural Outline Specification

5.7 Structural Outline Specification

5.8 Mechanical Outline Specification

5.9 Electrical Outline Specification

6.0 COST ESTIMATE

7.0 APPENDICES



ST. JAMES

CIVIC CENTRE

COMPLEX

2055 NESS AVE.

EXECUTIVE SUMMARY

1x1 architecture inc. was engaged by the City of Winnipeg to identify viable option(s) and associated cost estimate(s) for the relocation of the St. James Assiniboia 55+ Centre (SJAC) to the St. James Civic Centre.

The scope of Work includes:

a) An architectural and engineering analysis of the current building to ensure it can support the additional space and programs required;

b) A functional review that examines the existing SJAC space to determine what additional space is required to meet the functional needs of the SJAC and City of Winnipeg Programs;

c) Layout and design recommendations for the use of existing spaces in the St. James Civic Centre and new additions as required;

d) Cost analysis for the proposed renovations and additions.

The study was undertaken from August 10th to September 21, 2012.

The consultant team included:

Prime Consultant: 1x1 architecture inc.
Structural Consultant: Lavergne Draward & Associates Inc.
Mechanical Consultant: Epp Siepman Engineering Inc.
Electrical Consultant: Nova 3 Engineering Ltd.
Cost Consultant: GWH Construction Management Services

The scope of the building assessment is limited to that portion of the building in which the SJAC will be utilising. It was immediately acknowledged that the Swimming Pool and Hockey Arena portion of the building would not require a building assessment with the exception of the relocation of the main electrical panel which is located in the south east corner of the hockey arena.

The study reveals that the St. James Civic Centre has some significant National Building Code compliance issues resulting in the under utilized basement and second floor spaces as inadequate spaces for SJAC. As a result, the design recommendation is a +/- 6,500 square foot one storey addition focused around the existing auditorium. The addition will give SJAC significant street presence along Ness Avenue.

1.0 THE PROCESS

The process for meeting with the SJAC Building Committee and the City of Winnipeg was the following:

Meeting No. 1 - START OFF MEETING

At the onset of the project, a kick-off meeting was held where the goals and objectives of the project were established. The entire consultant team attended the meeting. The consultant team reviewed the existing SJAC space and did a thorough walkthrough of the St. James Civic Centre.

Meeting No. 2 - PROGRAMMING MEETING

At this meeting, the consultant team met with the SJAC building committee for an intensive information gathering session. The building committee provided a preliminary program that was developed over the course of the last year. This program formed the basis for the functional program.

Meeting No. 3 - SCHEMATIC DESIGN APPROACH.

At this meeting, the consultant team presented four options to the SJAC building committee and City of Winnipeg. Positive and negative aspects for each option were discussed. At the end of this meeting, the SJAC building committee and City of Winnipeg selected one option to develop further. This option was refined as per feedback from the meeting and schematic architectural drawings and outline specifications were produced. The cost consultant developed a cost estimate for the construction based on this information.

Participants of the Meetings:

August 10, 2012. START UP + SITE WALKTHROUGH

SJAC
Connie Newman
Marian Dore
John Pidwerbesky
Marilyn Robinson
Roxanne Greaves-Tackie

CITY OF WINNIPEG

Kathy Roberts
Pat Wallis
Paul Huntington
Dennis Glowasky

CONSULTANT TEAM

Travis Cooke
Markian Yereniuk
Julien Lavergne
David Epp
Dan Zilinski

August 16, 2012. PROGRAMMING

SJAC
Connie Newman
John Pidwerbesky
Roxanne Greaves-Tackie

CITY OF WINNIPEG

Kathy Roberts
Pat Wallis
Derek Stamm

CONSULTANT TEAM

Travis Cooke
Markian Yereniuk

August 24, 2012. SCHEMATIC DESIGN APPROACH

SJAC
Connie Newman
Marian Dore
John Pidwerbesky

CITY OF WINNIPEG

Kathy Roberts
Pat Wallis
Joy Hildebrand

CONSULTANT TEAM

Travis Cooke
Markian Yereniuk

Photograph from the walkthrough on August 10, 2012



2.0 THE USER AND THE FACILITY

2.1 St. James Assiniboia 55+ Centre (SJAC)

The St. James Assiniboia 55+ Centre has been operating out of the third floor at 203 Duffield Street on the grounds of the Deer Lodge Centre since 1993. The Centre's lease is up for renewal in 2013 and they are hoping to relocate. Partnering with another community based organization would allow for shared space and operating costs.

The space is approximately 9,000 square feet gross, which includes stairways, elevators, corridors etc.

The Healthy Aging Resource Team (HART), operated by the Winnipeg Regional Health Association, operates out of the facility.

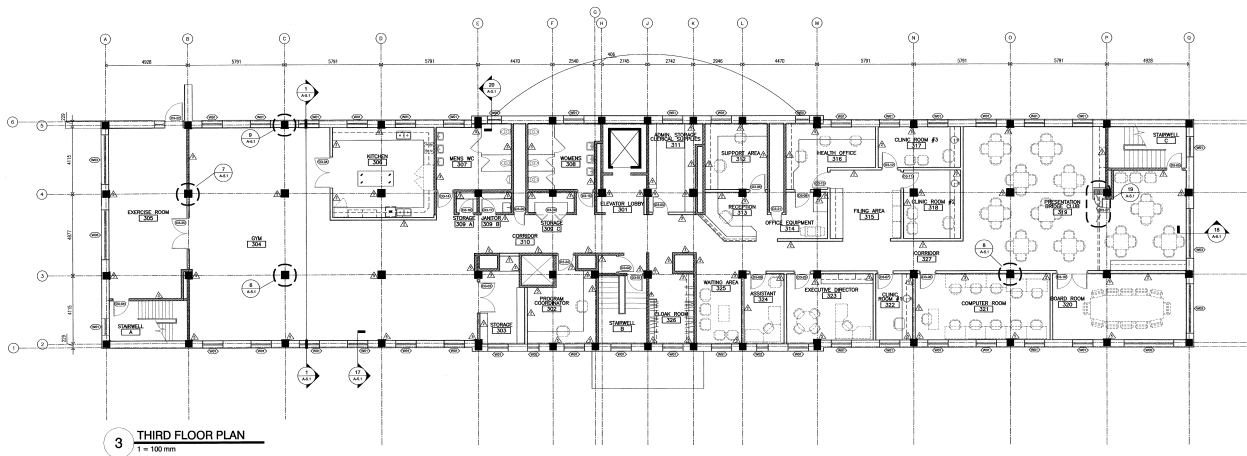
Currently, SJAC has 5 staff, 3 staff associated with HART and 1000 members, of which roughly 60 to 75 are on the premises daily.

The space has two negative features:

1. It is located on the third floor of the building. Although the space can be accessed by an elevator, a third floor location is not optimal for the user group.
2. There is minimal parking for staff and members. Parking on the street is limited in the immediate area to 1 and 2 hour zones.

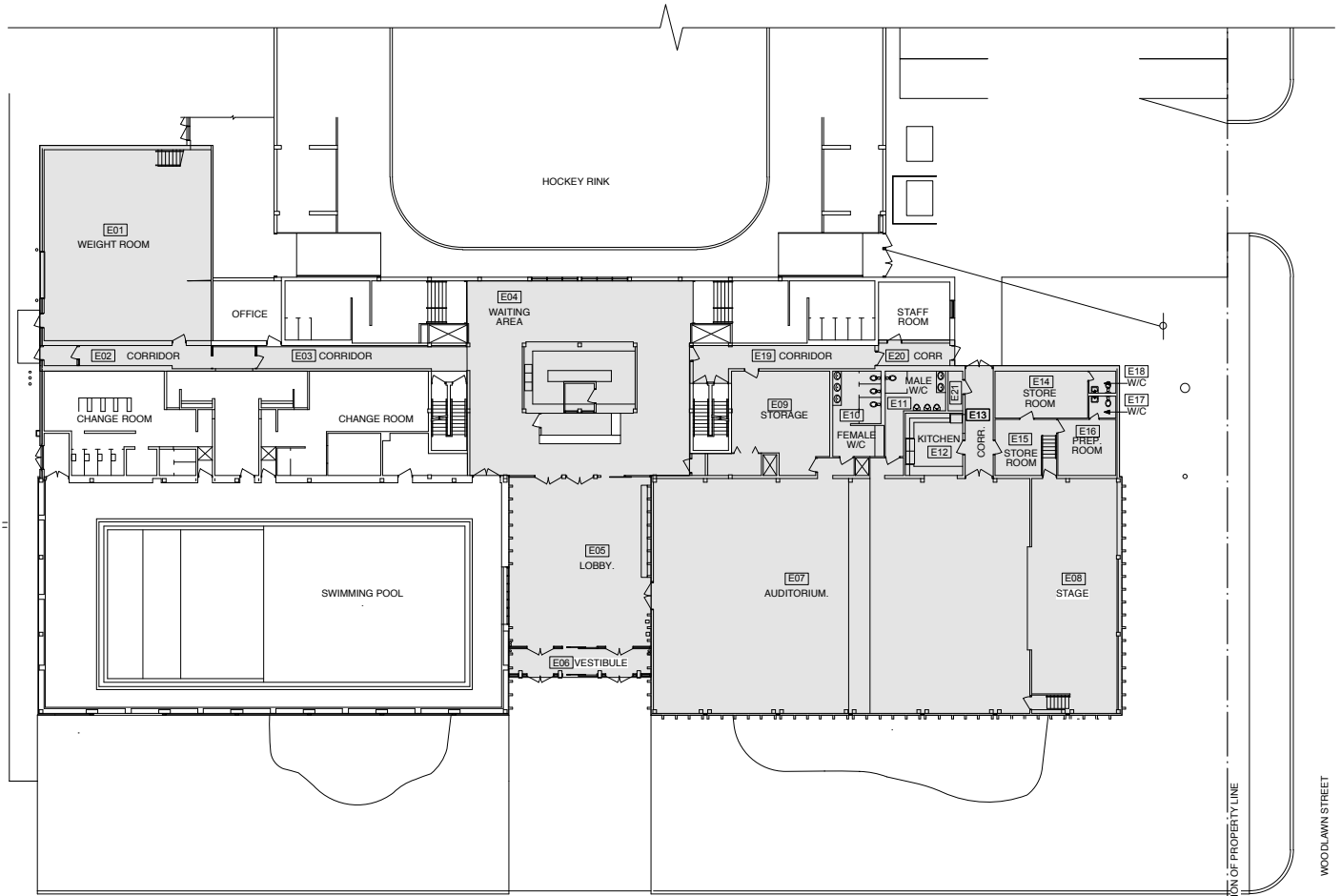
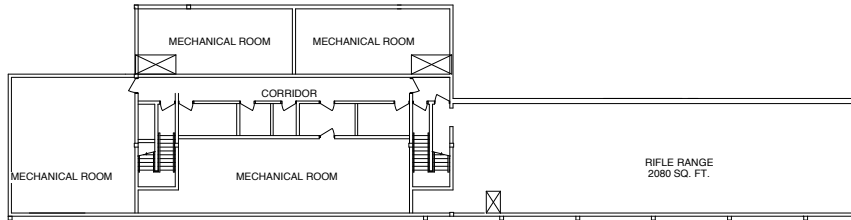


Top: Existing kitchen in SJAC at 203 Duffield Street
Above: Existing multi-purpose room at 203 Duffield Street

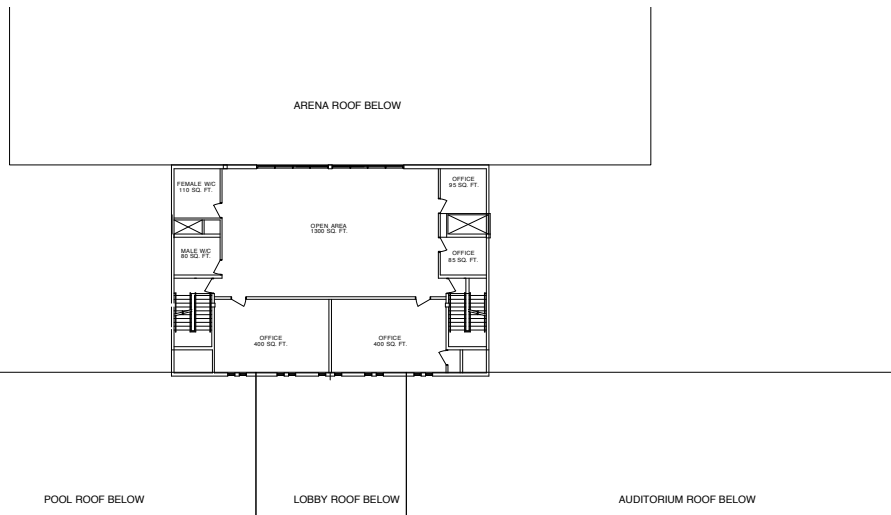


Floor plan of existing St. James Assiniboia 55+ Centre on third floor of 203 Duffield Street (Drawing completed by MMP Architects in 2007)

St. James Civic Centre
Basement Floor Plan

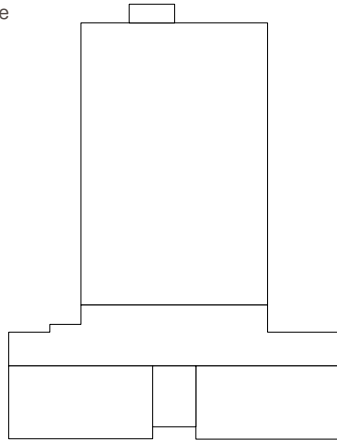


St. James Civic Centre
Main Floor Plan
NOTE: Area indicated in grey is the area in which the building assessment was conducted.

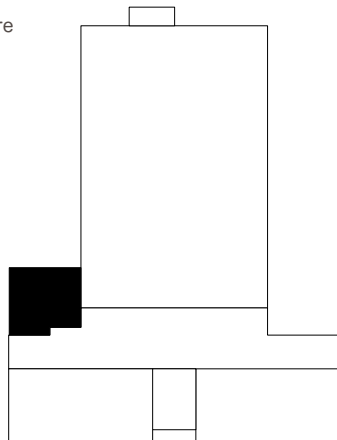


St. James Civic Centre
Second Floor Plan

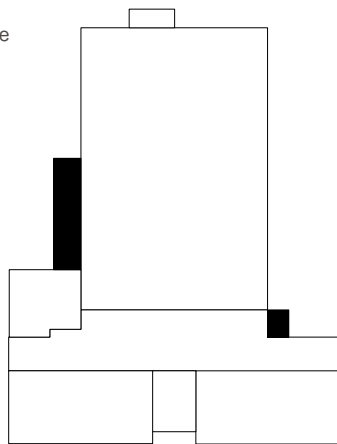
St. James Civic Centre
1965 Plan



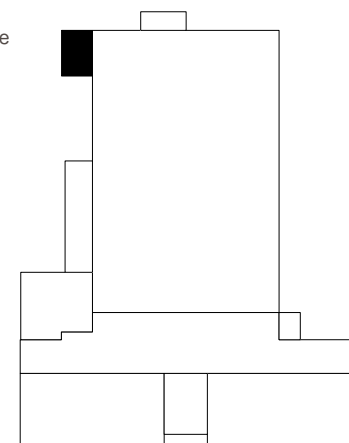
St. James Civic Centre
1982 Plan



St. James Civic Centre
mid 1980's Plan



St. James Civic Centre
1993 Plan



2.2 The St. James Civic Centre

The St. James Civic Centre is located at 2055 Ness Avenue. It is surrounded on three sides by the Assiniboia Golf Club.

Built in 1965, the building houses an indoor hockey rink, swimming pool and auditorium. The building is the largest City of Winnipeg operated facility in the western part of City and services St. James as well as surrounding City areas.

The building has had numerous additions and alterations since 1965. The following summarizes some of the development:

1965 Original building constructed. Design by Zunic & Sobowich / Dwight R. Johnston Architects

1982 Storage room (currently weight room) added to the Western part of the building

1993 Zamboni room added to the north west corner of the building

1997 Extensive renovation to pool c/w new cladding on south facade of pool

The staff office, change room on the east side and the carpentry shop were additions as well, presumably completed in the 1980's.

The building is approximately 65,000 sq. ft. and contains a partial basement and partial second floor. There is a crawlspace under the hockey rink.

The basement houses the mechanical and electrical rooms, as well as some programmed spaces such as a meeting room and a multi-purpose room, that was originally designed as a rifle range.

The second storey contains offices, meeting rooms, washrooms and a multipurpose room.

The building does not contain an elevator thus the basement and second floor are not accessible. The report titled '*Elevator / Barrier Free Washroom Feasibility Study*' completed by MCM architects in 2009 studied the feasibility of constructing an elevator in the existing building thus providing barrier free access to the basement and second floor. This report was made available to the consultant team for this feasibility study.

Refer to the opposite page (8) for the floor plan of existing St. James Civic Centre. The area in grey indicates the area in which the building assessment was conducted. Refer to the room names and numbers in this plan as reference for the building assessment section.

3.0 BUILDING ASSESSMENT

The consultant team conducted a visual review of the St. James Civic Centre on August 10, 2012 with the help of Kathy Roberts and Pat Wallis. Members from SJAC were also present and provided input during the walkthrough. Members of the consultant team returned to the building on various occasions to gather more information as required.

The City provided the consultant team with original design drawings of the St. James Civic Centre to assist in developing the report.

This report focuses on the assessment of those portions of the building that will be utilised by the SJAC and does not include an assessment of the entire building. Refer to page 8 which highlights the assessed area in grey.

The assessment is divided into the following categories:

- Site and Zoning
- Building Code and Life Safety (based on the National Building Code of Canada 2010 including Manitoba Amendments)
- Accessible Design (based on the 2010 City of Winnipeg Accessibility Design Standards)
- Exterior and Interior Finishes and Fixtures
- Structural Assessment
- Mechanical Assessment
- Electrical Assessment

ASSUMPTIONS

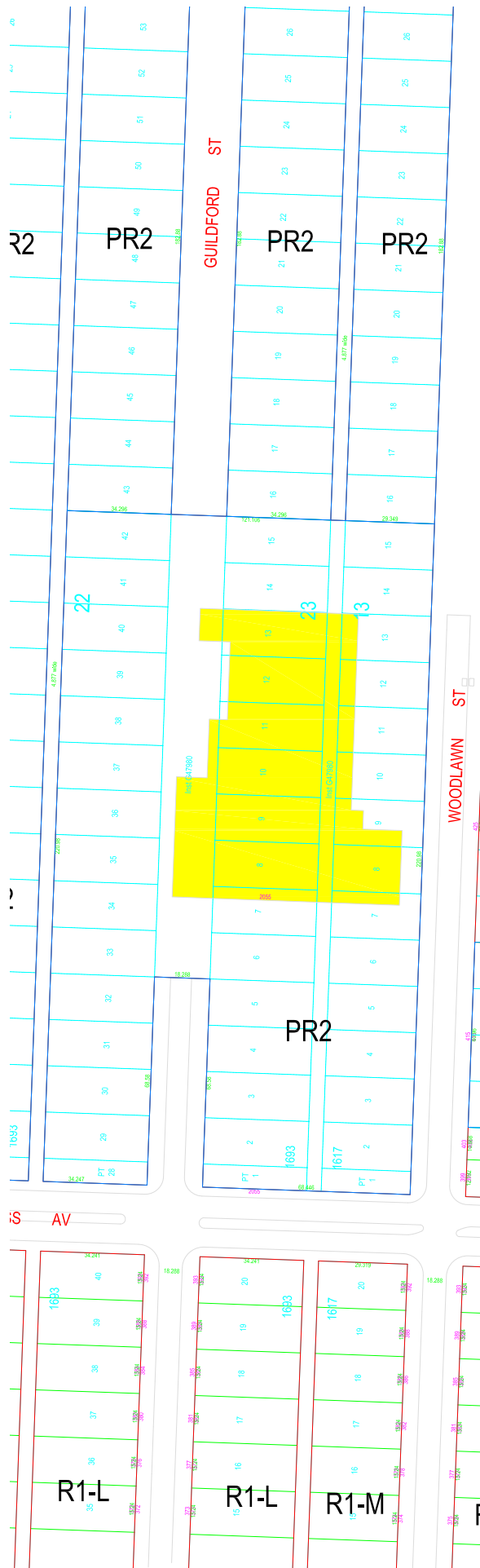
The building envelope and roof were not part of the assessment process and are assumed to be in good condition.

A hazardous materials survey did not form part of the assessment. The City of Winnipeg indicated that if hazardous materials are found during renovation work, the cost associated with remediation will be covered from a City of Winnipeg budget.

GENERAL COMMENTS

The building was constructed in 1965 and although numerous additions have occurred, none of these address the nature of the finishes within the building. The building is constructed of concrete block walls which, along with the fluorescent lights and acoustic ceiling tile in the majority of the spaces, provide a very sterile, uninviting environment. The entire facility could use a refresh with the use of more inviting materials such as wood, glass, new lighting and soft furniture. These materials are evident in new community centre designs around Winnipeg and the rest of Canada, they provide for a much more inviting space.

This feasibility study addresses the introduction of new materials within the assessed area, however any future development of the St. James Civic Centre should consider a review of all spaces.



3.1 SITE AND ZONING

The St. James Civic Centre Complex sits on roughly 6.4 acres of land. The site is surrounded by the Assiniboine Golf Club on the north, east and west. The main access to the complex is from Ness Avenue to the south. The Complex has a generous parking lot along Ness Avenue, as well as a staff parking lot on the north east corner of the site.

The parking lot houses a year round recycling depot and the City of Winnipeg’s Leaf drop off site in the Fall. The parking lot includes 4 pole mounted lights.

The site is situated along a bus route and a bus stop is located directly in front of the building on Ness avenue.

City of Winnipeg staff indicated that the marquee signage along Ness is in need of replacement. Signage similar to the Fort Rouge Leisure Centre on Osborne Street should be considered as part of any new development.

The zoning of 2055 Ness Avenue is PR2.

Description of PR2 from the City of Winnipeg website: This district is intended for sites that include community recreation facilities and parks that are accessed by a mix of pedestrian and vehicular traffic. These sites may provide active programs and activities, including community centres, hockey pens, arenas, indoor soccer, wading pools, spray parks, skateboard parks and athletic fields. Parking facilities ranging from 10 to 100 stalls may be associated with these uses. These parks and facilities typically occur along collector streets.

The Minimum setbacks according to the *City of Winnipeg Zoning By-law No. 200/2006* are:

- Minimum Front Yard (Ft.): 20
- Minimum Rear Yard (Ft.): 25
- Minimum Side Yard (Ft.): 10

The Building falls under airport vicinity by-law.

Source: City of Winnipeg website
<http://cms00asa1.winnipeg.ca/ZoningInfo.jsp?rsn=84238&js=y>

Site lot plan for the St. James Civic Centre

3.2 BUILDING CODE AND LIFE SAFETY

The following is based on the National Building Code of Canada (NBC) 2010 including Manitoba Amendments. The building classification is Group A, Division 2 and Group A, Division 3 (Arena).

Originally constructed in 1965, the building has undergone numerous additions and does not meet current National Building Code requirements in numerous areas. The significant issues are outlined below:

1. Elevator

The building is a three level building. The majority of programmed space occurs on the main level, however the basement and second floor have programmed space as well.

The second floor, located above the waiting area/canteen area is approximately 3,160 sq. ft. This floor currently houses offices, meeting rooms, washrooms and a multi-purpose space. City of Winnipeg programs are operated out of these spaces.

The basement is roughly 6,270 sq. ft. and houses mechanical rooms, a meeting room and a multipurpose room which houses City of Winnipeg run programs.

According to the National Building Code (NBC), access to the basement and second floor by an elevator is required. In 2009, MCM architects produced a feasibility study titled '*Elevator / Barrier Free Washroom Feasibility Study*' for the City of Winnipeg that provided solutions for the provision of an elevator in the building. This study also provided solutions to upgrading the arena washrooms to barrier free standards.

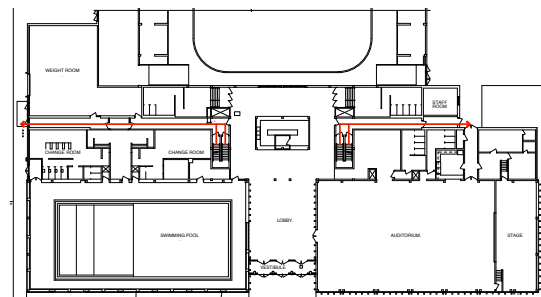
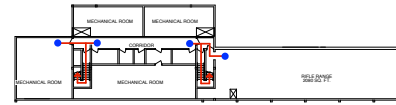
This feasibility study does not explore the provision of an elevator to access the basement and second floor as the proposed addition and renovation do not require the use of these spaces. It is unknown if the Authority Having Jurisdiction would require the introduction of an elevator if the renovation does not involve the basement or second floor.

2. Means of Egress

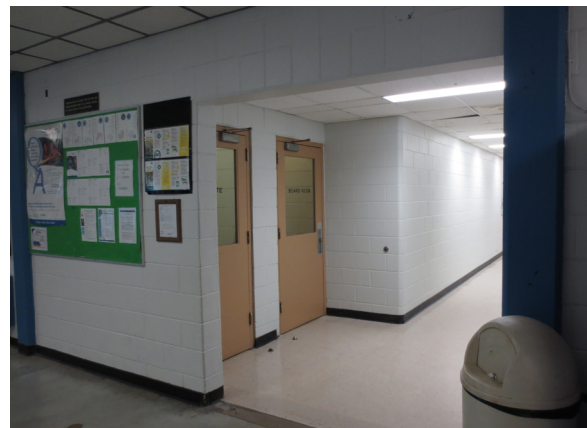
By definition a means of egress is a continuous path of travel provided for the escape of persons from any point in a building.

Two stairs within the St. James Civic Centre access the basement and second floor. They are located to the east and west of the canteen. The walls of the stairs are built of concrete block and it can assumed meet the requirements of the fire separation required for an exit stair. However, upon exiting to the main floor, the path of travel to an exit is compromised and the intent of the NBC is not met. The stairs enter back into the main floor of the building without any protection from the remainder of the building. The '*Elevator / Barrier Free Washroom Feasibility Study*' completed in 2009 does not provide any solutions for this non compliant situation.

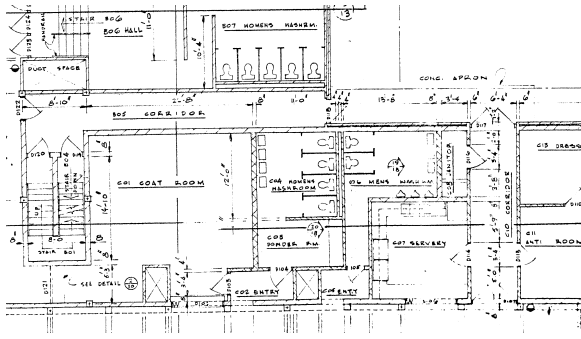
It is our understanding that the original design met the Building Code standards at the time of construction. In fact the original design of the east stair appears to meet



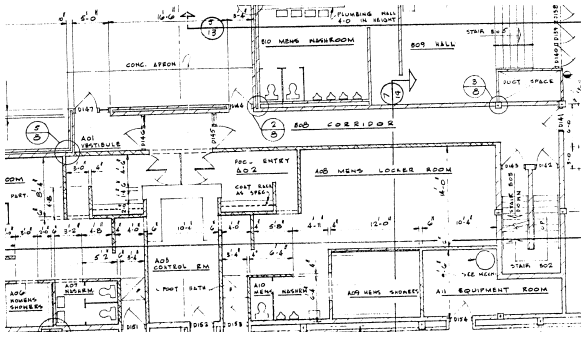
Top: Basement floor plan showing exiting
Middle: Main floor plan showing exiting out
of building as one exist the stairs
Bottom: Second floor plan showing exiting



West stair at main floor. Stair door exits
into lobby/corridor



Blow-up of 1965 floor plan
Original East stair exit configuration



Blow-up of 1965 floor plan
Original West stair exit configuration

the 2010 NBC requirement of an exit as the stair exits into a fire rated corridor that leads straight to the exterior of the building. With the addition of the staff room and a new entry from this corridor into the boardroom, this corridor is now used to access programmed space and does not meet the intent of the NBC.

The original design of the west stair was similar to the east except that at the furthest western point of the corridor, the swimming pool was accessed. There was direct access to the exterior at this point. This situation would not meet current building code standards however was a safer solution than what currently exists.

Renovations to this west stair has removed the door to the immediate east of the staircase which now leaves the stair case more exposed to the lobby / waiting area upon exiting from the basement or second floor. The addition of the weight room on the furthest west point of the building has extended the length of the corridor and added more programmed space directly off the corridor that is intended to act as an access to exit. This situation does not meet current NBC standards.

This feasibility study does not explore options for rectifying the exiting as the proposed addition and renovation do not require the use of the basement or second floor. It is unknown if the Authority Having Jurisdiction would require rectifying the non compliant exiting if the renovation does not involve the basement or second floor.

3. Sprinklering

Based on the 2010 NBC, a building with a classification of Group A, Division 2 of this size is required to be sprinklered. It is our understanding that providing an unsprinklered building must have met the Building Code standards at the time of construction. Additions in the past thirty years have been completed without the Authority Having Jurisdiction requiring the existing space to be sprinklered, however, it is our opinion that this renovation/addition is significant enough that the Authority Having Jurisdiction may require an upgrade of the entire building to be sprinklered.

4. Washrooms

There are four sets of multi-stalled washrooms in the facility, the male/female set in the auditorium, the male/female set that service the hockey arena, the male/female set that service the second floor and the male/female locker rooms in the swimming pool area.

The 'Elevator / Barrier Free Washroom Feasibility Study' provided solutions for upgrading the washrooms that service the hockey arena and the second floor. The male/female locker rooms are outside the scope of this feasibility study and were not reviewed.

As there is programmed space in the basement, washrooms are required on this level according to the NBC. As this is beyond the scope of this feasibility study, this issue was not explored.

The washrooms in the auditorium do not meet current NBC standards. The washroom count needs to be increased according to current occupancy requirements. The washrooms need to be upgraded to meet the requirements of National Building Code of Canada (NBC) 2010 as well as the 2010 City of Winnipeg Accessibility Design Standards.

3.3 ACCESSIBLE DESIGN

A review of the building using the 2010 City of Winnipeg Accessibility Design Standards (CWADS) has revealed numerous shortcomings in achieving a facility that is universally accessible.

Parking

The parking lot is equipped with accessible parking stalls, which are located within close proximity to the front entrance.

Picnic Tables

The picnic table at the front entrance is located in a non accessible area and does not have an extension to make the table accessible.

Entrance

The main entry to the building on the south facade has an automatic sliding door as well as a door operator on the east door, which meets the intent of the CWADS.

The approach to the building has a slight slope to the building and would meet the intent of the CWADS.

Stairs

The stairs to the basement and second level do not meet the CWADS but are beyond the scope of this feasibility study. Refer to section 3.2 for more in-depth discussion on the stairs.

Door Hardware

The door operating hardware in the majority of the facility, in most cases a doorknob, does not comply with the requirement that such devices “not require fine finger control, tight grasping, pinching or twisting of the wrist to operate”.

Elevators

As indicated in section 3.2, the facility is not equipped with an elevator for access to the basement and second floor.

Reception Desk

The reception desk and canteen in the lobby are not equipped with a lower section of counter as required by the CWADS.

Kitchen in Auditorium

The millwork in the kitchen does not meet requirements of the CWADS.

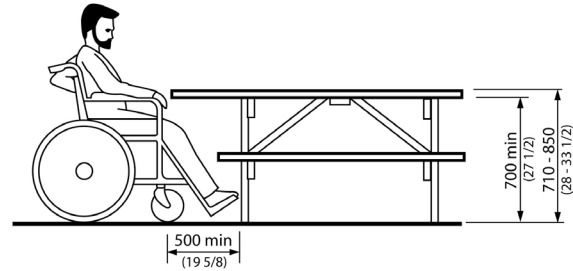
Washrooms

The multi-stalled washrooms in the entire facility have numerous deficiencies that do not meet the CWADS. CWADS also requires that at least one universal washroom be provided in a public area of all public buildings.

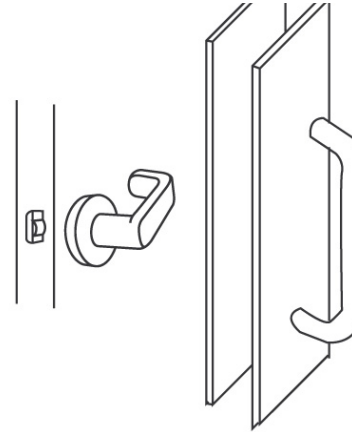
Access to Floors

As indicated in section 3.2, access to all levels in the building is not provided. The stage in the auditorium is also inaccessible.

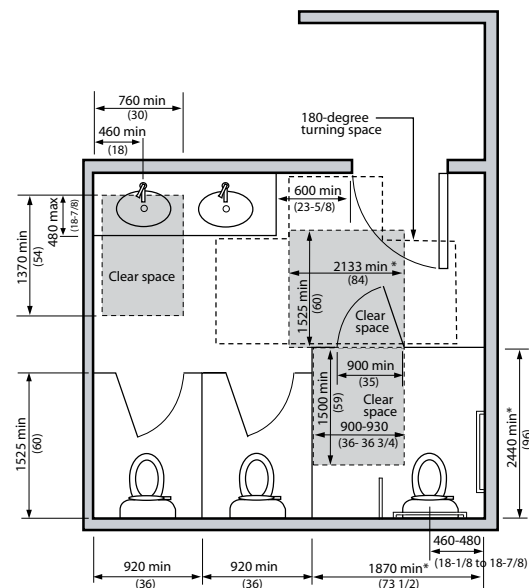
Note: The scope of this review only includes portions of the building identified in grey on page 8.



Accessible Picnic Table Requirements
(2010 City of Winnipeg Accessibility Design Standard).



Examples of Accessible Hardware
(2010 City of Winnipeg Accessibility Design Standard).



NOTE: In a retrofit situation where it is technically not feasible to provide the required clearances, the dimension marked with an * may be reduced to 1525 mm (60 in.).

Required Washroom Dimensions.
(2010 City of Winnipeg Accessibility Design Standards)



View of the weight room.



Corridor to weight room. The door has been removed from the steel frame

3.4 EXTERIOR/INTERIOR FINISHES AND FIXTURES

Also see General Comments on page 10.

Building Envelope

The existing building envelope was not part of the scope of this feasibility study. City staff did not indicate that there were any concerns with the its performance.

The auditorium is constructed of precast concrete panels which are original to the building. The walls around the swimming pool were retrofitted in the late 1990's due to problems in the building envelope caused by high humidification within the pool. The remaining portions of the building are typically constructed of concrete block.

E01 Weight Room

The weight room, located in an addition from the mid 1980's, is in a space that was originally designed as a storage room. This addition is a single storey steel frame structure with a mezzanine.

The space has a generous ceiling height, however does not have access to any natural light. The room is currently utilised as a weight room on both the main level and mezzanine. The mezzanine is accessed by a steel stair.

The mechanical ductwork and electrical conduits and panels are exposed within the room. This exposed aesthetic is fairly typical of these types of spaces.

City of Winnipeg staff indicated that the mechanical system is not sufficient and should be upgraded. Refer to Mechanical Assessment.

Finishes:	Type	Condition
Floor:	Rubber Flooring	Good
Walls:	Painted Concrete Block	Good
Ceiling:	Exposed Structure	Good

E02 Corridor

The corridor was built at the same time as the weight room addition in the 1980's. The corridor leads from the waiting area and swimming pool to a required exit door.

The door between corridor E02 and the corridor to the entry to the swimming pool has been remove, however the frame and sidelight remain. This allows for more visibility between spaces.

Finishes:	Type	Condition
Floor:	Tile	Good
Walls:	Painted Concrete Block	Good
Ceiling:	Gypsum Wallboard	Poor

It is anticipated that the floor tiles may contain Asbestos Containing Materials.

E03 Corridor

The corridor is original to the building construction and originally led directly to the exterior as an exit. Modifications to this arrangement in the 1980's have made the corridor non-code compliant as an exit from the basement and second floor.

The sidelite has been enclosed with wood and a mesh screen between corridor E03 and the entry to the swimming

pool locker area. The door remains open at all times when the locker area and weight room are open to the public. The corridor is a long sterile corridor. The lighting is poor and should be upgraded

Finishes:	Type	Condition
Floor:	Tile	Good
Walls:	Painted Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Poor

It is anticipated that the floor tiles may contain Asbestos Containing Materials.

E04 Waiting Area / Canteen Area

The waiting / canteen area sits at the heart of the building, and all functions spiral off of this area. This space acts as the waiting and warming up area when hockey games are in progress.

The doorway between the Waiting Area (E04) and Corridor (E03) was removed in a previous renovation. It is assumed this provided easier access to the swimming pool area and weight room.

The canteen sits in the middle of the area and is built of concrete block walls. The concrete block is in good condition, access to the interior of the canteen was not made available at the time of the walkthrough. The canteen is privately operated and City of Winnipeg staff indicated that it is underutilised due to the lack of large crowds in the hockey arena. City staff indicated that the canteen can be demolished in any future development and the facility would operate without this service.

The City of Winnipeg reception desk sits in the southern portion of this area. The reception desk is large enough for two persons and is appropriately located for patrons to show City of Winnipeg passes and purchase tickets for the programs available in the building. The desk does not meet current barrier free standards as indicated in section 3.3. City staff indicated that the reception can be demolished and replaced with new in any future development of this area.

The walls in this area contain tackboards for advertising events. This type of pin-up space is essential in a community centre and should be maintained, however the location could be re-evaluated.

City of Winnipeg staff recommended that this entire area be reconsidered as a social hub and meeting place for patrons of the facility. The gathering space at the North Centennial Recreation and Leisure Facility was recommended as a good precedent for this space.

The lighting in the waiting area / lobby is sterile and institutional. Materials and lighting in this type of area should be upgraded to be more inviting.

Finishes:	Type	Condition
Floor:	Concrete	Good
Walls:	Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Poor

E05 Lobby

The lobby space is +/- 1200 square foot and acts as the mediating space between the entrance to the hockey rink,



Above: Corridor to weight room.



Above: Waiting area with canteen on the right. Windows on the left have view to the hockey arena.

Below: City of Winnipeg Reception Desk





Top: Lobby showing the seating in front of the swimming pool

Lower: Lobby showing the doors and trophy shelf that City of Winnipeg staff recommended be demolished. Reception desk beyond



swimming pool and auditorium. Considering the nature of the materials in this area, the design intent appears that this area was to be the social gathering space for the building.

Three sets of doors access this space from the parking lot. The middle set is a relatively new automatic sliding door system. The door on the east end is equipped with a power door operator.

One shortcoming in design is that upon entry to the lobby space from the west doors, one is confronted with two rows of seating that are used for viewing the swimming pool. This creates a bottleneck scenario and, as a result, the door is not frequently used. As this is the only public viewing location for the swimming pool in the facility, options for relocating the seating are restricted.

The east and west wall are constructed of precast concrete panels similar to the exterior of the auditorium. The east side houses an underutilised trophy shelf and two MTS pay phones. The west side has a large expanse of glass for viewing into the pool area as well as space for vending machines. Floor mats are located along the typical patrons path through this space and are unsightly.

City of Winnipeg staff recommended removing the doors between the lobby (E05) and the waiting area (E04) as it does not provide ease of access between spaces. The original design did not have a vestibule at the front entrance, thus these doors would have acted as a wind block. Opening these spaces to one another will allow for more visibility of the reception desk and better flow from one space to another.

Finishes:	Type	Condition
Floor:	Terrazzo	Good
Walls:	Glass entry doors, Concrete walls	Good
Ceiling:	Exposed w/ acoustic treatment	Good

E06 Vestibule

The original design of the building did not contain a vestibule, this portion of the building was originally exterior space.

The vestibule is the main entry to the facility for the majority of patrons from the parking lot to the south. It contains three sets of doors, two are double sets of doors with the third an automatic sliding door. The eastern most door is equipped with a door operator, which is not an NBC requirement as the central automatic sliding door provides the barrier free access requirement. This door would have been equipped with the device prior to the installation of the automatic sliding door. The vestibule doors are glazed and provide some natural light into the lobby space.

Finishes:	Type	Condition
Floor:	Concrete	Good
Walls:	Glass entry doors, Concrete walls	Good
Ceiling:	Exposed Ceiling	Good

E07 Auditorium

The +/- 4,600 s.f. auditorium is a rentable space that serves the needs of the community and acts as a multi-purpose space for the City of Winnipeg and other organizations. The Manitoba Liquor Control Commission has indicated that the occupancy for the room is 350 persons.

Typical weekly programs include wheelchair hockey, soccer,



Above: Vestibule with automatic sliding door system and door operator

aerobic, yoga, tai Chi and Gymnastics. Outside user groups include:

1. Canadian Blood Services Blood Donor Clinics;
2. St. James Seals Swim Club;
3. Society of Manitobans with Disabilities;
4. Countrified City Slickers Line Dance Group;
5. Annual Line Dance Workshop;
6. Manitoba Curling Association;
7. Serbian Cultural Society;
8. Manitoba Highland Dancers Competition
9. Hungarian Cultural Society;
10. Elections Canada;
11. Manitoba Regional Lily Society;
12. Craft Sale;
13. Eastern Star Square Dance Group;
14. Company Childrens Christmas Partis;
15. Folklorama;
16. Private Socials.

There is a sliding partition and bulkhead that divides the space in two. City of Winnipeg staff indicated plans for the demolition of this partition are already in progress.

The ceiling is covered with a spray applied acoustic material, which is clean in appearance. The material is white which helps make the room feel brighter.

There are five vertical slot windows on the south side of the auditorium that bring natural light into the space. The space would be more inviting with the introduction of more natural light to the room.

The main access to the space from the lobby is through one set of double doors. These doors are solid wood with a small window. It would be recommended to provide more access doors to the room from the lobby and provide more glazing between the spaces to allow for patrons to see the activity in the auditorium.

The flourescent lighting in the room is suspended between the ceiling structure. As indicated by electrical, it provides a very low light level and should be upgraded. In order for the space to continue to be used as a sports facility, more durable lighting should be considered.

Finishes:	Type	Condition
Floor:	Vinyl Tile	Good
Walls:	Concrete/Painted Drywall	Good
Ceiling:	Exposed w/ acoustic treatment	Good

1x1 architecture proposed shortening the auditorium by 6' to 11' on the west side to provide access to the proposed SJAC addition. The City of Winnipeg staff indicated this reduction in square footage would not affect any user group. At a later date, City of Winnipeg staff indicated that there may be some user groups that require the complete square footage. This area reduction should be thoroughly reviewed with all users in future design development.

E08 Stage

The +/- 1,000 s.f. stage sits at the east of the auditorium and is utilised by various users throughout the year. Below the stage there is storage for tables and chairs.

The stage is accessible on both the east and west side with stairs. The stage does not have a ramp or lift to make it



Top: Auditorium viewed from the stage
Above: Auditorium windows



The stage



The Boardroom

barrier free accessible.

The hardwood flooring is in reasonably good shape, however could be sanded and refinished.

Finishes:	Type	Condition
Floor:	Hardwood	Good
Walls:	Concrete/Painted Drywall	Good
Ceiling:	Exposed Structure	Good

E09 Boardroom

The boardroom serves as a periodic meeting space for the City of Winnipeg, however is often used as a storage room. The room is accessible from both the auditorium and the corridor to the north. This access from the corridor allows its it to be used while activities are being held in the auditorium

Additionally, the space has a small storage closet that will require new doors. The space has no natural light.

Finishes:	Type	Condition
Floor:	Tile	Poor
Walls:	Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Good

It is anticipated that the floor tiles may contain Asbestos Containing Materials.

E10 Female W/C

The female washroom houses 3 water closets and 3 lavatories. This quantity does not meet current National Building Code requirements.

A review of the space using the National Building Code and the 2010 City of Winnipeg Accessibility Design Standards (CWADS) has revealed numerous shortcomings. It is recommended that these washrooms be re-configured to meet current standards

Finishes:	Type	Condition
Floor:	Tile	Poor
Walls:	Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Good

It is anticipated that the floor tiles may contain Asbestos Containing Materials.

E11 Male W/C

The male washroom houses 1 water closets, 3 urinals and 3 lavatories. This quantity does not meet current National Building Code requirements.

A review of the space using the National Building Code and the 2010 City of Winnipeg Accessibility Design Standards (CWADS) has revealed numerous shortcomings. It is recommended that these washrooms be re-configured to meet current standards.

Finishes:	Type	Condition
Floor:	Tile	Poor
Walls:	Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Good

It is anticipated that the floor tiles may contain Asbestos Containing Materials.



Female W/C

The kitchen



E12 Kitchen

The kitchen sits to the north of the auditorium. Loading for social functions is from the staff parking area through corridor E13. The kitchen contains an over the counter sliding door to the auditorium.

The size of the kitchen does not serve all patrons who rent the auditorium, specifically Folklorama who have to utilise additional areas in other parts of the facility for food preparation.

The kitchen houses two electric ranges, a sink and a refrigerator. The millwork is in relatively good condition but is out of date. Providing a higher quality kitchen could attract new patrons to rent the space.

Finishes:	Type	Condition
Floor:	Tile	Poor
Walls:	Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Good

It is anticipated that the floor tiles may contain Asbestos Containing Materials.

E13 Corridor

This corridor serves as an emergency exit out of the auditorium. It also acts as the delivery doors to the staff parking lot to the north for the kitchen and auditorium.

Finishes:	Type	Condition
Floor:	Vinyl Tile	Good
Walls:	Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Good

E14 Storage Room

This storage houses storage racks and space for permanent storage of miscellaneous items.

Finishes:	Type	Condition
Floor:	Concrete	Good
Walls:	Concrete Block	Good
Ceiling:	Exposed steel structure	Good

E15 Storage Room

This space acts as both a transition space from the corridor to the stage and a temporary storage room. This room has to be kept relatively open to access the stage.

The handrail on the stair that leads to the stage does not meet current NBC standards and should be replaced.

Finishes:	Type	Condition
Floor:	Concrete	Good
Walls:	Concrete Block	Good
Ceiling:	Exposed steel structure	Good

It is anticipated that the floor tiles may contain Asbestos Containing Materials.

E16 Prep Room

This room is a space for people to prepare themselves to go up on stage. It is directly adjacent to a washroom

Finishes:	Type	Condition
Floor:	Tile	Poor
Walls:	Concrete Block	Good
Ceiling:	Exposed steel structure	Good



Store Room

Washroom



It is anticipated that the floor tiles may contain Asbestos Containing Materials.

E17 Washroom

This washroom serves the purpose as a backstage washroom for people utilising the stage. The washroom appears to be in good working condition.

Finishes:	Type	Condition
Floor:	Tile	Poor
Walls:	Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Good

It is anticipated that the floor tiles may contain Asbestos Containing Materials.

E18 Washroom

At the time of the review, the washroom was used a storage area and the toilet was not operational. It appears that the washroom is redundant.

Finishes:	Type	Condition
Floor:	Tile	Poor
Walls:	Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Good

It is anticipated that the floor tiles may contain Asbestos Containing Materials.

E19 Corridor

The corridor is original to the building construction and originally led directly to the exterior as an exit. Modifications to this arrangement in the 1980's have made the corridor non-code compliant as an exit from the basement and second floor. The corridor still leads to the exit on the east side of the building and to the staff room.

Finishes:	Type	Condition
Floor:	Vinyl Tile	Good
Walls:	Painted Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Poor

It is anticipated that the floor tiles may contain Asbestos Containing Materials.

E20 Corridor

This corridor , along with the Staff Room, was an addition in the 1980's. The corridor leads to the exit on the east side of the building as well as the staff room.

Finishes:	Type	Condition
Floor:	Vinyl Tile	Good
Walls:	Painted Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Poor

E21 Janitors Closet

The janitors closet houses a mopsink and storage for cleaning and maintaining the auditorium, lobby and waiting area. The space is too small to function as a janitors closet and the NBC now requires a one hour fire resistance rating from the remainder of the building.

Finishes:	Type	Condition
Floor:	Concrete	Poor
Walls:	Concrete Block	Good
Ceiling:	Acoustic Ceiling Tile	Poor

Corridor E19 leading to the east exit



3.4 STRUCTURAL ASSESSMENT

For original document, refer to appendix

3.4.1 The Original Building

The original building was constructed in 1965 and added to at various times. Existing structural drawings of the original structure and most of the additions were made available for review. The only drawings that were not available were the drawings for the current staff room located to the north of the auditorium. The findings noted in the report are based on our visual review of the existing structure and our review of the existing drawings.

The existing foundation consists of a combination of cast-in-place caissons and belled piles bearing on hardpan and approximately 25' below existing grade. The allowable bearing capacity of the hardpan is not given in the drawings. Type 50 sulphate resistant concrete was used in all of the piles. On the basis of the foregoing, a geotechnical investigation will be required in order to properly design the foundations for the additions.

There is a partial basement which houses a former rifle range, mechanical rooms, storage and staff areas. The foundations noted in the foregoing support 10" thick basement walls in these areas and cast-in-place grade beams throughout the remainder of the building area.

These walls and beam in turn support structural concrete slabs. Piles directly support the floor in areas where there are two way structural slabs.

The roof structure over the auditorium and pool area consists of 24" deep precast concrete single tees spanning the width of these areas. These tees are supported by cast-in-place concrete beams which in turn are supported by concrete columns. The roof structure over the remaining area (not including the arena area) consists of structural steel deck over open web steel joists supported by steel beams or load bearing concrete block walls.

The roof structure for the arena is not on the existing structural drawings and was presumably constructed as a design-build component.

3.4.2 Structural Condition

For the most part, the structural condition of this front portion of the building (arena excluded) is in good condition with very few cracks or other signs of deterioration. The only area of concern was the north basement wall of the former rifle range where there is a significant horizontal crack about half way up the wall. It is our opinion that this crack should be repaired as part of this redevelopment.



Crack in the basement wall

3.5 MECHANICAL ASSESSMENT

For original document, refer to appendix

3.5.1 Plumbing

The major plumbing loads on the building are related to the pool and fitness area lockers and change rooms, the arena change rooms, the central concession, and the public washrooms and kitchenette adjacent to the auditorium. The proposed redevelopment won't affect the arena or the pool/weight room change areas, and they will be assumed to remain as-is.

The sanitary piping systems in the building are based on cast-iron and copper piping. Domestic supply piping is copper. The drainage piping serving the main floor fixtures north of the Auditorium are generally visible from the basement areas beneath. While the condition of this piping is likely good, it is assumed that the proposed renovation of this area will require entirely new sanitary drainage piping as well as new domestic hot and cold supply piping, with connection to the closest existing risers or mains which are not being changed.

The proposed redevelopment mainly consists of reconfiguring the main washrooms and relocating the kitchen/server. This is not expected to increase the total plumbing load on the building significantly, and the central domestic water supply should be adequate. The building manager did not report any problems with flow or pressure at fixtures in this area.

During the design of the renovation and addition, the storage and distribution temperature of the domestic hot water system should be reviewed. For prevention of Legionella, the domestic hot water should be stored at a minimum of 140°F. This temperature should be mixed either at a central location or at banks of fixtures to reduce the hot water supply temperature to a safe level. The proposed new kitchen should be supplied with 140°F. If hotter water is required for dishwashers, integrated booster heaters can be included in the new dishwashers.

The proposed redevelopment includes replacement of the washroom fixtures in the areas adjacent to the Auditorium. This will ensure that all the fixtures in this area will be brought to current standards for code compliance, barrier-free requirements, and water-saving standards.

3.5.2 Fire Safety

The complex currently does not have a wet sprinkler system. Refer to the architectural report for the related code analysis.

3.5.3 HVAC

The central heating system for the building consists of a boiler plant with Sunny Day gas-fired hot water boilers that appear to date to 1967. These boilers supply the perimeter hot water radiation, hot water heating coils in air handlers, and domestic hot water via the heat exchanger. The proposed redevelopment includes new packaged gas-fired HVAC units to serve the new spaces and in certain areas of the redeveloped spaces. Considering the addition takes away some exterior envelope loss and some additional heat is provided with the proposed new systems, the proposed redevelopment should reduce the overall heating load on the existing boiler plant. A review of the boiler plant with

consideration to replace or upgrade the boilers was not included in the scope of this study.

There are two large air handling units which provide cooling and ventilation air to the major areas of the building. One air handling unit is ducted to floor-level supply grilles in the main entrance/lobby area. It was not apparent at the time of the review that there was any air supply to the reception, canteen and arena viewing area. This is likely why the reception area is supplemented with a ductless-split air conditioning unit. To meet the cooling demand and to meet code requirements for ventilation, additional air supply is required to the existing canteen/reception/viewing area. Since the original air handling is doing the area closer to the main entrance, this system can likely be kept in use for the proposed renovation to serve the reconfigured Lobby area, with new packaged HVAC units (see the Outline Specification) for the Bench area.

The other major air handling unit is ducted through a crawlspace to floor-level supply grilles in the auditorium. Based on discussion with the building manager, the auditorium is adequately cooled and ventilated for the current usage. This air handling system is old and dates to the original construction of the building. However, with regular maintenance to the fan, motors, drives, and major components, this system can be left in operation. During the design of the renovation the quantity of ventilation air should be reviewed. Should that require an increase over the current settings, this should be achievable by adjusting the controls settings on the outside air dampers. For energy savings, this system would lend itself well to the addition of CO₂ ventilation control. This would respond well to the large variations in occupancy in this space, and would save energy by allowing the outside air volume to be reduced in times of low occupancy, and only increase with a measured demand.

The weight room HVAC system is a packaged outdoor heat/cool unit located on the flat roof of the arena change room directly north of the weight room. Supply air is ducted from the unit outside and enters the ceiling area of the weight room. From there it is ducted to ceiling-level diffusers in the weight room. This air supply is supplemented with ceiling fans distributed throughout the room. At the time of the review the air in the room was noticeably stale. This was also a concern raised by both the building manager as well as a couple of weight room patrons who happened to be in the room at the time. The existing unit is a Lennox gas-fired packaged unit, and given the age of the unit the refrigerant is likely R-22, which is no longer approved for production since it is categorized as an ozone-depleting substance.

The outdoor location of the existing package rooftop unit serving the weight room is very accessible and would lend itself well to simply replacing the existing unit with a new one that is sized for the proper cooling and ventilation loads for the weight room. Since this likely means an increase in air volume, the supply and return ducting and diffusers should be replaced to match the new loads. The ceiling fans can remain as installed. Although they may not be as necessary with the new HVAC system, they may be beneficial to providing an extra level of ventilation control for the occupants.

3.6 ELECTRICAL ASSESSMENT

For original document, refer to appendix

3.6.1 Summary

The writer attended the St. James Civic Centre to conduct an electrical building condition assessment. Existing electrical drawings for various renovations were provided following the site review, however they provide partial information only, as many areas do not have any information provided. The comments in this report are based on a brief non-intrusive inspection. The comments are general in nature and are not the result of detailed investigation or testing. The electrical systems appear to be in fair condition for the age of the building. The following specific items were noted.

3.6.2 Life/Safety Issues

No life safety issues were apparent. If significant renovations or an addition is undertaken, the existing fire alarm system, emergency lighting and exit signage will likely need upgrading to meet current code requirements. The extent of upgrades at that time would need to be determined together with the local authority having jurisdiction (City of Winnipeg).

3.6.3 Electrical Distribution

The electrical service utility is Manitoba Hydro. The building is fed from an overhead line to the east of the building.



Main distribution to the building and Hydro pole

The building has one 800A-120/208V-3ph-4w service, one 600A-600V-3ph-3w service and one 60A-600V-3ph-3w service. The 60A service is labelled to feed “golf course pump house”. The main distributions are located at the SE corner of the arena, at the top of the bleachers. Main disconnects and distribution panels are made by Amalgamated Electric and appear to be original equipment. The meters are located inside.

The original distribution panels appeared to be full. A newer 600A-600V-3ph-3w CDP with many spaces is located adjacent the existing distribution equipment. How it was fed could not be determined without intrusive investigation.

The majority of electrical panelboards seen appeared to be original equipment. Finding new/replacement circuit breakers may be difficult due to the age of the obsolete equipment.

All panels that were checked had panel circuit schedules. The accuracy of the schedules was not verified.

The location of the existing distribution equipment in the arena would not meet current code for sure footing, clearances, etc. City staff indicated that they would like to see the entire distribution relocated to a safe and secure location on the main or basement levels. A significant amount of rework would be required for this to take place.

City staff also indicated they would like to see the service revised from overhead to underground. If an addition is planned to the east, the overhead lines will be in the way of expansion.

3.6.4 Fire Alarm

A Simplex 4100U intelligent fire alarm system was present. Main annunciator indicated "System is Normal" at time of visit. It was not tested.

The most recent annual inspection report dated June 26, 2012 and completed by Chubb Edwards was provided for review. Seven deficiencies were noted. It is recommended these deficiencies are corrected.

Device locations generally appeared to be code conforming. Manual pull stations are installed above a height of 1200mm AFF. The existing locations would not meet current code for access by disabled individuals, however the City of Winnipeg does not normally require pull station height to be revised unless the station needs to be relocated.

Visual signalling devices are not present. Although they were not required at the time of installation, they are now required by code for new construction and major renovations. The existing fire alarm system can likely be expanded to accommodate the installation of visual signals.

Building is not sprinklered.

3.6.5 Exit/Emergency Lighting

A DC battery backup system is present with remote DC emergency lighting heads. A few single head fixtures were observed, which would not meet current code.

Exit signs were observed to be LED source.

City staff advised they would require a minimum of 60 minutes battery backup capacity for all new emergency lighting added. Backup duration of existing unit equipment was not verified.

3.6.6 Lighting - Exterior

Exterior lighting consists of building mounted HID luminaires. Fixtures appear to be in good condition and should provide acceptable lighting coverage where they are located.

3.6.7 Lighting - Interior

Interior lighting is generally fluorescent. Fixtures appeared to generally be complete with T8 lamps and ballasts. T12 lamps were not observed.

Light levels in general appeared to be on the low end of acceptable. The gymnasium, fitness room and reception areas were all noticeably dim. Fixture selection for the multi-purpose use of the gymnasium and for the main entrance vestibule did not appear appropriate for intended room usage.

Lighting control is generally with line voltage local switches.

3.6.8 Power Outlets Etc.

-Receptacles appear to be generally located where required by code and for their intended functions.

-If additional circuits are required in the future, sub-panels will likely need to be added. Refer to Electrical Distribution above.

3.6.9 Communication Systems

LAN, telephone and public address equipment is located in the basement electrical room.

A Metasys control system was observed in the basement electrical room.

The above systems should be expandable for a small addition.

No cable tray was observed to support the communication cabling.

3.6.10 Wiring Methods

The wiring methods used within the building are non-combustible and consist of a mix of armoured cable and conduit/wire. Both are acceptable for this building construction.

Electrical penetrations through floors/fire separations were not observed to be fire-stopped.

3.6.11 General Electrical Workmanship

For the most part workmanship associated with original installation work is good.

Workmanship associated with more recent electrical additions appears to be reasonable for the conditions presented.

3.6.12 Building Manager Comments

The building manager did not advise of any outstanding issues associated with the electrical systems in the building.

4.0 FUNCTIONAL REVIEW

The consultant team conducted a programming meeting with the user group and the City of Winnipeg to help develop a program for the proposed addition / renovation. The SJAC building committee previously developed a thorough program which formed the basis for the final program (see appendix).

The Program for the St. James Assiniboia 55+ Centre is as follows:

Existing Spaces to be renovated for specific use:

Auditorium **4,580 s.f. (existing)**

- Pickleball - 3 courts at 21' x 44'
- Provide vinyl floor markings
- space for dinners 1 to 3 times a year for occupancy of 100 +
- Aerobics
- Yoga
- Pilates
- Floor curling - 2 courts at 8'x39'
- Floor Shuffleboard

Weight room **1,400 s.f. (existing)**

- Drop in exercise area

Reception

- Can be integrated with City of Winnipeg reception desk

Program Requirements not Specific to any Existing Room:

Carpentry Shop **600 s.f**

- Provide adjacency to Multi Purpose Room no. 1
- Equipment List:
 - Band saw
 - Drill press
 - Planar/jointer
 - Table saw
 - Mitre saw
 - Dust collection system
 - Table and benches
 - Storage cupboards

Multi Purpose Room No. 1 **500 - 600 s.f.**

- Provide adjacency to Carpentry Room
- Men's drop in centre
- Hobby Room
- Provide sink in room

Multi Purpose Room No. 2 **500 - 600 s.f.**

- Writing/Arts Programs
- Games Room
- Crafters
- Stamps Club
- Parkinson/Stroke Group
- Meditation
- Singsationals
- Watercolours
- Shuffleboard
- Provide sink in room
- Provide lockable storage

Coat Room	100 s.f.
Provide adjacency to large dining area/Auditorium	
Boardroom	400 s.f
·Meetings for up to 12 persons	
Computer Room	200 s.f
·Provide room for 6 computer stations	
Community Kitchen	600 s.f
·Provide adjacency to Dining Room and Auditorium	
·Instructional Kitchen	
·Shared space with users of the Auditorium	
·Equipment List:	<ul style="list-style-type: none"> ·Handwash sink with footpump ·Walk-in cooler (70L x 50D) ·Walk-in Freezer (70L x 50D) ·30" over counter Microwave ·3 electric ranges (separate stations) ·Large island ·3 compartment sink with garburator ·Pot sink ·Walk in pantry / storage ·Stacked full size washer / dryer ·Dishwasher
Dining Room	600 s.f
·Provide adjacency to kitchen	
·Coffee Talk	
·Company of Friends	
·Wizards	
HART OFFICES	
·Provide adjacency to washrooms	
HART office No. 1	200 s.f
·2 person office space	
·File storage in office	
HART Clinic Room No. 1	120 s.f.
·Provide sink	
·Round table discussion	
HART Clinic Room No. 2	160 s.f.
·Provide sink	
·Round table discussion	
HART Storage	100 s.f.
Itinerant Office	160 s.f.
·Provide sink	
·Round table discussion	
ADMINISTRATION	
Support Services Office	
ED Office	100 s.f
Admin Office	150 s.f
Program Office	100 s.f.
Program Office	100 s.f.
Copy Room	100 s.f.
Storage Room	100 s.f.
TOTAL NET SQUARE FOOTAGE	4,890 s.f
Excludes area designated for auditorium and weight room.	

5.0 DESIGN RECOMMENDATIONS

The consultant team presented four options to SJAC building committee and City of Winnipeg staff, along with an assessment of both the positive and negative aspects of each scheme. The following is a summary

5.1 OPTION ONE

Option one proposed an addition in the northeast corner of the Auditorium. The proposal would re-configure the auditorium support spaces and construct a second storey addition above these support spaces. Two new stairs were proposed to allow for required exiting from the second floor and basement. An elevator is proposed in one of the existing stairwells.

Positive aspects of the scheme:

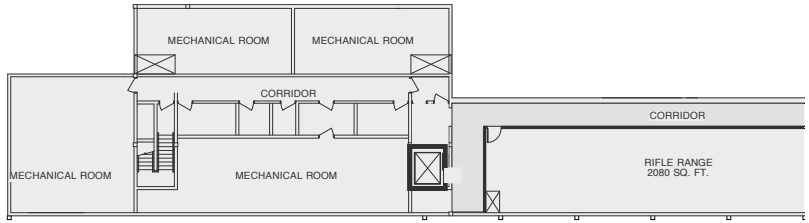
- The underutilised basement and second floor become accessible;
- SJAC acts as a stand alone entity

Negative aspects of the scheme:

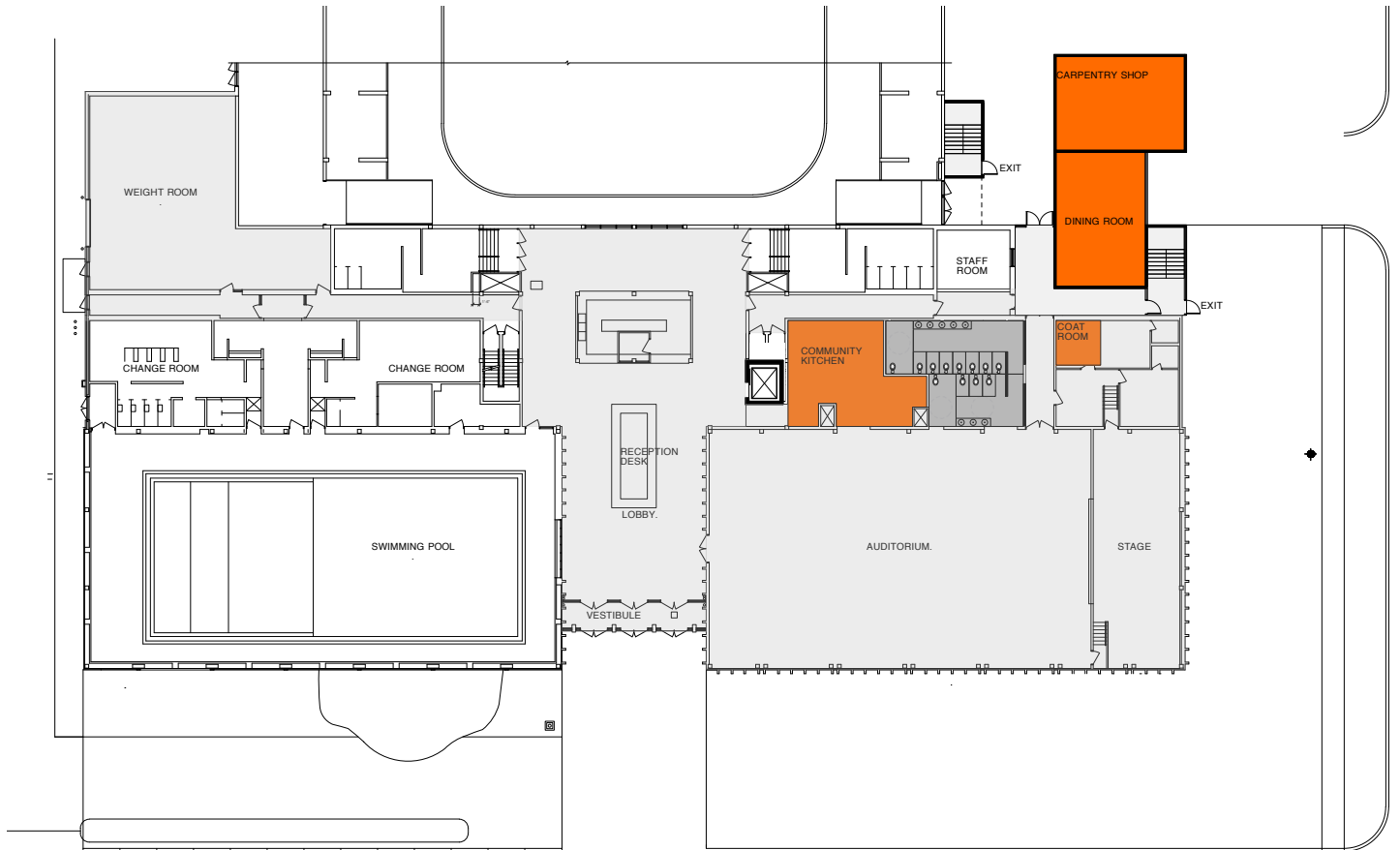
- Very difficult construction zone;
- Not strong connection to front door;
- Not strong connection to the auditorium;
- Reception is not in close in close proximity to SJAC;
- Front facade of the building is not upgraded;
- SJAC has no street presence from Ness Avenue
- Cost would be high;
- Staff parking stalls would be reduced ;
- Relocation of main electrical to building will be required;
- Structural engineer indicated that the existing foundation system will not likely be able to support the second floor - further analysis would be required.
- Structural engineer indicated that the existing auditorium roof may not be able to support the new snow load - further analysis would be required.



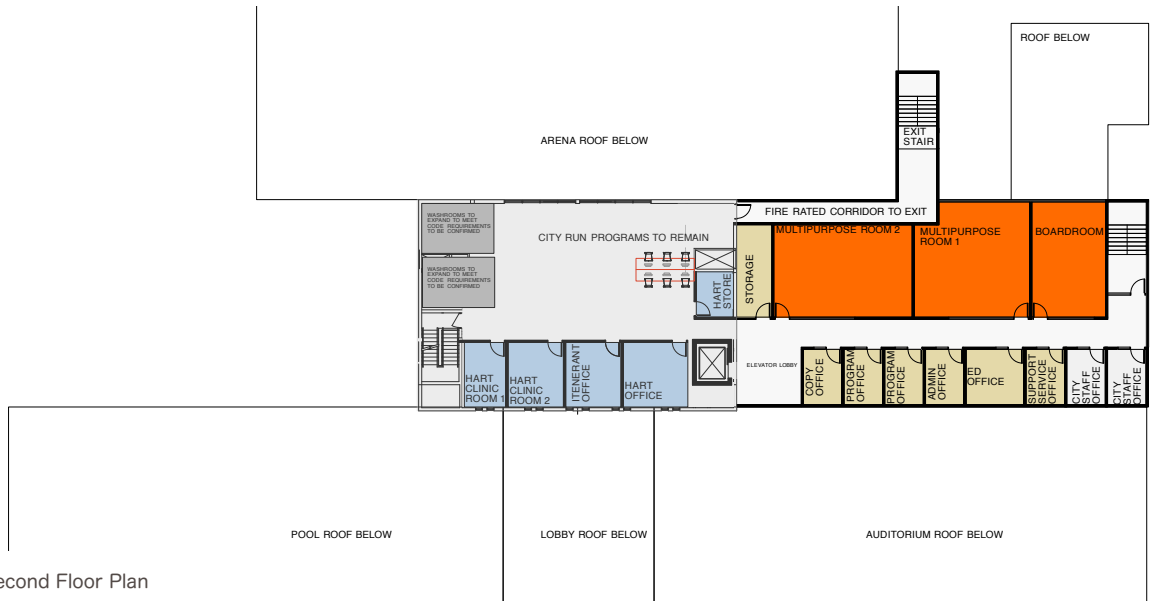
Location of proposed second floor



Basement Floor Plan



Main Floor Plan



Second Floor Plan

5.1 OPTION TWO

Option two proposed a two storey addition directly south of the auditorium. The proposal locates the west auditorium wall 11' to the east reducing the size of the auditorium to provide a strong link to the new construction. The scheme introduces an elevator only for this new addition and does not connect to the existing second floor or basement.

Positive aspects of the scheme:

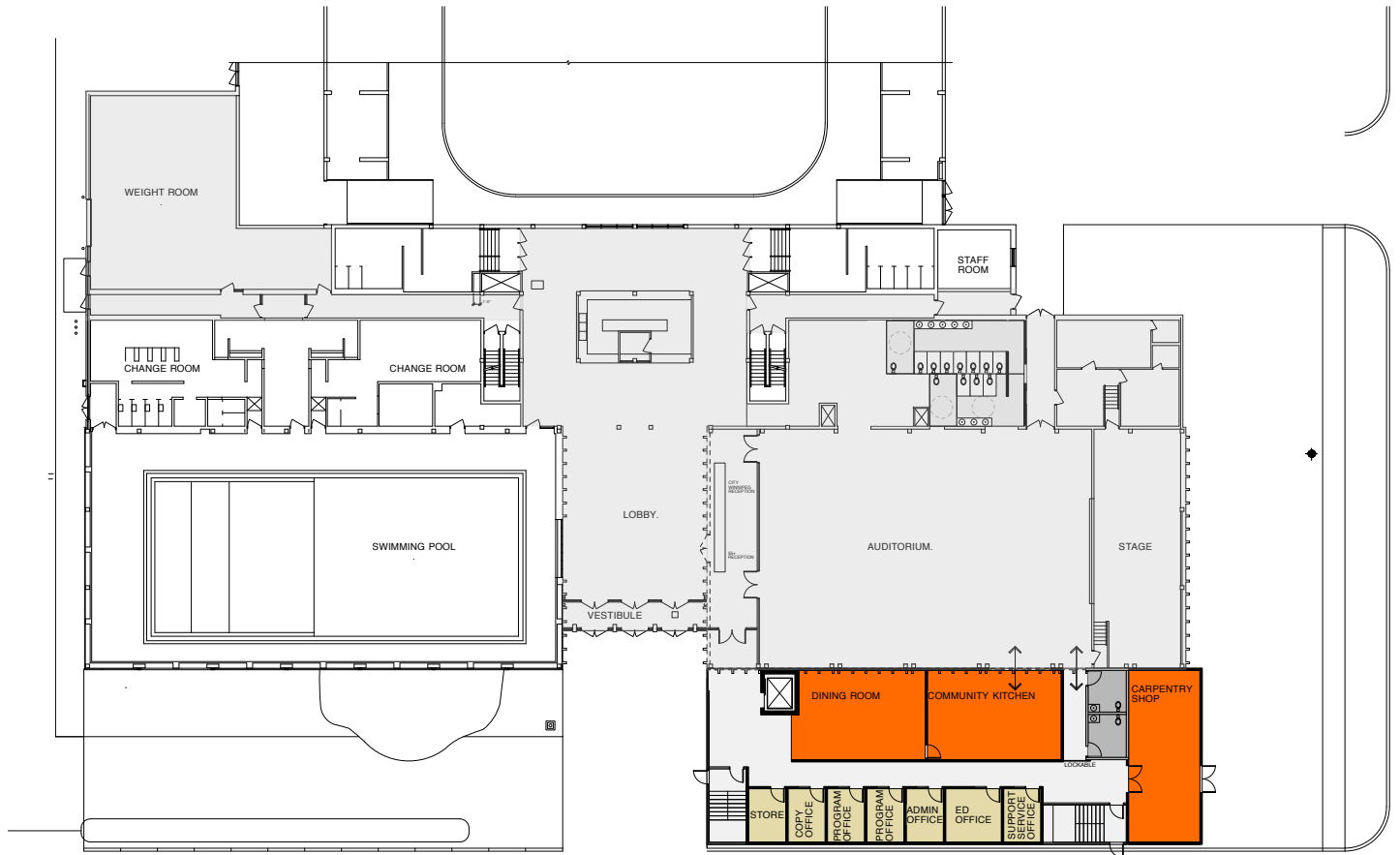
- Not difficult construction zone;
- SJAC acts as stand alone entity with strong linkage to the auditorium;
- Strong connection to front door of the St. James Civic Centre;
- Front facade of the building is upgraded;
- Reception would be directly adjacent to the SJAC;
- Potential to add natural light to the auditorium
- SJAC would have street presence on Ness Avenue

Negative aspects of the scheme:

- Does not provide access to basement or second floor;
- Eliminates one row of public parking on south side parking lot;
- Requires demolition of mature trees



The mature trees south of the auditorium



Main Floor Plan



Second Floor Plan



5.3 OPTION THREE

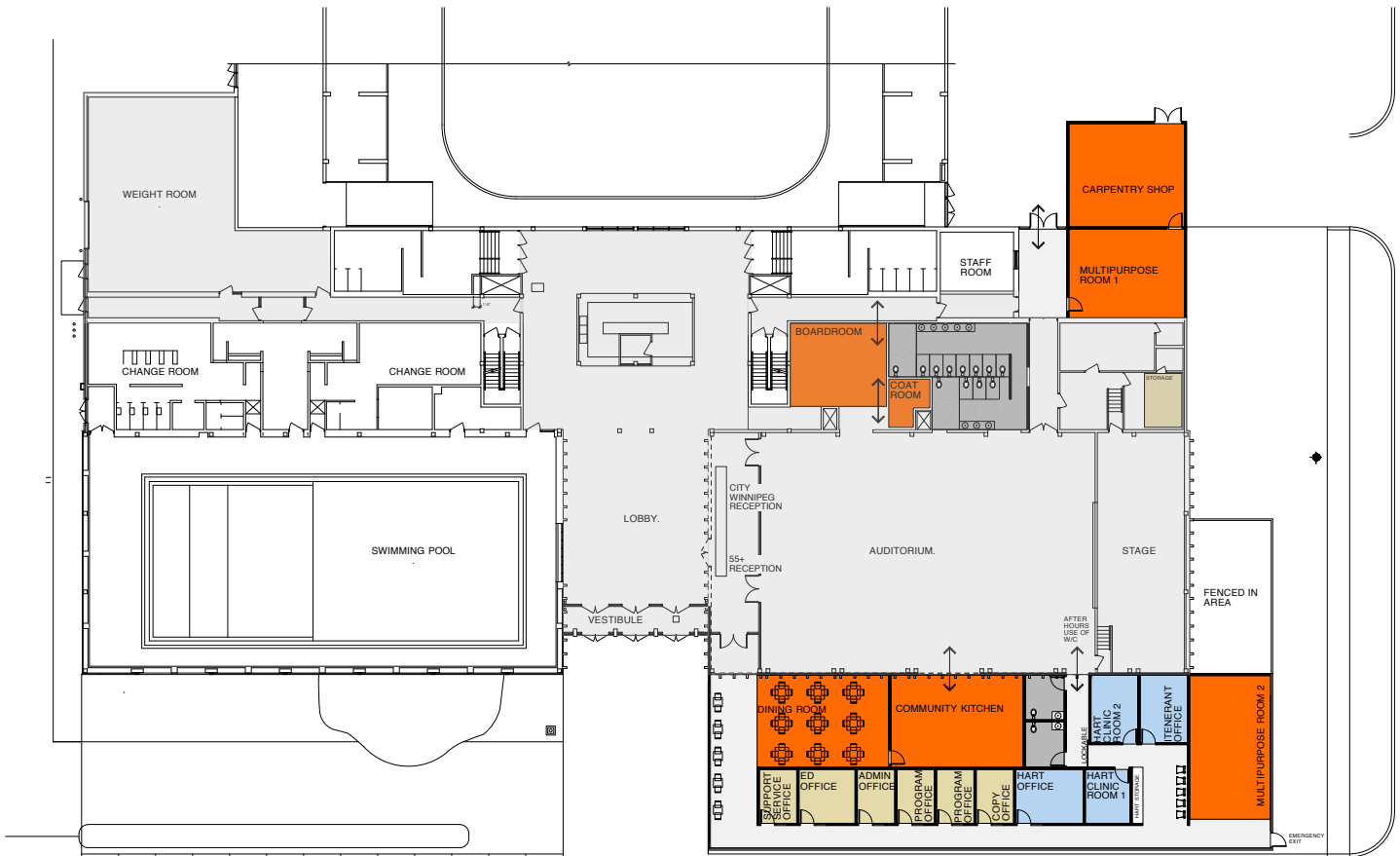
Option three proposes a one storey addition directly south of the auditorium and a one storey addition in the north east corner of the auditorium. The proposal locates the west auditorium wall 11' to the east reducing the size of the auditorium to provide a strong link to the SJAC. The scheme encompasses a larger portion of the main floor allowing the members of SJAC considerable movement through the building.

Positive aspects of the scheme:

- Not difficult construction zone;
- SJAC acts as stand alone entity with strong linkage to the auditorium;
- Strong connection to front door of the St. James Civic Centre;
- Front facade of the building is upgraded;
- Reception would be directly adjacent to the SJAC;
- Natural light could be added to the auditorium with new windows
- SJAC would have street presence on Ness Avenue

Negative aspects of the scheme:

- Does not provide access to basement or second floor;
- Eliminates one row of public parking on south side parking lot;
- Requires demolition of mature trees



N
Main Floor Plan

5.4 OPTION FOUR

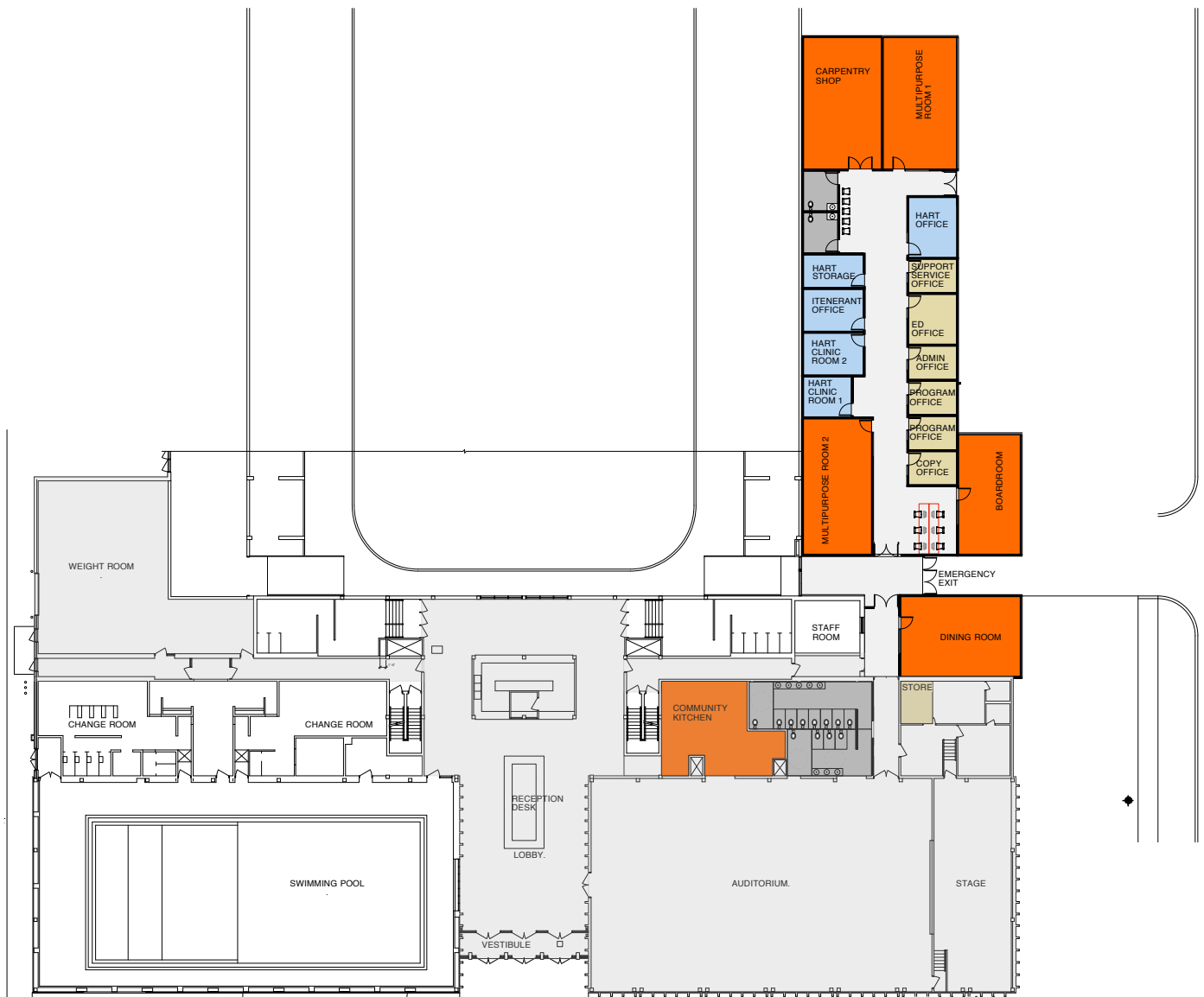
Option four proposes a one storey addition in the north east corner of the auditorium. The scheme utilises a large portion of the existing staff parking lot.

Positive aspects of the scheme:

- Not difficult construction zone;
- SJAC acts as stand alone entity;

Negative aspects of the scheme:

- Not a strong connection to front door;
- Not a strong connection to the auditorium;
- Reception is not in close in close proximity to SJAC;
- Front facade of the building is not upgraded;
- SJAC has no street presence from Ness Avenue
- Plan creates undesirable emergency exit from arena;
- Does not provide access to basement or second floor;
- Staff parking stalls would be reduced ;
- Relocation of main electrical to building will be required.



Main Floor Plan

5.5 THE SELECTED OPTION

At the August 24th, 2012 meeting, the SJAC building committee selected Option 3 as the only option to proceed with for a cost estimate. The design was refined based on client feedback. The following is a description of the scheme, including rendering, demolition, floor plan.

Rendering of the proposed addition





Project Description

The scheme situates itself around the auditorium with a new one storey addition on the south side and a new one storey in the northeast corner of the auditorium. The south addition includes exterior curtainwall glazing allowing a vast amount of natural light to filter into the space.

Upon entering into the main doors of the St. James Civic Centre, SJAC entry will be immediately to the east. The entire lobby and waiting area will be upgraded and the doors between these areas removed resulting in a much more open space. The canteen and reception desk will be demolished and a new reception desk provided on the west end of the waiting area. The lobby and waiting area will contain new chairs and tables to promote social gatherings.

The entry to the SJAC will be a wide corridor that will also operate as the computer drop in area. The dining and kitchen are located directly south of the auditorium and large sliding doors will allow for these spaces to be open to the auditorium as required.

A corridor to the east of the kitchen allows the kitchen to be utilised by patrons who rent the auditorium while allowing the remainder of SJAC to be secured. Two universal toilet rooms will serve both the SJAC and users of the auditorium.

The administration offices face south and include a sidelite adjacent to each door enabling natural light to filter into the offices. The corridor space to the south will eliminate glare often associated with south facing offices and will become an active zone for users to interact.

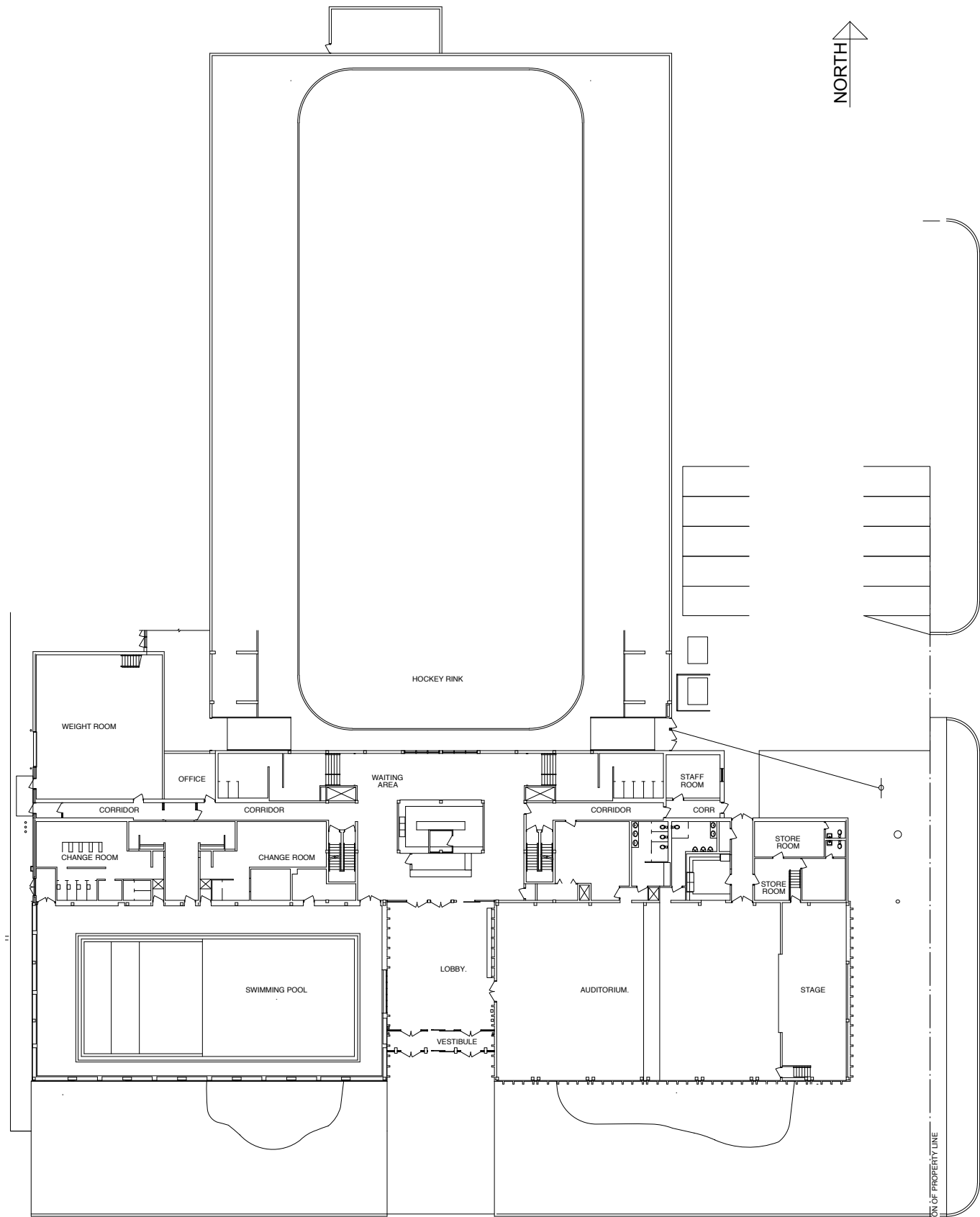
Near the end of the corridor, HART has a distinct zone with three clinic rooms. Patrons will feel comfortable waiting in the wide corridor. This area could be locked off if required.

A multipurpose room sits at the very east end of the new construction and will have exterior walls that are completely glazed. This space leads to an enclosed exterior patio to the north for outdoor activities. This area will have ample light in the morning but will be in shade for the majority of the day.

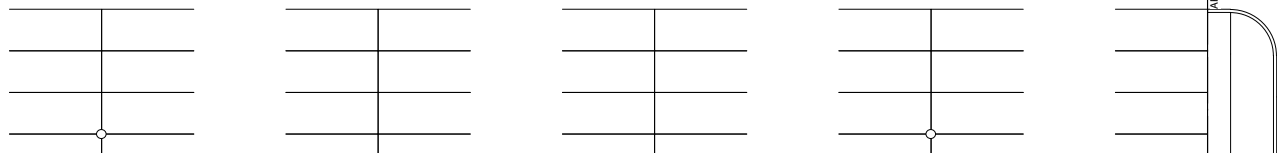
The new one storey addition to the north of the auditorium, containing the multipurpose room and carpentry shop, will be clad in metal panels and have large windows. The multipurpose room and carpentry shop share a door allowing ease of access. The dust collector would be in an enclosed room accessible from the exterior.

Renovations to the auditorium support spaces include expanding and upgrading the washroom facility to meet current NBC standards. In order to do this, the existing kitchen and janitor closet will be removed. New windows will be added to the existing south wall of the auditorium above the one storey addition. This will provide more natural light into the space.

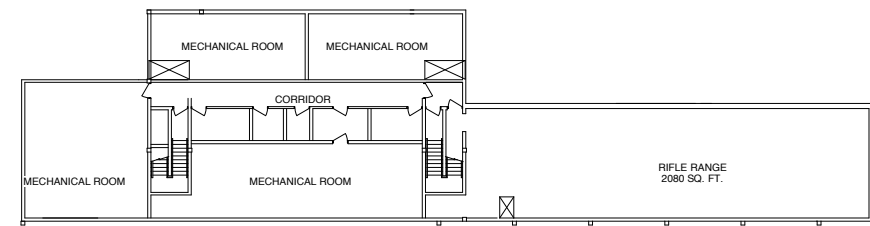
For additional details, refer to section 5.6



MAIN PLAN



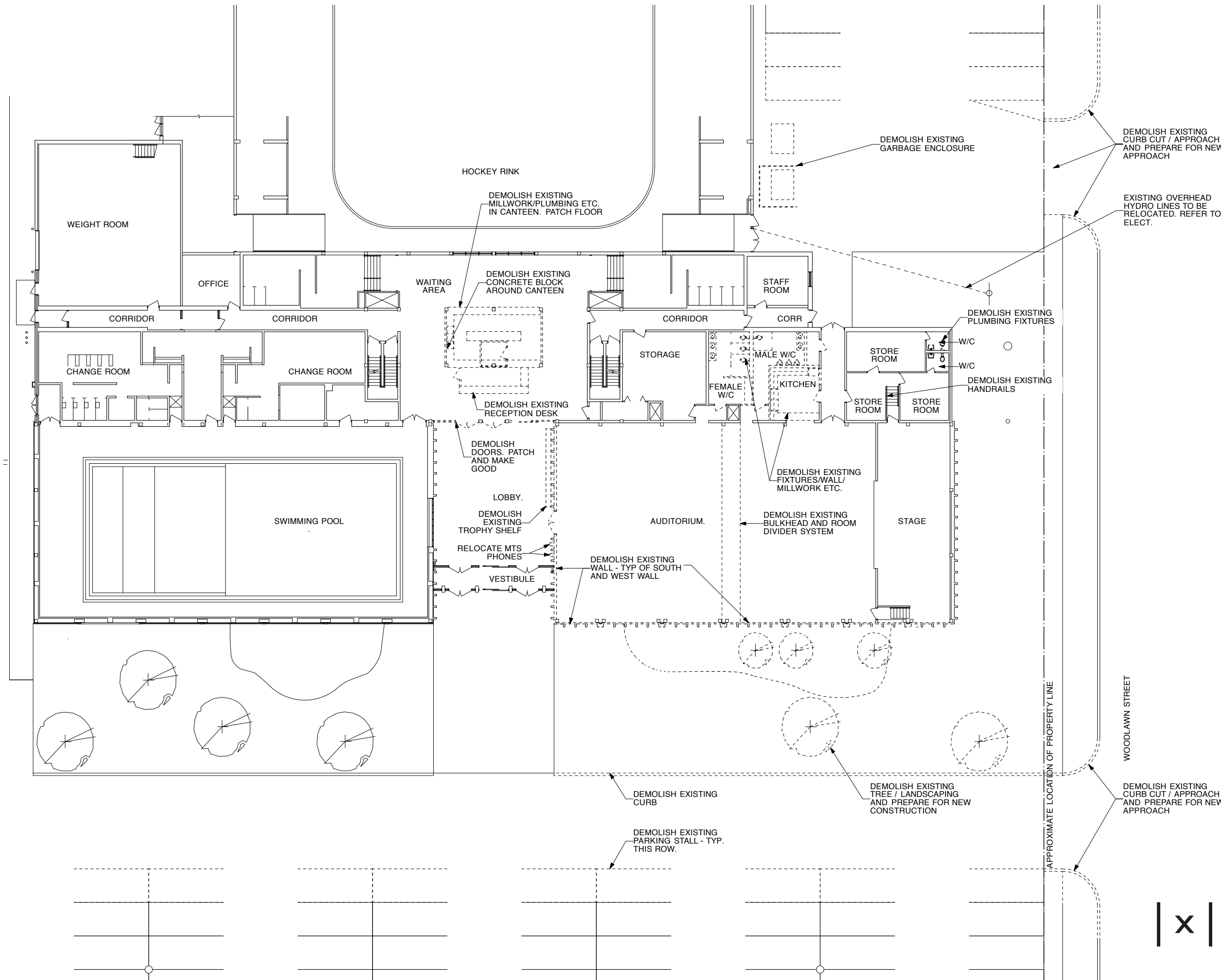
SECOND FLOOR PLAN



BASEMENT FLOOR PLAN

EXISTING FLOOR PLANS
SCALE 1:500

RELOCATION OF ST. JAMES ASSINIBOIA 55+
CENTRE TO THE ST. JAMES CIVIC CENTRE
2055 NESS AVENUE
WINNIPEG, MANITOBA
SEPTEMBER 7, 2012

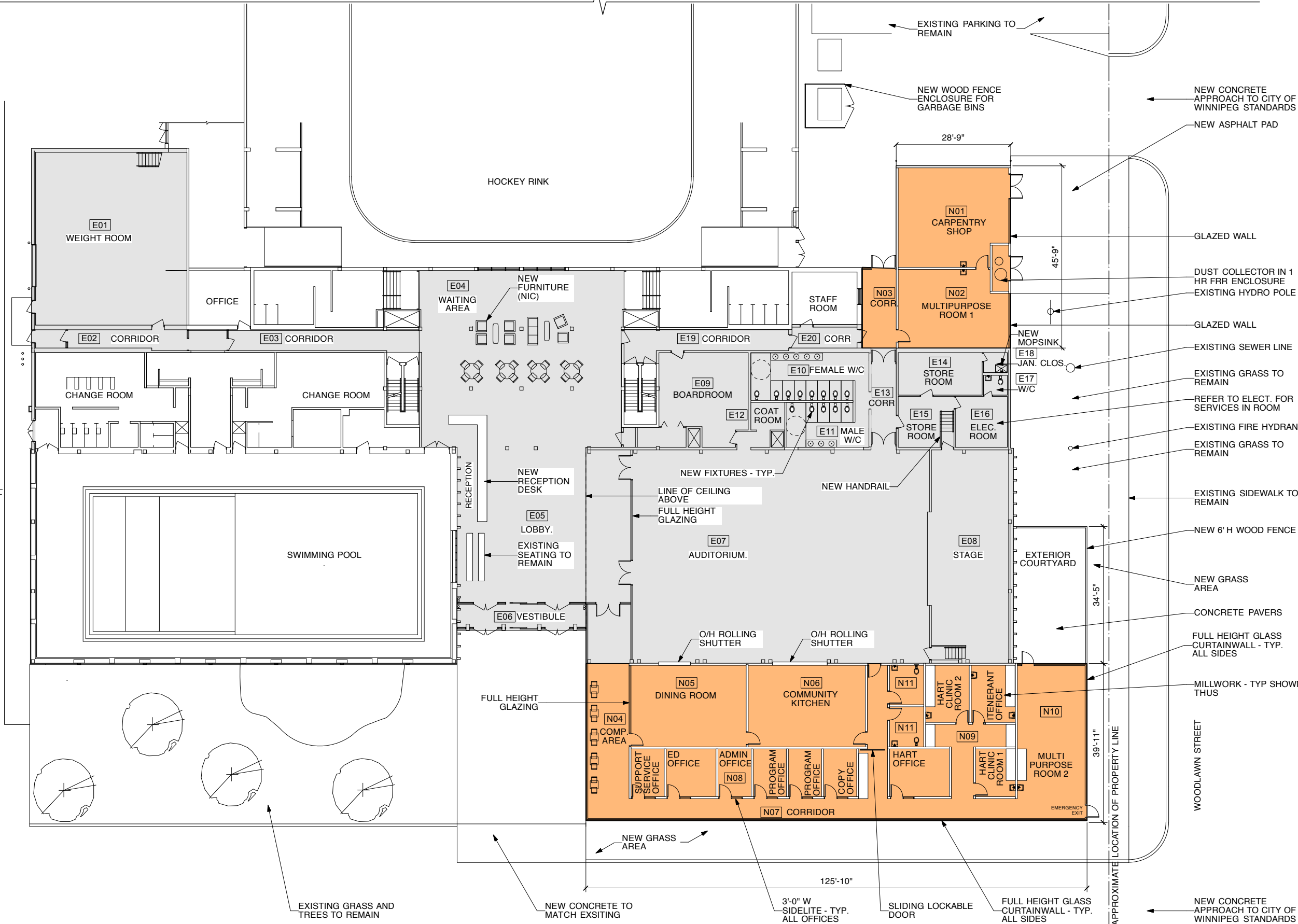


- LEGEND**
- RENOVATION
 - NEW CONSTRUCTION
 - NO WORK
 - ⌋ EXISTING DOOR TO REMAIN
 - ⌋ DEMOLISH EXISTING DOOR
 - ⌋ NEW DOOR
 - EXISTING WALL TO REMAIN
 - WALL TO BE DEMOLISHED
 - NEW WALL
 - NEW GLAZED WALL
 - [N01] NEW ROOM (NEW CONSTRUCTION)
 - [E01] EXIST/RENOVATED ROOM (RENOVATED CONSTRUCTION)

NOTES:
 1. REFER TO OUTLINE SPEC FOR DEMOLITION OF FINISHES IN ROOMS

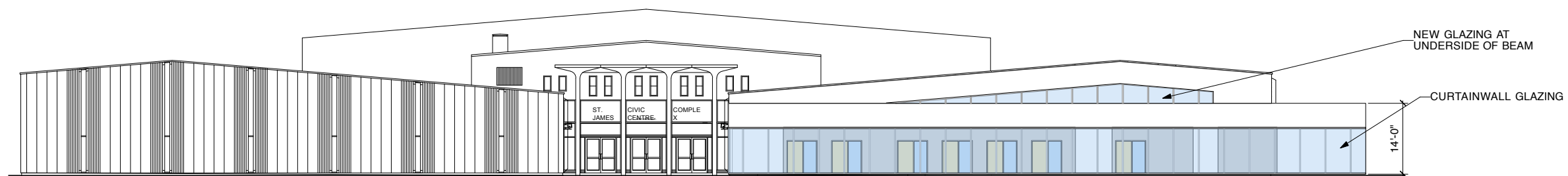
DEMOLITION PLAN
 SCALE 1:300

RELOCATION OF ST. JAMES ASSINIBOIA 55+ CENTRE TO THE ST. JAMES CIVIC CENTRE
 2055 NESS AVENUE
 WINNIPEG, MANITOBA
 SEPTEMBER 7, 2012



MAIN FLOOR PLAN
SCALE 1:300

RELOCATION OF ST. JAMES ASSINIBOIA 55+
CENTRE TO THE ST. JAMES CIVIC CENTRE
2055 NESS AVENUE
WINNIPEG, MANITOBA
SEPTEMBER 7, 2012



SOUTH ELEVATION

ELEVATION
SCALE 1:300

RELOCATION OF ST. JAMES ASSINIBOIA 55+
CENTRE TO THE ST. JAMES CIVIC CENTRE
2055 NESS AVENUE
WINNIPEG, MANITOBA
SEPTEMBER 7, 2012

INTENTIONALLY
LEFT BLANK FOR
DEMOLITION PLAN

INTENTIONALLY
LEFT BLANK FOR
PLAN PLAN

5.6 ARCHITECTURAL OUTLINE SPECIFICATION

1. GENERAL REQUIREMENTS

- 1.1. This project includes the relocation of the St. James Assiniboia 55+ Centre from the third floor of the Deer Lodge Centre (203 Duffield St. at Portage Avenue) to the St. James Civic Centre at 2055 Ness Avenue. The relocation requires a +/- 6,500 s.f. addition, partially on the north side of the existing auditorium and partially on the south side of the auditorium. The Work also includes renovation to the existing St. James Civic Centre as outlined below. There will be no work in the Swimming Pool and Hockey Rink portion of the building unless specified.
- 1.2. The building will be occupied during construction. Areas of construction will need to be closed off as required
- 1.3. Building Renovation to comply with Manitoba Building Code barrier free design guidelines
- 1.4. It is anticipated that the building contains minimal Asbestos Containing Materials. All work associated with removal of asbestos containing materials will be done by the City of Winnipeg above and beyond the scope of this project.
- 1.5. The schedule for construction start is September 2014.

2. CASH ALLOWANCE

- 2.1. New free standing lighted sign on pile, including digital reader board at Ness Avenue Entrance. Allow \$60,000
- 2.2. New lighted Building Signage on Building. Allow \$20,000

3. SITE WORK

- 3.1. A geotechnical investigation is not available. Refer to structural outline specification for general assumptions.
- 3.2. Relocate the two approaches along Woodlawn street to allow for new construction. To be constructed to City of Winnipeg standards.
- 3.3. Provide sidewalks and curbs as required. To be constructed to City of Winnipeg standards.
- 3.4. Relocate Hydro lines as per electrical specification.
- 3.5. Relocate garbage enclosure on north side of auditorium.
- 3.6. Demolish existing curb on south side of auditorium and provide new curb and landscaping as per drawings.
- 3.7. Remove 10 parking stalls on south side of auditorium.
- 3.8. Provide new wood fence and concrete pavers in exterior courtyard.
- 3.9. Patch and repair asphalt as required by construction.
- 3.10. Grade and sod site as required.
- 3.11. Provide 6 new concrete bollards

4. CONCRETE

- 4.1. Refer to the structural engineering specification.
- 4.2. Provide new curbs in the parking area as indicated on the drawings.

5. DEMOLITION

- 5.1. As required to suit the renovation. Refer to Demolition drawings.
- 5.2. Remove South and west wall of Auditorium in preparation for new construction.
- 5.3. Remove electrical and mechanical as indicated in M & E outline specifications

6. ARCHITECTURAL WOODWORK

- 6.1. All Millwork to meet AWMAC standards and barrier free standards.
- 6.2. Allow for custom millwork at the new reception desk.
- 6.3. Refer to room drawings and section 10 for millwork in new construction.

7. THERMAL AND MOISTURE PROTECTION

- 7.1. Walls below grade:
 - The concrete foundation walls and grade beams will be insulated on the exterior using 50mm polystyrene SM insulation fastened to the concrete, with a cement board cover where exposed.
- 7.2. Walls above grade:
 - South Addition: Exterior curtain wall to be Kawneer Isoweb 1600 series (or equivalent) with warm-edge spacer. Glazing to be 25 mm sealed dual glazed with 6 mm (1/4") clear inner and outer panes, 12.5 mm (1/2") air space between panes, argon fill and Comfort T1-AC 40 coating on #2 surface. Vertical joints to be S.S.G. Provide allowance for some operable sashes. Provide spandrel panels as required.
 - North Addition: Steel wall panels with stainless steel fasteners, airspace, R30 rigid insulation, membrane air/vapour barrier, exterior gypsum sheathing, 20-gauge 92 steel studs, 16mm GWB.
- 7.3. Roofing
 - R30 (average) rigid insulation sloped to internal drainage system, with Thermoplastic Polyolefin (TPO) single ply roofing.
 - Miscellaneous flashings to match wall panels.

8. DOORS AND WINDOWS

- 8.1. Exterior doors and frames to be thermally broken aluminum with anodized finish. Glazing to be clear and reflective, high performance H.S.D.G. with superspacer as indicated on the drawings. Exterior service doors to be painted insulated steel doors and insulated steel frames c/w glazing
- 8.2. Interior doors to be stained, maple veneer solid wood core. Frames to be painted welded hollow metal frames. Interior glazing to be single pane tempered when in door or sidelight. Interior sidelites to be door height.
- 8.3. New full height glazing in dining room to be aluminium frames with single pane tempered glass.
- 8.4. Door hardware will be institutional grade quality with exit hardware. Glass to be tempered.
- 8.5. Provide 10 door operators.

9. FINISHES

- 9.1. Refer to Specific Rooms in Sections 10 and 11 of this document
- 9.2. Baseboards will be rubber baseboards

10. EXISTING ROOM SPECIFIC NOTES

10.1. E01 Weight Room

- Existing Flooring to remain.
- Provide new paint on existing concrete block walls.
- Paint existing metal doors frames and sidelites and heaters
- Paint existing metal stair and handrail.
- Exposed ceiling to remain.
- Refer to Mechanical and Electrical for upgrades.

10.2. E02 Corridor

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls.
- Paint existing metal doors frames and sidelites and heaters.
- Refer to Mechanical and Electrical for upgrades.

10.3. E03 Corridor

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls.
- Paint existing metal doors frames and sidelite.

- Refer to Mechanical and Electrical for upgrades.

10.4. E04 Waiting Area

- Provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new wood slat ceiling.
- Paint existing concrete block walls and columns.
- Paint existing metal door/window frames and sidelites and heaters.
- Refer to Mechanical and Electrical for upgrades

10.5. E05 Lobby Area

- Existing flooring to remain;
- Existing exposed ceiling to remain;
- Paint existing concrete block/precast walls;
- Paint existing metal door and window frames and sidelites
- Relocate two MTS telephones, fire pull station as required with demolition of east wall.
- Patch and make good ceiling in location of demolition of aluminum doors.
- Refer to Mechanical and Electrical for upgrades

10.6. E06 Vestibule

- Existing flooring to remain.
- Existing exposed ceiling to remain.
- Paint existing concrete block/precast walls.
- Refer to Mechanical and Electrical for upgrades

10.7. E07 Auditorium

- Provide new high quality vinyl tile flooring.
- Existing exposed ceiling to remain.
- Demolish existing room partition system and associated bulkhead, patch and repair surfaces.
- Paint existing concrete block/precast walls/gypsum wallboard walls.
- Paint existing metal door and window frames and sidelites.
- Refer to Mechanical and Electrical for upgrades.

10.8. E08 Stage

- Refinish hardwood flooring.
- Refinish stair treads with vinyl.
- Demolish existing handrails and provide new wood guards/handrails.
- Existing exposed ceiling to remain, provide new paint.
- Paint existing concrete block/precast walls/gypsum wallboard walls.
- Refer to Mechanical and Electrical for upgrades.

10.9. E09 Boardroom

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls.
- Paint existing metal doors frames and sidelites and heaters.
- Provide new wood closet doors
- Refer to Mechanical and Electrical for upgrades.

10.10. E10 Female W/C

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls. New GWB walls to be painted
- Paint existing metal doors frames and sidelites and heaters.
- Provide wall braced metal partitions.
- Washroom and misc. accessories to be Bobrick contoured line commercial grade (or equivalent) and include towel bars, toilet paper holders, paper towel dispensers, liquid soap dispensers, waste receptacles, coat hooks, folding shower seats, sanitary napkin dispensers/receptacles, include toilet grab bars for one accessible toilet per washroom
- Refer to Mechanical and Electrical for upgrades.

10.11. E11 Male W/C

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls. New GWB walls to be painted
- Paint existing metal doors frames and sidelites and heaters.
- Provide wall braced metal partitions.
- Washroom and misc. accessories to be Bobrick contoured line commercial grade (or equivalent)

and include towel bars, toilet paper holders, paper towel dispensers, liquid soap dispensers, waste receptacles, coat hooks, folding shower seats, sanitary napkin dispensers/receptacles, include toilet grab bars for one accessible toilet per washroom
·Refer to Mechanical and Electrical for upgrades.

10.12. E12 Coat Room

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls.
- Paint existing metal doors frames and sidelite.
- Refer to Mechanical and Electrical for upgrades.

10.13. E13 Corridor

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls. Paint new GWB walls
- Paint existing metal doors frames and sidelite.
- Refer to Mechanical and Electrical for upgrades.

10.16. E14 Electrical Room

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls.
- Paint existing metal doors frames and sidelite.
- Refer to Mechanical and Electrical for upgrades.

10.15. E15 Store Room

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing tile on stairs and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls.
- Paint existing metal doors frames and sidelite.
- Refer to Mechanical and Electrical for upgrades.

10.14. E16 Prep Room

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls.
- Paint existing metal doors frames and sidelite.
- Refer to Mechanical and Electrical for upgrades.

10.17. E17 W/C

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls.
- Paint existing metal doors frames and sidelite.
- Replace plumbing fixtures.
- Refer to Mechanical and Electrical for upgrades.

10.18. E18 Janitors Closet

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls.
- Paint existing metal doors frames and sidelite.
- Demolish Plumbing and provide new mopsink.
- Provide metal shelf and accessories associated with mopsink.
- Refer to Mechanical and Electrical for upgrades.

10.19. E19 Corridor

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls.
- Paint existing metal doors frames and sidelites and heaters.
- Refer to Mechanical and Electrical for upgrades.

10.20. E20 Corridor

- Remove existing tile floor and provide new vinyl tile flooring.
- Remove existing acoustic ceiling tile and provide new acoustic ceiling tile.
- Paint existing concrete block walls.
- Paint existing metal doors frames and sidelites and heaters.
- Refer to Mechanical and Electrical for upgrades.

11. NEW CONSTRUCTION ROOM SPECIFIC NOTES

11.1. N01 Carpentry Shop

- Flooring to be exposed concrete.
- Walls to be clear coated plywood.
- Ceiling to be exposed structure
- Owner supplied equipment to be located in room: band saw, drill press, planar/jointer, table saw, mitre saw on stand, dust collection system, table and benches, storage cupboards
- Provide Dust Collection system c/w Dust Collector. Provide one hour fire separation wall around dust collector.
- 220 V required
- Eyewash station

11.2. N02 Multi Purpose Room No. 1

- Flooring to be sheet vinyl.
- Walls to be painted gypsum wallboard.
- Ceiling to be acoustic ceiling tile.

11.3. N03 Corridor

- Flooring to be sheet vinyl.
- Walls to be painted gypsum wallboard.
- Ceiling to be acoustic ceiling tile.

11.4. N04 Computer Area

- Flooring to be ground concrete.
- Exterior Walls to be curtainwall, interior walls to be full height glazing and painted gypsum wallboard.
- Ceiling to be wood slat ceiling.

11.5. N05 Dining Room

- Flooring to be ground concrete;
- Walls to be to be full height glazing and painted gypsum wallboard.
- Ceiling to be 50% acoustic ceiling tile, 50% wood slat ceiling.
- Provide 8'0 wide Overhead rolling shutter to Auditorium

11.6. N06 Community Kitchen

- Flooring to be Sheet Vinyl.
- Walls to be painted gypsum wallboard.
- Ceiling to be acoustic ceiling tile.
- Provide 8'0 wide Overhead rolling shutter to Auditorium
- Equipment to be included in contract: Hand washing sink with footpump, Walk in Cooler (70L x50D), Walk-in Freezer(70L x 50D), 30" over counter microwave, 3 electric ranges (separate stations), Large island, 3 compartment sink with garburator, pot sink, walk in pantry/storage, stacked full size washer/dryer, dishwasher.

11.7. N07 Corridor

- Flooring to be ground concrete.
- Exterior Walls to be curtainwall, interior walls to be full height glazing and painted gypsum wallboard;
- Ceiling to be wood slat ceiling

11.8. N08 Administration Offices & HART Office

- Flooring to be Carpet.
- Walls to be painted gypsum wallboard.
- Ceiling to be acoustic ceiling tile.

11.9. N09 HART Clinic Rooms

- Flooring to be Sheet Vinyl.
- Walls to be painted gypsum wallboard.
- Ceiling to be acoustic ceiling tile.

11.10. N10 Multi Purpose Room No. 2

- Flooring to be ground concrete.
- Exterior Walls to be curtainwall, interior walls to be full height glazing and painted gypsum wallboard;
- Ceiling to be wood slat ceiling.

11.11. N11 Washrooms

- Flooring to be Sheet Vinyl.
- Walls to be painted gypsum wallboard.
- Ceiling to be acoustic ceiling tile.

12. SPECIALTIES / ACCESSORIES

- 12.1. Kitchen Equipment as specified in Section 11.6.
- 12.2. Provide new lighting in all areas indicated as renovated on building plans

NOTE: All other mechanical and electrical items to be covered within the mechanical and electrical outline specifications.

5.7 STRUCTURAL OUTLINE SPECIFICATION

For original document, refer to appendix

1. Foundations:

·The new building will be founded on cast-in-place piles in accordance with the geotechnical investigation report that will be prepared for this project.

2. Main Floor Framing:

·The building perimeter structure will supported on a perimeter concrete grade beam

·The beams shall typically be 8" x 24" and reinforced with 2 25M bars top and bottom and 10M stirrups spaced at 14" on center.

·The beams will be designed and reinforced in accordance to CSA Standard A23.3.

·A 6" void will be provided below all grade beams.

·The main floor will consist of a 6" thick cast-in-place two-way structural slab supported by the grade beams around the perimeter and piles spaced at approximately 14' on centre within the interior.

·Reinforcing will typically be 15M at 12" on center each way bottom with 10 - 15 15M x 9' bars each way over piles

·A 6" void will be provided below all structural slabs.

3. Wall Framing

·The exterior walls for the north addition will be framed with 20 gauge steel spaced at 16" on centre. They will be vertical and wind load bearing.

·They will not be designed to carry any vertical load.

·Steel HSS bracing will be required in these walls.

·The exterior walls for the south addition will be curtain wall with steel studs above. This will require steel girts above the curtain wall and they will have to be tied back to the steel columns noted below.

·The steel framing in these walls will have to be designed as moment resisting portal frames or bracing will have to be added between the steel columns on the inside face of the curtain wall.

4. Roof Framing

·Roof framing will consist of deep open web steel joists spaced at approximately 6'-0" on centre.

·These will in turn be supported by a series of steel beams and columns.

·The roof decking will be 22 gauge 1 1/2" thick.

·Lateral loads will be taken down to the foundation via HSS steel cross-bracing or portal frames.

5. Live loads Due to Use, Occupancy, Snow, Ice, Rain and Wind

·Roof Design Snow, Ice and Rain Load

·The basic ground snow load S_s for St. Claude is 1.9 kPa

·The rain load S_s is 0.2 kPa

·The specified design roof snow load $S = I_s(S_s (C_b C_w C_s C_a) + S_r)$

$I_s = 1.0$ (building is considered normal)

$C_b = 0.8$

$C_w = 1.0$

$C_s = 1.0$

$C_a = 1.0$

$S = 1.0(1.9(0.8 \times 1.0 \times 1.0 \times 1.0) + 0.2) = 1.72 \text{ kPa}$

·Built up snow loads on the canopy will be calculated in accordance with the 2010 Manitoba Building Code.

·Wind Design

·The reference velocity pressure having a probability of being exceeded in any one year of 1 in 50 will be used for the design of structural members in general:

$$q_{50} = 0.45 \text{ kPa}$$

The specified external pressure or suction due to wind on part or all of the surface of the building will be calculated from:

$$p = lwq C_e C_g C_p$$

The specified internal pressure or suction due to wind will be calculated from:

$$p_i = lwq C_e C_g C_{p_i}$$

·The net specified pressure due to wind on part or all of the surface of the building will be algebraic difference of the external and internal pressures.

Floor Design Live Loads

·The main floor will be designed for a live load of 4.8 kPa.

·The mechanical room (if any) will be designed for the minimum live load of 7.2 kPa plus the specific weight of the equipment and housekeeping pads.

·The renovations do not require any significant structural modifications.

5.8 MECHANICAL OUTLINE SPECIFICATION

For original document, refer to appendix

The following outline specification is based on a schematic design and intended for preliminary cost projections and design review only.

1. General

- 1.1. Unless otherwise noted, the terms "install" or "provide" shall include the complete supply and installation of the items noted including all equipment, materials and commissioning necessary for a fully functional system.
- 1.2. All work and materials shall meet or exceed the minimum requirements of the National Building Code, and all local building codes and municipal requirements.
- 1.3. The mechanical contractor shall include all air balancing, fire damper inspection, piping pressure testing and equipment commissioning.
- 1.4. Equipment capacities given are preliminary and subject to final design.
- 1.5. Refer to architectural drawings for room layouts, general areas, and quantities for takeoffs.

2. Basis of Design

- 2.1. Schematic drawings by 1 x 1 Architecture dated 12-08-24.
- 2.2. City of Winnipeg Space Programming Document dated 12-07-03.

3. Site Services

- 3.1. No additional site services for mechanical systems are anticipated.

4. Fire Protection

- 4.1. The building currently does not have a wet sprinkler system.

5. Plumbing

- 5.1. Disconnect all plumbing systems serving the canteen.
- 5.2. Piping Materials
 - Domestic cold, hot, and recirculation (DCW, DHW, and DHWR) piping to be Type L Copper.
 - Drainage, waste and vent (DWV) piping shall be cast-iron/copper. Rain-water leaders shall be cast-iron. Below-grade DWV and storm drainage piping shall be PVC DWV.
 - Thermally insulate all domestic hot water lines, insulation shall be ½" thick. Thermally insulate all domestic cold water main lines, insulation shall be ½" thick. Insulation type shall be Fibreglass 455°C (850°F) pipe insulation, 5 lb. per cubic foot density with factory applied ASJ vapour barrier jacket (on DCW).
- 5.3. Install fire stopping between all fire separations as required by architectural plans.
- 5.4. Roof drains:
 - Install control-flow roof drains, 3" drain, single weir, cast-iron grate.
 - Roof drain locations and quantity:
 - 2 drains, new addition (south side)
 - 2 drains, new addition (north side – carpentry shop & MPR-2)
 - Rain water leaders shall be 3" diameter and run in the ceiling space, drop down to floor level in an enclosed chase, and discharge to grade level on the east side of the building. Install concrete splash pads at discharges.
 - All roof drainage piping shall be thermally insulated and jacketed. PVC jacket, or canvas painted to architectural specifications.
 - Roof drainage piping shall have a trap and cleanout to prevent cold air migration through the pipes. Locate traps at ceiling level.
- 5.5. Remove all washroom fixtures and piping rough-ins in the main washrooms (see Main Demolition Plan) and the ceiling of the basement below for all fixtures in the washrooms and kitchenette/servery.
- 5.6. Install new washroom fixtures to match the new washroom layout (Men's and Women's). The sanitary drainage piping will be run in the ceiling of the basement below. Allow for completely new drainage piping to serve the new washrooms, connecting to a main 6" drain. This drain will connect to the nearest existing sanitary main or riser in the basement ceiling.

- 5.7. Install new domestic hot, cold, and recirculation piping from the nearest mains to the new washroom fixtures. Install a main shut-off valve on each system for each washroom group.
- 5.8. Fixtures for washrooms shall be as follows.
- Watercloset WC-1: Floor-mounted, automatic flush-valve toilet, 4.8 L (1.28 gal.) per flush, open-front seat for elongated bowl, self-sustaining concealed check hinge, white.
 - Watercloset WC-2: Floor-mounted, automatic flush-valve toilet, 4.8 L (1.28 gal.) per flush, barrier-free height, open-front seat with cover for elongated bowl, self sustaining concealed check hinge, white.
 - Urinals UR-1: Waterless urinals to meet make/model approved by City of Winnipeg. Vitreous china construction.
 - Lavatories LAV-1: Countertop lavatory, vitreous china, self rimming deck mount, three hole, with 4" centres, complete with overflow, ADA compliant. Faucet: touch-free automatic faucet, c/w mixing valves for each.
 - Floor drains FD-1: 5" bronze strainer, 3" outlet, select model suitable for floor construction/material.
- 5.9. Washroom fixture quantities:
- Men's washroom: 3 WC-1 waterclosets, 1 WC-2 watercloset, 2 urinals, 3 lavatories, one floor drain.
 - Women's washroom: 7 WC-1 waterclosets, 1 WC-2 watercloset, 5 lavatories, one floor drain.
 - Men's stand-alone washrooms (2 locations): 1 WC-2 watercloset, 1 lavatory, one floor drain.
 - Women's stand-alone washrooms (2 locations): 1 WC-2 watercloset, 1 lavatory one floor drain.
- 5.10. Install a new molded-stone mopsink in the janitor's room adjacent to the single washrooms north of the stage.
- 5.11. Note that the locations of the two individual washrooms north of the stage will remain. Replace the fixtures using existing drainage and supply piping rough-ins. Install new floor drains in each washroom.
- 5.12. Install new roughins and fixtures in the new kitchen. Drainage piping for the kitchen and the new washrooms shall be run below the floor slab and run back through the crawlspace below the auditorium to connect to the nearest drainage main. Domestic supply piping shall run in the crawlspace then rise in an interior stud wall to distribute to the kitchen fixtures and washroom fixtures from the ceiling level. Kitchen fixtures to consist of:
- Two triple-compartment stainless steel (residential or light commercial) sinks, c/w long-spout faucet, single lever. C/w dishwasher connections from each.
 - Two single-compartment stainless steel sinks, c/w long-spout faucet, single lever.
 - Two floor drains.
 - Install a sink and all related piping in each of MPR-1 & MPR-2. Sinks shall be single-compartment stainless steel sinks, c/w long-spout faucet, single lever.
 - Install a sink and all related piping in the Hart clinic room. The sink shall be a stainless steel handwash sink, c/w goose-neck spout, 4"blade handles, laminar aerator (to meet CSA 317.1 requirements).
 - Install new natural gas piping on the rooftop to serve the new gas-fired heat/cool units.

6. HVAC

- 6.1. Generally: install manual balance dampers on all supply, return, and exhaust duct branches to diffusers and grilles.
- 6.2. Include air balancing of all systems by a certified balancing contractor.
- 6.3. Disconnect all HVAC systems serving the canteen. Salvage the ductless-split airconditioning unit and return to the City.
- 6.4. Install new package gas/electric heat/cool units (RTUs) to serve the new additions and renovated areas as noted. Refer to the attached schedule. RTUS shall have high efficiency cooling, direct drive ECM motor, complete with cold weather kit, fully modulating economizer with gravity exhaust dampers & outdoor filter, free cooling control, CO2 demand-control ventilation, factory acoustic roof curb/plenum, down discharge.
- 6.5. RTUs 1, 2, and 3 will serve the new addition on the south side. Locate the units above the MPR-2 so the Auditorium windows are not blocked. Install main supply duct runs from the units to serve the rooms/zones described in the schedule.
- RTU-1 & 2 shall have a return duct drop and elbow into the ceiling return air plenum. Acoustically line the return air drop. Each room in these zones shall have a ceiling egg-crate return air grille with an acoustic elbow in the ceiling.
 - Supply air from RTU-1 & 2 shall be ducted to each of the rooms in their respective zones, c/w thermally insulated supply ducting, balance dampers on each branch duct, 24" x 24" square-cone diffusers to each room (allow for up to 200 cfm per diffuser).

- RTU-3 shall have a return duct run from the unit to the Dining Room. Allow for a large ceiling egg-crate return air grille or a sidewall grille (eg. Price Model 530).Acoustically line the return duct for the first 20' from the unit. Install a transfer grille between the Community Kitchen and the Dining Room.
- Supply air from RTU-3 shall be ducted to the Community Kitchen and the Dining room, c/w thermally insulated supply ducting, balance dampers on each branch duct, 24" x 24" square-cone diffusers or exposed round-cone diffusers (eg. Price RCD) in each room (allow for up to 200 cfm per diffuser).

- 6.6. Allow for two roof exhausters for the south addition, Delhi or equal, for hood exhaust. Each fan shall be ducted to connect to two range hoods (non-grease cooking). Size for 250 cfm from each range hood of four range hoods for a total of 500 cfm from each fan. Ducting shall have water-proof sealed seams. Four 30" wide stainless-steel range hoods shall be supplied by the kitchen supplier. Control each of the two fans with a mechanical spring-wound 1 hour timer.
- 6.7. Install a ceiling washroom exhaust fan in each of the new stand-alone washrooms next to the Hart offices. Fans shall discharge to rooftop goosenecks or roof jacks. Control each of the two fans with a mechanical spring-wound 1 hour timer.

6.8. MPR-1 HVAC:

- Install copper pipe/aluminum fin wall-fin radiation in the MPR-1 to provide heating to the MPR-1. Connect the wall fin piping to the existing hydronic supply and return piping in the main building. The wall-fin shall have a control valve connected to a pneumatic space thermostat within the MPR-1. Run slope-top wall-fin cover continuously along the east wall of MPR-1. Allow for 15' of active fin, estimate 700 btuh/linear ft.
- Install an HRV to provide fresh air ventilation to the MPR-1. The HRV shall be 500 cfm capacity c/w 5 kW duct heater and SCR control. The HRV shall be located above the service space just south of MPR-1, with intake and exhaust ducts through the east wall terminating with galvanized steel hoods and backdraft dampers. Thermally insulate the intake and exhaust ducting from the HRV to the wall.
- Supply from the HRV to a single side-wall grille on the south wall of MPR-1. This diffuser shall deliver approximately 200 cfm of air. Extend another supply duct to the north wall of the MPR-1 and supply 200 cfm via sidewall diffuser into the Carpentry Shop, c/w fire damper at the wall.
- Exhaust air from the MPR-1 through a single side-wall grille on the south wall at the other side of the room. Balance to approximately 200 cfm. Install another exhaust duct branch to the two single washrooms and the janitor room just south of the MPR-1 and exhaust 67 cfm from each. Install new stainless steel egg-crate exhaust grilles in each of the reconfigured washrooms and the janitor room.
- Control the HRV with a 24-hr/7-day programmable controller located in the service space near the HRV. The duct heater shall be controlled with a duct thermostat on the supply duct.
- Install a ductless-split DX air conditioning system to serve MPR-1. The system shall be nominal 1.5 tons capacity. The indoor unit shall be a ceiling cassette unit with 4-way diffuser. Locate the condensing unit on the MPR-1 rooftop.

6.9. Carpentry HVAC:

- Install two electric unit heaters, suspended from the ceiling in the Carpentry Shop. Unit heaters shall be sized at 3 kW each, and shall be controlled by a single space thermostat, line voltage.
- Supply and install a new dust collector. The dust collector shall be a portable indoor unit, sized for up to 1200 cfm, two 4" diameter ports for up to two machines simultaneously. Unit shall be King Industrial Model KC-3108C 1200 cfm dust collector, or equal. 2 hp motor, 220 V 1 phase.
- Install a general exhaust fan to serve the Carpentry Shop. The fan shall be a roof exhauster, Delhi or equal. The fan shall be ducted to two ceiling-level exhaust grilles in the shop. Size the fan for 225 cfm. Control each of the two fans with a mechanical spring-wound 1 hour timer.

6.10. RTU-4 Weight Room:

- Disconnect and remove the existing ducting in the weight room. Cap the main air handler supply ducts at the air handler or main branch take-offs.
- RTU-4 shall serve the existing Weight Room. Locate the unit at grade on the north side of the weight room. Duct the supply duct on the exterior of the weight room wall and enter the weight room at high level. Distribute with a system of new ductwork and round cone diffusers (Price RCD or equal). Size diffusers for max 200 cfm each.
- Run the return ducting up the exterior wall to high level of the weight room. Install a new sidewall return air grille (Price 530 or equal).
- All exterior ducting shall be thermally insulated, jacketed, and weather-proofed.
- Existing ceiling fans and exhaust fans in the weight room to remain.

6.11. RTU-5 &6 Lobby & Seating Areas

- RTU-5 & 6 will serve the Lobby & Bench / Seating areas. Locate the units above the rooftop above. Install main supply duct runs from the units to serve the rooms/zones described in the schedule. Supply ducting shall be run in the ceiling to ceiling supply diffusers, Price 24" x 24" SCD or equal. Size for no

more than 200cfm per diffuser.

·RTU-5 & 6 shall have a return duct drops and elbow into the ceiling return air plenum. Acoustically line the return air drop. Install ceiling egg-crate return air grille with an acoustic elbows in the ceiling in several locations to transfer return air.

7. Controls

- 7.1. Each new air handling unit shall be supplied with local digital thermostat with 24-hr/7- day programmable capacity including fan, heating, and cooling control. The thermostats shall have the option to connect to the main DDC system for monitoring status.
- 7.2. All RTUs shall be complete with factory-supplied CO2 sensors in the zones for demand-control ventilation. The controls shall modulate open the outside air dampers from minimum position with rising CO2 levels to meet varying ventilation demand.
- 7.3. All controls wiring by controls contractor, including wiring of devices not integrated to the building automation system (BAS).

8. Commissioning

- 8.1. Provide commissioning of all mechanical systems. At a minimum the commissioning shall include all functional performance checks, system verifications.
- 8.2. Commissioning forms shall be provided for all intermediate and final commissioning checks.
- 8.3. Commissioning shall also include any seasonal commissioning that may be required within the first year to check or commission certain systems.

PACKAGE ROOFTOP HEAT/COOL UNITS

MARK	MAKE/MODEL (based on Lennox)	ZONE SERVED	SUPPLY AIRFLOW		HEAT INPUT (MBH)	FILTERS	NOMINAL COOLING CAPACITY (tons)	VOLTAGE/PH	NOTES
			(cfm)	(%)					
RTU-1	LGH048H4E	Hart offices, MPR2	1,500	15 - 20%	73 / 105	MERV 13	4	575/3	1,2
RTU-2	LGH048H4E	Program/Admin Offices	1,600	10 - 15%	65	MERV 13	4	575/3	1,4
RTU-3	LGH048H4E	Kitchen/Dining	1,500	20%	73 / 105	MERV 13	4	575/3	1,3
RTU-4	LGH048H4E	Weight Room	1,600	15 - 20%	73 / 105	MERV 13	4	575/3	1,2
RTU-5	LGH048H4E	Bench/Viewing Area	1,500	15 - 20%	73 / 105	MERV 13	4	575/3	1,2
RTU-6	LGH048H4E	Lobby/Reception	1,500	15 - 20%	73 / 105	MERV 13	4	575/3	1,2

Notes:

1. High efficiency cooling, direct drive ECM motor, complete with cold weather kit, fully modulating economizer with gravity exhaust dampers & outdoor filter, free cooling control, CO2 demand-control ventilation, factory acoustic roof curb/plenum, down discharge.
2. 2-stage gas heating, aluminized-steel heat exchanger.
3. 2-stage gas heating, stainless-steel heat exchanger.
4. 1-stage gas heating, aluminized-steel heat exchanger.

5.9 ELECTRICAL OUTLINE SPECIFICATION

For original document, refer to appendix

Project Summary:

1. New addition and renovation of the subject location to accommodate both public and the St. James Assiniboia 55+ Centre uses.

Electrical Provisions:

2. Provide electrical demolition as required to accommodate renovation. Refer to architect's demolition plan for areas to be demolished. All electrical outside the areas of renovation is to be maintained operational throughout the project. Re-route/re-wire as required. No wiring and/or raceways are to be left abandoned within the renovated area. Remove back to associated panel where practicable.
3. Existing overhead service is to be revised to underground. A new 1000A-347/600V-3ph-4w pad mounted CSTE c/w metering is proposed to be located at the east property line, subject to Manitoba Hydro's acceptance. From CSTE the existing 600A-600V-3ph-3w distribution is to be re-fed. A second feed from the CSTE to an exterior weather-proof 225kVA dry-type transformer shall feed the existing 800A-120/208V-3ph-4w service. A new 200A-347/600V-3ph-4w service is anticipated to feed the new addition. It will be located within the new addition.
4. Provide a separate price to relocate the existing 600V and 120/208V services from the bleacher area of the rink to the basement. New main fusible disconnect switches and CDPs will be required to minimize downtime. All existing loads are to be reconnected.
5. Provide new lighting throughout renovated areas. Refer to architect's renovation plan for areas to be renovated. Proposed luminaires are as follows:
 - Weight Room: suspended direct/indirect T5 fluorescents for a 500 lux average light level, with occupancy sensor control.
 - Lobby: new T5 fluorescent fixtures, type to be compatible with new ceiling type.
 - Auditorium: surface mounted T5 HO fluorescent luminaires, c/w dimming ballasts (to accommodate the variety of uses for this room). Existing stage lighting is anticipated to remain.
 - Boardroom, Multi-purpose rooms: T5 fluorescent luminaires, c/w dimming ballasts (to accommodate the variety of uses for this room)
 - Carpentry: Class 3, Div. 1 dust-tight fluorescent fixtures surface mounted.
 - Dining Room: Combination of fluorescent and incandescent fixtures.
 - Other areas: fluorescent compatible with ceiling type.
 - Exterior lighting for the new addition to be wall mounted HID.
6. Provide local line voltage lighting control within each room.
7. Provide receptacles to meet user's requirements and as per code.
8. Wire & connect all owner's equipment including kitchen and carpentry equipment.
9. Provide emergency lighting and exit signage throughout the complex to meet code. Emergency lighting is to be remote DC heads c/w central battery banks to provide 60 minutes backup capacity. All exit signs in the building are to be the new running man style.
10. Provide a code conforming fire alarm system extension throughout the renovated and new addition areas. Existing FACP is an addressable Simplex 4100U. As the building is not sprinklered throughout, heat detection is required. Audible devices are to match existing bells. Strobe lights are to be installed throughout the complex in all occupied areas. Provide fire alarm verification inspection of all new/modified devices.
11. Provide voice/data outlets in all offices, kitchen, clinic rooms, MPRs, Boardroom, and the Carpentry shop. Each outlet is to be provided a minimum of two Cat 6 UTP cables back to the LAN rack in the basement.
12. Wire & connect all new mechanical equipment. Refer to mechanical outline specifications for details.
13. Any required security system revisions are N.I.C. at this time.
14. Wiring method to generally be EMT conduit. Minimum wire size #12 AWG copper.

6.0 COST ESTIMATE

Refer to appendix for cost estimate breakdown. The following outlines total project costs:

The Class C cost estimate as attached in the appendix is indicated as \$4,218,955.00. The accuracy of this estimate at level 'C' should range between -20% to +20%

Escalation Factor

An escalation factor of 6% for construction to commence in September 2014 should be allowed. Note that this is only an estimate as projecting construction costs 24 months in the future is speculative.

6 % of Construction Cost (\$4,218,955.00)
Add \$253,137.30

Subtotal: **\$4,472,092.30 Construction Cost Estimate**

Design Fees

Consultant fees including Architectural, Structural, Mechanical and Electrical. An estimate of this fee is 10%
10 % of Construction Cost (\$4,472,092.30)

Add \$447,209.23

City of Winnipeg Overhead (Finance and Administration)

5% of Construction Cost (\$4,472,092.30)

Add \$223,604.62

Project Administration for City of Winnipeg

10% of Construction Cost (\$4,472,092.30)

Add \$447,209.23

TOTAL PROJECT COST \$5,590,115.38 + GST

Exclusions:

- Costs of asbestos removal if required;
- Relocation of existing facilities, including furniture and equipment;
- Cost of new furniture and equipment;
- Special audio, visual, security equipment;
- Window treatments;
- Geotechnical report and survey.

NOTE:

The cost estimate does not include any work to the swimming pool, hockey arena, addition of an elevator, any upgrades to washrooms (except for the auditorium), basement or second floor renovations or alternations to bring the exiting out of the basement and second floor through the main floor up to current National Building Code standards. If the Authority Having Jurisdiction requires any of the above or other requirement related to bringing the existing building up to current National Building Code standards, the cost estimate will be above and beyond that shown.

7.0 APPENDICES

·Functional Program supplied by St. James Assiniboia 55+ Centre

·Structural Assessment and Outline Specification

·Mechanical Assessment

·Mechanical Outline Specification

·Electrical Assessment

·Electrical Outline Specification

·Cost Estimate Cover Letter

·Cost Estimate Breakdown

St James 55+ Centre Space Requirements

3-Jul-12

SHARED SPACE EXISTING	SQ FT	Estimated size of groups using space	
MAIN FLOOR			
Gym	4574	Pickle ball Dinners Aerobic - Lite and Lively Aerobic - T. Body Workout Aerobic - Zumba Drop in clinics	Divisible? Floor markings? Storage? Divisible-partitions? Floor markings? Storage? Mon-Fri all day 3/mo.
		100+	1-3/year
		<25	Mon.Wed. 9am
		<25	Tues. 9am
		<25	Mon.Thurs. 10am
Exercise Room	381		
		<5	
Stage (estimated space size)	1100	Yoga - Invitational Yoga - Chair Yoga - Beginners Pilates -	Mobile barrier? Mat storage Wed. 9am Fri. 9am
		<15	
		<15	
		<15	
Carpentry Shop	416	Men's drop in	Wed.Thur. 1pm
Rink Room under bleachers	300	renovated for use beyond storage	renovated/expanded (to 1,000 sq ft)?
Coat Storage	543	storage beyond coats	renovated for multipurpose
BASEMENT			
West room	759	Shuffleboard Shuffleboard Floor curling Floor curling Men's drop in	Storage space Floor markings Storage space Floor markings Renovations
		<20	Mon. 12pm
		<21	Fri. 10am
		<20	Wed. 1pm
		<21	Sat. 9am
East room	1272		Wed.Thur. 1pm
SECOND FLOOR			
East conference room	400	Board meetings Computer course/clinics	Wireless access for laptops locked storage
		<5	12 Thurs. 10am
West conference room	400	Writing/arts programs Gamers Scrabble Crafters Stamp club Parkinson/Stroke groups	storage-tables, chairs, etc. storage-tables, chairs, etc. storage-tables, chairs, etc. storage-tables, chairs, etc. storage-tables, chairs, etc. storage-tables, chairs, etc.
		<20	Mon. Wed. 10am
		<20	Sat. 1pm
		<20	Fri. 1pm
		<20	Mon. 1pm
		<20	Tues. 930am
		<20	Tues. 1pm
		<20	Wed. 1pm
Multi-purpose room	1154	Meditation Singsationals Watercolours	locking storage locking storage locking storage
		<25	
		<25	
		<20	

		<u>Summary</u>				
		sq. ft.	New construction			
Renovation - shared space existing		11,299				
New development						
	Shared	1934	3714			
	Sole use	1780				
Grossing factor plus 35%		1300	1300			
Total project		16,313	5,014			

Structural

1.0 Existing Building

The original building was constructed in 1965 and added to at various times. Existing structural drawings of the original structure and most of the additions were made available for review. The only drawings that were not available were the drawings for the current staff room located to the north of the auditorium. The findings noted in the report are based on our visual review of the existing structure and our review of the existing drawings.

The existing foundation consists of a combination of cast-in-place caissons and belled piles bearing on hardpan and approximately 25' below existing grade. The allowable bearing capacity of the hardpan is not given in the drawings. Type 50 sulphate resistant concrete was used in all of the piles. On the basis of the foregoing, a geotechnical investigation will be required in order to properly design the foundations for the additions.

There is a partial basement which houses a former rifle range, mechanical rooms, storage and staff areas. The foundations noted in the foregoing support 10" thick basement walls in these areas and cast-in-place grade beams throughout the remainder of the building area.

These walls and beam in turn support structural concrete slabs. Piles directly support the floor in areas where there are two way structural slabs.

The roof structure over the auditorium and pool area consists of 24" deep precast concrete single tees spanning the width of these areas. These tees are supported by cast-in-place concrete beams which in turn are supported by concrete columns. The roof structure over the remaining area (not including the arena area) consists of structural steel deck over open web steel joists supported by steel beams or load bearing concrete block walls.

The roof structure for the arena is not on the existing structural drawings and was presumably constructed as a design-build component.

2.0 Structural Condition

For the most part, the structural condition of this front portion of the building (arena excluded) is in good condition with very few cracks or other signs of deterioration. The only area of concern was the north basement wall of the former rifle range where there is a significant

horizontal crack about half way up the wall. It is our opinion that this crack should be repaired as part of this redevelopment.

3.0 Feasibility of Proposed Additions

3.1 North Addition

The proposed north addition will consist of adding one storey space for a multipurpose room and a carpentry shop.

This addition will be adjacent to the north side of north east corner of the front original 1965 building and to the east of the staff room/corridor addition.

Since we are not penetrating the existing wall separating the two structures with any significant openings, this addition will be relatively simple to frame.

3.2 South Addition

The proposed south addition will consist of adding a one storey space that will house a variety of functions relating the fifty five plus activity centre.

It will involve the demolition of the south precast concrete wall and part of the demising wall that separates the auditorium from the lobby area.

From a structural point of view, these walls serve two purposes. They must resist wind loading perpendicular to the direction of the wind and also provide lateral stability to the structure as a whole by acting as a shear wall. The demolition of these walls may require that some bracing be added or that part of the wall is not demolished. This will be confirmed during the design stage of this project.

The design of the remainder of this addition poses no significant structural issues.

4.0 Outline Specifications

Structural Outline Specification

4.1 Foundations:

The new building will be founded on cast-in-place piles in accordance with the geotechnical investigation report that will be prepared for this project.

4.2 Main Floor Framing:

The building perimeter structure will be supported on a perimeter concrete grade beam.

The beams shall typically be 8" x 24" and reinforced with 2 25M bars top and bottom and 10M stirrups spaced at 14" on center.

The beams will be designed and reinforced in accordance to CSA Standard A23.3.

A 6" void will be provided below all grade beams.

The main floor will consist of a 6" thick cast-in-place two-way structural slab supported by the grade beams around the perimeter and piles spaced at approximately 14' on center within the interior.

Reinforcing will typically be 15M at 12" on center each way bottom with 10 - 15 15M x 9' bars each way over piles.

A 6" void will be provided below all structural slabs.

4.3 Wall Framing

The exterior walls for the north addition will be framed with 20 gauge steel spaced at 16" on center. They will be vertical and wind load bearing.

They will not be designed to carry any vertical load.

Steel HSS bracing will be required in these walls.

The exterior walls for the south addition will be curtain wall with steel studs above. This will require steel girts above the curtain wall and they will have to be tied back to the steel columns noted below.

The steel framing in these walls will have to be designed as moment resisting portal frames or bracing will have to be added between the steel columns on the inside face of the curtain wall.

4.4 Roof Framing

Roof framing will consist of deep open web steel joists spaced at approximately 6'-0" on centre.

These will in turn be supported by a series of steel beams and columns.

The roof decking will be 22 gauge 1 1/2" thick.

Lateral loads will be taken down to the foundation via HSS steel cross-bracing or portal frames.

4.5 Live loads Due to Use, Occupancy, Snow, Ice, Rain and Wind

Roof Design Snow, Ice and Rain Load

The basic ground snow load S_s for St. Claude is 1.9 kPa

The rain load S_r is 0.2 kPa

The specified design roof snow load $S = I_s(S_s (C_b C_w C_s C_a) + S_r)$

$I_s = 1.0$ (building is considered normal)

$C_b = 0.8$

$C_w = 1.0$

$C_s = 1.0$

$C_a = 1.0$

$S = 1.0(1.9(0.8 \times 1.0 \times 1.0 \times 1.0) + 0.2) = 1.72 \text{ kPa}$

Built up snow loads on the canopy will be calculated in accordance with the 2010 Manitoba Building Code.

Wind Design

The reference velocity pressure having a probability of being exceeded in any one year of 1 in 50 will be used for the design of structural members in general:

$$q_{50} = 0.45 \text{ kPa}$$

The specified external pressure or suction due to wind on part or all of the surface of the building will be calculated from:

$$p = I_w q C_e C_g C_p$$

The specified internal pressure or suction due to wind will be calculated from:

$$p_i = I_w q C_e C_g C_{pi}$$

The net specified pressure due to wind on part or all of the surface of the building will be algebraic difference of the external and internal pressures.

Floor Design Live Loads

The main floor will be designed for a live load of 4.8 kPa.

The mechanical room (if any) will be designed for the minimum live load of 7.2 kPa plus the specific weight of the equipment and housekeeping pads.

The renovations do not require any significant structural modifications.

Mechanical Systems Review
St. James Assiniboia 55+ Relocation

Total Pages: 3
Date: 2012-09-17

SCOPE OF WORK

This report will provide commentary on the impact on the existing mechanical systems of the proposed relocation of the St. James Assiniboia 55+ Centre from the current location at the Deer Lodge Centre to a proposed new location at the St. James Civic Centre.

This report will provide some brief commentary on the central systems of the building in general, but will be mainly focused on the systems that would be affected by the proposed renovation and addition shown in the Schematic Drawings by 1 x 1 Architecture.

DOCUMENTATION

Documents which provide background or input to this report are listed below. In addition, the St. James Civic Centre mechanical systems were visually reviewed during an on-site walk-through of the building.

- 1.1. City of Winnipeg Space Programming Document dated 12-07-03.
- 1.2. 1 x 1 Architecture Space Programming Document dated 12-08-23.
- 1.3. Schematic drawings by 1 x 1 Architecture dated 12-08-24.

CODE ISSUES RELATED TO THE 55+ PROGRAM

The program requirements of the 55+ program do not result in too many un-typical code requirements beyond those expected for a new building or addition. Generally, code requirements for the new and renovated areas will be related to providing adequate ventilation air to meet the occupant demands, and provision of adequate heating and cooling. The two areas that merit a closer look are the Carpentry Shop and the Community Kitchen.

The Carpentry Shop should have a dust collection system to exhaust and filter any activities creating dust. Volatile substances such as paints, thinners, etc. should not be stored in the Carpentry Shop unless they are in a specially designed containment area. Other point-of-source exhaust pickups may be required depending on the activities such as painting or staining. Based on the program it appears that a small dust collection system with corresponding general ventilation and exhaust should satisfy code requirements for this area, assuming any controlled substances are stored outside of this room.

The Community Kitchen has been defined by the users as a non-commercial kitchen (i.e. no cooking with grease-laden vapours). As such it will not fall under the requirements of NFPA 96 (Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations), which would necessitate ULC listed grease hoods and exhaust fans, welded grease duct, dry chemical suppression system, and a make-up air unit. Additional requirements were this to be a commercial kitchen would include grease interceptor(s), and other plumbing requirements. As described, this kitchen will be used as a teaching kitchen or for group cooking activities similar to residential cooking. Thus the residential ranges could be exhausted with individual range hoods for odours and vapours, and the make-up air for the space transferred from ventilation air through the main HVAC system via adjacent spaces and the air supply to the kitchen.

COMMENTARY ON MECHANICAL SYSTEMS – St. JAMES CIVIC CENTRE

Plumbing

The major plumbing loads on the building are related to the pool and fitness area lockers and change rooms, the arena change rooms, the central concession, and the public washrooms and kitchenette adjacent to the auditorium. The proposed redevelopment won't affect the arena or the pool/weight room change areas, and they will be assumed to remain as-is.

The sanitary piping systems in the building are based on cast-iron and copper piping. Domestic supply piping is copper. The drainage piping serving the main floor fixtures north of the Auditorium are generally visible from the basement areas beneath. While the condition of this piping is likely good, it is assumed that the proposed renovation of this area will require entirely new sanitary drainage piping as well as new domestic hot and cold supply piping, with connection to the closest existing risers or mains which are not being changed.

The proposed redevelopment mainly consists of reconfiguring the main washrooms and relocating the kitchen/servery. This is not expected to increase the total plumbing load on the building significantly, and the central domestic water supply should be adequate. The building manager did not report any problems with flow or pressure at fixtures in this area.

During the design of the renovation and addition, the storage and distribution temperature of the domestic hot water system should be reviewed. For prevention of Legionella, the domestic hot water should be stored at a minimum of 140°F. This temperature should be mixed either at a central location or at banks of fixtures to reduce the hot water supply temperature to a safe level. The proposed new kitchen should be supplied with 140°F. If hotter water is required for dishwashers, integrated booster heaters can be included in the new dishwashers.

The proposed redevelopment includes replacement of the washroom fixtures in the areas adjacent to the Auditorium. This will ensure that all the fixtures in this area will be brought to current standards for code compliance, barrier-free requirements, and water-saving standards.

Fire Safety

The complex currently does not have a wet sprinkler system. Refer to the architectural report for the related code analysis.

HVAC

The central heating system for the building consists of a boiler plant with Sunny Day gas-fired hot water boilers that appear to date to 1967. These boilers supply the perimeter hot water radiation, hot water heating coils in air handlers, and domestic hot water via the heat exchanger. The proposed redevelopment includes new packaged gas-fired HVAC units to serve the new spaces and in certain areas of the redeveloped spaces. Considering the addition takes away some exterior envelope loss and some additional heat is provided with the proposed new systems, the proposed redevelopment should reduce the overall heating load on the existing boiler plant. A review of the boiler plant with consideration to replace or upgrade the boilers was not included in the scope of this study.

There are two large air handling units which provide cooling and ventilation air to the major areas of the building. One air handling unit is ducted to floor-level supply grilles in the main entrance/lobby area. It was not apparent at the time of the review that there was any air supply to the reception, canteen and arena viewing area. This is likely why the reception area is supplemented with a ductless-split air conditioning unit. To meet the cooling demand and to meet code requirements for ventilation, additional air supply is required to the existing canteen/reception/viewing area. Since the original air handling is doing the area closer to the main entrance, this system can likely be kept in use for the proposed renovation to serve the reconfigured Lobby area, with new packaged HVAC units (see the Outline Specification) for the Bench area.

The other major air handling unit is ducted through a crawlspace to floor-level supply grilles in the auditorium. Based on discussion with the building manager, the auditorium is adequately cooled and ventilated for the current usage. This air handling system is old and dates to the original construction of the building. However, with regular maintenance to the fan, motors, drives, and major components, this system can be left in operation. During the design of the renovation the quantity of ventilation air should be reviewed. Should that require an increase over the current settings, this should be achievable by adjusting the controls settings on the outside air dampers. For energy savings, this system would lend itself well to the addition of CO₂ ventilation control. This would respond well to the large variations in occupancy in this space, and would save energy by allowing the outside air volume to be reduced in times of low occupancy, and only increase with a measured demand.

The weight room HVAC system is a packaged outdoor heat/cool unit located on the flat roof of the arena change room directly north of the weight room. Supply air is ducted from the unit outside and enters the ceiling area of the weight room. From there it is ducted to ceiling-level diffusers in the weight room. This air supply is supplemented with ceiling fans distributed throughout the room. At the time of the review the air in the room was noticeably stale. This was also a concern raised by both the building manager as well as a couple of weight room patrons who happened to be in the room at the time. The existing unit is a Lennox gas-fired packaged unit, and given the age of the unit the refrigerant is likely R-22, which is no longer approved for production since it is categorized as an ozone-depleting substance.

The outdoor location of the existing package rooftop unit serving the weight room is very accessible and would lend itself well to simply replacing the existing unit with a new one that is sized for the proper cooling and ventilation loads for the weight room. Since this likely means an increase in air volume, the supply and return ducting and diffusers should be replaced to match the new loads. The ceiling fans can remain as installed. Although they may not be as necessary with the new HVAC system, they may be beneficial to providing an extra level of ventilation control for the occupants.

Report by:

David Epp, P.Eng.
Epp Siepman Engineering

Outline Specification - Mechanical
St. James Assiniboia 55+ Relocation

Total Pages:
Date: 2012-09-07

The following outline specification is based on a schematic design and intended for preliminary cost projections and design review only.

1. General

- 1.1. Unless otherwise noted, the terms "install" or "provide" shall include the complete supply and installation of the items noted including all equipment, materials and commissioning necessary for a fully functional system.
- 1.2. All work and materials shall meet or exceed the minimum requirements of the National Building Code, and all local building codes and municipal requirements.
- 1.3. The mechanical contractor shall include all air balancing, fire damper inspection, piping pressure testing and equipment commissioning.
- 1.4. Equipment capacities given are preliminary and subject to final design.
- 1.5. Refer to architectural drawings for room layouts, general areas, and quantities for take-offs.

2. Basis of Design

- 2.1. Schematic drawings by 1 x 1 Architecture dated 12-08-24.
- 2.2. City of Winnipeg Space Programming Document dated 12-07-03.

3. Site Services

- 3.1. No additional site services for mechanical systems are anticipated.

4. Fire Protection

- 4.1. The building currently does not have a wet sprinkler system.

5. Plumbing

- 5.1. Disconnect all plumbing systems serving the canteen.
- 5.2. Piping Materials
 - 5.2.1. Domestic cold, hot, and recirculation (DCW, DHW, and DHWR) piping to be Type L Copper.
 - 5.2.2. Drainage, waste and vent (DWV) piping shall be cast-iron/copper. Rain-water leaders shall be cast-iron. Below-grade DWV and storm drainage piping shall be PVC DWV.
 - 5.2.3. Thermally insulate all domestic hot water lines, insulation shall be ½" thick. Thermally insulate all domestic cold water main lines, insulation shall be ½" thick. Insulation type shall be Fibreglass 455°C (850°F) pipe insulation, 5 lb. per cubic foot density with factory applied ASJ vapour barrier jacket (on DCW).
- 5.3. Install fire stopping between all fire separations as required by architectural plans.
- 5.4. Roof drains:
 - 5.4.1. Install control-flow roof drains, 3" drain, single weir, cast-iron grate.

- 5.4.2. Roof drain locations and quantity:
 - 2 drains, new addition (south side)
 - 2 drains, new addition (north side – carpentry shop & MPR-2)
- 5.4.3. Rain water leaders shall be 3" diameter and run in the ceiling space, drop down to floor level in an enclosed chase, and discharge to grade level on the east side of the building. Install concrete splash pads at discharges.
- 5.4.4. All roof drainage piping shall be thermally insulated and jacketed. PVC jacket, or canvas painted to architectural specifications.
- 5.4.5. Roof drainage piping shall have a trap and cleanout to prevent cold air migration through the pipes. Locate traps at ceiling level.
- 5.5. Remove all washroom fixtures and piping rough-ins in the main washrooms (see Main Demolition Plan) and the ceiling of the basement below for all fixtures in the washrooms and kitchenette/servery.
- 5.6. Install new washroom fixtures to match the new washroom layout (Men's and Women's). The sanitary drainage piping will be run in the ceiling of the basement below. Allow for completely new drainage piping to serve the new washrooms, connecting to a main 6" drain. This drain will connect to the nearest existing sanitary main or riser in the basement ceiling.
- 5.7. Install new domestic hot, cold, and recirculation piping from the nearest mains to the new washroom fixtures. Install a main shut-off valve on each system for each washroom group.
- 5.8. Fixtures for washrooms shall be as follows.
 - 5.8.1. Watercloset WC-1: Floor-mounted, automatic flush-valve toilet, 4.8 L (1.28 gal.) per flush, open-front seat for elongated bowl, self-sustaining concealed check hinge, white.
 - 5.8.2. Watercloset WC-2: Floor-mounted, automatic flush-valve toilet, 4.8 L (1.28 gal.) per flush, barrier-free height, open-front seat with cover for elongated bowl, self-sustaining concealed check hinge, white.
 - 5.8.3. Urinals UR-1: Waterless urinals to meet make/model approved by City of Winnipeg. Vitreous china construction.
 - 5.8.4. Lavatories LAV-1: Countertop lavatory, vitreous china, self rimming deck mount, three hole, with 4" centres, complete with overflow, ADA compliant. Faucet: touch-free automatic faucet, c/w mixing valves for each.
 - 5.8.5. Floor drains FD-1: 5" bronze strainer, 3" outlet, select model suitable for floor construction/material.
- 5.9. Washroom fixture quantities:
 - 5.9.1. Men's washroom: 3 WC-1 waterclosets, 1 WC-2 watercloset, 2 urinals, 3 lavatories, one floor drain.
 - 5.9.2. Women's washroom: 7 WC-1 waterclosets, 1 WC-2 watercloset, 5 lavatories, one floor drain.
 - 5.9.3. Men's stand-alone washrooms (2 locations): 1 WC-2 watercloset, 1 lavatory, one floor drain.
 - 5.9.4. Women's stand-alone washrooms (2 locations): 1 WC-2 watercloset, 1 lavatory one floor drain.

- 5.10. Install a new molded-stone mopsink in the janitor's room adjacent to the single washrooms north of the stage.
 - 5.11. Note that the locations of the two individual washrooms north of the stage will remain. Replace the fixtures using existing drainage and supply piping rough-ins. Install new floor drains in each washroom.
 - 5.12. Install new roughins and fixtures in the new kitchen. Drainage piping for the kitchen and the new washrooms shall be run below the floor slab and run back through the crawlspace below the auditorium to connect to the nearest drainage main. Domestic supply piping shall run in the crawlspace then rise in an interior stud wall to distribute to the kitchen fixtures and washroom fixtures from the ceiling level. Kitchen fixtures to consist of:
 - 5.12.1. Two triple-compartment stainless steel (residential or light commercial) sinks, c/w long-spout faucet, single lever. C/w dishwasher connections from each.
 - 5.12.2. Two single-compartment stainless steel sinks, c/w long-spout faucet, single lever.
 - 5.12.3. Two floor drains.
 - 5.12.4. Install a sink and all related piping in each of MPR-1 & MPR-2. Sinks shall be single-compartment stainless steel sinks, c/w long-spout faucet, single lever.
 - 5.12.5. Install a sink and all related piping in the Hart clinic room. The sink shall be a stainless steel handwash sink, c/w goose-neck spout, 4" blade handles, laminar aerator (to meet CSA 317.1 requirements).
 - 5.12.6. Install new natural gas piping on the rooftop to serve the new gas-fired heat/cool units.
6. HVAC
- 6.1. Generally: install manual balance dampers on all supply, return, and exhaust duct branches to diffusers and grilles.
 - 6.2. Include air balancing of all systems by a certified balancing contractor.
 - 6.3. Disconnect all HVAC systems serving the canteen. Salvage the ductless-split air-conditioning unit and return to the City.
 - 6.4. Install new package gas/electric heat/cool units (RTUs) to serve the new additions and renovated areas as noted. Refer to the attached schedule. RTUs shall have high efficiency cooling, direct drive ECM motor, complete with cold weather kit, fully modulating economizer with gravity exhaust dampers & outdoor filter, free cooling control, CO2 demand-control ventilation, factory acoustic roof curb/plenum, down discharge.
 - 6.5. RTUs 1, 2, and 3 will serve the new addition on the south side. Locate the units above the MPR-2 so the Auditorium windows are not blocked. Install main supply duct runs from the units to serve the rooms/zones described in the schedule.
 - 6.5.1. RTU-1 & 2 shall have a return duct drop and elbow into the ceiling return air plenum. Acoustically line the return air drop. Each room in these zones shall have a ceiling egg-crate return air grille with an acoustic elbow in the ceiling.
 - 6.5.2. Supply air from RTU-1 & 2 shall be ducted to each of the rooms in their respective zones, c/w thermally insulated supply ducting, balance dampers on each branch duct, 24" x 24" square-cone diffusers to each room (allow for up to 200 cfm per diffuser).

- 6.5.3. RTU-3 shall have a return duct run from the unit to the Dining Room. Allow for a large ceiling egg-crate return air grille or a sidewall grille (eg. Price Model 530). Acoustically line the return duct for the first 20' from the unit. Install a transfer grille between the Community Kitchen and the Dining Room.
- 6.5.4. Supply air from RTU-3 shall be ducted to the Community Kitchen and the Dining room, c/w thermally insulated supply ducting, balance dampers on each branch duct, 24" x 24" square-cone diffusers or exposed round-cone diffusers (eg. Price RCD) in each room (allow for up to 200 cfm per diffuser).
- 6.6. Allow for two roof exhausters for the south addition, Delhi or equal, for hood exhaust. Each fan shall be ducted to connect to two range hoods (non-grease cooking). Size for 250 cfm from each range hood of four range hoods for a total of 500 cfm from each fan. Ducting shall have water-proof sealed seams. Four 30" wide stainless-steel range hoods shall be supplied by the kitchen supplier. Control each of the two fans with a mechanical spring-wound 1 hour timer.
- 6.7. Install a ceiling washroom exhaust fan in each of the new stand-alone washrooms next to the Hart offices. Fans shall discharge to rooftop goosenecks or roof jacks. Control each of the two fans with a mechanical spring-wound 1 hour timer.
- 6.8. MPR-1 HVAC:
 - 6.8.1. Install copper pipe/aluminum fin wall-fin radiation in the MPR-1 to provide heating to the MPR-1. Connect the wall fin piping to the existing hydronic supply and return piping in the main building. The wall-fin shall have a control valve connected to a pneumatic space thermostat within the MPR-1. Run slope-top wall-fin cover continuously along the east wall of MPR-1. Allow for 15' of active fin, estimate 700 btuh/linear ft.
 - 6.8.2. Install an HRV to provide fresh air ventilation to the MPR-1. The HRV shall be 500 cfm capacity c/w 5 kW duct heater and SCR control. The HRV shall be located above the service space just south of MPR-1, with intake and exhaust ducts through the east wall terminating with galvanized steel hoods and backdraft dampers. Thermally insulate the intake and exhaust ducting from the HRV to the wall.
 - 6.8.3. Supply from the HRV to a single side-wall grille on the south wall of MPR-1. This diffuser shall deliver approximately 200 cfm of air. Extend another supply duct to the north wall of the MPR-1 and supply 200 cfm via sidewall diffuser into the Carpentry Shop, c/w fire damper at the wall.
 - 6.8.4. Exhaust air from the MPR-1 through a single side-wall grille on the south wall at the other side of the room. Balance to approximately 200 cfm. Install another exhaust duct branch to the two single washrooms and the janitor room just south of the MPR-1 and exhaust 67 cfm from each. Install new stainless steel egg-crate exhaust grilles in each of the reconfigured washrooms and the janitor room.
 - 6.8.5. Control the HRV with a 24-hr/7-day programmable controller located in the service space near the HRV. The duct heater shall be controlled with a duct thermostat on the supply duct.
 - 6.8.6. Install a ductless-split DX air conditioning system to serve MPR-1. The system shall be nominal 1.5 tons capacity. The indoor unit shall be a ceiling cassette unit with 4-way diffuser. Locate the condensing unit on the MPR-1 rooftop.
- 6.9. Carpentry HVAC:

- 6.9.1. Install two electric unit heaters, suspended from the ceiling in the Carpentry Shop. Unit heaters shall be sized at 3 kW each, and shall be controlled by a single space thermostat, line voltage.
 - 6.9.2. Supply and install a new dust collector. The dust collector shall be a portable indoor unit, sized for up to 1200 cfm, two 4" diameter ports for up to two machines simultaneously. Unit shall be King Industrial Model KC-3108C 1200 cfm dust collector, or equal. 2 hp motor, 220 V 1 phase.
 - 6.9.3. Install a general exhaust fan to serve the Carpentry Shop. The fan shall be a roof exhauster, Delhi or equal. The fan shall be ducted to two ceiling-level exhaust grilles in the shop. Size the fan for 225 cfm. Control each of the two fans with a mechanical spring-wound 1 hour timer.
- 6.10. RTU-4 Weight Room:
- 6.10.1. Disconnect and remove the existing ducting in the weight room. Cap the main air handler supply ducts at the air handler or main branch take-offs.
 - 6.10.2. RTU-4 shall serve the existing Weight Room. Locate the unit at grade on the north side of the weight room. Duct the supply duct on the exterior of the weight room wall and enter the weight room at high level. Distribute with a system of new ductwork and round cone diffusers (Price RCD or equal). Size diffusers for max 200 cfm each.
 - 6.10.3. Run the return ducting up the exterior wall to high level of the weight room. Install a new sidewall return air grille (Price 530 or equal).
 - 6.10.4. All exterior ducting shall be thermally insulated, jacketed, and weather-proofed.
 - 6.10.5. Existing ceiling fans and exhaust fans in the weight room to remain.
- 6.11. RTU-5 & 6 Lobby & Seating Areas
- 6.11.1. RTU-5 & 6 will serve the Lobby & Bench / Seating areas. Locate the units above the rooftop above. Install main supply duct runs from the units to serve the rooms/zones described in the schedule. Supply ducting shall be run in the ceiling to ceiling supply diffusers, Price 24" x 24" SCD or equal. Size for no more than 200 cfm per diffuser.
 - 6.11.2. RTU-5 & 6 shall have a return duct drops and elbow into the ceiling return air plenum. Acoustically line the return air drop. Install ceiling egg-crate return air grille with an acoustic elbows in the ceiling in several locations to transfer return air.
7. Controls
- 7.1. Each new air handling unit shall be supplied with local digital thermostat with 24-hr/7-day programmable capacity including fan, heating, and cooling control. The thermostats shall have the option to connect to the main DDC system for monitoring status.
 - 7.2. All RTUs shall be complete with factory-supplied CO2 sensors in the zones for demand-control ventilation. The controls shall modulate open the outside air dampers from minimum position with rising CO2 levels to meet varying ventilation demand.
 - 7.3. All controls wiring by controls contractor, including wiring of devices not integrated to the building automation system (BAS).
8. Commissioning

- 8.1. Provide commissioning of all mechanical systems. At a minimum the commissioning shall include all functional performance checks, system verifications.
- 8.2. Commissioning forms shall be provided for all intermediate and final commissioning checks.
- 8.3. Commissioning shall also include any seasonal commissioning that may be required within the first year to check or commission certain systems.

- End of Document -

PACKAGE ROOFTOP HEAT/COOL UNITS

MARK	MAKE/MODEL (based on Lennox)	ZONE SERVED	SUPPLY AIRFLOW		MINIMUM O/A (%)	HEAT INPUT (MBH)	FILTERS	NOMINAL COOLING CAPACITY (tons)	VOLTAGE/PH	NOTES
			(cfm)							
RTU-1	LGH048H4E	Hart offices, MPR2	1,500		15 - 20%	73 / 105	MERV 13	4	575/3	1,2
RTU-2	LGH048H4E	Program/Admin Offices	1,600		10 - 15%	65	MERV 13	4	575/3	1,4
RTU-3	LGH048H4E	Kitchen/Dining	1,500		20%	73 / 105	MERV 13	4	575/3	1,3
RTU-4	LGH048H4E	Weight Room	1,600		15 - 20%	73 / 105	MERV 13	4	575/3	1,2
RTU-5	LGH048H4E	Bench/Viewing Area	1,500		15 - 20%	73 / 105	MERV 13	4	575/3	1,2
RTU-6	LGH048H4E	Lobby/Reception	1,500		15 - 20%	73 / 105	MERV 13	4	575/3	1,2

Notes:

1. High efficiency cooling, direct drive ECM motor, complete with cold weather kit, fully modulating economizer with gravity exhaust dampers & outdoor filter, free cooling control, CO2 demand-control ventilation, factory acoustic roof curb/plenum, down discharge.
2. 2-stage gas heating, aluminized-steel heat exchanger.
3. 2-stage gas heating, stainless-steel heat exchanger.
4. 1-stage gas heating, aluminized-steel heat exchanger.

FIELD OBSERVATION REPORT

File No.: 32-189EI

Project: Relocation of St. James Assiniboia 55+ to St. James Civic Centre
2055 Ness Ave., Winnipeg

Inspection Date: August 10, 2012

Report Date: September 5, 2012

Page 1 of 3

1- Summary

The writer attended the above mentioned location to conduct an electrical building condition assessment. Existing electrical drawings for various renovations were provided following the site review, however they provide partial information only, as many areas do not have any information provided. The comments in this report are based on a brief non-intrusive inspection. The comments are general in nature and are not the result of detailed investigation or testing. The electrical systems appear to be in fair condition for the age of the building. The following specific items were noted.

2- Life/Safety Issues

-No life safety issues were apparent. If significant renovations or an addition is undertaken, the existing fire alarm system, emergency lighting and exit signage will likely need upgrading to meet current code requirements. The extent of upgrades at that time would need to be determined together with the local authority having jurisdiction (City of Winnipeg).

3- Electrical Distribution

- The electrical service utility is Manitoba Hydro. The building is fed from an overhead line to the east of the building.
- The building has one 800A-120/208V-3ph-4w service, one 600A-600V-3ph-3w service and one 60A-600V-3ph-3w service. The 60A service is labelled to feed "golf course pump house". The main distributions are located at the SE corner of the arena, at the top of the bleachers. Main disconnects and distribution panels are made by Amalgamated Electric and appear to be original equipment. The meters are located inside.
- The original distribution panels appeared to be full. A newer 600A-600V-3ph-3w CDP with many spaces is located adjacent the existing distribution equipment. How it was fed could not be determined without intrusive investigation.
- The majority of electrical panelboards seen appeared to be original equipment. Finding new/replacement circuit breakers may be difficult due to the age of the obsolete equipment.
- All panels that were checked had panel circuit schedules. The accuracy of the schedules was not verified.
- The location of the existing distribution equipment in the arena would not meet current code for sure footing, clearances, etc. City staff indicated that they would like to see the entire distribution relocated to a safe and secure location on the main or basement levels. A significant amount of rework would be required for this to take place.

-City staff also indicated they would like to see the service revised from overhead to underground. If an addition is planned to the east, the overhead lines will be in the way of expansion.

4- Fire Alarm

-A Simplex 4100U intelligent fire alarm system was present. Main annunciator indicated "System is Normal" at time of visit. It was not tested.

-The most recent annual inspection report dated June 26, 2012 and completed by Chubb Edwards was provided for review. Seven deficiencies were noted. It is recommended these deficiencies are corrected.

-Device locations generally appeared to be code conforming. Manual pull stations are installed above a height of 1200mm AFF. The existing locations would not meet current code for access by disabled individuals, however the City of Winnipeg does not normally require pull station height to be revised unless the station needs to be relocated.

-Visual signalling devices are not present. Although they were not required at the time of installation, they are now required by code for new construction and major renovations. The existing fire alarm system can likely be expanded to accommodate the installation of visual signals.

-Building is not sprinklered.

5- Exit/Emergency Lighting

-A DC battery backup system is present with remote DC emergency lighting heads. A few single head fixtures were observed, which would not meet current code.

-Exit signs were observed to be LED source.

-City staff advised they would require a minimum of 60 minutes battery backup capacity for all new emergency lighting added. Backup duration of existing unit equipment was not verified.

6- Lighting - Exterior

-Exterior lighting consists of building mounted HID luminaires. Fixtures appear to be in good condition and should provide acceptable lighting coverage where they are located.

7-Lighting - Interior

-Interior lighting is generally fluorescent. Fixtures appeared to generally be complete with T8 lamps and ballasts. T12 lamps were not observed.

-Light levels in general appeared to be on the low end of acceptable. The gymnasium, fitness room and reception areas were all noticeably dim. Fixture selection for the multi-purpose use of the gymnasium and for the main entrance vestibule did not appear appropriate for intended room usage.

-Lighting control is generally with line voltage local switches.

8- Power Outlets Etc.

-Receptacles appear to be generally located where required by code and for their intended functions.

-If additional circuits are required in the future, sub-panels will likely need to be added. Refer to Electrical Distribution above.

9- Communication Systems

- LAN, telephone and public address equipment is located in the basement electrical room.
- A Metasys control system was observed in the basement electrical room.
- The above systems should be expandable for a small addition.
- No cable tray was observed to support the communication cabling.

10-Wiring Methods

- The wiring methods used within the building are non-combustible and consist of a mix of armoured cable and conduit/wire. Both are acceptable for this building construction.
- Electrical penetrations through floors/fire separations were not observed to be fire-stopped.

11-General Electrical Workmanship

- For the most part workmanship associated with original installation work is good.
- Workmanship associated with more recent electrical additions appears to be reasonable for the conditions presented.

12- Building Manager Comments

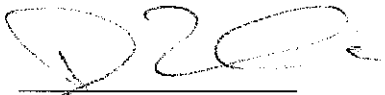
- The building manager did not advise of any outstanding issues associated with the electrical systems in the building.

13-Misc.

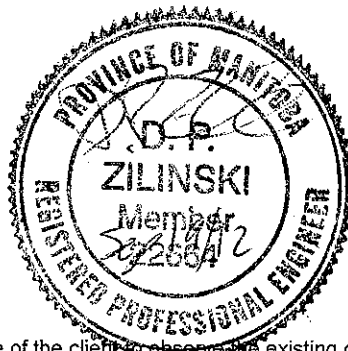
- Photographs were taken and are on file.

Nova 3 Engineering Ltd.

Per.



Dan Zilinski, P. Eng.



This report was produced for the exclusive use of the client to observe the existing conditions of the electrical facilities at the subject project specifically for the purpose of completing a facility planning study and is not to be used for any other purpose. The extent of review is limited to a field observation without testing or verification and limited to the best ability of the professional engineer. Any revisions contemplated to the electrical facility will require confirmation of existing conditions by the responsible professional engineer. The professional engineer does not assume responsibility for unobserved, unobservable (concealed) or post review unobserved maintenance items which could occur due to the age of the facility reviewed.



NOVA 3 ENGINEERING LTD.
201 - 120 Fort Street
Winnipeg, Manitoba
R3C 1C7 CANADA

CONSULTING ENGINEERS
Phone (204) 943-6142
Fax (204) 942-1276
info@nova3.ca

Date: September 5, 2012

Re: **Relocation of St. James Assiniboia 55+ to St. James Civic Centre
Electrical Outline Project Specification –
2055 Ness Ave., Winnipeg, MB**

Our File: 32-189E

Page 1 of 2

Project Summary:

New addition and renovation of the subject location to accommodate both public and the St. James Assiniboia 55+ Centre uses.

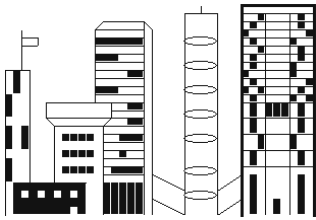
Electrical Provisions:

- Provide electrical demolition as required to accommodate renovation. Refer to architect's demolition plan for areas to be demolished. All electrical outside the areas of renovation is to be maintained operational throughout the project. Re-route/re-wire as required. No wiring and/or raceways are to be left abandoned within the renovated area. Remove back to associated panel where practicable.
- Existing overhead service is to be revised to underground. A new 1000A-347/600V-3ph-4w pad mounted CSTE c/w metering is proposed to be located at the east property line, subject to Manitoba Hydro's acceptance. From CSTE the existing 600A-600V-3ph-3w distribution is to be re-fed. A second feed from the CSTE to an exterior weather-proof 225kVA dry-type transformer shall feed the existing 800A-120/208V-3ph-4w service. A new 200A-347/600V-3ph-4w service is anticipated to feed the new addition. It will be located within the new addition.
- Provide a separate price to relocate the existing 600V and 120/208V services from the bleacher area of the rink to the basement. New main fusible disconnect switches and CDPs will be required to minimize downtime. All existing loads are to be reconnected.
- Provide new lighting throughout renovated areas. Refer to architect's renovation plan for areas to be renovated. Proposed luminaires are as follows:
 - Weight Room: suspended direct/indirect T5 fluorescents for a 500 lux average light level, with occupancy sensor control.
 - Lobby: new T5 fluorescent fixtures, type to be compatible with new ceiling type.
 - Auditorium: surface mounted T5 HO fluorescent luminaires, c/w dimming ballasts (to accommodate the variety of uses for this room). Existing stage lighting is anticipated to remain.
 - Boardroom, Multi-purpose rooms: T5 fluorescent luminaires, c/w dimming ballasts (to accommodate the variety of uses for this room)
 - Carpentry: Class 3, Div. 1 dust-tight fluorescent fixtures surface mounted.
 - Dining Room: Combination of fluorescent and incandescent fixtures.
 - Other areas: fluorescent compatible with ceiling type.
 - Exterior lighting for the new addition to be wall mounted HID.
- Provide local line voltage lighting control within each room.

Re: Electrical Outline Project Specification – 2055 Ness Ave.
Our File: 32-189E

Page 2 of 2

- Provide receptacles to meet user's requirements and as per code.
- Wire & connect all owner's equipment including kitchen and carpentry equipment.
- Provide emergency lighting and exit signage throughout the complex to meet code. Emergency lighting is to be remote DC heads c/w central battery banks to provide 60 minutes backup capacity. All exit signs in the building are to be the new running man style.
- Provide a code conforming fire alarm system extension throughout the renovated and new addition areas. Existing FACP is an addressable Simplex 4100U. As the building is not sprinklered throughout, heat detection is required. Audible devices are to match existing bells. Strobe lights are to be installed throughout the complex in all occupied areas. Provide fire alarm verification inspection of all new/modified devices.
- Provide voice/data outlets in all offices, kitchen, clinic rooms, MPRs, Boardroom, and the Carpentry shop. Each outlet is to be provided a minimum of two Cat 6 UTP cables back to the LAN rack in the basement.
- Wire & connect all new mechanical equipment. Refer to mechanical outline specifications for details.
- Any required security system revisions are N.I.C. at this time.
- Wiring method to generally be EMT conduit. Minimum wire size #12 AWG copper.



GWH

Construction Management Services Ltd.

419 Laidlaw Boulevard
Winnipeg, Manitoba
R3P 0K8

Telephone 204-663-2140
Fax 204-663-9180
Cellular 204-296-8916

1 x 1 Architecture
421 Mulvey Avenue East
Winnipeg, Manitoba
R3L 0R6

September 18, 2012

Attention: Mr. Travis Cooke, Architect

Dear Travis;

Re: Level "C" Construction Estimate Relocation of St. James Assiniboia 55+ Centre to St. James Civic Centre, 2055 Ness Avenue, Winnipeg, Manitoba

Attached please find our divisional breakdown summary with class "C" construction estimate, for the above noted project, based on your drawings and outline specifications dated September 7, 2012.

The overall estimated cost of the entire project is valued at \$4,218,955.00 + GST, including a 10% contingency allowance.

The accuracy of this estimate at level "C" should range between - 20% to +20%, of the tender prices you will be receiving. We never estimate to be low bid rather mid bid in a tender grouping of at least 5 Competitive General Contractors.

The following list of exclusions should be considered by all parties while reviewing the estimate.

Exclusions and Clarifications are as follows:

- Design, Engineering and Project Administration Costs.
- All costs are based on current month costs.
- Hazardous material removal or contaminated soil removal not included.
- Importation of Soils to revise grades and augment landscaping not included.
- GST is Extra
- Escalation not included.
- Market Conditions not included.
- Cash Allowances are included as noted.

Ownership and accuracy of the estimates, provided by GWHCMS Ltd.:

All estimates, reports, and similar documents prepared by GWHCMS Ltd. Shall remain the property of GWHCMS Ltd. The client will have access to all documents and worksheets related to the project and they shall be made available upon request.

Pricing by GWHCMS Ltd. reflects probable construction costs obtainable in the location of the project as of the date of the report and is a determination of fair market value for the construction of this project and should not be taken as a prediction of low bid.

This pricing assumes competitive bidding for every portion of the construction work including all subcontractors as well as the general contractor, and assumes a minimum of five (5) general bidders. If fewer bids are received, the bid results can be expected to be higher.

It is recognized, however that GWHCMS Ltd. does not have control over the cost of labor, materials or equipment, over a contractor's methods of determining bid prices, or over competitive bidding, market or negotiation conditions.

Accordingly GWHCMS Ltd. cannot and does not warrant or represent that bids or negotiated prices will not vary from this nor any subsequent estimate of construction cost or evaluation prepared by or agreed to by GWHCMS Ltd.

Trusting you will find the attached information helpful, please feel free to contact us at your convenience should you have any questions or concerns.

Respectfully yours,

Gerhard Hoppenheit C.E.T., P.Q.S., G.S.C.
President
GWH Construction Management Services Ltd.

GH/sh

Class "C" Construction Estimate Anticipated Accuracy -20% to +20%

Project # 2012-56

Project: Relocation of St James Assiniboia 55+ Centre to the St James Civic Centre , Winnipeg, Manitoba

Client: 1 x 1 Architecture

Divisional Cost Breakdown: Construction Duration Approximately 12 Months

Item #	Activity	Cost	Total Cost
1	General Requirements		
	Cash Allowances	\$80,000	
	General and Final Clean-up	\$11,100	
	Surveying and Foundation Layout	\$4,000	
	Equipment Rentals	\$6,000	
	Supervision & Project Management	\$132,000	
	Temp. Facilities, Freight and Cartage	\$20,400	
	Heat Closed Buildings During Construction	\$63,000	
	Temp. Light, Temp. Power, Site Fencing, Dust Hoardings	\$37,500	
	Testing, Safety & Equip., Photographs, Fire Safety, As-Builts & O & M Manuals	\$22,100	
			\$376,100
2	Site work and Selective Demolition		
	Selective Interior Demolition	\$88,400	
	Excavation, Fill and Back Fill	\$30,491	
	Piling	\$106,500	
	New 6" Sprinkler Service	\$25,000	
	Paving, Pavers, Approaches	\$53,500	
	Garbage Enclosure, Fencing, Landscaping Repairs	\$9,795	
			\$313,686
3	Concrete Work Including;		
	Grade Beams and Structural Slabs, Pads and Sidewalks	\$130,406	
			\$130,406
4	Masonry		
	Masonry where there is no curtain wall	\$60,000	
			\$60,000
5	Misc. Metal		
	Structural Steel and Misc. Metal	\$267,600	
			\$267,600
6	Rough Carpentry & Finish Carpentry		
	Misc. Carpentry	\$29,090	
	Millwork	\$55,200	
			\$84,290
7	Insulation, Roofing, Flashing and Sun Shades		
	Misc. Insulation, Vapor Barrier, Damproofing	\$10,407	
	Retrofit RTU Work for 3 New Units to Existing Areas	\$8,350	
	Spray-on Insulation Allowance	\$8,000	
	Roofing and Flashing and Tie-in Work	\$117,200	
			\$143,957

Class "C" Construction Estimate Anticipated Accuracy -20% to +20%

Project: Relocation of St James Assiniboia 55+ Centre to the St James Civic Centre , Winnipeg, Manitoba

Item #	Activity	Cost	Total Cost
8	Doors, Frames & Hardware Steel Doors, Frames and Hardware and Sidelights Aluminum Doors and Frames Special Doors Door Automatics	\$25,700 \$30,250 \$17,100 \$18,000	\$91,050
9	Curtain Walls and Interior Full Ht. Glass	\$364,500	\$364,500
10	Exterior Stud Infill, Interior Partitions, Parging to Grade Beam	\$81,500	\$81,500
11	Acoustic and Wood Slat Ceilings	\$112,500	\$112,500
12	Resilient and Carpet Flooring Resilient Floors Sealed and Polished Floors Refinish Stage Floor Carpet	\$65,500 \$20,500 \$3,000 \$5,600	\$94,600
13	Painting	\$65,000	\$65,000
14	Washroom Accessories, Toilet Partitions Chalk and Tack Board Allowance	\$21,200	\$21,200
15	Equipment Ranges, Exhaust Hoods, Walk-in Freezer and Refrigerator	\$26,425	\$26,425
16	Mechanical Sprinkler Except Hockey Rink (38,720 sf) Sprinkler Hockey Rink Glycol System (32,400 sf) HVAC, Plumbing	\$172,500 \$162,000 \$330,304	\$664,804
17	Electrical	\$665,025	\$665,025
		Subtotal	\$3,562,643
18	Bonds, Insurance, Permits, Overhead & Fee		\$272,771
19	Contingency Allowance 10%		\$383,541
		Total	\$4,218,955
	Cost per sf based on approximately 21,050 renovated and new SF	\$200.43 per SF	
Note: GST Extra			