CORNERSTONE

Winnipeg

Cornerstone Planning Group

City of Winnipeg Archives Program Facility Requirements

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EXECUTIVE SUMMARY

The City of Winnipeg Archives collection is widely recognized across the archival profession in Canada. However, the facility that the City of Winnipeg Archives is currently housed in, at 50 Myrtle St., does not meet basic standards for storage and care of archival materials, or permit delivery of essential programming activities. The Myrtle St. warehouse was intended to be a temporary facility following a 2013 rainstorm disaster that occurred during the renovation of the previous location of the City of Winnipeg Archives at the Carnegie Library, 380 William Ave. In 2019 and 2020, the temporary situation now warrants a permanent solution.

The limitations of the current facility include lack of storage and office space, no environmental controls, suboptimal spatial adjacencies, and lack of public programming space. These conditions contribute to an inefficient and ineffective work environment for the essential work of the City's staff within the Archives and Records Control Branch.

Cornerstone Planning Group has developed the spatial and functional requirements for the City of Winnipeg Archives, establishing infrastructure needs for a 20-year future. This process involved background review of preceding reports, a benchmarking study of similar archival organizations and their facilities, and in-depth interviews with City of Winnipeg Archives staff and stakeholders to examine current and projected activities, spaces, and collections. The resulting Functional Program has outlined a new set of requirements with key changes. The major anticipated changes include:

- Environmentally controlled vault space (Class A) for 20-years of collections growth
- Functional space for archival, digitization, and conservation activities
- Public programming and display space to support access and knowledge transfer
- Research space to provide for increased activity in an appropriate setting
- Administrative space supporting staff growth to 20-years

Table 1: City of Winnipeg Archives Requirements Summary

Component	CGSM	% of total
Public Area	304.3	11.1%
Staff Area	263.6	9.6%
Archives	2,048.6	74.8%
Support Area	123.0	4.5%
Total CGSM	**2,740**	
Total BGSM	**3,466**	

The requirements for future space are shown in Table 1, representing a net increase of +77% to current space, and an increase of just +1% from previous estimated reports.

Five development options were analyzed for suitability and financial accessibility. The renovation of the old Carnegie Library at 380 William Ave is the most attractive option, pending further analysis on the building's current condition. The second most attractive option is a new building, once land availability is better understood. These two options should be investigated alongside each other. Four next steps are identified to provide enough information to make the decision and move forward with confidence.

GLOSSARY

This document is a Functional Program, intended as a pre-architectural needs assessment for the City of Winnipeg Archives as an organization, and its functions and spaces. Specifically, a **functional program** is an inventory of all required spaces included in the facility, their sizes, and general characteristics. The functional program also includes descriptions of specific spaces and their intended function.

Several important terms are used throughout this document to describe the estimated areas. The definitions include the following:

- A **component** is a group of spaces with common purpose. The future City of Winnipeg Archives has been divided into 4 functional components, described in detail in the sections that follow.
- A **relationship diagram** shows the relative size and proximity of spaces in the building, as well as requirements for entrances, circulation, relationships between components, etc. that can potentially be achieved through a variety of floor plans.
- **Net Square Meters (NSM)** is all the usable space within the walls of the facility. This includes programmable spaces and assigned support spaces such as washrooms and storage. It excludes major circulation routes that connect net spaces and components.
- **Component Gross Square Meters (CGSM)** describes the size of a component as a unit. It is calculated by applying a component grossing factor to all of the net spaces that make up the component, allowing for circulation space and internal walls within.
- **Building Gross Square Meters (BGSM)** is the total area of all levels of a building as measured to the outside face of exterior walls. It is calculated by applying a building grossing factor to the CGSM, and includes all spaces, building systems (mechanical, electrical, HVAC etc.) and circulation.

INTRODUCTION

Introduction to the Archives

The City of Winnipeg Archives and Records Control Branch is comprised of three distinct program areas under the direction of the City Clerk. These program areas deliver distinct functions focused on Archival, Records Management, and Access and Privacy services. These are defined as:

- **Archives Program**: The Archives Program manages the City's significant archival collection, facilitates public access to its holdings and promotes interest in the history of the City of Winnipeg.
- **Records Management**: The Records Management Office administers the City's corporate records program and provides policies, procedures, guidelines, and advice to City of Winnipeg Departments.
- **Access and Privacy Office (APO)**: The APO coordinates requests for access to information and develops and implements process improvements to enhance openness and transparency by ensuring consistent and fair access to City records.

Currently, the Branch is spread over two locations which can broadly be referred to as the Corporate Records Centre (CRC) and the Archives. The CRC is home to semi-active records, some Records Management staff members, and some overflow archival storage including documentary art. The Archives location supports the remainder of the Branch including archival storage and processing activities, APO, Archives and Records Management staff members, and public interfaces for all functions.

The Mission

"To acquire, manage and maintain accurate, authentic and usable records in the public trust. To foster civic identity and awareness by connecting citizens to the sources of their past, their histories, their communities. To support the transformation of information into knowledge." [1]

The Vision

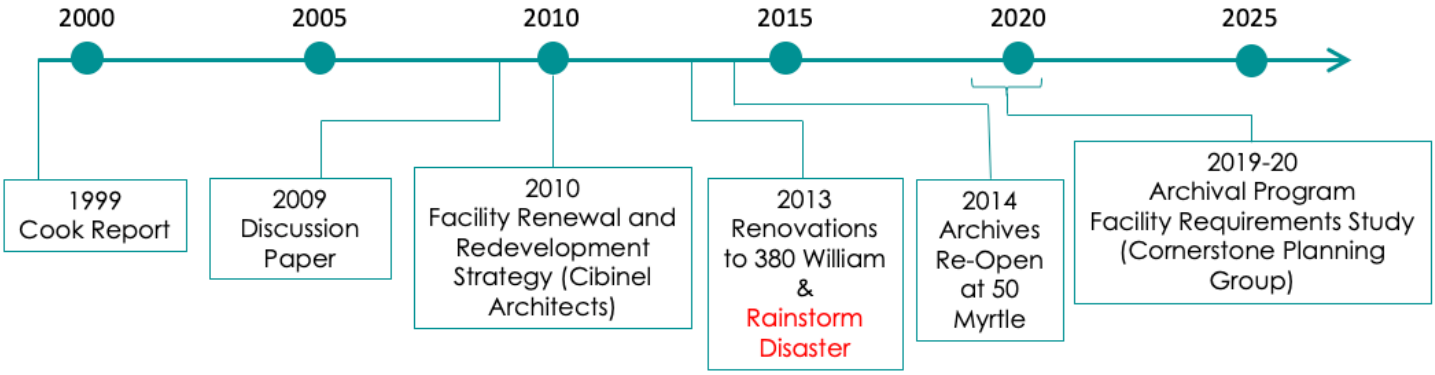
"The archive exists to preserve and protect the records entrusted to its care. As well, it must provide a safe and comfortable working environment for staff and include facilities to allow the public access to valuable records. An archive equipped to provide educational experiences for young and old alike and to create and enhance awareness of local history is an integral component of civic life and fosters tolerance, awareness and a deep understanding of place." [1]

Project History

From 1977 to 2013, the Winnipeg Archives was housed in the Carnegie Library at 380 William Avenue, a heritage building in downtown Winnipeg. In 2013, a major renovation project of the building was underway to address essential facility deficiencies, such as structural supports and HVAC systems, while at the same time addressing long-standing requirements for archival storage and programming. The planned renovation included a large temperature and humidity-controlled storage vault, moveable shelving, functional workspaces, and space for public-focused programming, research and community engagement. However, during construction, a major rainstorm caused significant damage to the building's interior and approximately 450 boxes of archival records. The collection was salvaged; affected records were recovered through treatment, and the collection was re-located to a temporary facility at 50 Myrtle St, in the Pacific Industrial area of Winnipeg. While it was an adequate emergency measure, the Myrtle St. warehouse is not (nor was it ever meant to be) a permanent solution to the space, storage, and program delivery challenges the 2013 renovations were intended to address. The Myrtle facility suffers from insufficient storage space, poor environmental controls, and suboptimal areas for staff and public to fulfil the Archives' mandate.

[1] 2009 City of Winnipeg Records Committee Discussion Paper, Program Requirements

Figure 1: Timeline, 1999 to 2020



1999 Cook Report

This report, commissioned by the City of Winnipeg, warned of the possibility of losing its collective memory by neglecting the City of Winnipeg Archives. The strategic plan developed in this report began the exploration of redeveloping the City of Winnipeg Archives, listing a total of 71 recommendations with respect to the City of Winnipeg Archives' mandate, collection, transfer and accessioning of archival records, arrangement and description of archival records, reference, outreach, community visibility, administering FIPPA access to permanent archival records, creating "The Friends of the City of Winnipeg Archives", automation, archival electronic records, preservation and conservation, microfilming at the archives, accommodation, staffing increases, management, and humans resource issues. Many of these recommendations have been followed, and the report is still recognized as a relevant guiding document.

2009 Discussion Paper

The 2009 Discussion Paper was the important next step in the development process. This document articulated the key issues related to 380 William Avenue site, including the absence of a fire suppression system; significant temperature/humidity fluctuations throughout the building; the absence of appropriate storage space for specialized collections (i.e. maps and cartographic materials, architectural plans and artifacts); poor lighting; accessibility issues; and problematic maintenance, safety, and suitability issues. The 2009 Discussion Paper created the foundational rationale for redevelopment of the 380 William Avenue facility.

2010 Facility Renewal and Redevelopment Strategy (Cibinel Architects)

The 2010 Cibinel-led Facility Renewal and Redevelopment Strategy detailed renovation strategies for 380 William Avenue and described future archival requirements. This study guided renovation efforts at the heritage facility. It is currently useful as a program comparison in the current study; however, their future storage requirements were calculated at the time (in 2010) based on trends of the day. Current growth estimates are lower due in part to the effect of born-digital records.

2013 Renovations to 380 William and Rainstorm Disaster

In 2013, building improvements to 380 William were underway. During renovations, a major rainstorm (2013) caused significant damage. The City of Winnipeg Archives was forced to re-locate to a temporary facility at 50 Myrtle St. Since then, the City of Winnipeg has not identified a permanent solution for the City of Winnipeg Archives and the building at 380 William Avenue.

2016 Corporate Records Centre Development	As part of the 2013 evacuation of 380 William Avenue, semi-active and inactive corporate records were transferred to a City-owned facility at 311 Ross Avenue, and other temporary storage facilities across the city. As the City of Winnipeg was preparing to divest itself of the 311 Ross Avenue property, and the other temporary locations ceased to be available, the remaining capital funds from the 380 William Avenue redevelopment project were used to establish a permanent Corporate Records Centre in the Inkster Industrial Park to house these semi-active and inactive (non-archival) corporate records. While this addressed the needs of the records management program, the Corporate Records Centre does not meet the needs of the Archives program, which include environmental controls, research space for the public, display areas, and collection processing spaces.
2019-20 Archival Program Requirements Study (Cornerstone Planning Group)	The current study seeks to solidify The City of Winnipeg Archives' space requirements. The functional program developed will consider the modern context and challenges associated with archival organizations such as the need for Indigenization, the effect of born-digital records, the necessity of providing engaging public programming, and the archival requirement of providing appropriate temperature- and humidity-controlled record storage space. Past studies will be used as reference points, but the modern context demands a fresh analysis of archival requirements.

The Responsibility and Value of the City of Winnipeg Archives

Under *The City of Winnipeg Charter Act* and *The Records Management By-law No. 86/2010*, the City of Winnipeg Archives are legally responsible for the acquisition, management, preservation, and accessibility of records created and received by city officials. Additionally, the City of Winnipeg Archives has community, ethical, and contractual obligations to care for records donated by citizens.

The City of Winnipeg's collective memory and history has been stored in trust by the Archives and Records Control Branch since its establishment in 1977-1979. With records dating from as far back as 1871, the City's archival collection has substantial financial and historical value, and the City is responsible for the long-term safekeeping of these irreplaceable materials. The City of Winnipeg Archives' current location threatens the integrity of these records and their availability to the public.

A Superior Reputation

The City of Winnipeg City Archives is widely recognized as a valuable and important resource.

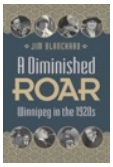
> *"The City of Winnipeg Archives was considered by professional archivists to have among the finest collections of municipal records in Canada." Gordon Goldsborough in "Abandoned Manitoba: Winnipeg's Carnegie Library" Manitoba History 88 (Winter 2018).*

> *"Few cities in Canada can match the completeness of its City Clerk's records or the assessment rolls, and this also generally holds true for the records of the surrounding former municipalities." Terry Cook in "In the Public Trust: A Strategic Plan for Archives and Records Management in the City of Winnipeg" (Gloucester, Ontario: Clio Consulting, 1999).*

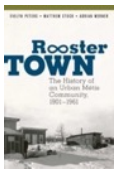
> *Valued at $4 million, the City of Winnipeg Archives are the most extensive and most significant city archives in Western Canada. 10,418 linear feet of historic records … include letters of citizens, council minutes and city by-laws, photographs, architectural and engineering drawings of city buildings, fire insurance plans, city directories, private records of individuals who have contributed to the makeup of the city, and much, much more. ("A New Home for the City of Winnipeg Archives"; E. Jones 2018)*

A Valuable Resource

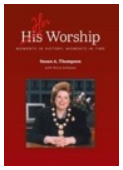
There are dozens of books, articles, and films that acknowledge use of the City of Winnipeg Archives including the following examples from the last few years. The Archives also supports performing arts productions such as two major musicals about the 1919 Winnipeg General Strike: **Strike!** (the stage version) and **Stand!** (the film version). The following list provides a brief selection of interesting works that depend on the Archives for their accuracy:



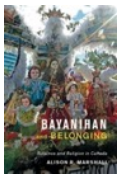
A Diminished Roar by Jim Blanchard (University of Manitoba Press, 2019). The third volume of Blanchard's popular history of early Winnipeg examines Winnipeg in the 1920s in the wake of the 1919 General Strike.



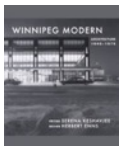
Rooster Town: The History of an Urban Metis Community, 1901-1961 by Evelyn Peters, Matthew Stock and Adrian Werner (University of Manitoba Press, 2018). Describes the unique experience of the Metis residents who created a community in the cracks of municipal bureaucracy, while navigating the legacy of settler colonialism and the demands of modernity and urbanization.



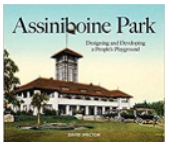
Her Worship: Moments in History, Moments in Time by Susan A. Thompson and Terry Létienne (Victoria: FriesenPress, 2016). The memoirs of Susan Thompson, former Winnipeg mayor (and the only female mayor to date).



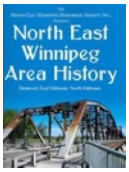
Bayanihan and Belonging: Filipinos and Religion in Canada by Alison R. Marshall (Toronto: University of Toronto Press, 2018). Focusing on Winnipeg, home to Canada's oldest and largest Filipino Canadian community, this book uses archival material and ethnographic research to understand the role of religion in within present-day Filipino Canadian communities.



Winnipeg Modern: Architecture, 1945-1975 edited by Serena Keshavjee, designed by Herbert Enns (Winnipeg: University of Manitoba Press, 2006). An illustrated look at some of Winnipeg's internationally acclaimed architects.



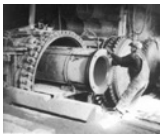
Assiniboine Park: Designing and Developing a People's Playground by David Spector (Winnipeg: Great Plains Publications, 2019). Local history book about the hundred-year history of the municipal park.



North East Winnipeg Area History: Elmwood, East Kildonan, North Kildonan compiled by Jim Smith, Ruth Wright, Maureen Silk, Donna Cudmore (Winnipeg: McNally Robinson Booksellers, 2017). Illustrated local history of north east Winnipeg.

Urban Eclipse: Rising Tides of Kekekoziibii (Shoal Lake #40 First Nation) by Jesse Green and Vanda Fleury-Green (2019). Marking the 100th anniversary of the opening of the aqueduct bringing water to Winnipeg from Shoal Lake 40 First Nation, this film draws on local settler archives to support Indigenous narratives surrounding the displacement of Shoal Lake 40 First Nation and illustrates the complex history of the construction of the aqueduct.

Going: Remembering Winnipeg Movie Theatres by Kenneth Godwin. Looks at the time when Winnipeg had almost 50 movie theatres in operation.



Sand and Stone from *Souvenirs* (2008) by Paula Kelly. Shows the history of construction labourers and the materials they used to construct Winnipeg.

Watermarks from *Souvenirs* (2008) by Paula Kelly. Examines the emotional currents evoked by the experience of flooding in Winnipeg.

Waiting for the Parade from *Souvenirs* (2008) by Paula Kelly. Transforms the 75th anniversary of Winnipeg celebration parade in 1948 into "a provocative discourse on decades of progress and regress, cynicism and hope."

Project Need

The temporary Myrtle St. facility has several significant limitations. As it was not intended as a permanent solution, the Archives has adapted its operations to remain functional at a basic level until a more permanent solution is found. Since 2014, the risks and constraints associated with the Myrtle St. location have become increasingly problematic, including physical risks to the collection, insufficient storage capacity, poor physical accessibility, and a variety of other functional limitations, which are summarized as follows:

Collection Risks

- The humidity and temperature controls in the building are designed for warehouse storage, not archival storage. Temperature and humidity cannot be controlled to the limits required for safe, long-term storage of archival materials. The longer the material remains in this environment, the greater the rate of deterioration.
- Building layout including access and circulation are not optimal for an Archive, leading to clear security risks and making even rudimentary environmental control very difficult.

Poor Physical Accessibility

- The Myrtle St. facility is primarily accessible by car and parking is difficult to find. It is in an industrial area of the City and is difficult to locate and reach. This restricts access for the public and researchers.
- Access from the main entrance into the Archives requires movement up a flight of stairs. The only wheelchair access is via a loading dock at the rear of the facility.
- There is no elevator access to a meeting room and offices on the second floor.

Insufficient Storage Capacity

- There is not enough storage capacity to accommodate the current Archives material, or any growth. Collection acquisition has been purposely slowed due to capacity issues; some archival material is kept at the Corporate Records Centre, and still others are stored in much more costly Departmental offices.
- Some of the collection and incoming material is temporarily being stored with records in another facility. Transport of materials between facilities is detrimental to the condition and increases risk of damage.
- The lack of storage results in some City records with archival value remaining temporarily stored in various locations within departments. This increases the risk of deterioration and of loss.
- Stakeholders report there is a high probability that the volume of historical and archival material from community sources (families, companies, organizations) will continue to increase over the next 5 to 10 years. With most government and community archives already at capacity, there is a danger that valuable material could be lost.

Functional Limitations

- The only area that is feasible to serve as research space is located in the lobby area and has limited capacity. The location of electrical outlets creates challenges for researchers with laptops.
- There is no space available to accommodate public programming. The only meeting room is on the second floor with no elevator access, is too small for anything other than small meetings, and would not meet emergency exiting requirements for public functions. This is a major constraint for programs that enhance public awareness of, and access to, the well-recognized range and depth of these Archives.
- There is no suitable space to perform Indigenous ceremonies like smudging. The Loading Dock is currently being used for this function.
- There is very limited space for key archival functions. The archival processing area is a part of the records storage area; there is no area supporting conservation activities. Digitization of records is completed in a room far too small for the functions required.
- There is no space for public display; currently, displays are distributed to a variety of City lobbies to publicise the collection and celebrate Winnipeg's civic history. There is no room for display cases in the Archives.

Implications of Delay
The longer the delay in securing a suitable facility for the City of Winnipeg Archives, the greater the risk of loss and deterioration of the archival collection. Delay also prolongs a loss of opportunity to fully benefit from, and to grow public interest in, the very valuable resource represented by the City's rich archival collection, and the potential benefit of a more accessible Archives.

As noted in a letter to the City from Adele Perry, President, Canadian Historical Association and Senior Fellow, St. John's College:

> *The City of Winnipeg Archives and its professional staff deserve an adequate location to preserve their records and do their important work. The people of Winnipeg likewise would benefit from greater access to and engagement with the city's rich documentary records. An examination of these records can shed light on many of the questions that preoccupy our public life today, around the relationship between drugs, public policy, and crime, around urban planning, cars and pedestrians, and on Winnipeg's history as a location of both colonialism and Indigenous resurgence.*
>
> *In many cities, the municipal archives are a tourist and cultural location as well as a resource to researchers and policy makers. In the current situation, the City of Winnipeg has an opportunity to provide an adequate space and infrastructure for its important records and the work of the professionals who manage them. Doing so will enrich all of us who have lived here and continue to live here and shape the important and ongoing conversations about this place and its histories.*

The Risks of Maintaining the Status Quo
If no renewal project were to be supported, the associated risks of continuing to operate in the current environment are potentially severe. While the documentary materials that comprise the bulk of the archival collection are generally stable (paper), the risks of benign neglect become greater with the passage of time. The City's oldest and most valuable records, in particular, are most susceptible to deterioration and loss (e.g. paper becomes brittle and pieces tear off). While the City of Winnipeg Archives has a strong digitization program (though limited in its current workspace), the core problem is the suboptimal environmental conditions for the preservation of fragile archival materials. Right now, the Archives restricts access to fragile documents that cannot be handled without further damaging the item. The records in their current state are also particularly vulnerable to another crisis event. If another disaster were to occur, Winnipeg's valuable collective memory will be at risk, and the City may be unable to access important information supporting developments and legal cases or tell citizens and newcomers Winnipeg's story.

Notwithstanding another disaster, relationships are likely to be tested between the City and local community groups with valuable records to donate, the City and Indigenous groups wanting to share their stories and decolonize their history, and the broader community. The City's ability to engage its citizens, to support actions and decisions, to celebrate its achievements, and to tell its story will be greatly diminished without action to address current deficiencies.

The City of Winnipeg Archives may be at risk of losing its archival accreditation, which provides assurances to donors and researchers that records are adequately cared for, and which is a requirement for grant eligibility and student placements.

PLANNING PROCESS

The approach adopted to complete the scope of work involved a 4-step process, described below:

1. **Current Context**
   The first step involved substantial review of background documents, project proposals, and past redevelopment studies. The start-up meeting also occurred in this part of the project where project goals and scope, proposed approach, project schedule, project deliverables, risks and constraints, and dates with confirmed project stakeholders were discussed and identified. Additionally, comparable archives were identified as part of the Benchmarking Study.

2. **Benchmarking**
   The Benchmarking Study involved interviewing archival experts from across Canada. A questionnaire was prepared and sent to each of the five comparable archives identified. The results of the questionnaire were compiled and analyzed into the Benchmarking Study Report – key takeaways and best practices were identified.

3. **Functional Programming Review**
   Planning parameters were developed in conjunction with the project team during the biweekly update meetings to guide the rest of the project. Stakeholder interviews were held, and comments and discussions heavily influenced the development of the functional program. Soon after, a draft of the Functional Program containing component descriptions, space lists, and relationship diagrams was submitted to the project team for review. After revisions from the project team, the Functional Program was finalized.

4. **Site Considerations and Financials**
   Following the completion of the Functional Program, financial projections were developed by a Quantity Surveyor for the proposed development options. A Draft Financial Report was developed and reviewed by the project team. Edits were made and the Financial Report was finalized. The Final Functional Program was integrated with the Final Financial Report to complete the overall report and was submitted to the project team.

BENCHMARKING SUMMARY

To better understand the City of Winnipeg Archives' standing amongst other archival organizations, a benchmarking study was completed. The City of Winnipeg Archives was benchmarked against five other Canadian archives organizations: City of Ottawa Archives, City of Vancouver Archives, North Vancouver Archives, Centre du Patrimoine (in Winnipeg), and City of Calgary Archives. Benchmarking occurred across a variety of comparable factors such as storage capacity and quality, programs and services, and staffing.

The following set of bullets summarizes the concluding remarks of the study. The complete study can be found in Appendix B.

Collection

- The City of Winnipeg Archives has a moderate sized archival collection, with a comparatively lower ratio of municipal governance records to community records than other institutions studied;
- Intake and management of digital records are a challenge for all archives studied, and although not a leader in this area, the City of Winnipeg Archives has taken the necessary steps required to acquire, maintain, and make available born-digital records;
- There is opportunity to store the City of Winnipeg Archives collection in a more efficient manner (mobile shelving and associated infrastructure supports would be required).

Space

- The City of Winnipeg Archives collection is currently housed in a relatively small facility, which is not sufficient to meet current or anticipated future storage space requirements;
- The City of Winnipeg Archives does not currently have appropriate archival storage (environmentally controlled vault) or conservation space, which are critical to the long-term care of its collection;
- Housing an archival collection in a heritage building is not essential to the delivery of services, but does contribute to the character of an archive;
- Digital records capacity does not replace the need for traditional archival facilities;
- The City of Winnipeg Archives is not currently located in an area that encourages high-volume public access/use.

Services

- Staffing and operating budget levels are consistent with the size of the facility and collection;
- The City of Winnipeg Archives has taken substantive steps to advance the Journey of Reconciliation through its programming activities, in relation to other archives;
- Essential public programming space is lacking in the current facility, limiting the City of Winnipeg Archives' ability to fully engage with the public.

PLANNING PARAMETERS

The following sections provide context for planning, by outlining key assumptions for the project, projecting staffing requirements, defining and applying growth assumptions for the collection, and describing key services now and into the future.

Project Assumptions

The following bullets detail general project assumptions affecting this project:

- The planning horizon for this project is 20 years in the future; accommodating growth less than 20 years will not provide a suitable long-term solution for the archives.
- Staffing can be considered to grow approximately proportionally to the size of the City's population.
- The former home of the archives at 380 William Avenue is not a confirmed solution; future requirements must be determined without the constraints of a known site.
- The archives will continue to be responsible for civic records and is likely to face pressure to accept private and organizational records into the future. Accepting these records in the public trust is consistent with the mandate of the archives.
- The Corporate Records Centre has recently invested in a shelving project at a relatively new facility. This function, and the staff located here, will not move in the future.
- Archival collections are assumed to be housed in static shelving initially (as current), with the capacity to adapt to compact shelving in the future. This entails having proper floor loading capacity to support the increased load of compact storage, and the ability for tracking to be installed for mobile shelves.
- The majority of the Documentary Art collection will remain stored in art racks at the Corporate Records Centre. A select number of pieces will be stored at the Archives facility.

Staffing

While staffing increases are not currently under consideration for the City of Winnipeg Archives, functional programming projecting 10 or 20 years must include capacity for growth. The future staffing in Full-time Equivalent (FTE) for the City of Winnipeg Archives have been estimated based on normalizing current staffing levels to expected levels, and then projecting forward based on population growth for Winnipeg's Census Metropolitan Area (CMA). According to Statistics Canada, from 2020-2030 (over 10 years) the population growth in the Winnipeg CMA is projected to be +16%. From 2020-2040 (over 20 years) the population is projected to increase by +34%. These respective growth rates were used to anticipate total staff numbers by section (rounded to a nearest half FTE), which were then distributed between specific positions as an estimate.

Table 2 shows staffing projections for 10 and 20 years into the future. The "normalized" column indicates the changes in staffing needed immediately for proper functionality of each distinct function. Comparing to the normalized state, the future FTE required over the project planning horizon (20 yeas) is:

- 1 additional FTE in the Administration Section
- 1 additional FTE for APO Section
- 3.5 additional FTE in the Archives Section, and
- 3 additional FTE in the Records Section *(note: 5 of the overall Records staff members are assumed to be based at the CRC)*.

Table 2: City of Winnipeg Archives Current and Future Staff List

Section	Position	FTE Current	Normalized	Future FTE	
				10 Years	20 Years
Admin	City Archivist/Records Manager	1	1	1	1
	Future Space Allowance	0	0	1	1
	Subtotal	**1**	**1**	**2**	**2**
APO	Corporate Access and Privacy Officer	1	1	1	1
	Access and Privacy Coordinator	1	2	2.5	3
	Subtotal	**2**	**3**	**3.5**	**4**
Archives	Senior Archivist	1	1	1	1
	Archivist	1	1	1	2
	Digital Archivist	1	1	2	2
	Archives Technician	0.5	0.5	1	1
	Contract worker/Intern	casual	casual	1	1
	Subtotal	**3.5**	**3.5**	**6**	**7**
Records	Senior Records Manager	1	1	2	2
	Records Manager	3	5	5	6
	Clerk - Records	2	2	3	3
	Subtotal	**6**	**8**	**10**	**11**
	TOTAL	**12.5**	**15.5**	**21.5**	**24**

Long-term facilities planning must include staffing growth proportional to that of population and the archival collection. Staffing may be expected to increase from 15.5 FTE at a normalized current state to ~24 FTE in 20 years (+32%), roughly in line with City population growth. The number of Archivists (not including the technician or contract/intern) is expected to be 5 in 2040. Considering the future collection size expectations, this number is roughly aligned with the average linear feet per archivist that is expected from benchmarked archival organizations.

Collections Growth Assumptions

The following set of collections assumptions were developed after speaking with various archival organizations and experts during the Benchmarking Study and interviewing the City of Winnipeg Archives user groups and stakeholders. The City of Winnipeg Archives does not have a regular past growth rate that can be analyzed, due to physical factors deceptively restricting growth over the past ~10 years. Benchmarked archival organizations have slightly different average annual growth rates, though most hover in the range of ***3%-4.5% of the overall collections size, per year***. In planning for the future, these archival organizations expect the same growth for approximately the next 10 years, past which growth in physical holdings may be expected to decline as born-digital records become more common.

In light of average growth rates across jurisdictions, a reasonable growth rate for the City of Winnipeg Archives was targeted at 3.5% per year, with some select exceptions for certain material types based on archival trends. Growth rates by type are summarized below and are reflected in the growth analysis that follows.

3.5% per year

Textual Materials including archival backlog; Rare Books, Photographs; Audio Recordings and Film, Documentary Art; and Digital Carriers will experience an annual growth rate of 3.5%, in line with general collections estimates.

5.0% per year

Maps and Plans; Gifts, Artifacts, Corporate Memorabilia; and Private Mixed Media will experience a higher annual growth rate of 5%. This is due to:

- A particular focus on Maps and Plans within the collection.
- A lack of alternative housing for gifts, artifacts, and corporate memorabilia. There is likely a volume of these materials not yet donated due to current space constraints.
- An opportunity and known need for community private and organizational record keeping. This is within the City Archives' mandate and is likely to increase in demand as volunteer organizations fold, and family records surface at the 3rd generation.

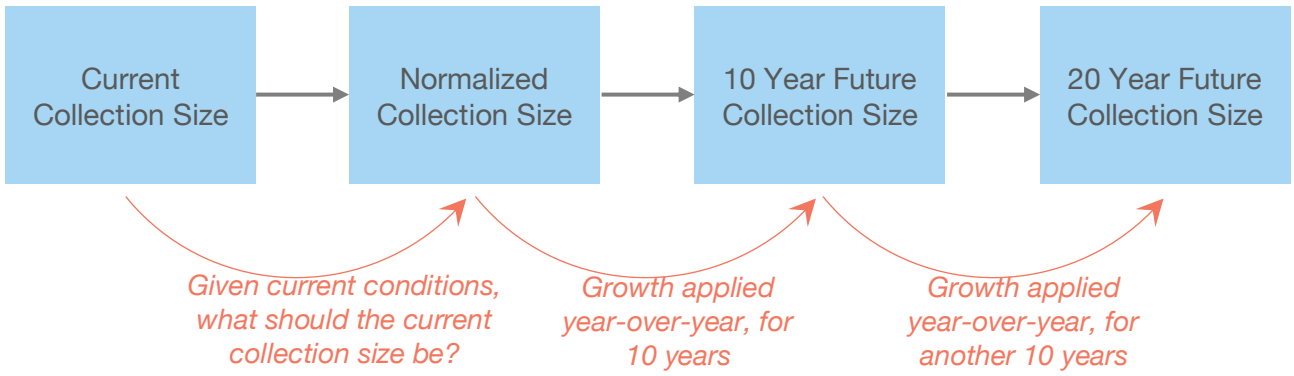
0% per year

Microfilm is assumed to experience an annual growth rate of 0%; current collections will be maintained but new records are no longer microfilmed for long-term storage.

Collections Growth Summary

Table 3 summarizes the City of Winnipeg Archives' current total collection and breaks down the 10 and 20-year collections growth projections for all material types, based on the assumptions described above. Specific comments and assumptions associated with the growth of each material type are listed in the notes below the table.

Figure 2: Growth Summary



Specifically, the table shows:

- The type of material and size of current collection (both as-is and normalized);
- What type of storage space is required for that material;
- Approximate percent each material type represents, as part of the total collection size (both normalized and in the future);
- Annual growth figures expected for each material type, and how that growth develops over 10- and 20-year horizons.

*Table 3: City of Winnipeg Archives – Current Collections and Growth Projections (**bold** text indicates a normalization assumption)*

Type	Storage Type	Current lin ft	Norm. lin ft	% total	FUTURE			
					Annual %	10-Year	20-Year	% Total Future
Textual Materials (A)	Regular Class A	10,000	10,000	76%	3.5%	14,106	19,898	73%
Archival Backlog (B)	Regular Class A	unknown	**1,000**	8%	3.5%	1,411	1,990	7%
Rare Books (C)	Regular Class A	155	155	1%	3.5%	219	308	1%
Photographs	Regular Class A	140	140	1%	3.5%	197	279	1%
Audio Recordings and Film	Cold / Frozen	95	95	1%	3.5%	134	189	1%
Documentary Art (D)	Art Racking / Class A	200	**200**	2%	3.5%	282	398	1%
Gifts, Artifacts, Corporate Memorabilia	Special Racking/ Class A	325	325	2%	5.0%	529	862	3%
Private Mixed Media (E)	Regular Class A	170	**1,192**	9%	5.0%	1,941	3,161	12%
Maps and Plans (F)	Flat / Class A	506	**759**	6%	5.0%	1,236	2,014	7%
Digital Carriers (G)	None (no Class A)	3	**5**	0%	3.5%	7	10	0%
Microfilm	None (no Class A)	90	90	1%	*assume zero*	90	90	0%
TOTAL LIN FEET:		**11,178**	**13,202**	**100%**		**18,916**	**27,185**	**100%**
GROWTH IN %:			**118%**			**169%**	**243%**	
Growth Summary by Storage Type						**10-Year**	**20-Year**	
TOTAL Regular Class A Storage:						17,874	25,636	Lin feet
TOTAL Regular Storage:						97	100	Lin feet
TOTAL Frozen Storage:						134	189	Lin feet
TOTAL Maps and Plans:						1,236	2,014	Lin feet

(A) Includes containers assigned to the Archives account and stored at the Corporate Records Centre.

(B) Immediate backlog will be based on renewed interest with project, and anticipated transfers of archival materials from City departments. There is no way to accurately estimate the amount of archival records being stored throughout the City; therefore, an assumption of 10% of textual collection size was used to account for it.

(C) Primarily the City Clerk's Library collection.

(D) Some works are on display in various City buildings, including 50 Myrtle St. The collection consists of 396 items of various sizes, including Royal portraits measuring approximately 112” x 74” (framed). While the majority of the artwork collection is on mobile shelving, these portraits are stored in crates. Normalize to 200 lin ft (size of collection desired to be stored in new facility).

(E) As found in the Benchmarking Study, there is no exact benchmark for the number of community records that a City Archive should have. The number ranges vastly (from 3% to 92%). It is considered reasonable for the interests of this study and given the Winnipeg context, to aim for a current ~10% holdings of community records and to allow for higher-than-average growth in this area over time.

(F) Currently includes 9 map cabinets; space should be normalized to +50% as these cabinets are already full, causing maps and plans to be stored rolled which is not ideal. Growth is anticipated at 5.0%/year, based on these being a specialty area for this particular Archives.

(G) The space for digital carriers including hard drives and DVDs is quite small, so has been normalized to a number suitable to project forward.

Services

As described previously, the City of Winnipeg Archives and Records Control Branch is comprised of three distinct program areas, which deliver Archival, Records Management, and Access and Privacy services. The following table summarizes the services provided by the Branch at the Myrtle St location. There are many services the City of Winnipeg Archives would like to offer but simply cannot provide in their current facility. Based on conversations with the City of Winnipeg Archives' staff and research on other archival facilities, the second column articulates potential service improvements to be offered by the City of Winnipeg Archives.

Table 4: City of Winnipeg Archives Services

Service Area	Services Currently Offered	Service Improvements
Public Programming	• Offsite programming at schools • Developing materials for offsite displays • Limited programming and support of smudging ceremonies	• Programming and events hosted on-site including tours, classes, lectures, discussion panels, book launches, photo exhibits, film nights, and receptions • Displays hosted on-site, curated by the City of Winnipeg Archives Expanded opportunities for: • Indigenous ceremonies, storytelling, and programming • Community outreach and partnerships with community organizations and school / university programs • More engagement with the public, tourists, students, and visitors
Research	• Providing assisted and non-assisted research, primarily occurring in the reading room	• Additional capacity for researchers • More dedicated and better-equipped research stations allowing access to both physical and born-digital records • Better environment for review of audio and video
Archival Services	• Accessioning of archival records, storage and preservation of records including digitization	• Moderate conservation services including humidification, flattening, and cleaning • Additional digitization efforts • Processing and accessioning of born-digital records
Access and Privacy Office	• Coordinating requests for access to information and developing and implementing process improvements to enhance openness and transparency by ensuring consistent and fair access to City records	• Expected increase in demand for services
Records Management	• Managing the corporate records program and implementing policies, guidelines, and procedures and providing advice to City of Winnipeg Departments	• Expected increase in demand for services to manage digital records

In addition, the City of Winnipeg Archives are considering adopting more accommodating operating hours including limited evening and possibly weekend hours. As a City service, the Archives are currently open from 8.30am-4.30pm (Monday to Friday).

SPACE REQUIREMENTS

Component Introduction

The City of Winnipeg Archives is comprised of four major components: Public Area, Staff Area, Archives, and Support Area. These components are described in summary below. Each component has its own section that follows, to detail the requirements.

Public Area CGSM* 304.3 11.1% of total	The Public Area is the public-facing component of the facility. This component will serve as the main entry to the facility and will house a Lobby (also serving as a Multi-Purpose Area), Reception Desk, Classroom, Reading Room, Media Room, Lockers, and Washrooms. Public access is restricted to this component only, save for scheduled tours of the facility. Activities expected here include public and Indigenous programming, research, and events.
Staff Area CGSM 263.6 9.6% of total	The Staff Area contains staff offices, work areas, and staff support spaces. The spaces of this component will be arranged to encourage communication efficiencies through workroom and office adjacencies. This component provides a combination of offices and open-office workspaces, with supporting areas including washrooms, a staff lounge / kitchen, and meeting spaces.
Archives CGSM 2,048.6 74.8% of total	The Archives Component supports archival activities, including archival processing, conservation, digitization, and storage. This is by far the largest component due to the size of the main 20-year storage vault. Collections materials stored in the vault include textual materials, rare books, photographs, documentary art, gifts, artifacts and corporate memorabilia, maps and plans, and private mixed media. An allocation for an environmental buffer (at external-facing walls) has been provided to ensure optimal environmental conditions can be maintained within the vault. As well, this component will include a cold storage area complete with freezers for storage of materials such as audio recordings and film.
Support Area CGSM 123.0 4.5% of total	The Support Area component will primarily consist of the Loading Dock, Staging Area, and the Quarantine Area. These spaces exist to handle the delivery of collections materials and movement of displays in and out. This component also includes allocations for building support such as a server room and a housekeeping space.

Total	**CGSM**	**2,740**	**BGSM**	**3,466**
	CGSF	29,489	BGSF	37,303

- Component Gross Square Meters (CGSM) describes the size of a component as a unit. It is calculated by applying a component grossing factor to all of the net spaces that make up the component, allowing for circulation space and internal walls within.

Table 5 summarizes the overall space requirements by component, with comparators to net space as defined by the previous study (Cibinel Report) and the approximate current space at 50 Myrtle St.

*Table 5: Comparison of summary space requirements (in **net square meters**)*

Component	Required Area	Cibinel Report	50 Myrtle St*
Public Area	253.6	426.9	64.2
Staff Area	219.7	285.7	154.7
Archives	1,707.2**	1,484.7	990.2
Support Area	102.5	68.0	79.3
Total	**2,283.0**	**2,265.3**	**1,288.4**

**Current spaces were estimated from a digital floorplan; ** includes environmental buffer allowance of 267.0 Net SM*

Summary Relationship Diagram

The relationship diagram in Figure 3 serves to visualize the relationships between subcomponent spaces identified above in relation to circulation routes, access and preferred adjacencies. The diagram is not intended to be viewed as a floor plan. Although roughly representative of size, spaces are not represented exactly to scale.

Figure 3: City of Winnipeg Archives Summary Relationship Diagram

The key relationships and adjacencies illustrated in this diagram are:

Public Area:

- The main entrance for all staff and public is at the Lobby.
- The Lobby serves as the central access point for the public, with direct access to the Classroom and Reading Room.
- Reception has clear lines of sight to the Lobby and Reading Room.
- The Public Area component is accessible to the public; all other areas are restricted to staff-only or escorted access.
- Material Lockers and Media Room are directly adjacent to the Reading Room for easy access.

Staff Area:

- Open Office Areas are adjacent to their respective department offices (e.g. Archivists' Open Office Area adjacent to Senior Archivist Office).
- The Meeting Rooms are centrally located for ease of access.
- All Staff Areas are behind the controlled circulation point.
- The Archivists' Open Office Area is in close proximity to the "Archives" component / Main 20-Year Storage Vault.

Archives:

- Archival Processing Area is directly adjacent to the Conservation Lab and is in close proximity to Loading and the Service Entrance, all to allow for shortest travel for materials.
- Digitization is located close to the Vault and Archival Processing.
- Cold Storage is in close proximity to Archival Processing and Conservation Lab.

Support:

- Staging area is accessible from and lies adjacent to the Loading Dock.
- The Quarantine Area is in close proximity to the Loading Dock.
- A service entrance with controlled access is located at the Loading Dock.

Design Guidelines and Character

The following section details design guidelines for the City of Winnipeg Archives. These guidelines describe the overall building and character of space and should be taken into account by the architecture team as design progresses. They are listed in alphabetical order which does not imply priority.

Access and Security

Two functional access points are required for the facility (not including emergency exits as required by code). One should be the Main entrance for public and staff on foot; the other, a service entrance for vehicle deliveries.

Given the sensitivity of the materials stored and displayed in the City of Winnipeg Archives, access and security must be tightly controlled. Public access should be limited to the Public Area component with an access point controlling movement to the rest of the facility. Another controlled access point should be located at the Service Entrance to ensure only service vehicles and personnel enter. Staff should have access to the facility (zoned to certain rooms if/as required) via fob or swipe card.

Accessibility

The facility must be physically accessible to all, particularly in public areas, and should be designed for ease of wayfinding. Furniture and equipment must also be selected for accessibility (e.g. reception desk and technology stations). Washrooms in the facility (public and staff) have all been sized for universal accessibility.

Accreditation and Category A Designation

Category A designation for Archives is governed by the Canadian Conservation Institute[2] (CCI) for the management of the Moveable Cultural Property Program under the Cultural Property Export and Import Act. This allows designated organizations to access tax incentives and grant provisions under the Act, and; it also allows the safe sharing and transfer of materials between these organizations.

To meet the requirements of Category A designation, organizations must meet facility, policy and business feasibility requirements. With respect to the building, specific requirements must be met in terms of location, envelope, and interior finishes. With respect to storage, key requirements cover location, structural, clearance, lighting, and functional spaces. Other specific requirements surround loading dock capabilities, HVAC, sensors, and security.

Category A designation is also recognized as an accepted standard for preservation of materials by accrediting bodies including the Association for Manitoba Archives. In Winnipeg, the following organizations currently hold Category A status[3] :

- Archives of Manitoba
- Gallery 1C03, University of Winnipeg
- Manitoba Museum
- Winnipeg Art Gallery
- Société historique de Saint-Boniface
- Royal Aviation Museum of Western Canada
- School of Art Gallery, University of Manitoba
- Ukrainian Cultural and Educational Centre
- Assiniboine Park Conservancy, Pavilion Gallery Museum
- University of Manitoba Libraries, Archives and Special Collections

The City of Winnipeg Archives does not currently hold Category A designation, nor is it achievable within its current facility (notwithstanding major renovation efforts within a leased facility). The City of Winnipeg Archives may be at risk of losing its accredited status with the Association for Manitoba Archives.

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[2] The Canadian Conservation Institute (CCI), a Special Operating Agency within the Department of Canadian Heritage, advances and promotes the conservation of Canada's heritage collections through its expertise in conservation science, treatment and preventive conservation. CCI works with heritage institutions and professionals to ensure these heritage collections are preserved and accessible to Canadians now and in the future. (https://www.canada.ca/en/conservation-institute.html)

[3] Per https://www.canada.ca/en/canadian-heritage/services/funding/movable-cultural-property/designated-organizations.html

Ceiling Height and Clear Spans

As clear spans are required for all net spaces, with the exception of the Vault and the Reading Room. Clear heights should be a minimum of 12' in public areas to accommodate required activities. Vault ceilings must be at least 12' to accommodate shelving 8 shelves high (~9 feet height alone). More height may be required to accommodate the enhanced structure supporting the clear span, HVAC, acoustic treatments, or suspended equipment. This should be determined during detailed design.

Class A Space

Importantly, Category A designation applies specifically to temperature and humidity controls in archival vaults. Class A space is required for Category A designated vaults and is considered by CCI to be the most cost-effective degree of control for most collections. Fundamentally, it is based on a special chapter covering museums, galleries, archives and libraries in the American Society of Heating, Refrigeration, and Air Conditioning Engineers Inc. (ASHRAE) Handbook, and calls for "*good control [of temperature and humidity, with] some gradients or seasonal changes, but not both".* Technically, this means one of two acceptable scenarios:

- short-term fluctuations of ±5% RH and ±2°C, with a seasonal temperature change of +5°C and -10°C, and a seasonal humidity change of +10% RH and -10% RH; or,
- short-term fluctuations of ±10% RH and ±2°C, with seasonal temperature change of +5°C and -10°C with no seasonal change in humidity.

In practice, maintaining these requirements over a year in a city with variable weather is near impossible without specifically designed space, equipment, and processes. As described elsewhere, the City of Winnipeg Archives' current storage space is not capable of Class A control.

Flexibility

Flexibility is a key component of any long-term facility plan. Planning assumptions made today may change with the future context unexpectedly. Key considerations in flexibility include:

- Use of bearing walls to define enclosed spaces should be minimized so that layout configurations can be altered over time in response to evolving needs.
- Mechanical, electrical, HVAC, and fibre/cabling systems should be incorporated into the building design in such a way that they minimize restrictions on layout reconfigurations over time.
- Spaces with similar functions should be grouped (e.g. spaces within a component should be located close together) to allow modifications in activities over time without compromising zoning and access.

Floor Loading Guidelines

Flooring loading for the vault area is expected to be higher than standard due to the heavy loaded shelving. The expectation is that the Archive will eventually transfer collections to mobile (compact) shelving units when required for capacity expansion. This arrangement has an even higher floor loading requirement. Spaces in the Support component including loading, staging, and quarantine may also experience higher-than-normal floor loading. Floors in all other spaces such as offices and public spaces may be of standard capacity.

Floors must be free of obstructions, as wheeled book trucks and tables will be in consistent use to transfer materials.

Gross Up

Net space is grossed up twice: once to account for walls and circulation within a component (Component Grossing Factor) and once again to account for overall building systems and structure (Building Grossing Factor). When considering a renovation project, the building systems and structure are mostly already in place; the component gross space is the more relevant measure.

For a public use facility such as an Archives, a component grossing factor of 20-30% is generally appropriate. In this program a 20% grossing factor was used.

Cornerstone generally applies a building gross up factor of 26.5% to a facility. This factor includes the allowances listed below; however, at this level of planning it is not advisable to customize the building grossing factor for particular allowances.

- 3% for a lobby allowance
- 1% for public washrooms
- 15% for major circulation allowance
- 0.5% for shared custodial/loading/staging/waste
- 5% for building mechanical/electrical
- 2% for walls and structures

Interior Environment Guidelines
The interior environment must support a community-oriented aesthetic where spaces are functional and in alignment with community values including fiscal responsibility; it should reflect a clean civic environment where interior finishes are resilient and of high quality, durable, and cleanable.

As an Archive, the interior environment should reflect respect for, and celebration of, history and its value.

Natural Light
Natural light is of particular importance in public and staff components and should be provided here at a priority, wherever possible.

The vault must be shielded from all natural light in order to properly maintain environmental conditions. Archival processing, conservation, and digitization areas must allow for complete shielding from (or strict control of) natural light for the same reasons.

Sustainability
The City of Winnipeg's Office of Sustainability has implemented a Green Building Policy, which mandates that all new City-owned buildings over 500 square meters (which certainly includes this facility) must be designed and constructed to achieve improved energy performance and certification in accordance with standards such as LEED Silver, at minimum. An existing building must meet certain criteria for emissions and energy.

Travel Distances
The design should consider the sensitive nature of archival records, art works, and artifacts by minimizing travel distances. All storage areas (especially Class A storage) should therefore be in close proximity to processing and working areas (i.e. Archival Processing, Digitization Lab, Conservation Lab, Archivists' Open Office Area, etc.) and the Service Entrance. Corridors should be wide and should not have tight corners along paths of routine travel. Door widths into the storage areas must permit materials and large works such as documentary art and flat maps to enter the space.

Warm and Welcoming
The City of Winnipeg Archives are expanding their public-facing services in the future. This will require a warm and welcoming public environment for all patrons and staff. In particular, Indigenous peoples (Métis, Inuit, and First Nations) must be able to see representation of themselves in the public areas.

Public Area

The Public Area component is the public-facing component of the City of Winnipeg Archives. The vast majority of Archives-led public programming will occur here, with some programming continuing to occur offsite within the community. The spaces in this component should be designed to be flexible, so that they can accommodate a variety of programming, events, and community activities. The activities expected to occur here include but are not limited to:

- **Research**
- **Public Programming**
  - Tours
  - Workshops
  - Lectures and classes
  - Discussion panels
  - Archives-curated displays / exhibits
  - Film screenings
- **Indigenous Programming**
  - Smudging ceremonies (select spaces only)
  - Elder visits / storytelling
  - Indigenous-curated displays
- **Events**
  - Networking events
  - Fundraisers
  - Open doors events
  - External meetings and rentals

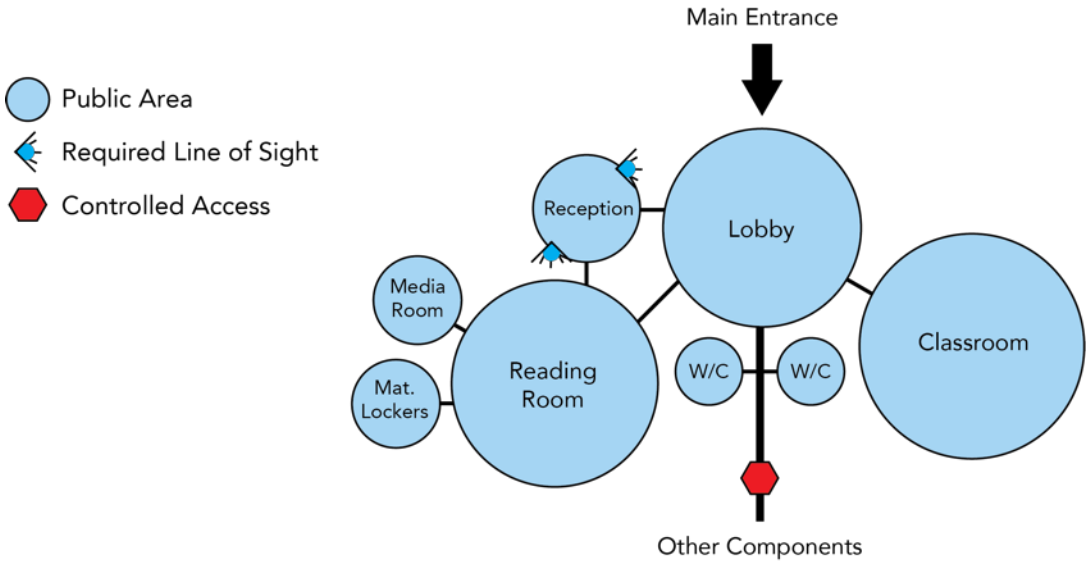
Table 6 below summarizes the activities, functions, and requirements of the Public Area spaces.

Table 6: City of Winnipeg Archives Public Area Space List

Component	Space	Unit SM	Unit	SM	SF	Notes
Public Area	Lobby / Multipurpose Area	60.0	1	60.0	646	Serves as main entryway and multi-purpose event space (capacity for seated dinner: 20, standing reception event: 50). Includes space for coats/boots and allowance for curated public display area. Should have appropriate ventilation to allow for smudging ceremonies.
	Reception Desk	12.0	1	12.0	129	Reception and Information Desk, providing room for 2 workstations incl. layout space. Must be accessible and have supervisory views of Reading Room and entryway.
	Classroom	75.0	1	75.0	807	Classroom and multi-purpose room with a capacity of 25 seated students. Includes allowance for kitchenette including sink. Must include presentation technology. Must have appropriate ventilation to allow for smudging ceremonies.
	Reading Room	79.1	1	70.5	852	Includes 12 research stations and 3 technology stations (such as microfilm readers and photocopiers). Includes reference material shelving, space for 2 sets of double stacked map cabinets, and space for microfilm and digital carriers.
	Material Lockers	1.5	6	9.0	97	An in-room allowance in the Reading Room for six lockable spaces for book trucks holding research materials. This allows researchers to secure materials during long projects.
	Media Room	9.3	1	9.3	100	An enclosed room for 2 listening/viewing stations for various media.
	W/C	4.6	2	9.2	99	Universally accessible, gender neutral washrooms for public use
			NET	**253.6**	**2,730**	
		CGSM	20%	**304.3**	**3,276**	

The relationship diagram in Figure 4 has been prepared to introduce spaces and to help visualize the relationships between those spaces in relation to circulation routes, access and adjacencies. As shown, public access should be controlled past this component. Reception should undertake supervision of spaces in this component, with direct line of sight to the Reading Room and Lobby.

Figure 4: City of Winnipeg Archives Public Area Relationship Diagram



Key Relationships and Adjacencies:

- Reception should have clear lines of sight to the Lobby and Reading Room.
- The Public Area component should be accessible to the public; all other areas should be restricted to staff only.
- The Media Room should be directly accessible from the Reading Room.
- Material Lockers should be located within the Reading Room for easy access.
- The Classroom must be immediately accessible from the Lobby to support movement of large groups. These patrons are different than those accessing the Reading Room.
- Washrooms should be accessible from main circulation (or the Lobby).

Staff Area

The Staff Area component consists of both closed and open office allowances. Some staff members are able to work in open office environments; these include Archivists and Records staff. Senior staff, managers, and APO staff members have privacy requirements that necessitate closed offices. The activities expected in this component include:

- Individual administrative work such as reporting, planning, and training.
- Phone calls, videoconferences, and computer work.
- Collaborative tasks in Open Office Areas.
- Meetings from 4-8 people (larger meetings to be held in the Classroom in the Public component).
- External City department meetings (as booked/allowed by Archives staff).
- *Note: the intent is that archival material will not be processed in these areas. Please see Archives subcomponent for workrooms.*

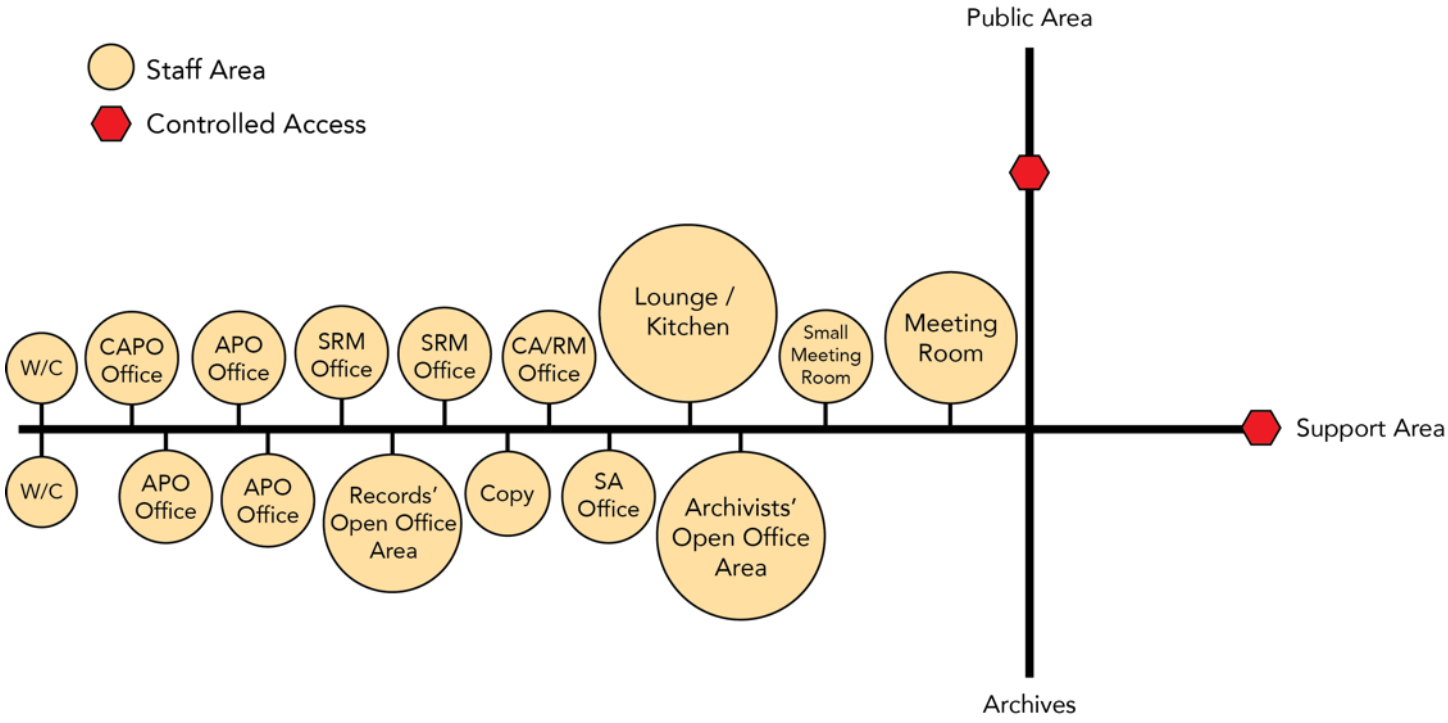
The space list in Table 7 summarizes the activities, functions, and requirements of the spaces within this component.

Table 7: City of Winnipeg Archives Staff Area Space List

Component	Space	Unit SM	Unit	SM	SF	Notes
Staff Area	Offices	9.3	8	74.4	800.9	Offices for City Archivist/Records Manager, Corporate Access and Privacy Officer, Senior Archivist, Access and Privacy Staff (1), Senior Records Managers (2), and two offices for future growth in APO.
	Open Office Area - Archivists	4.5	6	27.0	291	Six computer workstations supporting Archivists (2), Digital Archivists (2), Archives Technician (1), and a spare for Contract Workers, students, or interns.
	Open Office Area - Records	4.5	4	18.0	194	Four computer workstations for Records Managers (4). This assumes that an additional 2 Records Managers and 3 Clerks will continue to be located at CRC.
	Copy	6.0	1	6.0	65	Administrative support open area including photocopier, internal mail, and office supply storage.
	Lounge/Kitchen	30.8	1	30.8	332	A Lounge and Kitchen for staff, featuring a kitchenette, dining table, and a comfortable seating area with a combined capacity of 13 people.
	Meeting Room	16.7	1	16.7	180	Capacity 8, requires presentation equipment
	Small Meeting Room	9.3	1	9.3	100	Capacity ~4, supporting small meetings. Supports future growth as a flex office as needed.
	General Storage	1.0	19	19.0	205	General allowance of 1 SM of storage per person (office and workstations)
	W/C	4.6	2	9.2	99	Universally accessible, gender neutral washrooms for staff use
			NET	**219.7**	**2,365**	
		CGSM	20%	**263.6**	**2,838**	

The relationship diagram in Figure 5 has been prepared to introduce spaces and to help visualize the relationships between those spaces in relation to circulation routes, access and adjacencies.

Figure 5: City of Winnipeg Archives Staff Area Relationship Diagram



Key Relationships and Adjacencies:

- Spaces are shown clustered together to reflect functional staff groupings, enabling department leads to easily communicate with their respective teams (e.g. Records offices should be clustered together).
- Copy Area should be centrally located within the component.
- The Meeting Rooms should be located close to the Public area in case of external meeting requirements.
- The Archivists' Open Office Area should be in close proximity to the Archives component and the Support Area component for ease of access.

Archives

The Archives component contains the majority of the collection of the City of Winnipeg Archives (save select materials in the Reading Room) and spaces to support the processing, conservation, and digitization of the collection. The environmentally controlled storage vault contains collection materials on a variety of shelving appropriate to the medium. These materials include civic textual materials, rare books, photographs, documentary art, objects (gifts, artifacts and corporate memorabilia), private mixed media, and maps and plans. Cold storage is also needed to store more sensitive materials such as audio recordings and film.

Activities within this component include:

- Accessioning, processing, sorting, labeling, unpacking and repacking archival materials from a variety of sources
- Research projects by staff members
- Digitization of collections materials including textual documentation, maps, film, video, etc.
- Conservation including humidification, flattening, and cleaning
- Storage of archival collections
- Computer work requiring immediate adjacency to collections materials
- Storage of archival supplies

The space list in Table 8 has been prepared to detail the activities, functions, and requirements of the spaces within this component. Vault storage requirements have been calculated based on 0-10 year and 10-20 year requirements and separated by shelving type. However, ***the vault should ideally be one large open space*** to allow for flexibility over time. It may be divided into two or three areas at maximum to accommodate a variety of possible design solutions.

Shelving is assumed static to support a 20-year future, with the ability to switch to mobile (compact) shelving later to gain another ~ 7-10 years of capacity for acquisitions. This estimate was made pending the as-yet unknown effect of born-digital records, and assuming a 30%-50% efficiency gained from compact shelving.

The space list in Table 9 assumes Vault Storage (Textual / General) uses shelving 8 shelves high; however, the City of Winnipeg Archives may consider re-purposing their current shelving in the short term. These existing units are 6 shelves high. The rationale for this scenario would be to make use of existing shelving units, eventually upgrading to 8 shelves high when growth requires it. The following calculations (Table 8) show the differences in storage efficiency between an 8-high and a 6-high model, over the planning horizon.

Table 8: Shelving capacity analysis

	Collection Size (Textual / General)	8 Shelf Storage Efficiency per 1 SM	6 Shelf Storage Efficiency per 1 SM
Linear Feet	25,636	24	17.2
Linear Meters	7,813.8	7.3	5.25

Total Vault Needed (8 shelves): $\frac{7813.8}{7.3} = 1070.4\ SM$

Total Vault Needed (6 shelves): $\frac{7813.8}{5.25} = 1488.3\ SM$

Difference in Efficiency: $\frac{1070.4}{1488.3} = 0.72$

A 72% efficiency for 6 shelves implies that storage space would be at capacity at ~14 years (given a 20-year planning horizon). At 14 years, the City of Winnipeg Archives could upgrade their 6 shelves high shelving units to 8 shelves high to create capacity in the vault for the remaining 6 years.

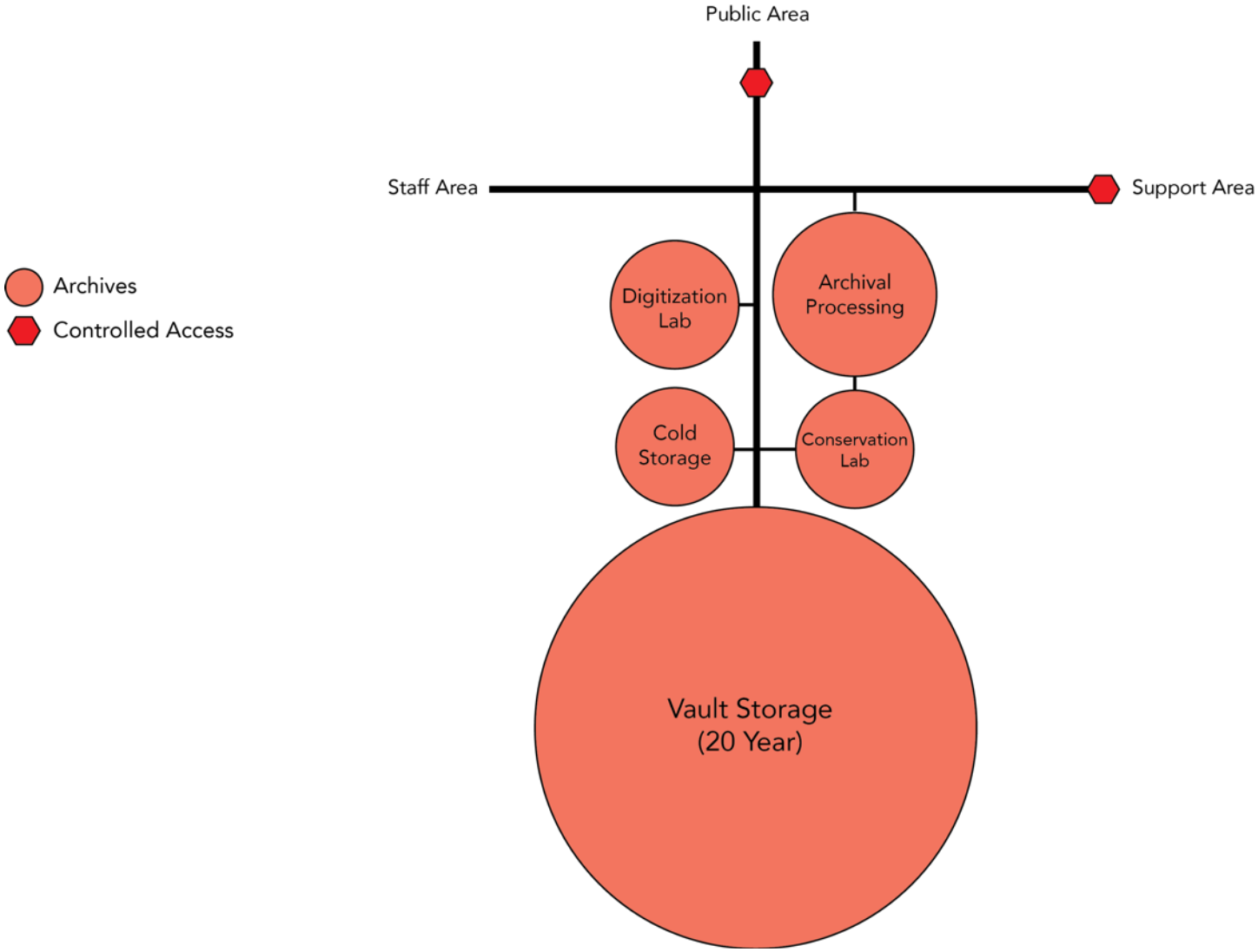
An environmental buffer allowance has been included to allow for the possibility of a particular design solution often used in modern archival facilities: a buffer corridor between the vault and the outside facility wall to help maintain environmental conditions. This solution is not strictly required as there are a number of ways that required vault environmental conditions can be achieved; however, the allowance maintains the option.

Table 9: City of Winnipeg Archives - Archives Space List

Component	Space	Unit SM	Unit	SM	SF	Notes
Archives	**Vault Storage -** Textual / General 0-10 year	744.7	1	744.7	8,016	Assumes static shelving, 8 shelves high). Includes Textual Materials (incl. Archival backlog), Rare Books, Photographs, and Private Mixed Media
	Vault Storage Textual / General 10-20 year	323.4	1	323.4	3,481	
	Vault Storage - Maps and Plans 0-10 year	76.6	1	76.6	824	Stored in specialized Archival Map Cabinets stacked 2 cabinets high
	Vault Storage - Maps and Plans 10-20 year	48.2	1	48.2	518	
	Vault Storage - Gifts and Artifacts 0-10 year	26.9	1	26.9	289	Assumes static shelving, 6 shelves high, to accommodate a variety of object sizes
	Vault Storage - Gifts and Artifacts 10-20 year	16.9	1	16.9	182	
	Vault Storage - Art Works (allowance)	85.0	1	85.0	915	Accommodates the preferred amount of art to be stored at the new facility.
	Environmental Buffer Allowance (Vault)	267	1	267	2,874	Equivalent to 25% of total vault storage area; assumes buffer corridor on three sides of vault to be used solely for air buffer
	Cold Storage (-5 to 0 C) 0-10 year	12.0	1	12.0	129	Assumes a single room accommodating a number of fridge-freezers (not walk-in freezer). Approx. 4 freezers needed for 0-10 year storage; plus another two for 20 year storage requirements. This should be one room only.
	Cold Storage (-5 to 0 C) 10-20 year	6.0	1	6.0	65	
	Archival Processing	42.1	1	42.1	453	For general archival processing. Assumes 2 large moveable tables (~40" x 52") for oversize processing, 3 computer workstations, and allowance for supply storage, circulation, and some material staging. No sink is required in this room.
	Digitization Lab	36.0	1	36.0	388	For digitization of varied materials. Includes space for: 2 double-monitor workstations, 2 flatbed scanners, microfilm scanner, camera setup (including top-down copy stand, tripod, soft lights and setup). Includes allowances for staging of materials (in/out) and storage of supplies and valuable equipment.
	Conservation Lab	18.2	1	18.2	196	Dedicated to conservation activities. Includes 2 industrial sink banks, work counter for humidification bins, 2 large tables, and supply storage.
			NET	**1,707.2**	**18,376**	
		CGSM	20%	**2,048.6**	**22,051**	

The relationship diagram in Figure 6 has been prepared to introduce spaces and to help visualize the relationships between those spaces in relation to circulation routes, access and adjacencies.

Figure 6: City of Winnipeg Archives - Archives / Vault Relationship Diagram



Key Relationships and Adjacencies:

- The Archives Component as a whole should be in close proximity to the Support Component and the Staff Area to minimize travel distances for staff and materials.
- The Conservation Lab and Archival Processing Space both should be directly accessible from each other and from main circulation to allow ease of movement of materials and staff between the related functions.
- The Cold Storage room should be in close proximity to the Conservation Lab and the Main Vault.
- The Main Vault is shown as one space but may be divided into two (or three areas at maximum) to accommodate a variety of possible design solutions.
- All rooms in this component must be secure, with card/fob access only.

Support Area

The Support Area component contains the support spaces of the archives, which include a Loading Dock, separate Staging Area, and Quarantine Area. The Loading Dock should be connected to the service entrance to enable proper delivery of materials and should have an overhead door for large truck deliveries to access the space directly. Adjacent to the Loading Dock, but separated to allow for more precise environmental control, should be the staging area for materials coming in or leaving. Close to these spaces should be the Quarantine Area where materials with suspected pests, mould, or spores can be isolated, examined, and treated with freezers. This component also allows for the Server Room and Housekeeping Area (not shown in relationship diagram).

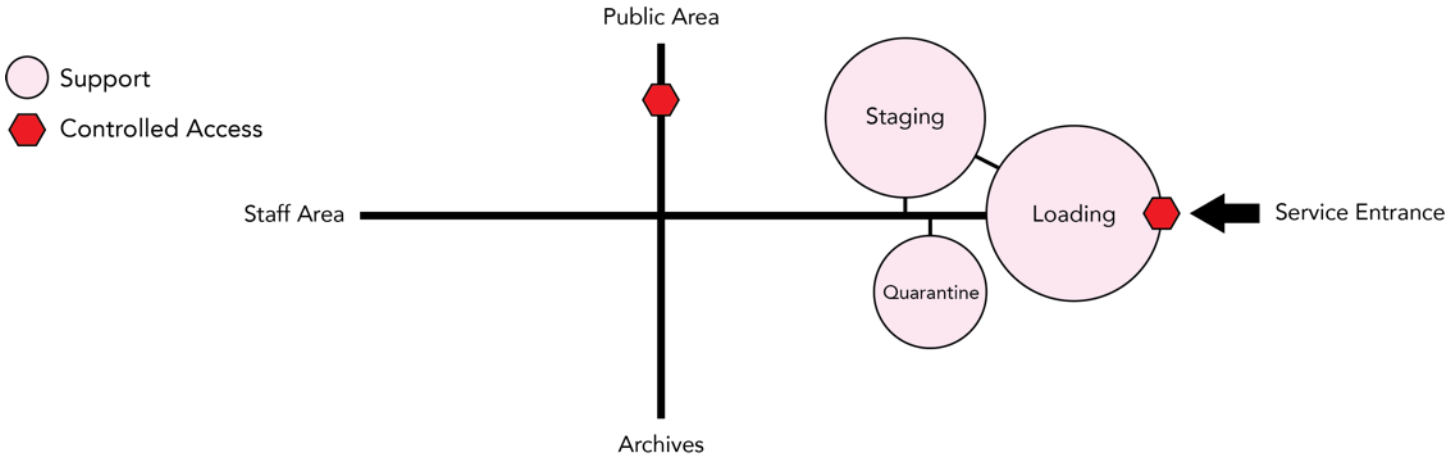
The space list in Table 10 summarizes the activities, functions, and requirements of the spaces within this component.

Table 10: City of Winnipeg Archives Support Space List

Component	Space	Unit SM	Unit	SM	SF	Notes
Support Area	Loading	40.0	1	40.0	431	Secure space connected to service entrance to receive deliveries of materials. Must have an overhead loading door (at loading height) with weather seals, and man-door. Should be adjacent to a truck parking apron (outside).
	Staging	30.0	1	30.0	323	Secure space adjacent to loading dock that supports secure storage of materials waiting to be transferred to and from Archives Storage / Vaults. Will also support curated displays or programming materials about to exit the building. Includes utility shelving and worktable.
	Quarantine	13.0	1	13.0	140	Lockable space to secure contaminated or suspected contaminated material. Includes chest freezer, work counter, and shelving. The ventilation should be designed so as not to spread suspected contaminants.
	Server	12.0	1	12.0	129	Allowance for server room for digital backups. HVAC must allow this room to be kept cool despite server loads.
	Housekeeping	7.5	1	7.5	81	Janitor room supporting building. Include floor sink, shelving for chemicals and supplies, and roll-in for housekeeping carts.
			NET	**102.5**	**1,103**	
		CGSM	20%	**123.0**	**1,324**	

The relationship diagram in Figure 7 has been prepared to introduce spaces and to help visualize the relationships between those spaces in relation to circulation routes, access and adjacencies.

Figure 7: City of Winnipeg Archives Support Space List



Key Relationships and Adjacencies:

- The Loading Dock should provide access from the Service Entrance to the main corridor.
- The Staging Area should be adjacent to the Loading Dock and directly accessible from both it and the main circulation; however, they are separate spaces and there must be a door to separate them.
- The Quarantine Area should be in close proximity to the Loading Dock for ease of movement of suspected contaminated materials.
- The Support component should be in close proximity to the Archives component and the Staff Area component.
- All rooms in this component must be secure, with card/fob access only.

DEVELOPMENT OPTIONS

The following options have been developed to test the best way forward in providing suitable accommodations for the City of Winnipeg Archives. The options use the information developed in this functional program to consider the variety of possibilities available within the development context.

Option Summary

The following assumptions have been used to develop the options:

- All options should be for a 20-year planning horizon.
- Both consolidated and distributed models should be considered.
- Occupation of 380 William Avenue is assumed, either by Archives or another function such as general administration.
- The City already owns any land considered for new builds.

Table 11 summarizes the options.

Table 11: City of Winnipeg Archives Development Options

Option #	Description	Estimated Total Project Cost
Option 1	New build of all required spaces for Archives, as programmed.	$22.3M
Option 2a	Distribution of functions between downtown site and industry site. Some space duplication required. Two new builds needed.	$25.8M
Option 2b	Same as Option 2b, but downtown location is a tenant improvement on a leased location.	$20.0M *(not including lease)*
Option 3	New build of required spaces for Archives to 10 years; assume expansion in 10 years.	$23.7M
Option 4	Renovation of 380 William Ave for Archives.	$13.3M *(not incl. hazmat removal)*

Costing Assumptions

Each option presented has undergone Class 'D' Estimates (Opinion of Probable Cost; equivalent to Class 3) at -20% to +30%. The estimates have been prepared by Hanscomb Quantity Surveyors Ltd. using information and guidelines provided by Cornerstone Planning Group. Hanscomb also made use of Class C costing information prepared for Cibinel Architect's 2010 report regarding the 380 William Avenue renovation. For more information on the costing analysis including a full list of assumptions, please see the full report in Appendix C.

The key assumptions to note are:

Escalation Allowance

- An allowance of 6% has been made for construction cost escalation that may occur between March 2020 and the anticipated bid date for the project (assumed 2 years from the date of this report).

Project vs Construction Costs

- The construction costs have been increased by another 20% to account for soft costs such as architecture, planning, etc. This results in a final "overall project cost" which is indicative of the total spend requirements to achieve the project (please note exclusions below).

Exclusions

- A full list of exclusions is presented in the Appendix C report. Importantly, this Estimate does not provide the following:

Table 12: Key Costing Exclusions

Exclusion	Notes
Cost of hazardous material (e.g. asbestos, lead, PCB, etc.) removal	This will be particularly important for the 380 William Ave renovation. Although hazardous materials are known to be in the building, their remediation cannot be estimated without further information and analysis.
Phased construction premiums	The work is assumed to happen in one phase.
Land acquisition costs	If a new build is selected, the land is assumed to already be owned by the City, without existing structures (i.e. demolition is existing structures is also excluded).

Costing Summary

Table 13 summarizes the costing for all options for the City of Winnipeg Archives. *Red text* indicates Cornerstone estimates using cost ratios.

Table 13: Costing Summary Table

Costing			Option #1	Option #2a		Option #2b		Option #3 NOW		Option #4 380 William Renovation
				Downtown	Offsite	Downtown	Offsite	2 years	Addition in 12 years	
Construction Costs	Estimated Construction		$13,155,306	$5,419,002	$9,948,532	Included in unit costs	$9,948,532	Included in unit costs	Included in unit costs; includes another 10 years escalation	$7,615,020
	General Requirements	var.	$1,183,978	$487,710	$795,883		$795,883			$609,202
	Fee	3%	$430,179	$177,201	$322,332		$322,332			$475,177
	Design and Pricing Allowance	15%	$2,215,419	$912,587	$1,660,012		$1,660,012			$2,447,163
	Escalation Allowance	6%	$1,019,093	$419,790	$763,606		$763,606			$1,125,695
	Construction Allowance	3%	$540,119	$222,489	$404,711		$404,711			$1,491,546
	Total Construction Cost		$18,544,093	$7,638,779	$13,895,076	*$2,800,841*	$13,895,076	*$15,121,271*	*$4,590,302*	$11,100,390
				$21,533,855		$16,695,917		$19,711,573		
Soft Costs	Design / Eng / Project Management	15%	$2,781,614	$3,230,078		$2,504,388		$2,956,736		$1,665,059
	Add FF & E Allowance*	5%	$927,205	$1,076,693		$834,796		$985,579		$555,020
ARCHIVES PROJECT COST			**$22,252,912**	**$25,840,626**		**$20,035,100**		**$23,653,888**		**$13,320,468**

**Furniture, Fixtures and Equipment*

Option Analysis

Option 1 – New Build as Programmed

Option 1 provides ideal space for the City of Winnipeg Archives, offering a new, purpose-built, consolidated facility that securely houses 20 years' worth of collection growth alongside an inviting public component. This option positions the City's Archives to best carry out its mandate to connect citizens, clients, and City administration with its historical records in an accessible and efficient facility, both now and well into the future. Option 1 requires higher initial build costs than the other options reviewed but provides long-term value as a permanent home for the City's rich archival collection. Option 1 provides better value than the distributed option studied in Options 2a/2b or the phased-in approach in Option 3, while offering an ideal space immediately. Given the growth allowance, some space will be underused in the short term. Cost recovery opportunities may be realized by leasing out any excess Class A storage space to other institutions with similar storage needs. However, the demand has not been evaluated as part of this project.

> **CONCLUSION →** Option 1 provides the best scenario for the Archives in new, purpose-built space. However, it assumes an appropriate site near City Hall is available for the new build and requires higher initial capital investment. This option is recommended for further analysis.

Option 2a – Distributed Model

Option 2a involves the distribution of major components:

- The public-facing component will act as a "**storefront**" and will be centrally located in Winnipeg. It will house a proportion (~25%) of the collection, along with public programming spaces such as a multi-purpose lobby area, classroom, and a reading room. To ensure proper archival functionality, the majority of office space will need to be located in the downtown location. This will allow corporate support functions such as the APO and Records Management to streamline their operations and connect more effectively and efficiently with the downtown campus.
- The majority of the collection (including 20-years of growth space) and the specialist Archival spaces (Processing, Digitization Lab, Conservation Lab, and Cold Storage) would reside in an **offsite** location.

This model requires some space duplication, which creates inefficiencies and larger overall space requirements (6% larger than the consolidated options presented). Support spaces (i.e. Loading, Staging Area, Quarantine, Housekeeping, and washrooms) would be duplicated in the distributed locations.

The operational inefficiencies resulting from distribution of functions are primarily attributed to the fragmentation of staff between buildings, which is likely to harm workflows and communication abilities. Modified services will need to be developed, which include advance requesting of materials by patrons and staff for materials that the storefront does not house, with associated retrieval and delivery delays. These modified services will create new administrative workload in the management of transportation and requests. People, too, will need to move between locations to interface with the public (downtown) or to process materials (offsite) as required, with time lost to travel and logistics. Finally, activities that have efficiencies when co-located, such as staff doing processing work while being available for unscheduled walk-ins, will be distributed and lose such efficiencies.

> **CONCLUSION →** Option 2a is more expensive than a consolidated option due to duplication in space; it is also expected to be more expensive operationally. This option is <u>not</u> recommended for further analysis.

Option 2b – Distributed Model (lease)

This option follows the same distribution model as Option 2a, except it assumes that an appropriate downtown "storefront" location is leased and improved in order to serve the Archives' needs. This option appears less expensive because the net present value of the lease costs over 20 years have not been included; option 2b essentially increases operating costs to find savings in initial capital investment.

Note: Hanscomb did not provide this estimate; the cost was estimated by Cornerstone by decreasing the capital investment (of the downtown location only) by shell costs (32.2% of whole), site and ancillary costs (6.6%), and half of services costs (35.1%x0.5); this is assumed to be a reasonable proxy for tenant improvement estimates on an existing facility.

> **CONCLUSION →** Option 2b depends on the availability of appropriate lease space near City Hall; it also ties the City into a long-term lease and likely expensive custom tenant improvements. This option is also not ideal given the inefficiencies of distributing services (as per above), and the long-term costs associated with tenant lease improvements; therefore, this option is not recommended for further analysis.

Option 3 – New Build, 10-Year Horizon

Option 3 is similar to Option 1 in that it is a new build meeting the functional requirements of the City Archives, but builds for collection growth for 10 years, with the expectation to expand to 20 years of growth in the future. This option provides the quality consolidated facility of Option 1, with a lower initial capital investment. However, this option only delays another investment to increase storage capacity in the near future. Option 3 includes an addition to the vault to reach a 20-year capacity, at 10 years post-build. Using today's unit rates, the escalation over 10 years results in a more expensive project than building all at once. As previously noted shelving is assumed static, with the ability to switch to mobile (compact) shelving at a later date to gain another 30%-50% capacity.

Note: Hanscomb did not provide the estimate for the 10-year addition; the cost was estimated by Cornerstone by multiplying the hard-construction unit cost for the remaining vault space required and escalating that construction cost by 10 years at 3%/year

> **CONCLUSION →** Option 3 is possible but puts the Archives at risk again in 10 years, when the vault is full and capital investment for expansion is required again. It is also more expensive than Option 1; therefore, this option is not recommended.

Option 4 – 380 William Avenue Renovation

The Carnegie Library at 380 William Ave is a heritage building owned by the City of Winnipeg. It is currently unoccupied and is in need of a significant renovation and update to enable occupancy of any kind. The City is motivated to find a suitable occupant for the building and see it restored. Many stakeholders, archival enthusiasts, and the public cannot separate the City of Winnipeg Archives from the old Carnegie Library. To many, this cherished, currently empty building is the only appropriate location for the City's Archives. However, the building was built in 1903, and does not meet modern building code standards (including accessibility), nor does it have appropriate environmental control systems to support the special needs of an archive. It is important to recognize that achieving any occupancy, not just the Archives, is bound to be costly given the building's condition.

Renovating 380 William Ave for the Archives was first costed in 2010 at a Class C level, when Hanscomb used drawings completed by Cibinel Architects to estimate the renovation cost. This report's space requirements differ from those in the 2010 report; however, they match closely enough overall to confirm that the building's size and character are suited to the Archives' updated requirements. This allows Hanscomb to use the original cost estimate as a baseline, recognizing that since then:

- The building has been vacant for over a year, triggering further code upgrades.
- Hazardous materials (lead paint, asbestos) have been confirmed.
- The unoccupied building has continued to deteriorate.

The estimates are difficult to accurately escalate the price over time without another complete Building Assessment including code review. For example, the cost of $13.3M does not currently include hazardous materials removal and changes to the City's own internal administration fees, which could substantially change costing. Additionally, the 2010 cost estimate was based on a particular scenario of investing

$500,000/year in the facility, extending the project timeline and necessitating escalation over 8 years at an additional cost of 21%. Our current renovation scenario excludes this spending restriction.

CONCLUSION → A renovation of 380 William Ave to accommodate the City of Winnipeg Archives meets the functional requirements articulated in this report, and offers the best value for money of the options examined. While the required renovations require significant capital investment , these costs would be borne by the City no matter who the future occupant is, and as a whole are substantially less than the other options reviewed. Further, as the original design and purpose of the building is as a library, the most efficient updated use of the building is as a library or archive. As the former home of the City Archives and a beautiful heritage structure with deep community connections, this is the best fit for both the building and the City's Archives program. An updated building condition assessment is recommended to pursue the site as a future permanent home for the Archives.

CONCLUSION

Following the analysis above, there are two viable options to consider, that should be investigated further. They are:

Option #	New Site	Est. Cost
Option 1	New build of all required spaces for Archives, as programmed.	$22.3M
Option 4	Renovation of 380 William Ave for Archives.	$13.3M

Option 1 is more attractive if there is a downtown site available. Option 4 is more attractive if there is City commitment to restoring 380 William Ave, and if the building has not greatly deteriorated since 2010. At this time, **the recommendation of this report is to pursue Option 4**. This option:

- Supports the functional space requirements as described in this program.
- Meets the City's goal to re-occupy the Carnegie Library at 380 William Ave.
- Meets the public's expectations for the Archives to re-occupy the building.
- Provides an attractive fundraising opportunity.

Both Options have remaining questions that must be answered in the project's next step. These next steps are recommended to be:

1. Complete an updated building condition assessment and code review at 380 William Ave, and re-cost renovations (using Cibinel drawings from 2010 as a reasonable guide) with a more detailed costing of required improvements for occupancy in general, and occupancy as an Archive;
2. Undertake a site selection exercise to discover whether there is there a suitable piece of land close to City Hall, that the City already owns (which would support Option 1);
3. Explore options for project partnership with another facility project in the area (such as a Library or Museum);
4. Following these, complete a life-cycle costing analysis on both Options, to ensure that investments are well understood across the building's life.

Undertaking these steps will provide enough information for the City to decide whether to move forward with Option 1 or Option 4. The investment in the 380 William Ave location must occur at some point and the Archives are a suitable function to occupy it once again after updates are completed. If this is not possible or feasible, a new facility will provide suitable space and an opportunity for a new, modern archival facility. Either option will provide the City of Winnipeg Archives with the appropriate facilities to meet their mandate over the next 20 years.

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Appendix A

Complete Space List

April 7 2020

Table 14: City of Winnipeg Archives - Complete Space List

Component	Space	Unit SM	Unit	SM	SF
Public Area	Lobby / Multipurpose Area	60.0	1	60.0	646
	Reception Desk	12.0	1	12.0	129
	Classroom	75.0	1	75.0	807
	Reading Room	79.1	1	70.5	852
	Media Room	9.3	1	9.3	100
	Material Lockers	1.5	6	9.0	97
	W/C	4.6	2	9.2	99
Staff Area	Enclosed Offices	9.3	8	74.4	801
	Open Office Area - Archivists	4.5	6	27.0	291
	Open Office Area - Records	4.5	4	18.0	194
	Copy	6.0	1	6.0	65
	Lounge/Kitchen	30.8	1	30.8	332
	Small Meeting Room	9.3	1	9.3	100
	Meeting Room	16.7	1	16.7	180
	General Storage	1.0	19	19.0	205
	W/C	4.6	2	9.2	99
Archives	Vault Storage - Textual / General 0-10 year	744.7	1	744.7	8,016
	Vault Storage - Textual / General 10-20 year	323.4	1	323.4	3,481
	Vault Storage - Maps and Plans 0-10 year	76.6	1	76.6	824
	Vault Storage - Maps and Plans 10-20 year	48.2	1	48.2	518
	Vault Storage - Gifts and Artifacts 0-10 year	26.9	1	26.9	289
	Vault Storage - Gifts and Artifacts 10-20 year	16.9	1	16.9	182
	Vault Storage -Art Works	85.0	1	85.0	915
	Environmental Buffer Allowance (Vault)	267.0	1	267.0	2,874
	Cold Storage (-5 to 0 C) 0-10 year	12.0	1	12.0	129
	Cold Storage (-5 to 0 C) 10-20 year	6.0	1	6.0	65
	Archival Processing	42.1	1	42.1	453
	Digitization Lab	36.0	1	36.0	388
	Conservation Lab	18.2	1	18.2	196
Support Area	Loading	40.0	1	40.0	431
	Staging	30.0	1	30.0	323
	Quarantine	13.0	1	13.0	140
	Server	12.0	1	12.0	129
	Housekeeping	7.5	1	7.5	81
			NET	**2,283.0**	**24,574**
		CGSM	20%	**2,739.6**	**29,489**
		BGSM	26.5%	**3,465.6**	**37,303**

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Appendix B

Benchmarking Study

April 7 2020

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Introduction & Background

Cornerstone Planning Group is working with the City of Winnipeg Archives to evaluate the organization's current and future space needs. As part of the study Cornerstone is benchmarking and comparing other similar archives to help understand the current state of the Winnipeg Archives, and to inform future space needs. Questionnaires were distributed to five archives across Canada in the hopes of understanding archival challenges and opportunities, and to establish appropriate benchmarks for the Winnipeg Archives. Following replies, a phone interview was held with an Archivist at each facility to discuss the outcomes and to further lines of questioning.

Archives Studied

The following archives were jointly selected as key case studies to compare to Winnipeg Archives: Ottawa, Vancouver, North Vancouver, Centre de Patrimoine (in Winnipeg), and Calgary. These are introduced briefly below, in turn.

Winnipeg Archives

- Civic & Community
- In temporary space
- 12,000 linear ft

Winnipeg Archives collects archival materials for the City of Winnipeg, with records going as far back to 1873. Winnipeg Archives keeps the history of the region in trust for the public, supporting the transformation of information into knowledge using rich collections, knowledgeable staff, and deep relationships with the community. Through the preservation of information over time, the Archives protects citizen rights and ensures that the ideas and activities of each generation are made known to successive generations.

Ottawa Archives

- Civic & Community
- Built 2011
- 72,200 linear ft

By far the largest archive studied in the benchmarking exercise, the City of Ottawa Archives (Central Branch) is considered an excellent, forward-thinking organization and facility with respect to the goal of preservation and conservation of historical and civic government records for the City of Ottawa. While the size of Ottawa Archives does not lend itself to immediate comparisons with Winnipeg Archives, the fact that it recently underwent a space needs study and updated their facility proves useful with respect to key ratios that can be mapped and applied to the context of Winnipeg Archives. As well, Ottawa Archives can be looked at as a "gold standard" for archives in Canada, better highlighting deficiencies across other archives studied.

Vancouver Archives

- Civic & Community
- Built 1972
- 37,400 linear ft

Vancouver Archives is more comparable in size with respect to staffing, facility, and collections to Winnipeg Archives. Similar to the City of Ottawa, Vancouver Archives also recently underwent a needs assessment and therefore provides up-to-date spatial and functional targets that Winnipeg Archives can compare against. An additional benefit of including Vancouver Archives is that Cornerstone completed a previous study in 2009 and was able to compare outcomes from the previous study.

North Vancouver Museum & Archives

- Civic (Dual) & Community
- Renovated in 2005

North Vancouver Museum & Archives is a combination Museum with Archives. One unique distinction of this Archives is that it is run by a non-profit organization, as opposed to operating directly under the City Clerk's Office. This is owing to the dual reporting nature of the Archives to both the City and District of North Vancouver. The North Vancouver Museum & Archives is housed in a heritage facility. Due to proximity, Cornerstone was able to tour the facility to get a deeper understanding of spatial and functional challenges and planning that went into the 2005 renovation.

Centre du Patrimoine

- Primarily Community, focused on French and Metis
- Built in 1998

Centre du Patrimoine is also run by a non-profit organization, the Société Historique de Saint-Boniface. While having a distinctly different collections mandate (community-focused rather than civic), the Centre du Patrimoine is located in Winnipeg. They can therefore provide a local comparison for Winnipeg Archives and have agreed to allow Cornerstone to tour their facility for more detailed analysis of archival challenges and opportunities.

Calgary Archives

- Civic & Community
- Built 1985
- 8,200 + 6,000 linear ft
- Split facility (central & offsite)

Not unlike Centre du Patrimoine, Calgary Archives offers a similar prairie context to compare to Winnipeg Archives but with the benefit of having a similar organizational structure operating under the City Clerk's Office as is Winnipeg. Calgary Archives has a similar collection size and facility size for their on-site collection. This Archives follows a distributed model to support all operations; we will discuss just the central location, for the purposes of this report.

A complete table listing all information can be found at the end of this document. The sections that follow detail comparison factors for:

- Organization and Staffing
- Facility and Spaces
- Programs and Services, and
- Collections and Growth

Then, key comparable ratios are analysed, trends discussed, and some conclusions drawn.

Organization / Staffing

The following section breaks down the staffing and organizational structure of the archives studied.

Mandate

Overall, mandates for the archives studied echoed very similar goals and objectives. The general mission of these mandates was to preserve and make accessible the records of municipal government records and private-sector records that document a city's history. The exception in this study is the Centre du Patrimoine, whose mandate is for community records only, focused on French and Metis communities.

Established Date

North Vancouver, Calgary, and Ottawa all had their respective archives established in the late 70s and early 80s. Winnipeg Archives can relate to this organizational history as it was established in 1978. Vancouver and Centre du Patrimoine have significantly older establishment dates at 1933 and 1902 respectively. These dates are likely to have an effect on collection sizes and therefore relative %-based acquisition rates.

Staff Number

Staff number varies widely given differently sized cities and collections and given different levels of available funding. Of the archives studied, staffing ranged from 3 FTE in North Vancouver Archives (not including the 6 museum staff) to 23.2 FTE in Ottawa. Staffing levels appear to correlate with overall collections size, but not directly proportionally (see "Key Comparison Measures" section).

The following table reveals Winnipeg Archives' standing amongst other Canadian archival organizations with respect to their staffing of archivists.

Table 1: Archive Staffing Comparison Table

Comparable Measures		Winnipeg	Ottawa	Vancouver	North Vancouver	Centre de Patrimoine	Calgary
Staffing	**Archivists**	4	6	5	1	1	5
Textual Collection (lin ft)		10,000	72,200	37,400	11,300	6,800	14,000

Despite Ottawa Archives' collection being over six times the size of Winnipeg Archives' collection, Ottawa only has 2 more archivists. This reveals that Winnipeg is actually in good standing with respect to the amount of archivists they have on staff.

Annual Operating Budget

Annual Operating Budgets across archives studied range from $500,000 to $1.9M. Much of the annual budget goes toward supporting archives staff, making Vancouver's annual budget likely the best comparison for Winnipeg Archives (given their most similar current staffing levels). Vancouver (Archives alone) has an annual operating budget of $907,521 with 8 FTE while Winnipeg has an annual budget of $1.38M with 12 FTE, though much of this goes toward Records.

Annual Researchers

The amount of annual in-house researchers ranged from ~400 at Centre du Patrimoine to ~9,800 at the Ottawa Archives. The figure at Ottawa is considered an outlier, as the rest of the archives studied hovered in the 500 – 1500 range of annual in-house researchers. The trend in annual in-person research visits was discussed and said to be declining.

Facility and Spaces

The following section compares notable features of each archival facility.

Heritage Facility

Out of the six archives compared, only one facility resides in a heritage building: North Vancouver Museum & Archives. The heritage facility was built in 1920 and renovated in 2005. The remaining archives reside in facilities built between 1972 – 2011. Although Archives are often expected to be in heritage facilities, it is not the trend among those studied, likely given the specific and modern environmental control requirements of an archive. It is clear that if archives are to be located in a heritage facility, it must be renovated to properly accommodate such specific archival needs.

Size & Age of Facility

The size of facilities (including secondary and / or shared supportive spaces) ranged between 11,000 SF at the Calgary Archives' central building and 43,600 SF at the Ottawa Archives. Winnipeg Archives' location at Myrtle is currently ~13,000 SF. Build dates vary, with the oldest facility at Vancouver (now nearly 50 years old). Vancouver has been positioning and planning for a new (or newly renovated) facility for the last 10 years; this is likely to occur within the next 5 years.

Table 2: Archive Facility Size / Date Built

Archives	Size (SF)	Date Built:
Winnipeg Archives	**12,900**	• **50 Myrtle St: Built 1947 (renovated in 2008)**
Ottawa Archives	64,474	• Facility built in 2011
Vancouver Archives	29,500	• Primary site built in 1972 (17,000 SF) • Temporary site built in 1958 (12,500 SF)
North Vancouver Museum & Archives	17,921	• Facility built in 1920, renovated in 2005
Centre du Patrimoine	18,000	• Facility built in 1998
Calgary Archives	15,400	• Facility built in 1985

Location of the Facility

Only two of the six archives studied are currently centrally located: Vancouver and the Centre du Patrimoine. However, this is based on geographic area and does not account for transit accessibility.

The central location of archives does not appear to be critical to the success of the facility, however, a centrally located archives would make public programming feasible and visitation much more appealing for researchers and members of the public.

Archival Spaces

The following table and subsequent text break down Winnipeg Archives' standing amongst other Canadian archival organizations with respect to key archival spaces.

Table 3: Archive Spaces Comparison Table ("Y" denotes Yes, "-" denotes No)

Comparable Measures		Winnipeg	Ottawa	Vancouver	North Vancouver	Centre de Patrimoine	Calgary
Spaces	Reading Room	Y*	Y	Y	Y	Y	Y
	Conservation Lab	-	Y	Y	-	-	Y
	Public Programming Space	-	Y	Y	Y	Y	Y
	Temperature and Humidity Controlled Vault	-	Y	Y	Y	Y	Y
	Fire Suppression System	Sprinklers	Sprinklers	Debating between misting solution / pre-action sprinklers	Sprinklers	Sprinklers	Dry chemical suppression system
	Cold Storage	-	Y	Y	Y	Y	Y
	Documentary Art	Y	Y	Y	Contained in separate Museum Collection	Y	-

** The Reading Room at Winnipeg is also the lobby area*

Reading Room

Reading rooms are a necessary space in Archives top support mandated access to materials and encourage active use including research. All archives studied have reading rooms. While Winnipeg Archives does have a reading room, it is currently undersized and has suboptimal adjacencies (e.g. staff lunchroom) and also acts as building lobby. Moreover, the character of the reading room is lacking. North Vancouver Archives, for instance, has a warm, welcoming, spacious reading room with comfortable seating, distinct character, and small displays that encourage spontaneous discovery and research (see the following figure for comparison).

Figure 1: Reading Room Comparison: Winnipeg Archives (left) vs. North Vancouver Archives (right)

Conservation Lab
Currently, Winnipeg Archives does not have a conservation lab. While two of the benchmarked Archives do not have conservation labs either – North Vancouver and Centre du Patrimoine – these are comparatively small and are non-profit organizations as opposed to being municipally governed. With respect to larger, municipally governed archives studied – Calgary, Vancouver, Ottawa – it is clear that a conservation lab is an normalized space, with Vancouver and Ottawa having full-service conservation labs, and Calgary having a "half-service" conservation lab. Winnipeg is the only municipally governed archive out of the archives studied that does not have a dedicated conservation lab. At a minimum, Winnipeg should at least have a space dedicated to simple conservation work, outsourcing complex conservation duties like the Calgary model.

Public Programming Space
With respect to Public Programming Space, Winnipeg Archives is a clear outlier of all archives studied as it is the only archives lacking public programming space. A multi-purpose programming / lobby space would be a welcome addition to Winnipeg Archives where activities such as lectures, panel discussions, networking events, fundraisers, and Indigenous ceremonies (to name a few) could be held. The Centre du Patrimoine has an interesting lobby area that is frequently used for various programming activities.

Figure 2: Lobby / Public Programming Space in the Centre du Patrimoine

Temperature and Humidity Controlled Vault
Perhaps Winnipeg Archives' greatest gap is its lack of proper environmentally controlled vault space, capable of keeping collections within appropriate ranges of temperature and humidity. All other archives studied have some sort of temperature and humidity-controlled vault space – which is a minimum requirement for accreditation, as opposed to a gold standard. The figure below shows custom environmentally controlled vault space at Centre du Patrimoine.

Figure 3: Temperature and Humidity Controlled Vault at Centre du Patrimoine (16 °C at 40% humidity)

Fire Suppression System
The optimal fire suppression system for archives is somewhat up for debate, though sprinkler systems seem to be the preferred method across archives studied and according to CCI:

> *CCI recommends wet-pipe sprinklers despite the slight risk of locating water-holding pipes in collection spaces. These systems are more reliable and less costly to install and maintain. Water damage, although undesirable, is more likely to respond to conservation treatment than fire or soot damage. Systems that limit the water risk – pre-action, water mist, clean agent – are also acceptable[1].*

Winnipeg Archives then, can decide between a misting solution (uses significantly less water than sprinklers with similar effectiveness), pre-action, dry chemical suppression, or a sprinkler system.

Cold Storage
Winnipeg Archives is the only archives without cold storage out of all archives studied. Cold storage is necessary for the proper storage and longevity of photographic negatives and film material. In future, Winnipeg Archives will need cold storage to safely house these types of materials.

Documentary Art
Most of the archives studied have documentary art as part of their collection. While Winnipeg Archives has documentary art in their collection, it is not a central acquisition focus. It is likely a good idea to retain at least

[1] Stewart, D. "Agent of Deterioration: Fire." Ottawa: Canadian Conservation Institute. Last modified 6 September 2013. Accessed 20 October 2014. http://www.cci-icc.gc.ca/resourcesressources/agentsofdeterioration-agentsdedeterioration/chap04-eng.aspx

some of the art collection for select presentation in public displays and exhibits. North Vancouver Archives is the only archive not to report Documentary Art, likely as its museum branch supports that collection mandate.

Vault

The following table articulates Winnipeg Archives' standing amongst other Canadian archival organizations with respect to collection size, establishment date, and vault size.

Table 4: Key Archive Stats Comparison Table

Comparable Measures		Winnipeg	Ottawa	Vancouver	North Vancouver	Centre de Patrimoine	Calgary
Stats	Collection Size (lin ft)	12,000	72,179	37,400	11,311	6,795	14,050
	Date established	1978	1976	1933	Late 1970s	1902	1981
	Vault Size (SF)	7,500	43,500	18,837	2,750	4,835	10,660

Given its comparable collection size to Calgary Archives – 12,000 lin ft for Winnipeg vs. 14,050 lin ft for Calgary – Winnipeg Archives should have a larger vault size (7,500 SF in Winnipeg vs. 10,660 in Calgary). North Vancouver disrupts this argument slightly however as its collection (11,311 lin ft) is even more comparable than Calgary's and has a significantly smaller vault size (2,750 SF). That being said, North Vancouver's vault space is environmentally controlled and uses mobile storage racks, whereas Winnipeg's vault space has neither.

CCI Category A

The Canadian Conservation Institute's (CCI) Category A space remains a sought-after designation for archives in Canada, encouraging the survival and perpetuity of valuable records. Of the six archives studied, 5/6 archives have achieved CCI Category A status. Such a designation is even more critical for archives located in geographies where climate changes drastically throughout the year.

Table 5: Average Daily Relative Humidity Averaged for the Year (data retrieved from: https://www.currentresults.com/Weather/Canada/Cities/humidity-annual-average.php

City	Average Daily Relative Humidity Averaged for the Year	
	Morning	Afternoon
Winnipeg	82	61
Ottawa	81	59
Vancouver	86	70
Calgary	72	48

Winnipeg and Ottawa share nearly identical (and considerable) humidity levels, thereby amplifying the need for Category A space. Ottawa has Category A space, yet Winnipeg does not. Interestingly, the Centre du Patrimoine (also located in Winnipeg), is unaware of the Category A designation but certainly meets Cat A standards.

Public Instruction Space / Display Space

As with conservation spaces, public instruction space and display space are present in all archives benchmarked. This includes reading rooms, display areas, and classrooms. Winnipeg currently has a small reading room only and no space for education or events.

Wishlist Space
Wishlist spaces ("what space do you wish you had which you do not have?") varied according to the specific needs of each archive. Vancouver had a variety of desired spaces such as: additional standard vault space, frozen vault space (for acetate negatives, colour negatives, acetate film and a walk-in glass storage area). North Vancouver is in need of more processing space, as well as lockers for patrons for use in the Archives Reading Room. Lastly, due to Centre du Patrimoine's particular interest in oral stories and audio recordings, their "wishlist space" was a sound-proof area for audio-visual consultation / processing that would be acoustically separate from the rest of the facility. This would ensure better processioning of newly acquired video and audio recordings given an enhanced viewing and listening experience. Ottawa Archives and Calgary Archives did not indicate any "wishlist spaces".

Security
Given the important historical value of materials collected in archives, physical security (such as security workstations / offices, FOBs, locks, alarm systems, secure vaults, motion sensors) and virtual security for digitized materials (such as passwords), are critical for modern archives. All archives studied implement similar physical and virtual security measures.

Favoured Archive
Calgary Archives indicates their favoured archive is Glenbow Archives given that it has been historically been well funded and has an excellent digitization program which makes material available to remote users. Vancouver's favoured archive (with respect to the facility), was Gatineau Preservation Centre and the upcoming Gatineau Ottawa II; NARA in the US, and the provincial Archives of Ontario. Neither North Vancouver nor the Centre du Patrimoine mentioned a favoured archive.

Archive Programs & Services

The following section analyzes Winnipeg Archives' standing amongst other Canadian archival organizations with respect to their programs and services.

Table 6: Archive Programs & Services Table

Comparable Measures		Winnipeg	Ottawa	Vancouver	North Vancouver	Centre de Patrimoine	Calgary
Programs/ Services	APO	Y	N*	N*	-	-	N*
	Records Storage Centre	Y	Y	Y	Y	-	Y
	Community Records	1%	3%	50%	70%	92%	20%
	Indigenous Programming	-	Y	Y	Y	-	-
	Management of Digital Records	Y	Y	Y	-	-	Y
	Conservation Programs	-	Y	Y	-	Y	Y (but complex conservation work outsourced)

** Archives not responsible for this function - both report to City Clerk*

Access & Privacy Office:
All municipally governed archives work in partnership with an access and privacy office. For these cases, the archives are not responsible for their respective access and privacy offices, but both report to their respective City Clerks. This appears to be a normal structure for archives in Canada. Non-profit archives like North Vancouver and Centre du Patrimoine are not in direct association with an access and privacy office.

Records Storage Centre
All archives save for Centre du Patrimoine have a Records Storage Centre associated with their functions. These spaces provide civic departments with cost-effective records storage, retrieval and disposition services. Critically, a records storage centre also provides additional space to offer departments that have semi-active or inactive physical records to transfer – and in the case of Winnipeg Archives, this is particularly important to have given the civic records backlog across City departments.

Community Records
The collection and preservation of community records varied dramatically across all archives studied. There is no clear benchmark target for municipally governed archives save for under 50% of collection being dedicated to community records. Non-profit archives (North Vancouver and Centre du Patrimoine) take a more community-oriented acquisitions focus making the majority of their records being of community origin.

Indigenous Programming
Similar to community records, indigenous programming provided through archives is discretionary. Given Winnipeg's relatively large Indigenous population and given the Indigenous support for the Archives echoed

by the Association of Manitoba Archives and various other stakeholders, it would be wise for Winnipeg Archives to consider providing Indigenous-led Indigenous Programming.

Management of Digital Records

The management of digital records is a primary concern for archives in Canada due to the influx of born digital records, and the need to digitize physical collections materials. North Vancouver and Centre du Patrimoine recognize the importance of the management of digital records but have yet to establish a digital records management system. Both continue their digitization efforts but likely lack the resources to implement a digital management system. This is especially difficult for archives due to the lack of an established digital records management standard / approach. Calgary Archives will be accepting born-digital records this year and is considered a forerunner in born-digital management and policy. Winnipeg is currently strategizing a digital records management approach.

Conservation Programs

At a minimum, most of the archives studied have dedicated conservation spaces for simple conservation projects. Centre du Patrimoine conduct photograph digitization projects, and contract workers or summer students to do scanning of maps, architectural plans and other textual documents if funding from grants is available. Calgary has a space for simple conservation projects (e.g. flattening of materials) but outsources complex conservation work (e.g. cleaning, gluing, mounting) to local specialists. Given Winnipeg Archive's similar collection size, their services should be at least as robust as Calgary Archives. Ideally though, Winnipeg Archives can strive for a more establish conservation program akin to Vancouver Archive's program. Vancouver has a full-time Digital Conservator who performs a range of conservation duties and manages the conservation lab and digitization program.

Collections / Growth

The following section compares the collection size and growth rate of the six archives studied. The following section analyzes Winnipeg Archives' standing amongst other Canadian archival organizations with respect to their collections.

Total Size of Collections

The clear outlier in this category of comparison is Ottawa Archives. The total size of the Ottawa Archives is 22 lin km (72,179 lin ft). This collection dwarfs the Winnipeg Archives and the five other archives studied. While such a discrepancy does not make for an immediate comparison with more comparably sized archives, growth factor ratios and facility standards can be usefully measured.

Types of Material

The following table breaks down the amount of material in each archive's collection (self-reported via questionnaire). Unless indicated otherwise, all numbers in the following table are expressed in linear feet. It is important to note that some of the numbers shown are estimates.

Table 7: Collections Material Breakdown Table

Comparable Measures		Winnipeg	Ottawa	Vancouver	North Vancouver*	Centre de Patrimoine	Calgary
Collection (lin ft)	Total	12,000	72,179	37,400	11,311	6,795	14,050
	Textual	10,000	72,179	27,000	8,483	26.7	3,995
	Digital	3	-	94 TB	113	4 TB	-
	Rare Books	155	942	10	113	2,165	-
	Maps and Plans	506 ft^3	200 ft^{3*}	310 ft^{3*}	583 ft^{3*}	625 ft^3	304 ft^{3*}
	Photographs	140	2,000	3,000	1,697	272	73
	Audio Recordings and Film	95	-	-	339	656	33
	Art	200**	1600 SF	12 art racks	-	606 SF and 72	-
	Gifts, Artifacts, Corp. Memorabilia	325	-	-	-	-	-
	Other?	260	1000 rolls	-	226	3632 and 23 SF of microfiche	-

**estimates; ** to be kept at facility*

Archive Collections Comparison

Winnipeg Archives has a moderately sized collection. Due to differing mandates, establishment dates, and acquisition policies each archival collection is unique. North Vancouver and Calgary have the most comparable collection in terms of total linear footage.

Average Acquisition Rate

The following table indicates each archive's average acquisition rate.

Table 8: Average Acquisition Rates

COMPARABLE MEASURES	Winnipeg	Ottawa	Vancouver	North Vancouver	Centre du Patrimoine	Calgary
Average Acquisition Rate	9.6 cubic ft of records in 2018 (average not useful given obstruction of acquisition activities due to current state of the archives)	Between 1.9% and 4.5% per year	Between 2.4% and 3.4% per year (the upper limit is the equivalent of 800 banker boxes)	Unknown	2.4% per year	656 lin ft / year (~4.6% of total collection – onsite and offsite)

Estimates for Growth

Comments around the estimation for growth varied in their level of specificity. Vancouver calculates that their archival collection will grow between 2.4% and 3.4% per year – the upper limit of which, is equivalent to 800 banker boxes. Calgary Archives mentioned that a growth rate of ~656 lin ft per year (or ~4.6% of total collection) is likely, with swells during election years. They also wondered how acquisition rates will be affected by the addition of native digital content disposition. Ottawa Archives expected that their collections size would grow at 4.5% for 10 years and decrease to 1.9% for the next 5. Centre du Patrimoine predicted that the amount of traditional materials in archives should diminish, whereas born-digital materials should increase. And given that most Franco-Manitoban and Metis organizations have already transferred their older archives to the Centre du Patrimoine, they expect future additions to be quite small.

Digital Collections Size

Only a few archives indicated their digital collections size. Vancouver Archives has a sizeable digital collection with 94 TB. Centre du Patrimoine has a small digital collections size at ~4TB. North Vancouver Archives indicated that civic records are typically digitized prior to transfer to Archives and that they hold the analog originals. For North Vancouver Archives (and many other Canadian archives), digitization is relatively new for their civic stakeholders.

Key Comparable Measures

The following section articulates some of the key comparable measures across archives studied. These comparable measures arguably reveal the most with respect to how Winnipeg Archives compares to other similar archives. See below for the Key Comparable Measures Summary Table.

Table 9: Key Comparable Measures Summary Table

COMPARABLE MEASURES	ARCHIVES					
	Winnipeg Archives	Ottawa Archives	Vancouver Archives	North Vancouver Archives	Centre du Patrimoine	Calgary Archives
Population per SF	55	15	21	5	39	87
% Vault Space of Overall Space	58%	67%	64%	15%	27%	69%
Size of Collection vs. size of facility (LIN FT / 1000 SF)	930	1,120	1,268	631	378	912
Size of Facility per Archivist (SF / Archivist)	4,300	10,746	5,900	17,921	18,000	3,080
Size of Collection per Archivist (Lin Ft / Archivist)	4,000	12,030	7,480	11,311	6,795	2,810

**estimates*

Population per SF

This comparable measure indicates how well-served an archive's catchment populations are by virtue of the size of an archive in SF. Winnipeg Archives is in somewhat poor standing with respect to its SF per Population with 55 people served for every square foot of total facility. For instance, Vancouver has a similar catchment population (631,486 in Vancouver vs. 705,244 in Winnipeg) and has 34 less people per SF than Winnipeg. This means that Winnipeg Archives (from a facility size perspective), is less equipped to service its population. In fact, of the archives studied, only Calgary has a worse people per SF figure at 87 people per SF of facility. Although this statistic is misleading as Calgary Archives uses a distributed model. While this measure is useful, it only has heuristic value and does not speak to efficiencies and to the intricate requirements of a functioning archive.

% Vault Space of Overall Space

Winnipeg Archives is slightly below the optimal range with respect to its proportion of vault space vs. non-vault space. The high 60% range appears to be the right proportion as City of Ottawa, Vancouver, and Calgary have 67%, 64%, and 69% respectively. Winnipeg's vault space percentage is 58%. Centre du Patrimoine and North Vancouver Archives have significantly less vault space compared to non-vault space at 27% and 15% respectively. In the case of Centre du Patrimoine, this low number can be explained by ample public programming space and focus, while North Vancouver simply does not have a large catchment population and therefore has a much smaller collection size than other Archives.

The Key Comparable Measures table seems to indicate that an archive with less than 50% of its area being dedicated to collection storage (vault area) is either a small archive with a small catchment population, a comparatively short history, or has a sizeable public-facing component, or is a medium to large sized archive that does not have sufficient storage (as it should hover in the 60-70% range).

It is important to note that in this case, "vaults" were assumed to be collection storage space. If we only assume collection storage space that is suitable for collections (e.g. Category A), then Winnipeg Archives has effectively 0% vault space.

Size of Collection vs. Size of Facility
The following table articulates the relationship between collection size and facility size among archives studied.

Table 10: Collection Size vs. Facility Size

COMPARABLE MEASURES	ARCHIVES					
	Winnipeg	Ottawa	Vancouver	North Vancouver	Centre du Patrimoine	Calgary
Total Size of Facility (SF)	12,900	64,474	29,500	17,921	18,000	15,400
Total Size of Collection (lin ft)	12,500	72,179	37,400	11,311	6,795	14,050
Size of Collection vs. Size of Facility (Lin ft / 1000 SF)	930	1,120	1,268	631	378	912

Per 1000 SF, Vancouver has the most lin ft of collections materials stored; it is the most "full" or effective at storage with 1,268 lin ft per 1000 SF of facility. Ottawa has the next most efficient storage capacity with 1,120 lin ft per 1000 SF. This is not surprising given the vast size of Ottawa Archive's collection compared to other archives. In comparison, this reveals that there is room for improvement for Winnipeg Archives (12,000 lin ft in a 12,900 SF facility) – as it could be storing its moderately sized collection in a slightly more efficient manner, akin to the storage efficiency of Vancouver or Ottawa Archives.

Size of Staff vs. Size of Facility
The table below summarizes the relationship between the number of archivists and the size of an archival facility.

Table 11: Number of Archivists vs. Facility Size

COMPARABLE MEASURES	ARCHIVES					
	Winnipeg	Ottawa	Vancouver	North Vancouver	Centre du Patrimoine	Calgary
# of Archivists	3	6	5	1	1	5
Total Size of Facility (SF)	12,900	64,474	29,500	17,921	18,000	15,400
SF / Archivist	4,300	10,746	5,900	17,921	18,000	3,080

The table above shows that one archivist can be responsible for a large facility. Centre du Patrimoine has only one archivist and the facility is 18,000 SF (however, they have many skilled volunteers). A similar relationship can be found in North Vancouver Archives, where one archivist governs the entire 17,921 SF facility. Relative to facility size, Calgary has the most archivists with 3,080 SF per archivist. Winnipeg Archives then, appears to be in a good position with respect to this relationship – with 4,300 SF per archivist.

Size of Staff vs. Size of Collection
Consult the following table to understand the relationship between the number archivists and collection size.

Table 12: Number of Archivists vs. Collection Size

COMPARABLE MEASURES	ARCHIVES					
	Winnipeg	Ottawa	Vancouver	North Vancouver	Centre du Patrimoine	Calgary
# of Archivists	3	6	5	1	1	5
Total Size of Collection (lin ft)	12,000	72,179	37,400	11,311	6,795	14,050
Lin ft / Archivist	4,000	12,030	7,480	11,311	6,795	2,810

What is clear in this comparable measure is that the number of archivists does not increase in lockstep with the size of the collection. In fact, the relationship is weak with archivists having responsibility over larger and larger collections as the size of the collection increases. The number archivists barely increase, only the breadth of their responsibility does. For instance, despite having 72,179 lin ft (or 22 lin km) of collections materials in the Ottawa Archives compared to Winnipeg Archive's total collection of 12,000 lin ft, Ottawa only have 6 archivists compared to Winnipeg's 4. From a mathematical point of view, this means each Ottawa archivist is responsible for 12,030 lin ft of material while each Winnipeg archivist is only responsible for 4,000 lin ft. This division of collections responsibility does not reflect how archivists actually operate and is only discussed to reveal how the number of archivists scales with size of collections.

Other Themes & Trends

We noted the following key themes emerging through our questionnaire review and interviews.

Digitization

Archives in general, are under increasing pressure to increase digitization efforts, but struggle to find the resources to respond to this pressure. There is often not a sufficient business case to digitize records over storing original copies and accessing them as needed.

Born-Digital Records

There is increasing pressure to accept and manage born-digital records. Government offices have only recently reached the point where significant volumes of born-digital records are ready for archival transfer and municipal archives may or may not be ready for this transfer. The issues of data security, transfer cadence, and accessible formats are all arising. Calgary Archives appears to be at the forefront of this issue, and will be archiving born-digital records under a specific policy starting this year.

Indigenization & Truth and Reconciliation (TRC)

There are a variety of ways archival organizations can approach the "indigenization" of relevant materials and collections. Much of how indigenous-related materials are recognized and managed in light of TRC recommendations depend upon the unique relationships between various First Nations and archival organizations. The Centre du Patrimoine has the closest relationship with local First Nations and stores some of their records. However, the civic archives primarily were focusing on the correct indexing of their materials to make them properly accessible to all communities; this process was only just beginning.

Concluding Remarks

The following set of bullets speak to the key takeaways of the benchmarking study:

- The amount of staffing, in particular the number of archivists for the Winnipeg Archives, appears to be in good standing given how much facility and collections an archivist is capable of overseeing
- In order for public programming to flourish, Winnipeg Archives should be centrally located
- Winnipeg Archives has a moderately sized collection
- Winnipeg Archives is housed in a relatively small facility compared to that collection
- Winnipeg Archives has no Category A space – this is a critical measure
- Winnipeg Archives could store its collection in a more efficient manner (mobile shelving would be required)

Consolidated Table:

Comparable Measures		Winnipeg	Ottawa	Vancouver	North Vancouver*	Centre de Patrimoine	Calgary
Stats	Collection Size (lin ft)	12,000	72,179	37,400	11,311	6,795	14,050
	Date established	1978	1976	1933	Late 1970s	1902	1981
	Vault Size (SF)	7,500	43,500	18,837	2,750	4,835	10,660
Spaces	Reading Room	Y*	Y	Y	Y	Y	Y
	Conservation Lab	-	Y	Y	-	-	Y
	Public Programming Space	-	Y	Y	Y	Y	Y
	Temperature and Humidity Controlled Vault	-	Y	Y	Y	-	Y
	Fire Suppression System	Sprinklers	Sprinklers	Debating between misting solution / pre-action sprinklers	Sprinklers	Sprinklers	Dry chemical suppression system
	Cold Storage	-	Y	Y	Y	Y	Y
	Documentary Art	Y	Y	Y	Separate Museum Collection	Y	-
Programs/ Services	APO	Y	Y (Archives not responsible for this function - both report to City Clerk)	Y (Archives not responsible for this function - both report to City Clerk)	-	-	Y (Archives not responsible for this function - both report to City Clerk)
	Records Storage Centre	Y	Y	Y	Y	-	Y
	Community Records	1%	3%	50%	42%	92%	20%
	Indigenous Programming	-	Y	Y	Y	-	-
	Management of Digital Records	Y	Y	Y	-	-	Y

Comparable Measures		Winnipeg	Ottawa	Vancouver	North Vancouver*	Centre de Patrimoine	Calgary
	Conservation Programs	-	Y	Y	-	Y	Y (but complex conservation work outsourced)
Collection (lin ft)	**Total**	12,000	72,179	37,400	11,311	6,795	14,050
	Textual	10,000	72,179	27,000	8,483	26.7	3,995
	Digital	3	-	94 TB	113	4 TB	-
	Rare Books	155	942	10	113	2,165	-
	Maps and Plans	506 ft3	200 ft3*	310 ft3*	583 ft3*	625 ft3	304 ft3*
	Photographs	140	2,000	3,000	1,697	272	73
	Audio Recordings and Film	95	-	-	339	656	33
	Art	200	1600 SF	12 art racks	-	606 SF and 72	-
	Gifts, Artifacts, Corp. Memorabilia	325	-	-	-	-	-
	Other?	260	1000 rolls	-	226	3632 and 23 SF of microfiche	-
Staffing	**Archivists**	4	6	5	1	1	5

**estimates*

CORNERSTONE

Winnipeg

Appendix C

Class D Costing Report - Hanscomb Quantity Surveyors

April 7 2020

CLASS 'D' ESTIMATE

WINNIPEG ARCHIVAL PROGRAM FACILITY
NEW BUILD & RENOVATION OPTIONS
WINNIPEG, MANITOBA

Prepared for:
Cornerstone Planning Group

March 18, 2020

Hanscomb
Quantity Surveyors - Since 1957

March 18, 2020 Ref # WIN1826

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E: Melanie@cornerplan.com

Attn: Melanie Roskell, Partner

Re: Winnipeg Archival Program Facility, New Build & Renovation Options, Winnipeg, Manitoba

Dear Ms. Roskell:

Please find attached our Class 'D' Estimate for the Winnipeg Archival Program Facility, New Build & Renovation Options in Winnipeg, Manitoba.

This Class 'D' Estimate is intended to provide a realistic allocation of direct construction costs and is a determination of fair market value. Pricing shown reflects probable construction costs obtainable in the Winnipeg, Manitoba area on the effective date of this report and is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the work.

Hanscomb has prepared this estimate(s) in accordance with generally accepted principles and practices. Our general assumptions are included in Section 3 of this report and any exclusions are identified in Section 1.6. For quality assurance, this estimate has been reviewed by the designated Team Lead as signed below and Hanscomb staff are available and pleased to discuss the contents of this report with any interested party.

Requests for modifications of any apparent errors or omissions to this document must be made to Hanscomb within ten (10) days of receipt of this estimate. Otherwise, it will be understood that the contents have been concurred with and accepted.

We trust our estimate is complete and comprehensive and provides the necessary information to allow for informed capital decisions for moving this project forward. Please do not hesitate to contact us if you have any questions or require additional information.

Yours truly,

Hanscomb Limited
Team Lead

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1. INTRODUCTION

1.1 PURPOSE

This Class 'D' Estimate is intended to provide a realistic allocation of direct construction costs for the Winnipeg Archival Program Facility, New Build & Renovation Options, located in Winnipeg, Manitoba, with the exception of the items listed in 1.6 Exclusions.

1.2 DESCRIPTION

The Winnipeg Archival Program Facility, New Build & Renovation Options located in Winnipeg, Manitoba is comprised of the following key elements:

The project consists facility renewal and redevelopment strategy for the City of Winnipeg Archives and Records Control located at 380 William Avenue. This estimate includes the following options:

*Option 1 – **New Build as Programmed**: New Building of 3,467m2 gross floor area including a basement. The basis of this estimate assumes a steel framed structure, flat roof and some allowance for site work*

*Option 2 – **Distributed Model:** 2 New Buildings, one store front building of 1,368m2 gross floor area and another offsite building of 2,376m2 gross floor area, both buildings having basements. The basis of this estimate assumes a steel framed structure, flat roof and some allowance for site work*

*Option 4 – **380 William Avenue Renovation**: This includes **renovations to the existing building as previously scoped in 2010**, adjusted for escalation and 20% allowance for additional renovation as a result of building deterioration, changes in code requirements etc.*

1.3 METHODOLOGY

Hanscomb has prepared this estimate(s) in accordance with generally accepted principles and practices. Hanscomb staff are available to discuss its contents with any interested party.

From the documentation and information provided, quantities of all major elements were assessed or measured where possible and priced at rates considered competitive for a project of this type under a stipulated sum form of contract in Winnipeg, Manitoba.

Pricing shown reflects probable construction costs obtainable in the Winnipeg, Manitoba area on the effective date of this report. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the work.

1.4 SPECIFICATIONS

For building components and systems where specifications and design details are not available, quality standards have been established based on discussions with the design team.

1. INTRODUCTION

1.5 ESTIMATE CLASSIFICATION AND COST PREDICTABILITY

Estimates are defined and classified based on the stage of a project's development and the level of information available at the time of the milestone estimate.

> *This Class 'D' Estimate is considered to have an expected degree of accuracy of* +/- 20-30%. *In other words, bid results might vary by this amount if the construction budget were set at this milestone estimate.*

At the initial stages of a contemplated project, the cost accuracy of the estimate is low as there may be little or no information available to inform a first high-level concept estimate or order of magnitude estimate. As a project nears design completion and is ready to be released to market for tender, the level of accuracy of the estimate is high as the detail is generally extensive and typically represents the information on which contractors will bid.

Milestone cost estimates or "checks" are recommended as the project design develops to keep track of scope and budget. Early detection of potential budget overruns will allow for remedial action before design and scope are locked in. The number of milestone estimates will depend on a project's size and schedule and cost predictability will improve as the design advances.

According to the Canadian Joint Federal Government/Industry Cost Predictability Taskforce, industry standards for estimate classification and cost estimate accuracy may be summarized as follows:

COST ESTIMATE CLASSIFICATION SYSTEM						
AACE	Class 5	Class 4	Class 3		Class 2	Class 1
DND			Indicative		Substantive	
RAIC	OME	Sketch Design	Design Develop		Contract Documents	Tender Documents
GOC	OME	**D**	**C**	← **B**	→	**A**
Design Documentation % Complete		**12.5%**	**25.0%**		**95.0%**	**100.0%**
Cost Estimate Accuracy (+/-%)	**+/- 30%**	**+/- 20-30%**	**+/- 15-20%**		**+/- 10-15%**	**+/- 5-10%**

Legend

AACE Association for the Advancement of Cost Engineering
DND Department of National Defence
GOC Government of Canada
RAIC Royal Architectural Institute of Canada
OME Order of Magnitude Estimate

While the classification categories differ from one authority to the next, the overarching principle for cost predictability remains the same – as the level of detail and design development increases, so does the level of accuracy of the estimate.

1. INTRODUCTION

1.6 EXCLUSIONS

This Class 'D' Estimate does not provide for the following, if required:

- Cost of contaminated soil removal
- Cost of hazardous material (e.g. asbestos, lead, PCB, etc.) removal
- Equipment beyond that identified in this estimate
- Financing costs
- Loose furniture, furnishings and equipment
- Special audio, visual, security equipment or installation other than those carried in electrical division
- Winter Construction (Concrete foundation and masonry heating & hoarding)
- Premiums associated with Public-Private Partnership procurement model
- Trade tariffs
- Cost related to impact of COVID-19 (Coronavirus) on construction.
- Third party commissioning costs
- Overtime premiums for work done outside normal working hours
- Phased construction premiums
- Soft Costs
  - Building permit
  - Development charges
  - Easement costs
  - Fund raising costs
  - Land acquisition costs and impost charges
  - Legal fees and expenses
  - Owner’s staff and associated management
  - Preventative maintenance contracts
  - Professional fees and expenses
  - Relocation of existing facilities, including furniture and equipment
  - Right of way charges
  - Value-added tax (e.g. Harmonized Sales Tax, Goods and Services Tax, or other)

2. DOCUMENTATION

This Class 'D' Estimate has been prepared from the documentation included in Appendix AA of this report.

All of the above documentation was received from Cornerstone Planning Group and was supplemented with information gathered in meeting(s) and telephone conversations with the design team, as applicable.

Design changes and/or additions made subsequent to this issuance of the documentation noted above have not been incorporated in this report.

3. COST CONSIDERATIONS

3.1 COST BASE

All costs are estimated on the basis of competitive bids (a minimum of 4 general contractor bids and at least 4 subcontractor bids for each trade) being received in March 2020 from general contractors and all major subcontractors and suppliers based on a stipulated sum form of contract. If these conditions are not met, bids received could be expected to exceed this estimate.

3.2 UNIT RATES

The unit rates in the preparation of this Class 'D' Estimate include labour and material, equipment, subcontractor's overheads and profit. Union contractors are assumed to perform the work with the fair wage policy in effect.

3.3 GENERAL REQUIREMENTS AND FEE

General Requirements and Fee cover the General Contractor's indirect costs which may include but not be limited to supervision, site set up, temporary utilities, equipment, utilities, clean up, etc. as covered in Division 1 General Conditions of the Contract Documents. It also includes the contractor's fees and should not be confused with Design or Consultant fees which are excluded from the Construction Costs and carried separately in the Owner's Total Project Costs.

3.4 DESIGN AND PRICING ALLOWANCE

An allowance of 15.0% has been included to cover design and pricing unknowns. This allowance is not intended to cover any program space modifications but rather to provide some flexibility for the designers and cost planners during the remaining contract document stages.

It is expected that this allowance amount will be absorbed into the base construction costs as the design advances. The amount by which this allowance is reduced corresponds to an increase in accuracy and detailed design information. Hanscomb recommends that careful consideration be made at each milestone estimate to maintain adequate contingency for this allowance.

As a project nears completion of design, Hanscomb recommends retaining some contingency for this allowance for the final coordination of documents.

3.5 ESCALATION ALLOWANCE

All costs are based on March 2020 dollars. An allowance of 6% has been made for construction cost escalation that may occur between March 2020 and the anticipated bid date for the project (assumed 2 years from the date of this report). Escalation during construction is included in the unit rates.

For escalation, the budgeted amount will typically decline as the time to award nears. Forecasting escalation requires careful assessment of a continually changing construction market which at best is difficult to predict. The escalation rate should be monitored.

3. COST CONSIDERATIONS

3.6 CONSTRUCTION ALLOWANCE

An allowance of 3.0% for Option 1 & 2 and 7.5% for Option 4 have been made to cover construction (post contract) unknowns. This allowance, also known as the Post Contract Contingency (PCC), is intended to cover costs for change orders during construction that are not foreseeable. It is not intended to cover scope changes to the contract. The amount carried in a budget for this allowance is typically set at the initial planning stage and should be based on the complexity of the project and the probability of unknowns and retained risks.

3.7 CASH ALLOWANCE

Cash allowances are intended to allow the contractor to include in the bid price the cost for work that is difficult to fully scope at the time of tendering based on factors that are beyond the Owner and Prime Consultant's control. Cash allowances attempt to reduce the risks by dedicating a set amount for use against a certain cost that cannot yet be detailed. The Contractor is obligated to work as best as possible within the limitations of the Cash Allowance.

Examples of Cash Allowances include hardware, inspection and testing, site conditions, replacement of existing elements during demolition for renovation, hazardous materials abatement, signage, etc.

Any Cash Allowances if applicable are included either in the details of this estimate under the appropriate discipline or at the summary level.

3.8 TAXES

Provincial Sales Tax is included where applicable. Provision has been made for value added taxes (e.g. Harmonized Sales Tax, Goods and Services Tax).

3.9 SCHEDULE

Pricing assumes a standard schedule of work appropriate to the size and scope of this project. Premiums for off-hour work, working in an operational facility, accelerated schedule, etc., if applicable, are identified separately in the body of the estimate.

3.10 STATEMENT OF PROBABLE COSTS

Hanscomb has no control over the cost of labour and materials, the contractor's method of determining prices, or competitive bidding and market conditions. This opinion of probable cost of construction is made on the basis of experience, qualifications and best judgment of the professional consultant familiar with the construction industry. Hanscomb cannot and does not guarantee that proposals, bids or actual construction costs will not vary from this or subsequent cost estimates.

3. COST CONSIDERATIONS

3.11 ONGOING COST CONTROL

Hanscomb recommends that the Owner and design team carefully review this document, including line item description, unit prices, clarifications, exclusions, inclusions and assumptions, contingencies, escalation, and mark-ups. If the project is over budget, or if there are unresolved budgeting issues, alternative systems/schemes should be evaluated before proceeding into the next design phase.

It is recommended that a final updated estimate at the end of the design stage be produced by Hanscomb using Bid Documents to determine overall cost changes which may have occurred since the preparation of this estimate. The final updated estimate will address changes and additions to the documents, as well as addenda issued during the bidding process. Hanscomb cannot reconcile bid results to any estimate not produced from bid documents including all addenda.

This estimate does not constitute an offer to undertake the work, nor is any guarantee given that an offer, to undertake the work at the estimate(s) price, will subsequently be submitted by a construction contractor. Unless explicitly stated otherwise, it is assumed that competitive bids will be sought when tender documents have been completed. Any significant deviation between bids received and a pre-tender estimate prepared by Hanscomb from the same tender documents, should be evaluated to establish the possible cause(s).

4. GROSS FLOOR AND SITE DEVELOPED AREAS

Gross Floor Area

	Option 1	Option 2		Option 4
	New Build as Programmed	Distributed Model: Downtown	Distributed Model: Offsite	380 William Ave. Renovation
Description	**m2**	**m2**	**m2**	**m2**
Multi-purpose Space	371	371	-	
Office Space	273	258	155	
Class A Vault Storage Space	2,420	579	1,840	
Storage Space	27	-	28	
Archival/Multi-purpose Space	146	-	146	
Support Space	230	160	207	
Sub-total	3,467	1,368	2,376	3,470
Total Gross Floor Area	**3,467**		**3,744**	**3,470**

The above areas have been measured in accordance with the Canadian Institute of Quantity Surveyors' Method of Buildings by Area and Volume.

5. CONSTRUCTION COST ESTIMATE SUMMARY

		Option 1	Option 2			Option 4	
	% Adds-on	New Build as Programmed	Distributed Model - Downtown	% Adds-on	Distributed Model - Offsite	% Adds-on	380 William Avenue Renovation
New Construction		13,155,306	5,419,002		9,948,532		-
Net Building Cost Aug. 2010							$5,352,400
Add: Escalation from 2010 - 2020, 16%		N/A	N/A		N/A		$900,000
Add: Additional scope due to deterioration, etc. to 2020 - 20%		N/A	N/A		N/A		$1,000,000
Sub-total		13,155,306	5,419,002		9,948,532		$7,252,400
Phasing Premium		N/A	N/A		N/A	5.0%	$362,600
General Requirements	9.0%	$1,183,978	$487,710	8.0%	$795,883	8.0%	$609,200
Fee	3.0%	$430,179	$177,201		$322,332		$246,700
Sub-total		$14,769,463	$6,083,913		$11,066,747		$8,470,900
Design and Pricing Allowance	15.0%	$2,215,419	$912,587		$1,660,012		$1,270,600
Escalation Allowance	6.0%	$1,019,093	$419,790		$763,606		$584,490
Construction Allowance	3.0%	$540,119	$222,489		$404,711	7.5%	$774,400
Total Construction Cost		18,544,094	7,638,779		13,895,076		$11,100,390
Total Construction Cost		18,544,094			21,533,855		$11,100,390
ADD							
Soft Costs							
Design/Eng./Project Management	15%	$2,781,614			$3,230,078		$1,665,059
Add FF&E Allowance	5%	$927,205			$1,076,693		$555,020
Total Project Cost		$22,252,913			$25,840,626		$13,320,469

Note: Renovation cost excludes hazmat remediation, only allows scope of 2010 Cibinel Study

6. UNDERSTANDING THE ELEMENTAL COST SUMMARY

The cost information prepared and presented by Quantity Surveyors is organized in a form referred to by Quantity Surveyors as an 'Elemental Cost Summary'. In this format, the more 'intuitive' elements (e.g. foundations, exterior cladding, plumbing, etc.) of a building are evaluated rather than materials or trades. Quantity Surveyors track this information consistently from project to project to benchmark not just the overall unit rate of a building type but also rates and ratios for key elements. Below are some of the key features on the Elementary Cost Summary you will find on **page A-1** of this estimate:

Building components are summarized as elements 'A2 Structure' and then sub-elements 'A23 Roof Construction'. This allows review of Roof Construction costs whether it is steel, concrete or wood - something difficult with a trade summary.

Ratio to GFA evaluates design efficiency and highlights outliers. It is arrived at by dividing the parametric quantity of a sub-element (i.e. overall exterior wall area) by the building gross floor area (GFA). A ratio greater than 0.600 for 'A32 Walls Above Grade' is considered high and may be due to articulation, courtyard design or high floor to floor heights.

The 'Unit Rate' is the blended rate of a sub-element's costs divided by its parametric quantity and allows a review of its reasonableness relative to bench-marks. A rate of $559/m2 indicates a good quality exterior wall cladding.

The last column expresses the cost of each element as a percentage of total construction cost. At 18.7% of total construction costs, mechanical and electrical systems are considered basic.

The 'Rate per SF' (m^2) column converts costs for each element or sub-element to a $/SF ($m^2$) of GFA for comparison to benchmark rates. A rate of $217/$m^2$ indicates basic electrical design.

General Requirements & Fee cover General Contractor's overheads (site set up, supervision, etc.) and contractor's expenses. Fee is not for Consultants.

Allowances are critical for estimates. Design & pricing compensates for a lack of detail early in design; escalation considers changes to labour & material; construction allowance is for unforeseen conditions; and, cash allowances offer flexibility for items difficult to detail at bid.

SAMPLE ELEMENTAL SUMMARY

Project :
Location :
Owner :
Consultant :

Report date : 19 Jul 2017
Page No. : A - 1
Bldg Type : 420
C.T. Index : 0.0
GFA : 1,582 m2

Element		Ratio to GFA	Elemental Cost Quantity	Elemental Cost Unit Rate	Elemental Amount Sub-Total	Elemental Amount Total	Rate per m2 Sub-Total	Rate per m2 Total	%
A	**SHELL**		1,582 m2			1,829,900		1,156.70	35.6
A1	**SUBSTRUCTURE**					250,000		158.03	4.9
A11	Foundations	1.000	1,582 m2	158.03	250,000		158.03		
A12	Basement Excavation	0.001	1 Nil	0.00	0		0.00		
A13	Special Conditions	0.001	1 Sum	0.00	0		0.00		
A2	**STRUCTURE**					468,800		296.33	9.1
A21	Lowest Floor Construction	1.000	1,582 m2	64.92	102,700		64.92		
A23	**Roof Construction**		1 Nil	0.00	0		0.00		
A23	Roof Construction	1.013	1,602 m2	228.53	366,100		231.42		
A3	**EXTERIOR ENCLOSURE**					1,111,100		702.34	21.6
A31	Walls Below Grade	0.001	1 Nil	0.00	0		0.00		
A32	**Walls Above Grade**		1,096 m2	**559.22**	612,900		387.42		
A33	Windows & Entrances	0.003	4 Lvs	3,275.00	13,100		8.28		
A34	Roof Coverings	1.013	1,602 m2	220.22	352,800		223.01		
A35	Projections	1.000	1,582 m2	83.63	132,300		83.63		
B	**INTERIORS**		1,582 m2			1,033,400		653.22	20.1
B1	**PARTITIONS & DOORS**					382,900		242.04	7.4
B11	Partitions	1.504	2,380 m2	105.29	250,600		158.41		
B12	Doors	0.038	60 Lvs	2,205.00	132,300		83.63		
B2	**FINISHES**					398,400		251.83	7.7
B21	Floor Finishes	1.000	1,582 m2	75.35	119,200		75.35		
B22	Ceiling Finishes	1.000	1,582 m2	91.28	144,400		91.28		
B23	Wall Finishes	2.314	3,660 m2	36.83	134,800		85.21		
B3	**FITTINGS & EQUIPMENT**					252,100		159.36	4.9
B31	Fittings & Fixtures	1.000	1,582 m2	159.36	252,100		159.36		
B32	Equipment	1.000	1,582 m2	0.00	0		0.00		
B33	Elevators	0.001	1 Nil	0.00	0		0.00		
B34	Escalators	0.001	1 Nil	0.00	0		0.00		
C	**SERVICES**		1,582 m2			964,400		609.61	**18.7**
C1	**MECHANICAL**					621,100		392.60	12.1
C11	Plumbing & Drainage	1.000	1,582 m2	145.26	229,800		145.26		
C12	Fire Protection	1.000	1,582 m2	31.04	49,100		31.04		
C13	HVAC	1.000	1,582 m2	170.35	269,500		170.35		
C14	Controls	1.000	1,582 m2	45.95	72,700		45.95		
C2	**ELECTRICAL**					343,300		**217.00**	6.7
C21	Service & Distribution	1.000	1,582 m2	42.54	67,300		42.54		
C22	Lighting, Devices & Heating	1.000	1,582 m2	116.81	184,800		116.81		
C23	Systems & Ancillaries	1.000	1,582 m2	57.65	91,200		57.65		
	NET BUILDING COST - EXCLUDING SITE				**$**	**3,827,700**		2,419.53	74.4
D	**SITE & ANCILLARY WORK**		1,582 m2			799,800		505.56	15.5
D1	**SITE WORK**					799,800		505.56	15.5
D11	Site Development	6.541	10,348 m2	48.71	504,100		318.65		
D12	Mechanical Site Services	0.001	1 Sum	167,400.00	167,400		105.82		
D13	Electrical Site Services	0.001	1 Sum	128,300.00	128,300		81.10		
D2	**ANCILLARY WORK**				0			0.00	0.0
D21	Demolitions	0.001	1 Nil	0.00	0		0.00		
D22	Alterations	0.001	1 Nil	0.00	0		0.00		
	NET BUILDING COST - INCLUDING SITE				**$**	**4,627,500**		2,925.09	89.9
Z1	**GENERAL REQUIREMENTS & FEE**		**8.0%**			520,100		328.76	10.1
Z11	General Requirements		**3.0%**		370,200		234.01		
Z12	Fee				149,900		94.75		
	TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES				**$**	**5,147,600**		3,253.86	100.0
Z2	**ALLOWANCES**		**10.0%**			930,500		588.18	
Z21	Design & Pricing Allowance		**2.5%**		514,800		325.41		
Z22	Escalation Allowance		**3.0%**		141,600		89.51		
Z23	Construction Allowance				174,100		110.05		
Z24	Cash Allowances		**1 Sum**	100,000.00	100,000		63.21		
	TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES				**$**	**6,078,100**		3,842.04	
	VALUE ADDED TAX (GST/HST)					0		0.00	
	Value Added Tax (GST/HST)		0.0 %		0		0.00		
	TOTAL CONSTRUCTION ESTIMATE				**$**	**6,078,100**	**$**	**3,842.04**	

J2351 -Z1 CLASS C ESTIMATE Hanscomb

The power of the Elemental Cost Summary lies in the ability to compare costs with similar building types as well as alternatives without losing sight of the cost associated with that element of the building. By using this format consistently across all projects, Quantity Surveyors can better understand why the 'roof covering' element may be more on this project, if it's fulfilling the same function as a similar project.

Appendix
A - Elemental Cost Summary (New Build as Programmed - Option 1)

Project	: **City of Winnipeg**		Plan date : 5 Mar 2020
	: **Archival Program Facility - Option 1**		Page No. : A - 1
Location	: **Winnipeg, Manitoba**	**ELEMENTAL COST SUMMARY**	Bldg Type : 720
Owner	: **City of Winnipeg**		C.T. Index : 0.0
Consultant	: **Cornerstone**		GFA : 3,467 m2

Element	Ratio to GFA	Elemental Cost Quantity	Elemental Cost Unit rate	Elemental Amount Sub-Total	Elemental Amount Total	Rate per m2 Sub-Total	Rate per m2 Total	%
A SHELL		3,467 m2			4,457,912		1,285.81	30.2
A1 SUBSTRUCTURE					1,154,941		333.12	7.8
A11 Foundations	0.000	1 Sum	232,488.00	232,488		67.06		
A12 Basement Excavation	0.000	1 Sum	125,994.00	125,994		36.34		
A13 Special Conditions	0.000	1 Sum	796,459.00	796,459		229.73		
A2 STRUCTURE					1,640,599		473.20	11.1
A20 Crawl Space Floor Const.				0		0.00		
A21 Lowest Floor Construction	0.000	1 Sum	349,482.00	349,482		100.80		
A22 Upper Floor Construction	0.000	1 Sum	883,138.00	883,138		254.73		
A23 Roof Construction	0.000	1 Sum	407,979.00	407,979		117.67		
A3 EXTERIOR ENCLOSURE					1,662,372		479.48	11.3
A31 Walls Below Grade	0.000	1 Sum	343,182.00	343,182		98.99		
A32 Walls Above Grade	0.000	1 Sum	503,974.00	503,974		145.36		
A33 Windows & Entrances	0.000	1 Sum	215,989.00	215,989		62.30		
A34 Roof Coverings	0.000	1 Sum	451,477.00	451,477		130.22		
A35 Projections	0.000	1 Sum	147,750.00	147,750		42.62		
B INTERIORS		3,467 m2			2,566,522		740.27	17.4
B1 PARTITIONS & DOORS					679,500		195.99	4.6
B11 Partitions	0.000	1 Sum	522,000.00	522,000		150.56		
B12 Doors	0.000	1 Sum	157,500.00	157,500		45.43		
B2 FINISHES					609,668		175.85	4.1
B21 Floor Finishes	0.000	1 Sum	275,442.00	275,442		79.45		
B22 Ceiling Finishes	0.000	1 Sum	203,726.00	203,726		58.76		
B23 Wall Finishes	0.000	1 Sum	130,500.00	130,500		37.64		
B3 FITTINGS & EQUIPMENT					1,277,354		368.43	8.7
B31 Fittings & Fixtures	0.000	1 Sum	253,355.00	253,355		73.08		
B32 Equipment	0.000	1 Sum	844,008.00	844,008		243.44		
B33 Elevators	0.000	1 Sum	179,991.00	179,991		51.92		
C SERVICES		3,467 m2			5,330,912		1,537.62	36.1
C1 MECHANICAL					3,413,970		984.70	23.1
C11 Plumbing & Drainage	1.000	3,467 m2	80.97	280,720		80.97		
C12 Fire Protection	1.000	3,467 m2	112.86	391,296		112.86		
C13 HVAC	1.000	3,467 m2	718.87	2,492,330		718.87		
C14 Controls	1.000	3,467 m2	72.00	249,624		72.00		
C2 ELECTRICAL					1,916,942		552.91	13.0
C21 Service & Distribution	1.000	3,467 m2	185.37	642,690		185.37		
C22 Lighting, Devices & Heating	1.000	3,467 m2	186.00	644,862		186.00		
C23 Systems & Ancillaries	1.000	3,467 m2	181.54	629,390		181.54		
NET BUILDING COST - EXCLUDING SITE				**$**	**12,355,346**		3,563.70	83.7
D SITE & ANCILLARY WORK		3,467 m2			799,960		230.74	5.4
D1 SITE WORK					799,960		230.74	5.4
D11 Site Development	0.000	1 Sum	299,985.00	299,985		86.53		
D12 Mechanical Site Services	0.000	1 Sum	199,990.00	199,990		57.68		
D13 Electrical Site Services	0.000	1 Sum	299,985.00	299,985		86.53		
D2 ANCILLARY WORK					0		0.00	0.0
D21 Demolitions				0		0.00		
D22 Alterations				0		0.00		
NET BUILDING COST - INCLUDING SITE				**$**	**13,155,306**		3,794.43	89.1
Z1 GENERAL REQUIREMENTS & FEE					1,614,157		465.58	10.9
Z11 General Requirements		9.0 %		1,183,978		341.50		
Z12 Fee		3.0 %		430,179		124.08		
TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES				**$**	**14,769,463**		4,260.01	100.0
Z2 ALLOWANCES					3,774,631		1,088.73	
Z21 Design & Pricing Allowance		15.0 %		2,215,419		639.00		
Z22 Escalation Allowance		6.0 %		1,019,093		293.94		
Z23 Construction Allowance		3.0 %		540,119		155.79		
TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES				**$**	**18,544,094**		5,348.74	
VALUE ADDED TAX (GST/HST)					0		0.00	
Value Added Tax (GST/HST)		0.0 %		0		0.00		
TOTAL CONSTRUCTION ESTIMATE				**$**	**18,544,094**	**$**	**5,348.74**	

Appendix
B - Elemental Cost Summary (Distributed Model: Downtown - Option 2)

Project	: **City of Winnipeg**		Plan date : 5 Mar 2020
	: **Archival Program Fac.-Option 2-Downtown**		Page No. : B - 1
Location	: **Winnipeg, Manitoba**	**ELEMENTAL COST SUMMARY**	Bldg Type : 720
Owner	: **City of Winnipeg**		C.T. Index : 0.0
Consultant	: **Cornerstone**		GFA : 1,368 m2

Element	Ratio to GFA	Elemental Cost Quantity	Elemental Cost Unit rate	Elemental Amount Sub-Total	Elemental Amount Total	Rate per m2 Sub-Total	Rate per m2 Total	%
A SHELL		1,368 m2			1,957,279		1,430.76	32.2
A1 SUBSTRUCTURE					526,513		384.88	8.7
A11 Foundations	0.001	1 Sum	105,986.00	105,986		77.48		
A12 Basement Excavation	0.001	1 Sum	57,438.00	57,438		41.99		
A13 Special Conditions	0.001	1 Sum	363,089.00	363,089		265.42		
A2 STRUCTURE					652,328		476.85	10.7
A20 Crawl Space Floor Const.				0		0.00		
A21 Lowest Floor Construction	0.001	1 Sum	159,321.00	159,321		116.46		
A22 Upper Floor Construction	0.001	1 Sum	307,018.00	307,018		224.43		
A23 Roof Construction	0.001	1 Sum	185,989.00	185,989		135.96		
A3 EXTERIOR ENCLOSURE					778,438		569.03	12.8
A31 Walls Below Grade	0.001	1 Sum	214,432.00	214,432		156.75		
A32 Walls Above Grade	0.001	1 Sum	209,933.00	209,933		153.46		
A33 Windows & Entrances	0.001	1 Sum	89,971.00	89,971		65.77		
A34 Roof Coverings	0.001	1 Sum	205,819.00	205,819		150.45		
A35 Projections	0.001	1 Sum	58,283.00	58,283		42.60		
B INTERIORS		1,368 m2			926,457		677.23	15.2
B1 PARTITIONS & DOORS					253,525		185.33	4.2
B11 Partitions	0.001	1 Sum	187,650.00	187,650		137.17		
B12 Doors	0.001	1 Sum	65,875.00	65,875		48.15		
B2 FINISHES					248,494		181.65	4.1
B21 Floor Finishes	0.001	1 Sum	108,480.00	108,480		79.30		
B22 Ceiling Finishes	0.001	1 Sum	93,101.00	93,101		68.06		
B23 Wall Finishes	0.001	1 Sum	46,913.00	46,913		34.29		
B3 FITTINGS & EQUIPMENT					424,438		310.26	7.0
B31 Fittings & Fixtures	0.001	1 Sum	123,713.00	123,713		90.43		
B32 Equipment	0.001	1 Sum	180,763.00	180,763		132.14		
B33 Elevators	0.001	1 Sum	119,962.00	119,962		87.69		
C SERVICES		1,368 m2			2,135,394		1,560.96	35.1
C1 MECHANICAL					1,316,210		962.14	21.6
C11 Plumbing & Drainage	1.000	1,368 m2	119.68	163,720		119.68		
C12 Fire Protection	1.000	1,368 m2	161.30	220,664		161.30		
C13 HVAC	1.000	1,368 m2	609.16	833,330		609.16		
C14 Controls	1.000	1,368 m2	72.00	98,496		72.00		
C2 ELECTRICAL					819,184		598.82	13.5
C21 Service & Distribution	1.000	1,368 m2	224.20	306,704		224.20		
C22 Lighting, Devices & Heating	1.000	1,368 m2	186.00	254,448		186.00		
C23 Systems & Ancillaries	1.000	1,368 m2	188.62	258,032		188.62		
NET BUILDING COST - EXCLUDING SITE				**$**	**5,019,130**		3,668.95	82.5
D SITE & ANCILLARY WORK		1,368 m2			399,872		292.30	6.6
D1 SITE WORK					399,872		292.30	6.6
D11 Site Development	0.001	1 Sum	149,952.00	149,952		109.61		
D12 Mechanical Site Services	0.001	1 Sum	99,968.00	99,968		73.08		
D13 Electrical Site Services	0.001	1 Sum	149,952.00	149,952		109.61		
D2 ANCILLARY WORK					0		0.00	0.0
D21 Demolitions				0		0.00		
D22 Alterations				0		0.00		
NET BUILDING COST - INCLUDING SITE				**$**	**5,419,002**		3,961.26	89.1
Z1 GENERAL REQUIREMENTS & FEE					664,911		486.05	10.9
Z11 General Requirements		9.0 %		487,710		356.51		
Z12 Fee		3.0 %		177,201		129.53		
TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES				**$**	**6,083,913**		4,447.30	100.0
Z2 ALLOWANCES					1,554,866		1,136.60	
Z21 Design & Pricing Allowance		15.0 %		912,587		667.10		
Z22 Escalation Allowance		6.0 %		419,790		306.86		
Z23 Construction Allowance		3.0 %		222,489		162.64		
TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES				**$**	**7,638,779**		5,583.90	
VALUE ADDED TAX (GST/HST)					0		0.00	
Value Added Tax (GST/HST)		0.0 %		0		0.00		
TOTAL CONSTRUCTION ESTIMATE				**$**	**7,638,779**	**$**	**5,583.90**	

Appendix
C - Elemental Cost Summary (Distributed Model: Offsite - Option 2)

Project	: **City of Winnipeg**		Plan date : 5 Mar 2020
	: **Archival Program Fac.-Option 2-Offsite**		Page No. : C - 1
Location	: **Winnipeg, Manitoba**	**ELEMENTAL COST SUMMARY**	Bldg Type : 720
Owner	: **City of Winnipeg**		C.T. Index : 0.0
Consultant	: **Cornerstone**		GFA : 2,376 m2

Element	Ratio to GFA	Elemental Cost Quantity	Elemental Cost Unit rate	Elemental Amount Sub-Total	Elemental Amount Total	Rate per m2 Sub-Total	Rate per m2 Total	%
A SHELL		2,376 m2			3,227,038		1,358.18	29.2
A1 SUBSTRUCTURE					914,697		384.97	8.3
A11 Foundations	0.000	1 Sum	184,127.00	184,127		77.49		
A12 Basement Excavation	0.000	1 Sum	99,785.00	99,785		42.00		
A13 Special Conditions	0.000	1 Sum	630,785.00	630,785		265.48		
A2 STRUCTURE					1,133,274		476.97	10.2
A20 Crawl Space Floor Const.				0		0.00		
A21 Lowest Floor Construction	0.000	1 Sum	276,785.00	276,785		116.49		
A22 Upper Floor Construction	0.000	1 Sum	533,375.00	533,375		224.48		
A23 Roof Construction	0.000	1 Sum	323,114.00	323,114		135.99		
A3 EXTERIOR ENCLOSURE					1,179,067		496.24	10.7
A31 Walls Below Grade	0.000	1 Sum	300,279.00	300,279		126.38		
A32 Walls Above Grade	0.000	1 Sum	293,980.00	293,980		123.73		
A33 Windows & Entrances	0.000	1 Sum	125,991.00	125,991		53.03		
A34 Roof Coverings	0.000	1 Sum	357,563.00	357,563		150.49		
A35 Projections	0.000	1 Sum	101,254.00	101,254		42.62		
B INTERIORS		2,376 m2			1,841,243		774.93	16.6
B1 PARTITIONS & DOORS					481,183		202.52	4.4
B11 Partitions	0.000	1 Sum	371,958.00	371,958		156.55		
B12 Doors	0.000	1 Sum	109,225.00	109,225		45.97		
B2 FINISHES					403,875		169.98	3.7
B21 Floor Finishes	0.000	1 Sum	183,558.00	183,558		77.26		
B22 Ceiling Finishes	0.000	1 Sum	127,327.00	127,327		53.59		
B23 Wall Finishes	0.000	1 Sum	92,990.00	92,990		39.14		
B3 FITTINGS & EQUIPMENT					956,185		402.43	8.6
B31 Fittings & Fixtures	0.000	1 Sum	170,860.00	170,860		71.91		
B32 Equipment	0.000	1 Sum	665,333.00	665,333		280.02		
B33 Elevators	0.000	1 Sum	119,992.00	119,992		50.50		
C SERVICES		2,376 m2			3,780,328		1,591.05	34.2
C1 MECHANICAL					2,409,640		1,014.16	21.8
C11 Plumbing & Drainage	1.000	2,376 m2	79.11	187,960		79.11		
C12 Fire Protection	1.000	2,376 m2	121.65	289,048		121.65		
C13 HVAC	1.000	2,376 m2	741.40	1,761,560		741.40		
C14 Controls	1.000	2,376 m2	72.00	171,072		72.00		
C2 ELECTRICAL					1,370,688		576.89	12.4
C21 Service & Distribution	1.000	2,376 m2	204.26	485,328		204.26		
C22 Lighting, Devices & Heating	1.000	2,376 m2	186.00	441,936		186.00		
C23 Systems & Ancillaries	1.000	2,376 m2	186.63	443,424		186.63		
NET BUILDING COST - EXCLUDING SITE				**$**	**8,848,609**		3,724.16	80.0
D SITE & ANCILLARY WORK		2,376 m2			1,099,923		462.93	9.9
D1 SITE WORK					1,099,923		462.93	9.9
D11 Site Development	0.000	1 Sum	399,972.00	399,972		168.34		
D12 Mechanical Site Services	0.000	1 Sum	299,979.00	299,979		126.25		
D13 Electrical Site Services	0.000	1 Sum	399,972.00	399,972		168.34		
D2 ANCILLARY WORK					0		0.00	0.0
D21 Demolitions				0		0.00		
D22 Alterations				0		0.00		
NET BUILDING COST - INCLUDING SITE				**$**	**9,948,532**		4,187.09	89.9
Z1 GENERAL REQUIREMENTS & FEE					1,118,215		470.63	10.1
Z11 General Requirements		8.0 %		795,883		334.97		
Z12 Fee		3.0 %		322,332		135.66		
TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES				**$**	**11,066,747**		4,657.72	100.0
Z2 ALLOWANCES					2,828,329		1,190.37	
Z21 Design & Pricing Allowance		15.0 %		1,660,012		698.66		
Z22 Escalation Allowance		6.0 %		763,606		321.38		
Z23 Construction Allowance		3.0 %		404,711		170.33		
TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES				**$**	**13,895,076**		5,848.10	
VALUE ADDED TAX (GST/HST)					0		0.00	
Value Added Tax (GST/HST)		0.0 %		0		0.00		
TOTAL CONSTRUCTION ESTIMATE				**$**	**13,895,076**	**$**	**5,848.10**	

Appendix
D - Elemental Cost Summary (380 William Avenue Renovation - Option 4)

Project	: **CARNEGIE BUILDING, 380 WILLIAM AVENUE**		Report date : 12 Aug 2010
	: **ARCHIVES RENOVATION**		Page No. : D - 1
Location	: **WINNIPEG, MANITOBA**	**ELEMENTAL COST SUMMARY**	Bldg Type : 380
Owner	: **CITY OF WINNIPEG ARCHIVES**		C.T. Index : 0.0
Consultant	: **CIBINEL ARCHITECTS LIMITED**		GFA : 37,337 SF

Element	Ratio to GFA	Elemental Cost Quantity	Elemental Cost Unit rate	Elemental Amount Sub-Total	Elemental Amount Total	Rate per SF Sub-Total	Rate per SF Total	%
A SHELL		37,337 SF			562,000		15.10	9.0
A1 SUBSTRUCTURE					59,000		1.60	0.9
A11 Foundations	0.280	10,318 SF	0.00	0		0.00		
A12 Basement Excavation				0		0.00		
A13 Special Conditions	0.000	1 Sum	59,000.00	59,000		1.60		
A2 STRUCTURE					298,600		8.00	4.8
A21 Lowest Floor Construction	0.280	10,318 SF	8.00	83,400		2.20		
A22 Upper Floor Construction	0.030	1,210 SF	58.00	70,700		1.90		
A23 Roof Construction	0.240	9,107 SF	16.00	144,500		3.90		
A3 EXTERIOR ENCLOSURE					204,400		5.50	3.3
A31 Walls Below Grade				0		0.00		
A32 Walls Above Grade				0		0.00		
A33 Windows & Entrances				0		0.00		
A34 Roof Coverings	0.240	9,107 SF	20.00	177,600		4.80		
A35 Projections	0.000	1 Sum	26,800.00	26,800		0.70		
B INTERIORS		37,337 SF			2,415,900		64.70	38.6
B1 PARTITIONS & DOORS					250,200		6.70	4.0
B11 Partitions	0.250	9,380 SF	17.00	163,400		4.40		
B12 Doors	0.000	44 No.	1,973.00	86,800		2.30		
B2 FINISHES					235,200		6.30	3.8
B21 Floor Finishes	1.000	37,337 SF	3.00	125,500		3.40		
B22 Ceiling Finishes	1.000	37,337 SF	2.00	78,700		2.10		
B23 Wall Finishes	0.830	30,998 SF	1.00	31,000		0.80		
B3 FITTINGS & EQUIPMENT					1,930,500		51.70	30.9
B31 Fittings & Fixtures	1.000	37,337 SF	8.00	297,900		8.00		
B32 Equipment	1.000	37,337 SF	41.00	1,522,600		40.80		
B33 Elevators	0.000	1 No	110,000.00	110,000		2.90		
B34 Escalators				0		0.00		
C SERVICES		37,337 SF			1,716,400		46.00	27.5
C1 MECHANICAL					985,100		26.40	15.8
C11 Plumbing & Drainage	1.000	37,337 SF	2.00	73,200		2.00		
C12 Fire Protection	1.000	37,337 SF	6.00	223,700		6.00		
C13 HVAC	1.000	37,337 SF	16.00	601,600		16.10		
C14 Controls	1.000	37,337 SF	2.00	86,600		2.30		
C2 ELECTRICAL					731,300		19.60	11.7
C21 Service & Distribution	1.000	37,337 SF	1.00	49,200		1.30		
C22 Lighting, Devices & Heating	1.000	37,337 SF	10.00	379,200		10.20		
C23 Systems & Ancillaries	1.000	37,337 SF	8.00	302,900		8.10		
NET BUILDING COST - EXCLUDING SITE				**$**	**4,694,300**		125.73	75.1
D SITE & ANCILLARY WORK		37,337 SF			658,100		17.60	10.5
D1 SITE WORK					6,700		0.20	0.1
D11 Site Development	0.000	137 SF	1.00	200		0.00		
D12 Mechanical Site Services				0		0.00		
D13 Electrical Site Services	0.000	1 Sum	6,500.00	6,500		0.20		
D2 ANCILLARY WORK					651,400		17.40	10.4
D21 Demolitions	1.000	37,337 SF	3.00	129,900		3.50		
D22 Alterations	1.000	37,337 SF	14.00	521,500		14.00		
NET BUILDING COST - INCLUDING SITE				**$**	**5,352,400**		143.35	85.6
Z1 GENERAL REQUIREMENTS & FEE					899,300		24.10	14.4
Z10 Phasing Premium		5.0 %		267,600		7.20		
Z11 General Requirements		8.0 %		449,600		12.00		
Z12 Fee		3.0 %		182,100		4.90		
TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES				**$**	**6,251,700**		167.44	100.0
Z2 ALLOWANCES					1,918,000		51.40	
Z21 Design & Pricing Allowance		8.0 %		500,100		13.40		
Z22 Escalation Allowance		21.0 %		1,417,900		38.00		
Z23 Construction Allowance		0.0 %		0		0.00		
TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES				**$**	**8,169,700**		218.81	
GOODS & SERVICES TAX					0		0.00	
Goods & Service Tax		0.0 %		0		0.00		
TOTAL CONSTRUCTION ESTIMATE				**$**	**8,169,700**	**$**	**218.80**	

Appendix AA
Documents and Drawings List

DOCUMENTS AND DRAWINGS LIST

DOCUMENTS

Number	Title	Dated	Received
8 pages	Costing Guidelines	Dec. 22, 2010	Feb. 25, 2020
102 pages	Cibinel Report		Feb. 25, 2020

ARCHITECTURAL (Not provided)

Number	Title	Dated	Received
N/A	N/A	N/A	N/A

STRUCTURAL DRAWINGS (Not provided)

Number	Title	Dated	Received
N/A	N/A	N/A	N/A

MECHANICAL DRAWINGS (Not provided)

Number	Title	Dated	Received
N/A	N/A	N/A	N/A

ELECTRICAL DRAWINGS (Not provided)

Number	Title	Dated	Received
N/A	N/A	N/A	N/A

CIVIL DRAWINGS (Not provided)

Number	Title	Dated	Received
N/A	N/A	N/A	N/A

SURVEY (Not provided)

Number	Title	Dated	Received
N/A	N/A	N/A	N/A

LANDSCAPE DRAWINGS (Not provided)

Number	Title	Dated	Received
N/A	N/A	N/A	N/A

Appendix AB
Representative Drawings

Hanscomb: Celebrating More than 60 Years of Excellence in the Construction Industry

Hanscomb Limited, a leading independent organization of project control specialists, has been privileged to serve both Canadian and international clients on a wide variety of construction projects for over 60 years. By planning, monitoring and controlling cost in an unbiased independent professional manner, Hanscomb has become an internationally recognized leader in the coordinated management of capital projects.

Our growing team of trusted professionals and experts consists of quantity surveyors, cost consultants, project monitors, schedulers and value specialists, skilled in a remarkable variety of project sectors including but not limited to transportation, civil infrastructure, education, healthcare, residential, and commercial. Hanscomb takes pride in the multi-disciplinary character of the company and the ability of its people to bring together, in a team, the professional and practical skills of the very diverse field of quantity surveying.

Our nationwide network of offices and worldwide associates allows for the easy exchange of information, skills and resources ensuring we stay abreast of the latest in design, construction practices and trends. With offices located coast to coast, Hanscomb has the local experience and worldwide presence to keep your projects on track.

Cost Planning & Control
- Master plan costing
- Construction cost estimates
- Replacement cost estimates

Scheduling

Value Management

Financial Analysis
- Life cycle costing
- Operations and maintenance
- Cost / benefit analysis
- Feasibility studies

Applied Research
- Construction price indexing
- Risk and gap analysis
- Cost publications

Project Loan Monitoring

Project Management

Litigation Support

From east to west, our leadership team is here to serve you. We collaborate on many projects nationally and internationally and are available to assist you. For information please contact us:

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Mike Swick, Director	edmonton@hanscomb.com	(780) 426-7980
Ken King, Manager	vancouver@hanscomb.com	(604) 685-1241

CONSTRUCTION COST SUMMARY

BUILDING GROSS AREA SUMMARY

No.	Unit	CGSF (sf)	m2	BGSF (sf)	m2	rate/m2	Total Cost
ARCIHVAL PROGRAM FACILITY - OPTION 1 NEW CONSTRUCTION							
1	Multi-Purpose Space	3,157	293	3,994	371	5,195	1,928,445
2	Office Space	2,321	216	2,936	273	5,429	1,481,273
3	Class A Vault Storage Space	20,575	1,912	26,027	2,419	5,312	12,849,775
4	Storage Space	233	22	294	27	10,673	291,614
5	Archival/Multi-Purpose Space	1,244	116	1,573	146	5,161	754,516
5	Support Space	1,959	182	2,479	230	5,374	1,238,202
	Total	**29,489**	**2,741**	**37,303**	**3,467**		

TOTAL CONSTRUCTION COST INCLUDING SITE DEVELOPMENT **18,543,825**

CONSTRUCTION COST SUMMARY

BUILDING GROSS AREA SUMMARY

No.	Unit	CGSF (sf)	m2	BGSF (sf)	m2	rate/m2	Total Cost
ARCIHVAL PROGRAM FACILITY - OPTION 1 NEW CONSTRUCTION							
1	Multi-Purpose Space	3,157	293	3,994	371	5,431	2,015,936
2	Office Space	2,198	204	2,781	258	5,076	1,311,800
3	Class A Vault Storage Space	4,924	458	6,229	579	5,901	3,416,109
4	Storage Space	0	-	-	-	-	-
5	Archival/Multi-Purpose Space	0	-	-	-	-	-
5	Support Space	1,352	126	1,711	159	5,627	894,772
	Total	**11,631**	**1,081**	**14,715**	**1,368**		

TOTAL CONSTRUCTION COST INCLUDING SITE DEVELOPMENT **7,638,618**

CONSTRUCTION COST SUMMARY

BUILDING GROSS AREA SUMMARY

No.	Unit	CGSF (sf)	m2	BGSF (sf)	m2	rate/m2	Total Cost
ARCIHVAL PROGRAM FACILITY - OPTION 1 NEW CONSTRUCTION							
1	Multi-Purpose Space	0	-	-	-	-	-
2	Office Space	1,322	123	1,672	155	5,785	898,903
3	Class A Vault Storage Space	15,651	1,455	19,798	1,840	5,845	10,753,799
4	Storage Space	233	22	294	27	10,820	295,628
5	Archival/Multi-Purpose Space	1,244	116	1,573	146	5,233	765,003
5	Support Space	1,761	164	2,227	207	5,712	1,182,134
	Total	**20,211**	**1,878**	**25,564**	**2,376**		

TOTAL CONSTRUCTION COST INCLUDING SITE DEVELOPMENT **13,895,468**