The Corporation of the City of St. Catharines
CITY COUNCIL (BUDGET) AGENDA
Regular, Wednesday, November 23, 2022
Council Chambers and Electronic Participation, 6:00 PM

This Meeting will be held in both person at Council Chambers and electronically.

Individuals who are feeling unwell are asked to watch the Meeting online at www.stcatharines.ca/youtube rather than attend in-person.

Delegations to Council can be made in-person in Council Chambers or electronically through Zoom. Requests to delegate must be submitted using the City's Electronic Delegation Form by Wednesday, November 23, 2022 before 9 a.m. Those wishing to delegate through Zoom must attend a test session on Wednesday, November 23, 2022 at 10:00 a.m.

Public Comments: The public may submit comments regarding agenda matters to the Office of the City Clerk by contacting clerks@stcatharines.ca by Wednesday, November 23, 2022 before Noon. Comments submitted will be considered as public information and entered into public record.

His Worship Mayor Mat Siscoe takes the Chair and opens the meeting with a Land Acknowledgement.

1. Mayor's Report

2. Adoption of the Agenda

3. Adoption of the Minutes

3.1 Council (Budget), minutes of November 16, 2022

[Addenda]

4. Declarations of Interest

5. Motion to Move Consent Reports

Consent Reports are approved in one motion which approves all of the recommendations contained in each report. Prior to this motion, a councillor may request that one or more of the reports listed under Item 6 be moved to the list of Discussion Reports.

6. Consent Reports

Page

7. Public Meetings

8. Presentations

9. Discussion Reports

3 - 9 9.1 Chief Administrative Officer
Pre-Budget Information: Forecasted 2023 Operating Pressures and Opportunities

[Addenda]

10 - 258 9.2 Financial Management Services
2023 Capital Budget, Four Year Forecast and Asset Management Status
(Staff presentation will precede discussion of the report)

10. Motions

11. Call for Notices of Motion

12. Closed Session

Council will meet in Closed Session for the following purpose(s):

13. Motion Arising from Closed Session

14. Adjournment

St. Catharines | **Corporate Report**
City Council

Report from: Office of the Chief Administrative Officer

Report Date: November 18, 2022

Meeting Date: November 23, 2022

Report Number: CAO-193-2022

File: 10.4.19

Subject: Pre-Budget Information: Forecasted 2023 Operating Pressures and Opportunities

Strategic Pillar:

This report aligns with the following St. Catharines Strategic Plan pillars:

Recommendation

That Report CAO-193-2022 regarding Pre-Budget Information: Forecasted 2023 Operating Pressures and Opportunities be received for information.

Summary

In preparation for 2023 Operating Budget discussions with Council this report discusses the recent successes of the City, the innovative financial strategies implemented and the current and future priorities. It also discusses the fiscal challenges, pressures, and opportunities that face the City on the path to financial sustainability.

Relationship to Strategic Plan

This report supports all pillars of Council Strategic Plan.

Background

Prior to formal budget discussions with the new term of Council, staff feel an obligation to provide open and transparent context regarding challenges and opportunities the City is facing on the way to operational and financial sustainability.

As the community and corporation continue to recover from the effects of the COVID-19 pandemic, staff and Council have worked together to balance the City's fiscal challenges with affordability for St. Catharines taxpayers. While essential during a time-limited period during the pandemic, the tools that have been employed to address

taxpayer affordability, such as deferred projects, increased reliance on reserves and reduced contributions to capital are not sustainable over long time horizons.

In preparing the 2023 Operating Budget for Council's consideration, staff have identified pressures that need to be considered within the context of operating budget discussions. These pressures, outlined in subsequent sections of this report, primarily relate to staff's ability to continue to deliver existing services. Left unaddressed, these pressures will significantly challenge the organization's ability to deliver services at their current levels.

At the same time, staff have identified opportunities to move toward financial sustainability and think differently about existing financial management practices and processes. These opportunities are also outlined in the following sections.

Report

Preparation of the 2023 Operating Budget is in its final stages and staff intend to table the 2023 Operating Budget at the December 12, 2022 Council meeting. In the meantime, staff feel it is important to provide advance information to Council on the pressures and opportunities that have influenced the budget development for 2023. Over the next several weeks, staff will host a series of budget workshops with Councillors to inform and answer any questions relating to the 2023 operating budget.

The following pressures and opportunities are foundational to 2023 Operating Budget deliberations, as the organization moves beyond the COVID-19 pandemic, recovery efforts focus on financial and operational sustainability.

Pressures for 2023 and Subsequent Operating Budgets

Staff have identified the following themes when evaluating the 2023 Operating Budget.

Legislative Changes

Recent provincial legislation and regulations have impacts on the operating budget ranging from a need for additional staffing to a reduction in fee revenues. Specifically, Bill 109 (More Homes for Everyone Act, 2022) will have an estimated negative impact through loss in revenues coupled with increased staffing requirements to meet both market demand and legislative timelines. Other examples include investments required for Next Generation 911 implementation, additional staffing required by the new Provincial regulation of implementing new regulatory compliance requirements for municipalities for stormwater management systems and wastewater collection systems and the continued reduction in Ontario Municipal Partnership Fund support. Financial impacts related to legislative changes are estimated at $2.08 million for 2023, though impacts of recent legislation (Bill 23 – More Homes, Build Faster Act) have not yet been fully assessed and are uncertain.

Inflationary and Non-Discretionary Changes

In line with Nation-wide economic inflation, the City is experiencing increasing costs for contracted services, fuel, materials that have incremental impacts and when combined place additional pressures on the operating budget. In addition to these inflationary

pressures many service contracts, software license fees are experiencing significant increases in 2023. Operational financial impacts related to inflationary and non-discretionary changes are estimated at $1.08 million for 2023.

Health and Safety

It is the position of the Senior Leadership Team that investments that have been identified as part of health and safety are essential to continued service delivery. Any deferral of these investments would have significant legislative, risk and morale implications specifically related to the safety of staff when dealing with the current opioid, homelessness, and mental health crisis. Financial impacts related to health and safety are estimated at $495,000 for 2023.

Previously Deferred Items

There are items that were deferred prior to the onset of the COVID-19 pandemic which the City has been unable to revisit over the past three years. However, continuing to defer items such as training and development of staff have long-term implications for the City's operations and service delivery. For 2023, addressing some of these previously deferred items has an estimated financial impact of $2.35 million.

Transition from COVID-19 to Financial Recovery

As noted above, time limited measures were employed during the pandemic to provide relief to taxpayers such an increased reliance on reserves and reduced operating contributions to the capital program. These measures are not sustainable over the long term and transitioning away from these measures is estimated to have financial impacts of $5.3 million in 2023.

Parking Operations

The COVID-19 pandemic has had significant negative effects on the financial sustainability of the City's parking operations due to lower parking demand. While staff are looking at opportunities to address the long-term sustainability of parking operation, this work is not complete and the 2023 impact is estimated at $500,000.

Opportunities for 2023 and Subsequent Operating Budgets

Similar to the pressures in the 2023 Operating Budget, staff have identified themes in opportunities to mitigate budget implications.

New and Expanded Revenue Sources

Throughout the past several years Council has approved several initiatives with an aim to increase revenue thus decreasing the pressures placed on the tax levy. From the approval of a development charge by-law and a community benefits charge by-law effective in 2022, the introduction of a Municipal Accommodation Tax in 2023 to a comprehensive fee review to better align the planning and building fees to the actual administrative costs, these initiatives are intended to provide the City with more growth-funding tools as well as to reduce the associated cost of service.

Investment Income

The current interest rate environment has increased investment income in 2022 and the trend in 2023 is estimated to see continued positive investment income.

Transition to Regional Transit Service:

With the upload of transit services to Niagara Region, $13.2 million in levy supported obligations will be removed from the City's portion of property taxes. While staff acknowledge these costs will still be borne by St. Catharines taxpayers, the upload provides an opportunity to address some pressures cited above and correct current financial sustainability issues while smoothing property tax increases in future years.

Reduced Reliance on Reserves

Based on Council direction, the City is moving toward enhanced financial sustainability through reduced reliance on reserves. At its meeting on June 21, 2021, BSC approved the following motion through Report FMS-B018-2021.

> "That annual usage of the Civic Project Fund for Operating Budget support be reduced by 20% of the 2021 level each year 2023 to 2026 targeting zero Operating Budget support from the Civic Project Fund starting in 2027; and
>
> That the annual usage limit on special projects be set at 10% of the prior year ending balance of the Civic Project Fund starting in 2023."

Staff are implementing this change in the development of the 2023 Operating Budget. This strategy assists the City to move towards its long term objective of improved financial independence.

Increased Flexibility in Project Advancement and Deferrals:

Collaboratively with the new budget office, staff closely monitored the current year financial forecast and assessed the workplan and employee resources available. As a result, staff were able to advance several projects utilizing the current year funding available. In addition, staff worked with all City departments and the Senior Leadership Team on priorities resulting in the deferral of certain projects or initiatives to future years. These strategies are helping to mitigate the budget pressures for 2023.

Financial Recovery Targets

In the 2021 budget process, Council approved a reduction of capital out of revenue (COOR) to 5% from than the 10% rate stipulated in the Debt Management Strategy. To get the City back on course to this policy, staff are working toward a gradual increase of COOR based on the following schedule.

- 2023 – 7.5%
- 2024 – 8.5%
- 2025 – 9.5%
- 2026 – 10%

The reduction if COOR percentage during 2021 and 2022 budget years provided much needed assistance to lessen the tax burden on St. Catharines residents. However, the reduction is not sustainable over the long-term and 2023 operating budget reflects a

increase towards the pre-COVID-19 pandemic percentage to ensure the City moves forward with financial recovery.

The pressures and opportunities above are expected to benefit residents significantly in future years by ensuring the City is prepared to manage and proactively support longer term Council and community objectives. Throughout 2023 community engagement will be sought to ensure the objectives established in the Strategic Plan are aligned to staff work plans and supported by the operating and capital budget.

Financial Implications

This report is financial in focus and provides important information related to the Draft 2023 Operating Budget for Council consideration.

While staff have identified pressure themes within the 2023 Operating Budget, staff have also identified various opportunities of mitigation of those pressures.

Environmental Sustainability Implications

Several projects and initiatives included in the Draft 2023 Operating Budget pertain to environment and climate change related investments as the City continues to better align with and enhance connectivity between Council's Strategic Plan and the Corporation's priorities, long-term goals and initiatives.

Conclusion

The impact of the COVID-19 pandemic and its effect on the City's financial resiliency and sustainability continues to present challenges. The financial recovery path will take several years for the City to fully recover. At the same time, new and emerging pressures as outlined in this report are challenging this recover path.

City staff are taking innovative steps in identifying risks and seeking opportunities during the budget development process. In balancing the City's responsibilities to the taxpayers and its economic interest, staff welcome questions and feedback from Council over the coming weeks as the Draft 2023 Operating Budget is finalized for consideration.

Prepared by
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Submitted and Approved by
Dave Oakes, Chief Administrative Officer

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Director of Financial Management Services / City Treasurer / Chief Financial Officer

Appendices

1. 2022-2023 Significant Budget Changes – Summary

City of St. Catharines

2023 Operating Budget

Analysis of Budget Changes from 2022 to 2023

Appendix 1

2022 Approved Budget	***$***	***114,690,813***
Significant Changes from 2022:		
Base Budget Increase	$	1,159,000
Inflation Impact	$	198,000
Non-Discretionary Changes	$	880,000
Health & Safety	$	495,000
Subtotal - Base, Inflation, Non-Discretionary, Health & Safety	***$***	***2,730,000***
Legislative Impact	$	2,077,000
Council Initiatives/Projects	$	1,472,000
COVID-19 Impact	$	3,674,000
Road to Financial Recovery & Independency	$	1,620,000
Previously Deferred Items - Maintain Current Service Level	$	2,348,000
Support to Parking Operations	$	500,000
Stewardship of Assets	$	1,424,000
Service Level Enhancement & Modification	$	960,000
Revenue Generation Changes	$	(2,051,000)
Subtotal - Budget Changes excluding ABC's	***$***	***14,752,000***
Boards and Commissions:	$	(12,714,000)
City Tax Levy Increase	***$***	***2,038,000***

St. Catharines | **Corporate Report**
City Council

Report from: Financial Management Services, Director

Report Date: October 31, 2022

Meeting Date: November 23, 2022

Report Number: FMS-164-2022

File: 10.57.10

Subject: 2023 Capital Budget, Four-Year Forecast and Asset Management Status

Strategic Pillar:

This report aligns with the following St. Catharines Strategic Plan pillars: economic, social, environmental and organizational excellence.

Recommendation

That Report FMS-164-2022, regarding the 2023 Capital Budget, Four-Year Forecast and Asset Management Status, be referred to City Council for consideration of the Staff Recommendation after the public meeting to be scheduled, for which notice will be duly given.

Staff Recommendation (to be considered after Public Meeting)

That Council approve the 2023 Capital Budget and Four-Year Forecast as detailed in Appendix 1, Tab 2, Schedules A to V; and

That Council approve for the 2023 Capital Budget, a 7.5% capital out of revenue funding contribution (consistent with the COVID-19 Financial Recovery Plan) rather than the 10% rate stipulated in the Debt Management Strategy; and

That Council approve for the 2023 Capital Budget, a forecast 2023 debt ratio of 10.18% which is marginally higher than the 10% limit stipulated in the Debt Management Strategy; and

That Council approve an additional full-time employee in the 2023 operating budget, for a Project Manager and that will be funded through an overhead charge to related capital projects similar to best practices followed by other Ontario municipalities; and

That the approval of the construction phase of the Central Library's Renovation project as part of the 2023 Capital Budget be contingent upon approval of grant funding from the Federal Government; and

That projects identified in Appendix 6 be recommended for 30-year debenture term funding; and

That Council receive for information, as detailed in Appendix 1, the 2022 Asset Management Status, and Schedules W to AE; and

Further, that the City Solicitor be directed to prepare the necessary borrowing by-laws.

Summary

The 2023 Capital Budget, including the related funding, and the 2024 to 2027 Forecast in conjunction with the 2022 Corporate Asset Management Status, is provided for consideration in Appendix 1. The Capital Budget of $71,412,580 balances the need to maintain the City's infrastructure in alignment with the council approved Asset Management Plan and taxpayer affordability. Deferrals in 2023 capital spending plans results in increased annual planned expenditures over the next five years to ensure the City continues to address infrastructure deficits. As the City continues to align to the asset management requirements outlined in O.Reg 588/17, there will be more accurate understanding of the state of the City's infrastructure, level of service requirements and life cycle strategies to optimize investment into sustainability.

Consistent with the COVID-19 Financial Recovery Plan, capital out of revenue has increased to 7.5% from 5%. As stipulated in the Debt Management Strategy, capital out of revenue is stipulated to be at 10%. With the uncertainty with COVID-19, Council approved a reduction to 5% in 2020. As the City recovers from COVID-19, staff anticipate to be back in alignment with the Debt Management Strategy stipulated rate of 10% in 2026. Even with these reductions, a portion of the budget remains funded by the Operating and Water/Wastewater Budgets, which will be presented in December 2022 and in Q1 2023, respectively.

While the debt levels are forecast to increase, the City continues to comply with the provincially legislated Annual Repayment Limit (ARL). However, consistent with prior year forecasts, debt servicing ratios are projected to move marginally above the 10% Council stipulated limit in 2023. Debt servicing ratios are also projected to range between 10.2%-14.1%, for 2023 to 2027, which will require ongoing monitoring and Council direction.

Relationship to Strategic Plan

The 2023 Capital Budget, Four-Year forecast and Asset Management Status reflects and implements many of the Strategic Plan's goals and actions. Renewal of existing infrastructure and newly constructed infrastructure is critical to a municipality.

The recommendations of this report support the following: Social Well-Being Strategic goal – Build and support strong inclusive neighbourhoods that provide high quality of life for residents of all ages is supported by the construction program that addresses all areas of the City's infrastructure, as well as projects that will specifically address the goal to improve transportation and overall connectedness (all modes, including GO Rail, VIA Rail, and active transportation), incorporate urban design guidelines and provide complete streets in City neighbourhoods.

Environmental Stewardship Strategic goals are supported through continuing investment in Shoreline Protection, Watercourses, Sanitary Sewers and Storm Sewers. These projects are undertaken in a manner that protects the natural environment and aligns with the City's Climate Adaptation Plan.

The Capital Budget is also informed by our Asset Management Plans (AMP), which assist staff in prioritizing City needs and balancing them with the evolving priorities of Council to ensure they can be delivered concurrently.

As the City aligns to the requirements of O.Reg 588/17 for setting a sustainable level of service, the City will need to match the staffing requirements to ensure capital projects are completed as recommended in the AMP to ensure organizational excellence.

Background

The City owns, operates and maintains varied and complex infrastructure essential for service delivery to citizens, and its condition impacts the levels of service the City can provide. On October 4, 2021, Council endorsed the 2021 Asset Management Plan for core Assets, which provides a strategic guide supporting asset related activities for core assets valued at more than $5 billion.

The AMP identified anticipated annual funding deficits in tax supported assets, storm, transportation, and bridges/ structures, which will result in the need to increase funding levels or reduce service. For rate supported assets, the incorporation of increased planned spending identified in the 2019 Water/Wastewater Plan, will result in adequate funding to support current service levels. (See Figure 1 on Page 5)

The 2023 Capital Budget includes amounts that are in line with the anticipated annual funding included in the AMP. To provide comparable year over year information, Figure 1 incorporates both the information from the AMP and the most current information available for non-core service areas: Shoreline Protection, Buildings and Facilities, and other amenities that support Community, Recreation, and Culture service delivery. There are also other service areas that will be included in the AMP for non-core asset

such as fleet, green infrastructure, and IT solutions and hardware which are not included in Figure 1.

The Capital Budget is presented before the Operating Budget. This timing allows Council to understand the impacts of the Capital Budget on the Operating Budget.

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Figure 1. Select Asset Management Information by Service Area (in $Millions)

Service Area	Inventory Details	Capital Budget Sch.	Replacement Value	Backlog (1)	Forecasted Equivalent Annual Cost (2)	Average Anticipated Funding 2022-2032 (3)	2023 Capital Budget	2023 Renewal/ Replace Budget
Water		G,R	$1,366	$259	$16.2	$21.1	$11.93	$11.54
Water Distribution	593 km							
Wastewater/Pollution Control		E,F,R	$1,627	$172	$10.9	$9.9	$6.09	$4.90
Wastewater Collection	568 km							
Storage facilities	9 ea.							
Transportation		B,C,R	$1,202	$95	$35.3	$15.8	$13.11	$9.41
Sidewalks and pathways	585 km							
Roads	575 km							
Structures		H	$66	$8	$1.8	$1.1	$4.20	$3.40
Bridges & Culverts (>=3m)	71 ea.							
Bridges & Culverts (<3m)	46 ea.							
Stormwater			$931	$47	$5.0	$4.3	$2.13	$0.57
Stormwater Collection	405 km	D,R						
Treatment & Control (OGS)	31 ea.							
Facilities (incl. parking) (4)		M	$620	$56	Will be available upon completion of next Asset Management Plan Phase 2		$16.31	$16.06
Buildings and Facilities	174 bldgs							
Shoreline Protection (4)		I	$70	$9			$0.21	$0.00
Protected	3.612 km							
Parks and Recreation (4)		L	$71				$2.87	$2.02
Playgrounds/ Tennis Courts/ Basketball Courts	110 ea.			$7				

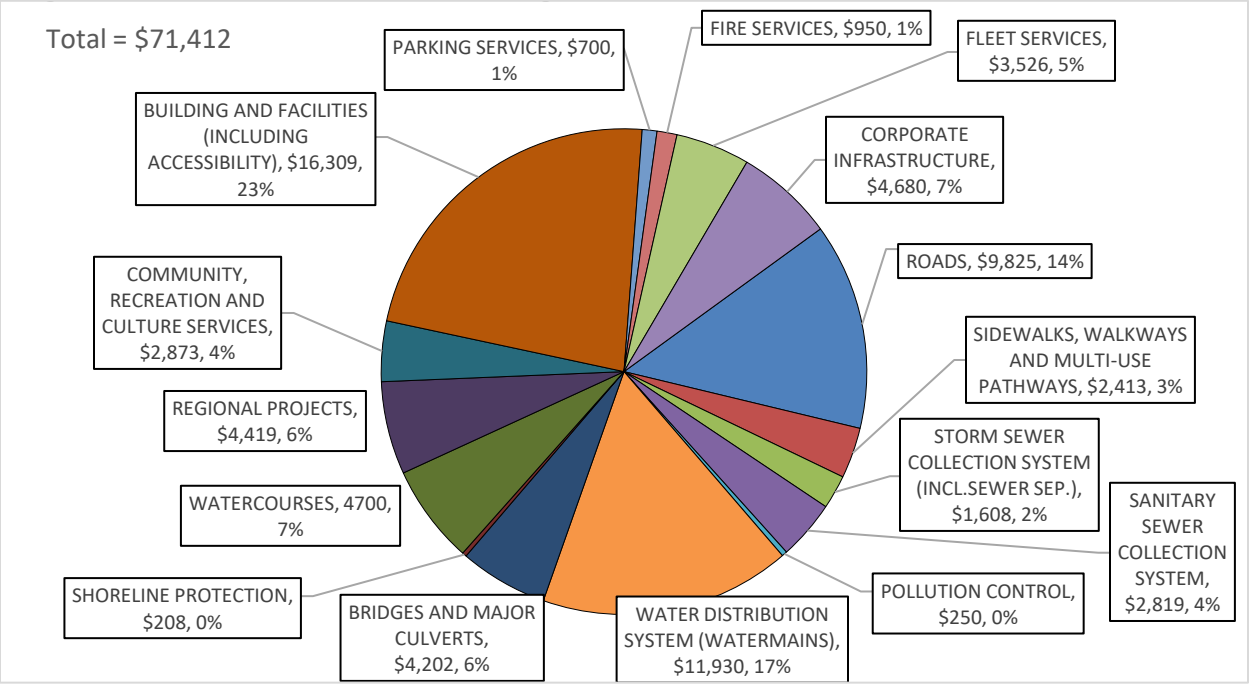
Service Area	Inventory Details	Capital Budget Sch.	Replacement Value	Backlog (1)	Forecasted Equivalent Annual Cost (2)	Average Anticipated Funding 2022-2032 (3)	2023 Capital Budget	2023 Renewal/ Replace Budget
Outdoor Pools & Splash Pads	9 ea.			$6				
Skatepark & Golf course	1 ea.							
Sports fields (Ball Diamonds & Soccer Fields)	55 ea.							
Leash Free Dog Park	2 sites							
Total			$5,953	$659			$57	$48

(1) Backlog is work that should have been completed before 2023 given unlimited funds based on known condition or age
(2) Forecast Equivalent Annual Cost provided in the City's 2021 Asset Management Plan - Core Assets
(3) Average Anticipated Funding based on the 2021 Capital Budget and provided in the 2021 AMP for Core Assets
(4) Information may change significantly upon completion of the next phase of the City's AMP which will be completed in compliance with O. Reg. 588/17

Report

The 2023 Capital Budget provides for a $71,412,580 investment in the City's infrastructure, spread between the various types of assets as shown in Figure 2 below.

Figure 2. 2023 Capital Budget (in $000's)



COVID-19 Financial Recovery Plan

The 2023 Capital Budget will continue to respond and address the ongoing fiscal impacts to the City resulting from the COVID-19 pandemic while also balancing the needs of asset sustainability.

In the 2021 Capital Budget process, Council approved a reduction of Capital Out Of Revenue (COOR) to 5% rather than the 10% rate stipulated in the Debt Management Strategy. To get the City back on course to this policy, it is recommended for a gradual increase of COOR based on the following schedule.

- 2023 – 7.5%
- 2024 – 8.5%
- 2025 – 9.5%
- 2026 – 10%

While some projects have become higher priorities, others have been deferred to later years to provide relief to the operating and rate supported Capital budget in 2023. Appendix 2 provided the details for all the proposed project deferrals.

Projects supporting active living continue to be a priority due to the need to support health and wellness. The 2023 budget includes related projects totaling more than $6.96 million (2022 - $6.67 million). Appendix 3 provides a listing of these projects.

Of specific note are the deferral of water and wastewater projects. The 2019 Water/Wastewater Financial Plan provided increased spending to address ongoing infrastructure deficits and included annual increases of no more than 6.5% on a typical residential household bill. Spending deferrals first proposed in 2020 for the Capital program from 2021-2023 have been maintained for the 2023 budget. These deferrals in 2021-2023 are offset by increased spending in 2024-2026, resulting in the same net investment in infrastructure over the next six years. This modified spending plan is also reflected in the Asset Management Plan for core assets endorsed by Council on October 4, 2021. During this term of Council, the Water/Wastewater Financial Plan will be updated in 2024 in alignment with the regulation of the Safe Drinking Water Act.

As a result of supply chain issues and pandemic-related fiscal and monetary stimulus, the Capital Budget was developed with the assumption of a continued high inflationary environment. Staff have developed the budget with contingency to mitigate project risk. Staff will continue to monitor inflationary increases and their impact on capital projects and provide updates to council through quarterly reporting.

Multi-Year Budgeting

On August 29, 2022, Council approved the multi-year budget policy. One of the lessons learned from COVID-19 was the requirements for multi-year budgeting as the City was developing the COVID-19 Financial Recovery Plan. This policy will also assist with the City meeting the requirements of the AMP outlined in O.reg 588/17 and the requirements of a Water/Wastewater financial plan outlined in the Safe Drinking Water Act. The new policy will provide the following benefits:

- Focus on long-term objectives and encourage strategic thinking
- Provide a tool for evaluating long-term compliance with financial policies and plans
- Help diagnose potential risks and causes of fiscal distress to allow for pre-emptive action to mitigate forecasted financial distress
- Communicate long term financial goals to citizens and other interested parties including organizations providing grant funding
- Multi-year procurement/contracting to make costs more predictable

For the first year of a new council, only the 2023 budget is recommended for approval. For next year’s Capital Budgeting process, the 2024 to 2026 Capital Budget (three years) will be recommended for approval once the new council had the opportunity to develop focus areas and key priorities.

The Capital Budget project details and related funding as well as summary information on the four-year forecast is included in Appendix 1. The contents of the 2023 Capital Budget, Four Year Forecast and Asset Management Status in Appendix 1 is as follows:

Section Description		Page
1. Asset Management Status		5
2. 2023 Capital Budget Program Details		
Schedule A	Capital Budget Summary (breakdown of 2023 capital expenditures with funding sources)	13
Schedule B-Q	2023 Capital Budget Details proposed by function, including narrative for each function.	15
Schedule S	2023 Coordinated Projects	75
3. Future Capital Budget and Forecast Information		
Schedule T	2024 Capital Forecast	79
Schedule U	2023 Capital Budget and Four-Year Forecast	81
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4. Funding Our Capital Budget		
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Schedule Y	Funding from Canada Community Building Fund	92
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Schedule AA	Municipal Act Debt Limits	95
Schedule AB	Capital Budget and Debt – Municipal Comparators	97
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5. 2023 Construction Program – Ward Listing		
Schedule AD	2023 Construction Program by Ward Listing – Linear	101
Schedule AE	2023 Construction Program by Ward Listing – Non-Linear	107

Prioritizing Capital Projects

Limited funding necessitates that renewal (sustainability) of infrastructure is the highest priority and that expansion and service improvement is the second priority. This prioritization guided determining the projects included in 2023 and the projects deferred to future years. Introductory information for each major asset category (Schedule B - Q) includes asset management considerations.

Target service levels (such as condition ratings) and risk related to asset failure determine project prioritization. While individual considerations may vary between asset categories the general priority is similar. The highest priorities are given to:

- Regulatory or legislative requirements
- Health and safety issues
- Capital maintenance/preventative maintenance aligned to the AMP
- Maintaining service levels
- Timing requirement with the Region

Capital budget projects which are the result of regulations or guidelines are as follows:

- Accessibility upgrades (roads, buildings, and facilities)
- Pollution control plan implementation
- New storm sewers replacing combined sewer
- Water/Wastewater 10-Year Financial Plan
- Bridge renewals

The City coordinates projects both within the city and with the Region for much of its linear construction to minimize the impact on the public and manage the costs of asset renewal. Schedule S presents the budget information from schedules B through Q, grouped by the major coordinated projects.

Central Library Renovation

The Central Library Renovation Phase 1 project is the largest request in the 2023 Capital Budget at $4,850,000. Library and City staff have been collaborating with the design architects to phase the project over three years. The total cost of the Central Library Renovation is estimated to be approximately $15 million. The phases are broken down as follows:

- Phase 1 – Design and basement renovation
- Phase 2 – Ground floor renovation
- Phase 3 – Second and third floor renovation

Phase 1 of the project is being recommended to be approved as part of the 2023 Capital Budget to satisfy the grant application requirement for council support under the Green and Inclusive Community Buildings Grant (GICB). The GICB program focuses on retrofits and upgrades to existing public community buildings to serve high-needs and underserved communities in Canada. The renovation includes accessibility upgrades, gender neutral bathrooms, improved thermal properties and other green infrastructure which falls within the scope of the grant program.

To ensure prudent planning and project risk management, staff are recommending that the project construction phase to only proceed contingent on a successful grant award from the GICB. Staff will provide Council an update on the progress of this grant application as it goes through the application process. A full copy of the conceptual design report can be found in Appendix 4.

Preapproved Projects

Bringing forward all capital projects for consideration at the same time within the annual capital budget supports prioritization of budgets. However, some projects require multi-year approval or early approval to satisfy third-party arrangements. In 2022, $4,270,000 of preapproved projects are comprised of the following;

Budget Schedule	Description	Amount	Council Report
M	Seymour Hannah Upgrade dehumidification system for pad 2/3	$ 1,000,000	EFES-132-2022
Q	Enterprise Resource Planning (ERP) System Implementation	$3,270,000	FMS-114-2022
	Total	$ 4,270,000	

Consequently, Council is being asked to approve the 2023 Capital Budget of $67,142,580.

Building Future Year Budgets

To smooth-out the capital program to mitigate fluctuations in the capital forecast, projects were included in the 2023 Capital Budget to build budgets for future year projects. A list of those projects that are building for future years are identified in Appendix 5.

Alignment of Budgets and Plans

Consistent with Asset Management Policy, the Capital Budget is aligned with Corporate Strategy. The 2023 Capital Budget and 2024-2027 Forecast also considers the significant plans approved by Council in prior years including the Water/Wastewater 10-year Financial Plan, Redevelopment of Sunset Beach (PRCS-149-2019) the Fire Master Plan (2017) and the Arena Strategy (PRCS-124-2019), Transportation Master Plan (EFES-041-2021), the 2021 Aquatics Strategy (CRCS-158-2021 and CRCS-042-2021) and the Parks Renewal Plan (CRCS-B017-2021).

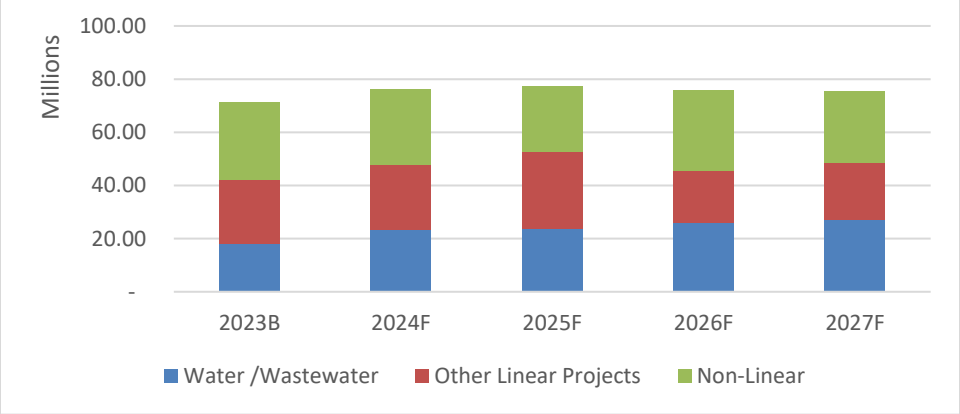
2023 Capital Budget Impacts on Future Operating Budgets

Strengthening Asset Management practice requires undertaking a full lifecycle approach to infrastructure acquisition.

To support the continued delivery of the increasing number of projects in the 2023 Capital Budget and Four-Year Forecast, this budget includes funding for a second project manager. The full costs for the position have been included in the 2023 operating budget and will be funded through an overhead charge to related capital projects. This approach is similar to practices followed by other Ontario and Canadian municipalities.

Projects within the 2023 capital budget that are anticipated to increase subsequent future operating budgets (2024 and beyond) include the new Splashpad, James Street Civic Square and the new access road to the Go Station. Each of these projects, which increase services provided, are anticipated to require additional on-going operational and maintenance resources and financial support once the project is complete. The operating impacts will come forward to Council as the capital projects are completed and these assets are added to the City's inventory.

Figure 3. 2023 Capital Budget & Four- Year Forecast (in $millions)

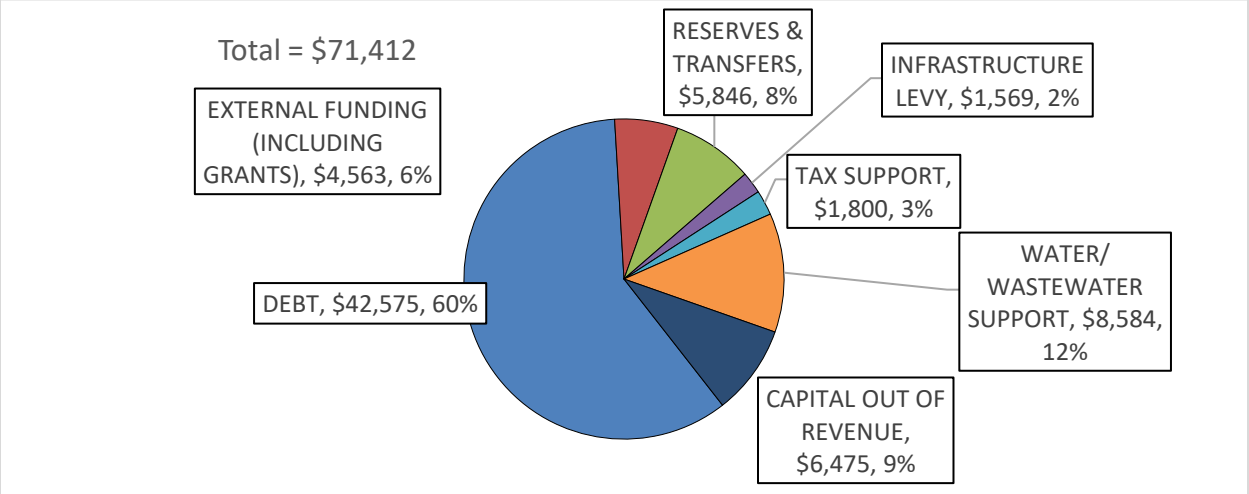


The forecast expenditures shown in Figure 3 depicts continued growth in capital expenditures year-over-year to meet identified future capital requirements. The growth in water/wastewaters' expenditures year over year occurs due to the deferrals in earlier years (Appendix 2). The increase in the Region's planned expenditures over 2023-2027 is partially accommodated within the rate supported budgets. The average capital budget over 2023-2027 is $75.4 million. From Phase 1 of the Asset Management Plan which only included core assets (water, wastewater, stormwater, transportation including bridges and culverts), the equivalent annual cost to maintain the existing level of service was approximately $69 million. Once Phase 2 of the Asset Management Plan is complete which will include all City capital assets, the City will have complete information on the optimal size of the Capital Budget to maintain existing level of service.

Funding the Capital Assets

As shown in Figure 4, the Capital Budget is funded first by available grants, reserves, developer contributions, tax support, water/wastewater support and finally debt for any remainder.

Figure 4. 2023 Capital Budget Funding Sources (in $000)



The largest portion of the external funding of $4.4 million comes from the Canada Community Building Fund. This is the largest of the recurring grants, providing annual funding of $4.4 million for 2023, and similar annual amounts for 2024-2027.

Operating and Rate Support

Consistent with prior years, operating and rate support includes the capital out of revenue and the infrastructure levy as well as the direct tax and water/wastewater rate support.

In 2016, a separate annual infrastructure tax levy was implemented to help address the infrastructure deficit. The 2023 Capital Budget and all forecast years includes a 1.5% ($1,569,000) infrastructure levy that provides funding to address the infrastructure deficits.

O.Reg 588/17 requires the City to adopt a financial strategy by 2025 to sustain the proposed level of service and the City's capital assets. Operating and Rate support will be a crucial funding source to ensure the city balances taxpayer affordability and service/asset sustainability.

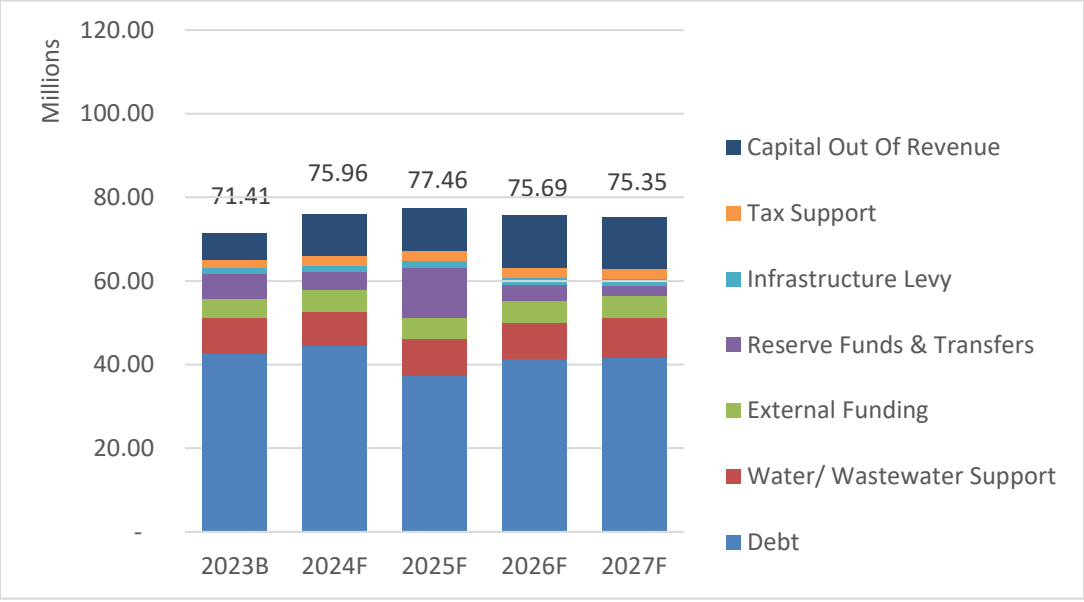
Reserves and Funding Transfers

The reserves and funding transfers of $5.84 million includes $247,600 of Community Benefit Charges, resulting from the City adopting this new financing source as a result of Bill 108 introduced by the Province of Ontario. The Development Charge ($4,771,714), Building ($610,000), Meridian Event Fund ($137,000) and Meridian Centre Capital Reserves ($80,000) are providing the remaining $5,598,714 of reserve funding.

Figure 5 shows the funding trend for 2023- 2027. Debt continues to provide the largest portion of funding in 2023 and the forecast shows this trend continuing. Debt financing allows the City to spread the costs of capital over the term of the debt, rather than requiring funding in the year of construction. This allows the City to acquire large long-life assets by spreading the acquisition cost over the life of the asset. Using debt also facilitates paying for the assets over a period that approximates the asset life, and the extension of debt terms up to 30 years for specified asset included in the Debt Management Strategy, means that borrowing terms for some of the City's longer life assets will move a little closer to useful lives of the related assets. Projects that are recommended for 30 year borrowing term are in Appendix 6.

The increases in debt financing in forecast years are due to increased capital budgets as well as reduced tax and rate support as a result of the COVID-19 Financial recovery plan.

Figure 5. 2023 Capital Budget and 4 Year Forecast Funding Sources (in $millions)



A portion of this debt will be funded from the water/wastewater budget as in Figure 6. In Figure 6, the annual tax supported capital out of revenue allocations starting at 7.5% building up to 10% down payment through the tax levy for each capital project funded by debt, outlined in the Council approved Debt Management Strategy. Similarly, while the annual water/wastewater capital out of revenue rates range from 45% to 57%, they are also lower than originally contemplated in the water/wastewater 10-year Financial Plan, which included annual blended capital out of revenue rates between 47% to 60%.

Figure 6. Debenture and Capital out of Revenue Funding (millions)

Debt Allocation	2023B	2024F	2025F	2026F	2027F
Tax Supported	$38.48	$38.05	$31.42	$34.58	$35.02
Water / Wastewater	4.09	6.47	5.99	6.72	6.47
Debentures	42.57	44.52	37.42	41.30	41.49

COOR Allocation	2023B	2024F	2025F	2026F	2027F
Tax Supported	$3.13	$3.54	$3.30	$3.85	$3.89
Water / Wastewater	3.35	6.47	6.83	8.69	8.46
Total	6.47	10.01	10.13	12.53	12.36
Tax Supported %	7.5%	8.5%	9.5%	10%	10%
Water / Wastewater %	45%	50%	53%	56%	57%

Ontario Regulation 403/2 Debt Repayment Limit restricts annual debt charges to no more than 25% of the City's net revenues. This is known as the Annual Repayment Limit (ARL). The City Treasurer has updated the ARL for the City and the debenture amount proposed in the 2023 Capital Budget will not cause the City to exceed its limit. The updated calculation is available in Appendix 1, page 95.

Council has also approved a policy that limits debt charges to 10% of the City's own source revenues. This Policy is aligned with the Ministry of Municipal Affairs guidance that debt costs between 5% to 10% are considered moderate risk. As shown in Figure 7, the debt charges as a percentage of operating expenditures is forecast to move marginally above 10% in 2022.

While the City has no remaining capacity within its internal debt limit, under the ARL the City could increase its debt by a further $126.4 million based on an interest rate of 7% which is the rate the Ministry of Municipal Affairs uses for illustrative purposes. Using a lower estimated borrowing rate of 5%, the City's additional debt capacity would be approximately $143.2 million.

The annual debt forecasts shown in Figure 7 are based on several conservative assumptions including interest rates of 5% (compared to 2022 borrowing rates of 3.80%). Any differences between the assumptions and actual results, including debt

terms, rates and debt issuances will impact the actual results. Consequently, actual results will vary from the estimates provided above.

Figure 7. Debt Funding Ratios

	2022	2023	2024	2025	2026	2027
Outstanding Debt (external)	$118.9M	$141.7M	$155.1M	$179.5M	$195.2M	$192.1M
Outstanding debt (internal)	$2.8M	$2.2M	$1.5M	$0.8M	-	-
Debt Per Household	2,028	2,407	2,574	2,925	3,126	3,038
Total Annual Debt Servicing	$20.4M	$20.7M	$22.4M	$24.9M	$29.4M	$31.1M
Debt Servicing as % of Own Source Revenues	10.02%	10.18%	10.76%	11.74%	13.61%	14.10%

Financial Implications

The 2023 Capital Budget includes the City's highest capital priorities. Short- and longer-term financial implications are outlined within this report The Capital Budget includes contributions from the operating and water/wastewater budgets, which Council will address as part of future budget deliberations. The required water/wastewater and operating budget support includes capital out of revenue, operating transfers, and the 1.5% infrastructure levy within the operating budget.

Debt funding of capital projects is a necessary funding tool for local governments. The use of debt allows for the completion of more projects at one time, which is necessary to address the infrastructure deficit.

The four-year forecast includes significant growth in annual spending to meet the need for infrastructure renewal within many areas of the City including water/wastewater, buildings and facilities (Fire Halls and Libraries). Consistent with prior year forecasts, debt servicing ratios are projected to move above 10% in 2022. Debt servicing ratios are projected to range between 10.2% to 14.1%, for 2023 to 2027, which will require ongoing monitoring and direction. Differences between the actual results and any of the conservative assumptions such as interest rates and project timing utilized to create the debt forecasts will impact the actual results.

Environmental Sustainability Implications

The 2023 Capital Budget and 2024 to 2027 forecast provides for projects that will support environmental sustainability, such as Shoreline Protection and water courses, as well as sanitary and storm sewer management projects. These projects are undertaken in a manner that protects the natural environment and aligns with the City's Climate Adaptation Plan.

Conclusion

The 2023 Capital Budget of $71.41 million includes the City's highest capital priorities and has been prepared within the context of the current COVID-19 recovery which is challenging the City's financial and operational resources.

The impacts on the 2023 operating and water/wastewater budgets have been mitigated with corporate prioritization and deferrals and are aligned to the COVID-19 Financial recovery plan.

The 2023 Capital Budget asset renewal rates have increased compared to prior budgets. The outcome of the Core Asset Management Plan was for a minimum annual budget of $69 million to maintain the existing level of service. This minimum budget will increase as we continue phase 2 of the Asset Management Plan which will include all city capital assets.

After including the planned debenture issuances to fund the 2023 Capital Budget, the City continues to comply with the Provincially legislated Annual Repayment Limit (ARL). However in 2022, the debt charges as a percentage of owns source revenues are forecast to move marginally above Council's 10% limit. Future years forecast debt ratio continues to stay above 10% as more debt is utilized to fund future capital projects.

Staff will continue to review the actual debt limits as well as debt strategy to ensure the City's financial sustainability. For the 2023 Capital Budget, Council are being requested to approve the forecast debt limit above the debt limit within the Debt Management Strategy.

Staff will continue to work in conjunction with the external consultant on the Asset Management Plans that are required to promote sustainability and comply with Provincial legislation (O. Reg. 588/17). As the AMPs are completed, staff will investigate financial options for balancing the needs for taxpayer affordability and infrastucture sustainability so that the City can continue to deliver services as desired by residents.

Notifications

It is in order to notify of Council's decision:

- ASM Global, General Manager and Manager of Finance & Administration
- FirstOntario Performing Arts Centre, Executive Director, and Director of Finance and Administration
- St. Catharines Public Library, Chief Executive Officer

Prepared by
Ricci Cheung, Financial Management Services, Capital Planning Supervisor

Submitted by
Kristine Douglas, Director of Financial Management Services/City Treasurer,
Anthony Martuccio, Director Engineering, Facilities and Environmental Services, Engineering

Approved by
David Oakes, Chief Administrative Officer, Office of the Chief Administrative Officer

Appendices

- Appendix 1 - 2023 Capital Budget, 2024 – 2027 Forecast and Asset Management Status
- Appendix 2 - 2023 Capital Budget Deferrals
- Appendix 3 - 2023 Projects Supporting Outdoor Recreation and Active Transportation
- Appendix 4 - St. Catharines Central Library Renovation Architect Conceptual Design Report
- Appendix 5 - Building for Future Year Project Budget
- Appendix 6 - Projects Recommended for 30 year-debt

2023 CAPITAL BUDGET, 2024-2027 FORECAST

and Asset Management Status Update

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The City of St. Catharines

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2023 Capital budget and 2024-2027 Forecast

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*Note: No Requirement for Niagara District Airport

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2022 Asset Management Status

The City is committed to building and growing a diverse and resilient economy through fiscal responsibility, urban regeneration and collaborative partnerships. The 2023 Capital Budget aims to build and support strong, inclusive neighbourhoods that provide high quality of life for residents of all ages

Guided by our strategic goals, the 2023 Capital Budget aims to support the provision of quality municipal services that enhance our social fabric, environmental sustainability, cultural vitality; and contribute to the economic prosperity in our community. The City owns, operates and maintains infrastructure with an estimated replacement value of over $5.94 billion

In October 2021 Council endorsed the Asset Management Plan (AMP) for Core assets, that meets the requirements set out under Ontario Regulation 588/17. The AMP identifies funding levels for our core services (water, wastewater stormwater management and transportation) required to maintain sustainable infrastructure and related services. Based on the information known on the existing infrastructure's age and condition, the City will need to increase funding for asset rehabilitation and replacement, to maintain the existing levels of service to the public. The sustainable funding targets will continue to be refined as data and information on the assets is improved.

Figures 1 and 2 below provide the forecast lifecycle requirements for the City's core services split between rate supported operations and tax supported operations.

As shown in Figure 1, the 2021 AMP found that the anticipated tax supported annual funding for the City's related core infrastructure which includes transportation, storm water management systems and related facilities, is insufficient to meet the projected needs. As the assets continue to age, increasing the funding towards their replacement will be critical to maintaining existing levels of service or alternatively targeted levels of service will need to be reduced.

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Figure 1 - Forecasted Asset Portfolio for Tax Based, Core Infrastructure Expenditures (Source: 2021 AMP)

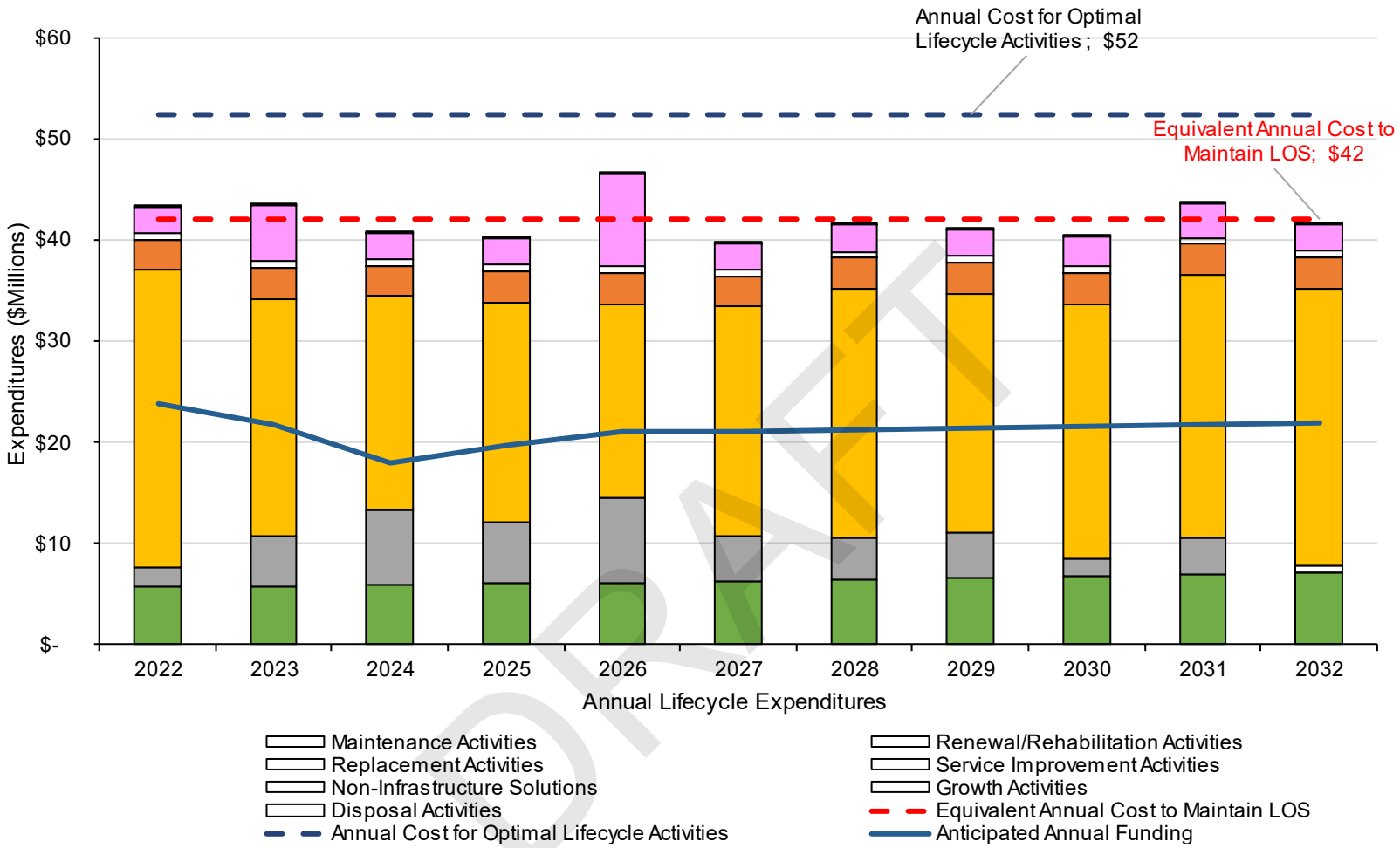

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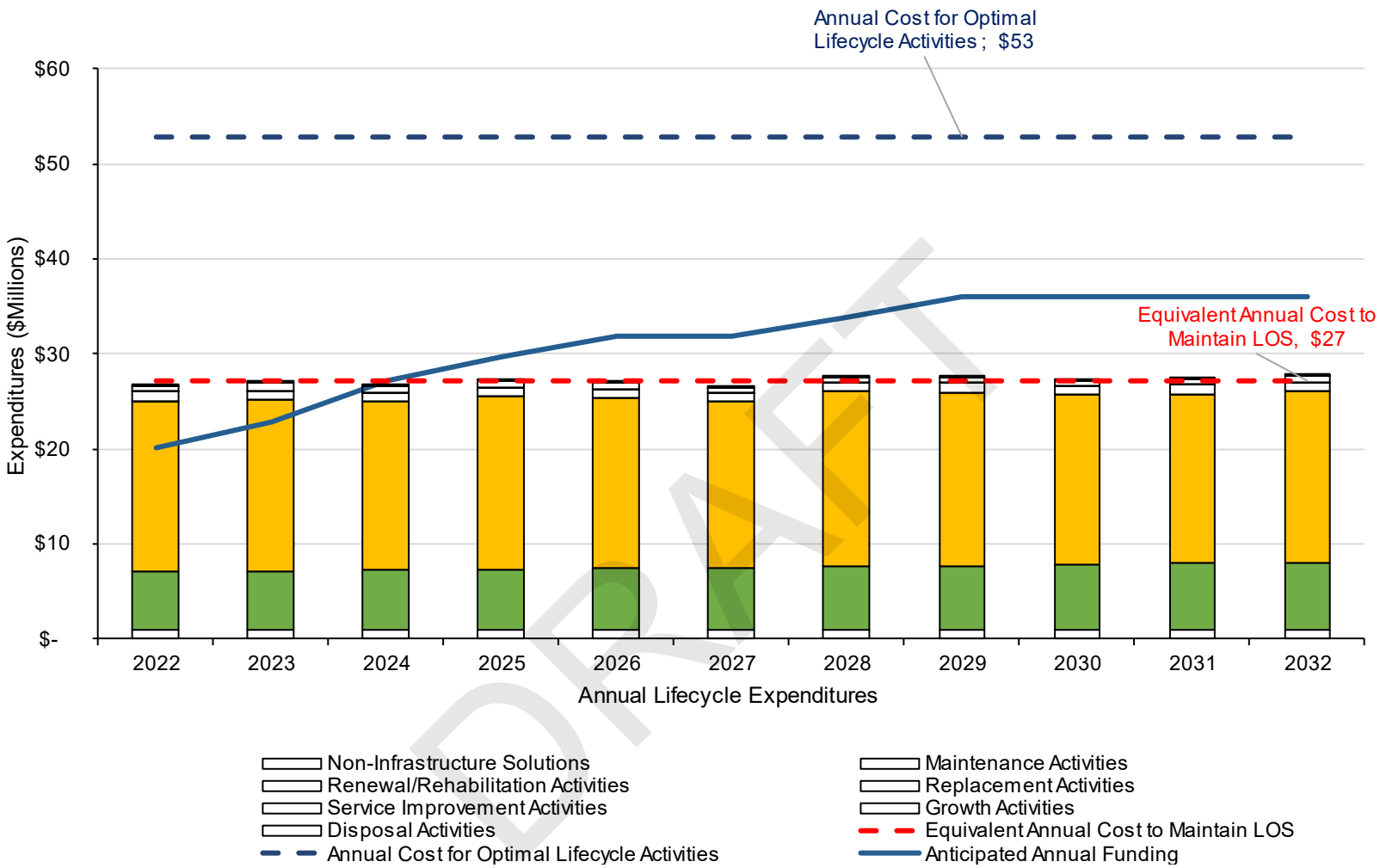
Figure 2 - Forecasted Asset Portfolio for Rate Based, Core Infrastructure Expenditures (Source: 2021 AMP)



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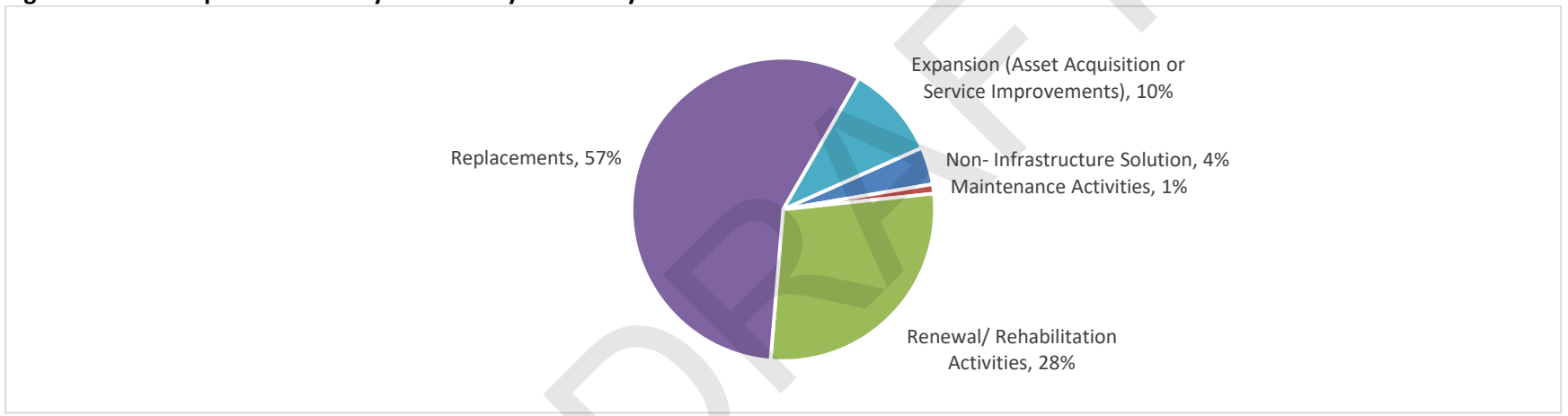
The City's water and wastewater infrastructure accounts for 58% of the City's core infrastructure. In 2019 Council approved the 10-year Financial Plan for Water and Wastewater, which included significant increases in the investment in related infrastructure over a ten-year period to assist in closing the funding gap for the Water/Wastewater assets. Even after including the planned deferrals resulting from COVID-19 related financial pressures the anticipated rate-based investments currently planned are sufficient to maintain the current condition and forecast a slight improvement to service, however are still below the optimal renewals identified.

Figure 3 shows the 2023 budget of $57 million is split between major asset lifecycle activities, which are consistent with the activities within the AMP:

- Renewal/Rehabilitation includes the significant repairs to extend the life of the asset, and can defer the need for asset replacement
- Non infrastructure activities are made to improvement of programs and services or monitor condition of assets to maintain them in a state of good repair and support service delivery
- Replacement activities which are activities that are expected to occur once an asset has reached its end of its useful life and renewal/rehabilitation is no longer an option
- Expansion activities support increasing demands due to population growth and the expansion of existing services to improve the quality of life for our residents.
- Disposal activities are associated with disposing of an asset once it has reached the end of its useful life or is no longer needed
- Maintenance activities include regularly scheduled inspection and maintenance and more significant repairs and activities associated with unexpected events

Figure 3 – 2023 Capital Forecast by Asset Lifecycle Activity



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A risk management framework was developed for each of the asset categories in the AMP to assist with the prioritization of investments within the forecasts. Moving forward risk scores will be considered in prioritizing capital expenditures. The consequence of asset failure based on financial, social and environment impacts and the likelihood of that event occurring and provide the risk score. This approach is in line with the priorities listed below.

- Alignment with core business and the strategic plan
- Renewal of aging infrastructure
- Health and safety
- Compliance with policy standards and legislative requirements
- Sustainability (economic, environment, and social)
- Accommodating population growth
- Providing service improvements

Where appropriate asset renewal and replacement within the road allowance (roads, sidewalks, sewers and watermains) are co-ordinated to take advantage of economies of scale and to reduce the impact of construction. This co-ordination may impact the timing of asset renewal for some asset categories. Determination of the final construction program is the result of iterative effort by staff in reviewing all the asset categories.

In prior years Council was provided with data as shown in Figure 3 that highlighted the cumulative infrastructure deficit and reinvestment rates. The information provided for the assets that will be included in the upcoming AMP for non-core assets may change significantly because of this work. Also, it is expected that the AMP for non-core assets will include assets not currently listed in this table including fleet, corporate infrastructure, and green infrastructure.

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Figure 3 Asset Management Information by Service Area (in $millions)

Service Area	Inventory Details	Capital Budget Sch.	Replacement Value	Backlog (1)	Forecasted Equivalent Annual Cost (2)	Average Anticipated Funding 2022-2032 (3)	2023 Capital Budget	2023 Renewal/ Replace Budget
Water		G, R	$1,366	$259	$16.2	$21.1	$11.93	$11.54
Water Distribution	593 km							
Wastewater/Pollution Control		E, F, R	$1,627	$172	$10.9	$9.9	$6.09	$4.90
Wastewater Collection	568 km							
Storage facilities	9 ea.							
Transportation		B, C, R	$1,202	$95	$35.3	$15.8	$13.11	$9.41
Sidewalks and pathways	585 km							
Roads	575 km							
Structures		H	$66	$8	$1.8	$1.1	$4.20	$3.40
Bridges & Culverts (>=3m)	71 ea.							
Bridges & Culverts (<3m)	46 ea.							
Stormwater		D, R	$931	$47	$5.0	$4.3	$2.13	$0.57
Stormwater Collection	405 km							
Treatment & Control (OGS)	31 ea.							
Facilities (incl. parking) (4)		M	$620	$56	Will be available upon completion of Asset Management Plan Phase 2		$16.31	$16.06
Buildings and Facilities	174 bldgs							
Shoreline Protection (4)		I	$70	$9			$0.21	$0.00
Protected	3.612 km							
Parks and Recreation (4)		L	$71				$2.87	$2.02
Playgrounds/ Tennis Courts/ Basketball Courts	110 ea.			$7				
Outdoor Pools & Splash Pads	9 ea.			$6				
Skatepark and Golf course	1 ea.							
Sports fields (Ball Diamonds & Soccer Fields)	55 ea.							
Leash Free Dog Park	2 sites							
Total			$5,953	$659			$57	$48

(1) Backlog is work that should have been completed before 2023 given unlimited funds based on known condition or age
(2) Forecast Equivalent Annual Cost provided in the City's 2021 Asset Management Plan - Core Assets
(3) Average Anticipated Funding based on the 2021 Capital Budget and provided in the 2021 AMP for Core Assets
(4) Information may change significantly upon completion of the next Phase of the City's AMP which will be completed in compliance with O. Reg. 588/17

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In 2023, the City will continuously improve asset management through the following initiatives and projects:

- Continue to update its asset management practices and implement recommendations included within 2021 AMP for Core Assets (roads, bridges and culverts, water, wastewater, and stormwater management systems).
- Continue to gather information and complete the next phase of the AMP which will include all city assets not included (non-core) in the 2021 AMP to meet the July 1, 2024 deadline. At the conclusion of this exercise, the city will have a complete listing of the Cities assets and the costs to optimally maintain. This will help the City work towards the subsequent phases of the AMP which will include identifying a level of service and completing a financial strategy that is affordable and sustainable for the citizens of St. Catharines.
- Using the information gathered in the non-core AMP, improve the Cities financial statements to align with new accounting standards outlined in PS 3280 "Asset Retirement Obligations".
- Continue monthly asset management working group meetings to share information with a collaborative cross departmental approach.

Climate Change Considerations

St. Catharines strategic plan identifies climate change as an important issue that will affect the City. In 2019, Council unanimously declared a Climate Emergency demonstrating the need to prepare and adapt to a changing future.

In 2021, Council approved a Climate Adaptation Plan which identified high risk impacts and prioritized necessary actions to reduce the projected negative effects of climate change. Projected climate data indicates that St. Catharines will experience overall increased temperature, increased precipitation in all seasons except for the summer and an increase in extreme events. Considering demands of a changing climate provides an opportunity for the City to replace aging infrastructure and install new infrastructure with climate resilience in mind.

In addition, it is important that the City does it's part to reduce greenhouse emissions from municipal operations and services. This is needed for the City to achieve it climate targets and protect the health and well being of residents. Examples of projects that will help meet the City's climate objectives include:

- Active Transportation – the City continues to prioritize active transportation investments to provide environmentally friendly options for residents.
- Tree planting / Urban Forest – trees provide multiple benefits including absorbing carbon dioxide, providing shade and cooling, stormwater improvements and increasing biodiversity.
    - Urban Canopy Target of 30% by 2030
- Shoreline protection and watercourse erosion projects to improve resiliency to extreme storms and Lake Ontario water levels.
- Modernizing sewer systems to improve capacity and reduce basement flooding risks. City facilities
    - Corporate buildings to reach Net zero by 2050
    - Energy efficiency upgrades
    - Installing vehicle charging stations a municipal facilities and parks

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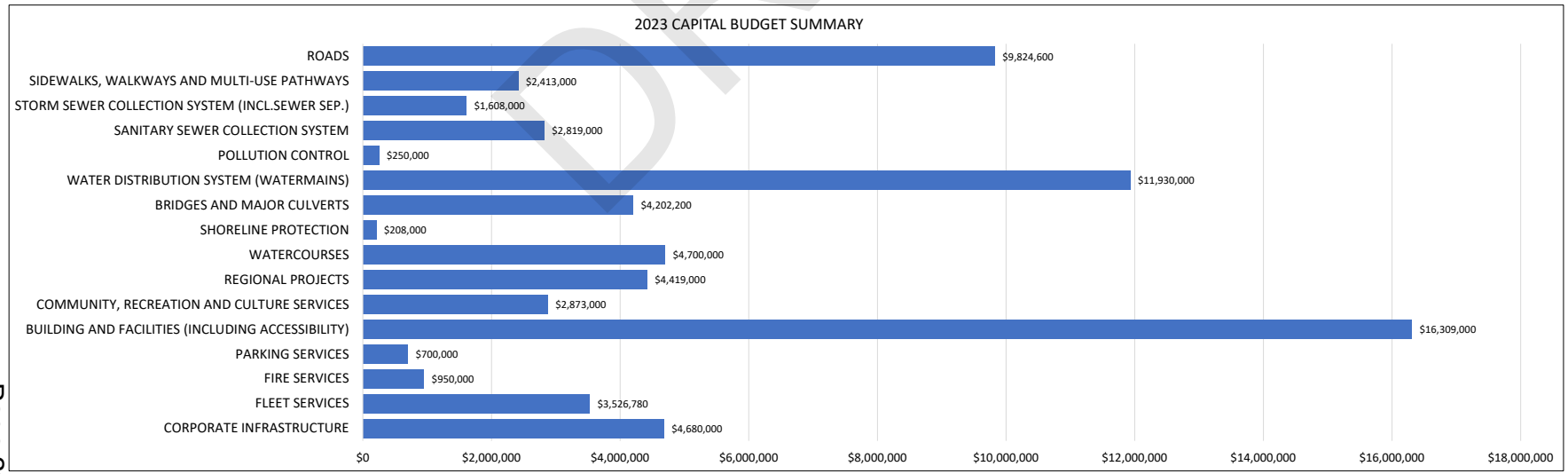
CITY OF ST. CATHARINES
2023 CAPITAL BUDGET SUMMARY (SCHEDULE A)

DESCRIPTION	SCHEDULE	GROSS COST	CANADA COMMUNITY BUILDING FUND	OTHER EXTERNAL/ RESERVES	TAX/RATE PAYER	DEBT
ROADS	SCHEDULE B	9,824,600	519,000	312,236	1,915,000	7,078,364
SIDEWALKS, WALKWAYS AND MULTI-USE PATHWAYS	SCHEDULE C	2,413,000	250,000	501,480	457,000	1,204,520
STORM SEWER COLLECTION SYSTEM (INCL.SEWER SEP.)	SCHEDULE D	1,608,000	656,000	-	302,000	650,000
SANITARY SEWER COLLECTION SYSTEM	SCHEDULE E	2,819,000	1,000,000	-	1,697,000	122,000
POLLUTION CONTROL	SCHEDULE F	250,000	-	-	250,000	-
WATER DISTRIBUTION SYSTEM (WATERMAINS)	SCHEDULE G	11,930,000	1,352,000	-	7,370,731	3,207,269
BRIDGES AND MAJOR CULVERTS	SCHEDULE H	4,202,200	-	-	315,000	3,887,200
SHORELINE PROTECTION	SCHEDULE I	208,000	-	52,000	12,000	144,000
WATERCOURSES	SCHEDULE J	4,700,000	503,251	-	315,000	3,881,749
REGIONAL PROJECTS	SCHEDULE K	4,419,000	-	-	2,359,388	2,059,612
COMMUNITY, RECREATION AND CULTURE SERVICES	SCHEDULE L	2,873,000	-	623,498	830,000	1,419,502
BUILDING AND FACILITIES (INCLUDING ACCESSIBILITY)	SCHEDULE M	16,309,000	-	4,199,300	912,000	11,197,700
PARKING SERVICES	SCHEDULE N	700,000	-	-	53,000	647,000
FIRE SERVICES	SCHEDULE O	950,000	-	185,000	58,000	707,000
FLEET SERVICES	SCHEDULE P	3,526,780	-	-	599,000	2,927,780
CORPORATE INFRASTRUCTURE	SCHEDULE Q	4,680,000	125,000	130,800	983,000	3,441,200
		$ 71,412,580	$ 4,405,251	$ 6,004,314	$ 18,428,119	$ 42,574,896
LESS: CAPITAL BUDGETS COUNCIL PREAPPROVED IN 2022 OR PRIOR YRS		**4,270,000**	**-**	**130,800**	**310,000**	**3,829,200**
CAPITAL BUDGET REQUIRIING COUNCIL APPROVAL		**$ 67,142,580**	**$ 4,405,251**	**$ 5,873,514**	**$ 18,118,119**	**$ 38,745,696**



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Transportation (Roads, Sidewalks, Walkways and Multi-use Pathways)
(Schedules B and C)

The City is committed to providing transportation services that strive to provide a safe, efficient, accessible, and sustainable transportation system for all required uses and modes of transportation in accordance with regulatory requirements and community expectations.
Provided by:

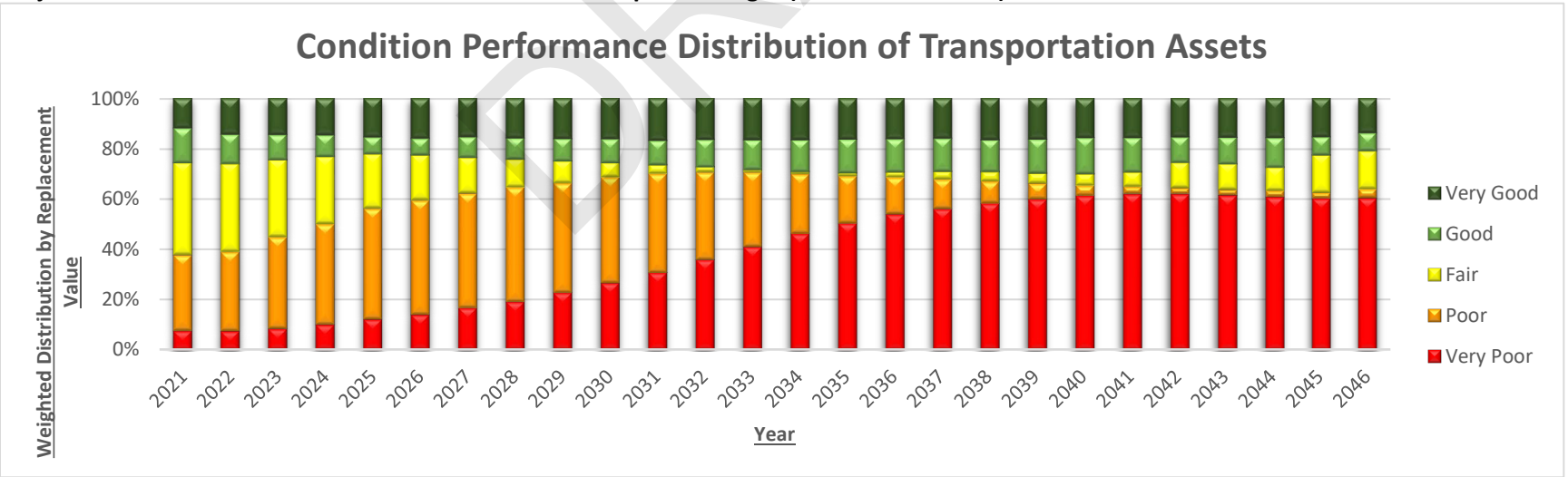
- 575 km of city owned roads or 1174 lane-km
- 62 km of roads with dedicated bike lanes*
- 16 km of roads with paved shoulders*
- 8 km of roads with Signed Cycling Route with Sharrows*
- 2 km of roads with Signed Cycling Route without Sharrows*
- 585 km of sidewalks and walkways
- 109 km of off-road trails*
- 54 Signalized Intersections
- Over 13,000 Streetlights and over 22,000 traffic signs

(*Information taken from 2021 Corporate AMP for Core Assets and City's TMP)

Value and Condition

Total replacement value:	$1,202 million
Current backlog of work:	$95 million
Current average condition:	Fair

Projected Condition Distribution Performance with Anticipated Budget (Source: 2021 AMP)



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The overall average condition of transportation assets has been deteriorating, indicating the City is not keeping pace in investing in the rehabilitation of its assets. The average Pavement Quality Index (PQI) of City's road network is 49 in 2022 compared to 54 in 2018.

Current Strategy

Renewal and Replacement: The City utilizes a pavement management system to guide the road improvement program. The system places the highest priorities for road works on a predicted future road condition using historical experience and the risks of delaying treatments. Generally, this means priority is given to roads with higher traffic volumes and will generally recommend resurfacing rather than more costly reconstruction.

Where appropriate, both the roadway expansion and renewal are co-ordinated with the replacement of other subsurface infrastructure, such as watermains or sanitary and storm sewers. Roads are typically rehabilitated or resurfaced, rather than reconstructed when there is no other subsurface infrastructure that requires replacement. Other considerations, such as the timing of proposed developments, are also incorporated into the decision to replace or rehabilitate a road. The approach for sidewalks and trails is to replace the infrastructure when they are in poor or very poor condition.

Expansion of Services: Expansion of the transportation network may be undertaken to support growth and development or to meet user demands. There continues to be increased demand for assets that support active transportation (AT). This is consistent with a recommendation from the City's recently endorsed Transportation Master Plan which recommends additional AT funding of $18 million over the next 20 years and supports the City's strategic goal to build and support strong, inclusive neighbourhoods that provide high quality of life for residents of all ages. When assets are renewed, opportunities for the expansion of the AT network are reviewed with the goal to improve accessibility for all users.

Non-Infrastructure Solutions: Environmental assessments, geotechnical investigation and design for future road works are undertaken a few years in advance of proposed larger construction projects. Transportation projects can take several months to years; and include public consultation and the preparation of finalized designs.

2023 Highlights

- 19% of the 2023 transportation program directly funds improvements to active transportation network
- Resurfacing of approximately 6.9km of roadway and reconstruction of approximately 600m of roadway
- Design and Public Consultation for future works on James Street, Parnell Road, Facer Street and Welland Canal Parkway

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2023 CAPITAL BUDGET
ROADS (SCHEDULE B)

Project No.	Project Type	Project Name / Location	From	To	Gross Cost	Details	Notes
Previously Budgeted Projects - Additional Budget Requirements							
P22-064	RN	Blue Spruce / Huntingwood			411,000	Resurfacing/ full depth asphalt replacement in conjunction with watermain replacement	1a
		Kerwin Gate	Crescentwood Dr.	Cul-de-sac			
		Mariner Court	Crescentwood Dr.	Cul-de-sac			
		Harbour Heights Lane	Crescentwood Dr.	Cul-de-sac			
		Cherryblossom Lane	Crescentwood Dr.	Harbour Heights Lane			
P18-063	E / RP	Chestnut / Merritt Underground			3,169,000	Additional funding for utility relocates, streetscaping, streetlights and road reconstruction	CP, 1a, 2b & 3a
		Mountain St.	Glendale Ave.	Chestnut St.			
		Chestnut St.	Merritt St.	Glengarry Road			
		Merritt St.	Almond Lane	Walnut St.			
P21-100	RN	Flanders Watermain Improvements			129,400	Resurfacing in conjunction with watermain replacement	1a
		Flanders Ave.	Vivian Ave.	Karen Ave.			
		Karen Ave.	Grantham Ave.	Flanders Ave.			
P22-061	D / RP	James Street	King St.	Church St.	773,000	Design and Utility relocates for road reconstruction and development of a multiuse space	2a
P19-066	E	Moffatt Secondary Access - Utilities			500,000	Utility relocates for Moffat Secondary Access	1a & 4a
P20-065	E	New Access Road - Ridley Road	Ridley Road	Train Station	505,000	Additional funds for new road to train station	1a
P22-063	RP	Parnell Road Reconstruction	Richelieu Dr.	Vine St.	200,000	Additional funds for utility relocations for future road reconstruction	3b
				Subtotal	**$ 5,687,400**		

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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2023 CAPITAL BUDGET
ROADS (SCHEDULE B)

Project No.	Project Type	Project Name / Location	From	To	Gross Cost	Details	Notes
New Projects							
P23-060	RN	2023 Road Resurfacing Program			$ 2,361,400		1a
		Autumn Place	Park Ave	Cul-de-sac		Spot curb repairs and replace asphalt road surface	
		Carlisle Street	King Street	Church Street			
		Lake Street	Carlton St.	North Service Road		Resurfacing of existing roadway & spot curb repairs	
		North Service Road	YMCA Drive	Geneva Street			
		Lloyd Street	St Paul St. West	Rykert St		Curb replacement and full depth asphalt replacement	
		Linden Street	Geneva St.	Wiley Street		Spot curb repairs & replace asphalt road surface on south side; Mill and resurface	
		Welland Canal Parkway	Queenston St.	Eastchester Ave.		Full depth asphalt replacement	
		Lakeshore Road West	Seventh Street	West Limit		Pulverize road and resurface	
		Sunset Lane	Gregory Street	West Limit			
		Other locations to be determined / as required				Annual - priority locations to be determined	
P23-103	RN	Briarsdale / Donlon			207,700	Spot curb repairs & replace asphalt road surface in conjunction with watermain replacement	CP, 1a
		Briarsdale Drive	Chestnut Street	Jacobson Avenue			
		Jacobson Avenue	Briarsdale Drive	Glen Morris Drive			
P23-061	RP	Brimley Crescent Road Rehabilitation & Underground Improvements	Cindy Drive	Cul-de-sac	$ 427,500	Curb replacement and asphalt road surface replacement in conjunction with watermain replacement and sewer	CP, 1a
P23-101	RN	Dundas / Leeson			67,000	Spot curb repairs mill and resurface existing roadway in conjunction with watermain replacement	CP, 1a
		Dundas Crescent	Bradley Street	Bradley Street			
P23-062	RP	Facer Street road and underground improvements	Grantham Ave.	Niagara St.	170,000	Design for future road improvements	3a

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

2023 CAPITAL BUDGET
ROADS (SCHEDULE B)

Project No.	Project Type	Project Name / Location	From	To	Gross Cost	Details	Notes
P23-097	RN / RP	Traffic Signals (including pedestrian crossings)			242,000	Annual - priority location(s) to be determined	
P23-097	E	Traffic Signs (40 KM)			262,600	Annual - priority location(s) to be determined	
P23-067	RP	Third Street / Old Martindale Road Reconstruction	Old Martindale Road	South Service Road	257,000	Design for Reconstruction, realignment and widening of roadway to allow for bike lanes	1a, 5a
P23-064	RN	Welland Canal Parkway Road Rehabilitation & Drainage Improvements			142,000	Design for Future replacement of existing asphalt road surface with drainage improvements	1a, 5a
		Welland Canal Parkway	Eastchester Ave.	Carlton Street			
				Subtotal	**$ 4,137,200**		
					$ 9,824,600		

NOTES: CP - Co-ordinated projects involving more than one asset group (see Schedule S)
As per TMP road classes: 1a. Community Street; 2a. Downtown Corridor; 2b. Downtown Community Street;
3a. Collector Mixed -Use Corridor; 3b. Collector Residential Corridor; 3c. Collector Industrial Corridor;
4a. Main Mixed-Use Corridor; 4b. Main Residential Corridor; 5a. Rural Corridor; 5b. Rural Community Street

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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2023 CAPITAL BUDGET
SIDEWALKS, WALKWAYS AND MULTI-USE PATHWAYS (SCHEDULE C)

Project No.	Project Type	Project Name/Location	From	To	Gross Cost	Details	Notes
Previously Budgeted Sidewalks and Walkways Projects - Additional Budget Requirements							
P18-063	E / RP	Chestnut / Merritt Underground Improvements			650,000	Additional funding for installation of new and replacement of s/w in conjunction with road reconstruction	CP, 1a, 2b & 3a
		Mountain St.	Glendale Ave.	Chestnut St.			
		Chestnut St.	Merritt St.	Glengarry Road			
		Merritt St.	Almond Lane	Walnut St.			
				Subtotal	**$ 650,000**		
New Sidewalks and Walkways Projects							
P23-040	RP	2023 Sidewalk Replacement Program			360,000	Annual - priority location(s) to be determined	
P23-040-1	RP	2023 Walkway Improvements			50,000	Annual walkway repair program locations to be determined	
P23-041	E	New Sidewalk installation Program			67,000	Annual - priority location(s) to be determined	
				Subtotal	**$ 477,000**		
New Multi-Use Pathways							
P23-068	E / RP	Active Transportation			250,000	Annual - priority location(s) to be determined (100% CCBF funded portion)	

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

2023 CAPITAL BUDGET
SIDEWALKS, WALKWAYS AND MULTI-USE PATHWAYS (SCHEDULE C)

Project No.	Project Type	Project Name/Location	From	To	Gross Cost	Details	Notes
P23-068	E / RP	Active Transportation Priorities			1,036,000		
		Halene Court Pedestrian Bridge (P041S)	East of Cherie Road between Cindy Dr and Lake Ontario			Engineering services for replacement of existing pedestrian bridge	
		Walker's Creek Park Bridge (P045S)	East of Bradmon Dr, between Lakeshore Rd and Parnell Rd				
		Welland Canal Trail	South of Glendale Ave	City Limits		Engineering services for reconstruction/widening of existing trail and installation of new lighting along trail	
		Fairview Park/John Page Park Trail Lighting				Design & installation of lighting along existing trail	
		Vansickle Road	St Paul St. West	Rykert St		Widening of existing sidewalk	
		Various Locations				Installation of green bicycle lanes throughout City	
		Various Locations				Installation of Pedestrian Crossovers at priority locations throughout the City	
		Other locations to be determined as required				Annual - priority location(s) to be determined	
				Subtotal	**$ 1,286,000**		
					$ 2,413,000		
Additional budget for Sidewalks within Regional Projects (Schedule K)					$ 800,000		

NOTES: CP - Co-ordinated projects involving more than one asset group (see Schedule S)
As per TMP road classes: 1a. Community Street; 2a. Downtown Corridor; 2b. Downtown Community Street;
3a. Collector Mixed -Use Corridor; 3b. Collector Residential Corridor; 3c. Collector Industrial Corridor;
4a. Main Mixed-Use Corridor; 4b. Main Residential Corridor; 5a. Rural Corridor; 5b. Rural Community Street

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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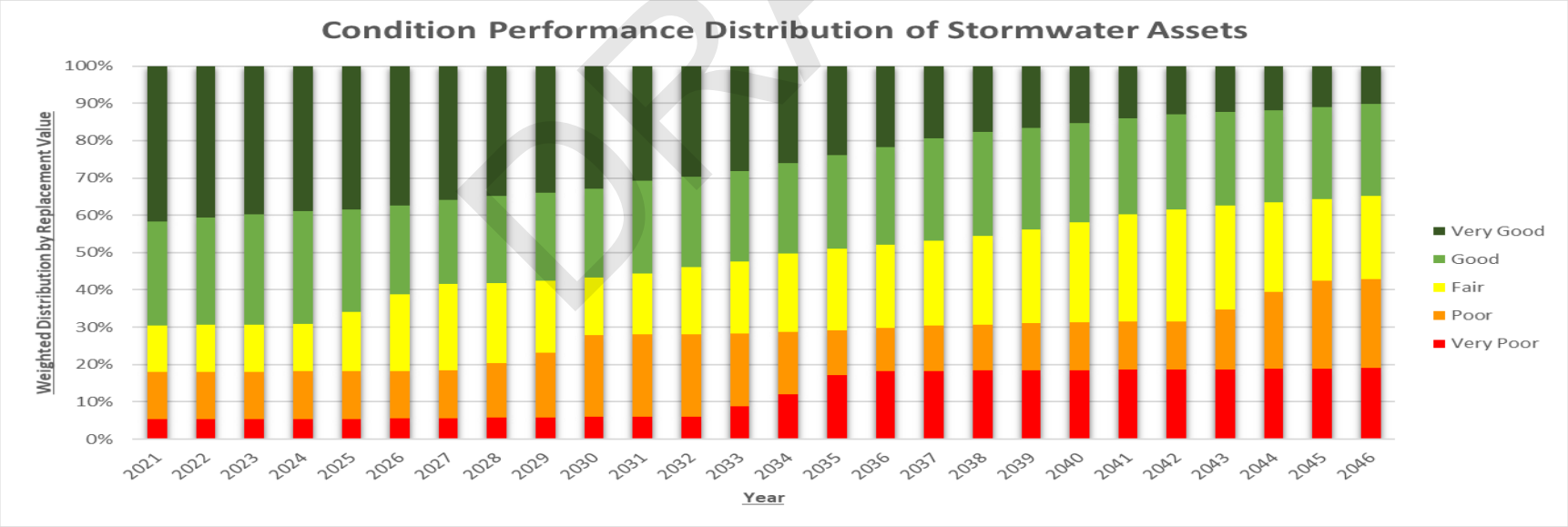
Stormwater (Storm Sewer Collection system including Sewer Separation)
(Schedule D)

The City of St. Catharines is committed to providing effective, sustainable, and reliable drainage of stormwater to both protect and benefit the community and environment.

Provided by:
405 kilometres of Storm Sewers
31 Oil & Grit Separators
1 constructed wetland and several natural and manmade ponds and open drainage channels

Value and Condition (As provided in the 2021 Corporate AMP for Core Assets)
Total replacement value: $931 million
Current backlog of work: $ 47 million
Current average condition: Good

Projected Condition Distribution Performance with Anticipated Budget (Source: 2021 AMP)



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Unlike sanitary and combined sewers, storm sewers have not been inspected historically and as a result, it has been more difficult to assess their condition. A City-wide Zoom camera inspection of all the sewer systems, including storm sewers, started in August 2017 which is now complete. Results from the zoom camera inspection have helped develop a baseline of sewer conditions. The zoom camera inspection also has helped in targeting sewer sections for further detailed investigations such as CCTV (Closed Circuit TV) camera inspections. Zoom camera inspections followed by CCTV inspections of sewers guide the decisions to rehabilitate or replace sewers independently or in conjunction with other infrastructure projects.

Current Strategy

Renewal and Replacement: Rehabilitation of storm sewers is intended to ensure an adequate level of service and to reduce the likelihood of flooding in areas adjacent to the storm sewers. Deficiencies in the storm sewer system include blockages from damaged pipe sections, silt or debris accumulation and root infiltration. These restrict capacity and may lead to flooding during periods of high flow. Deficiencies also include other physical attributes of the sewers and expected consequences such as a structurally deteriorated sewer section that is still functioning but on the verge of collapsing.

Non- infrastructure Solutions: Tools such as zoom camera inspections and CCTV inspections are utilized to gauge the condition of sewers and to implement suitable maintenance, rehabilitation, or replacement strategies at appropriate times. These tools/methods also help in prioritizing needed works to match available budgets. Hydraulic and hydrologic modelling and studies monitor system capacity requirements.

Expansion of Services: Expansion of the network may be undertaken to support growth and development or to meet demands of users.

New storm sewers are installed in areas with combined sewers to divert stormwater drainage away from sanitary drainage. This practice is called sewer separation and is recommended in the Pollution Control Plan. Storm water is then conveyed to a storm water outfall for discharge directly into the environment. This reduces the risk of basement flooding by the pre-existing combined sewer, improves environmental outcomes and reduces the volume of flows which are treated at a wastewater treatment plant.

In some cases, additional features such as oil-grit separators or stormwater ponds may be added to storm sewer systems to increase the water quality of stormwater discharges to the environment.

Construction of new assets will have a direct impact on the operation and maintenance budget. The full extent of the impacts will be dependent on the design and level of services provided.

Highlights

- Budget for an extension of an existing sewer section and one project for replacement of existing sewer sections in addition to annual programs including sewer CCTV inspections and sewer spot repairs
- Budget for new sewer sections in coordination with new road off Ridley Road to the train station
- Coordination with the Region for RR48 Niagara Street (See Schedule K)

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2023 CAPITAL BUDGET
STORM SEWER COLLECTION SYSTEM - INCLUDING SEWER SEPARATION (SCHEDULE D)

Project No.	Project Type	Project Name/Location	From	To	Gross Cost	Details	Notes
Previously Budgeted Projects - Additional Budget Requirements							
P20-065	E	New Access Road - Ridley Road	Ridley Road	Train Station	231,000	Installation of storm infrastructure along new road to train station	CP
P18-062	RP	Lake Street Underground Improvements	Ontario St.	Welland Ave.	80,000	Construction of storm sewer in conjunction with underground improvements and road reconstruction	CP
P18-063	E / RP	Chestnut / Merritt Underground Improvements	Merritt St. Glendale Ave.	Glengarry Rd Chestnut St.	498,000	Additional funding for replacement of storm sewer in conjunction with road reconstruction	CP
				Subtotal	**$ 809,000**		
New Projects							
P23-060	M	2023 Road Resurfacing Program	Lloyd St.		138,000	Extension of catch basin lead for combined sewer separation on Lloyd Street	
P23-061	RP	Brimley Crescent Road Rehabilitation & Underground	Gaywood Drive	Cul-de-sac	311,000	Replacement of storm sewer sections in conjunction with watermain replacement	
P23-006	RP	Catch Basins and Storm Service Installations		City-Wide	100,000	Installation of catch basins, catch basin leads and storm laterals to alleviate issolated surface flooding	
P23-015	NI	Design for next years projects		City-Wide	50,000	Engineering services for future storm drainage system projects as required	

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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2023 CAPITAL BUDGET
STORM SEWER COLLECTION SYSTEM - INCLUDING SEWER SEPARATION (SCHEDULE D)

Project No.	Project Type	Project Name/Location	From	To	Gross Cost	Details	Notes
P23-014	NI	Sewer CCTV Inspections		City-Wide	100,000	CCTV sewer inspections for condition assessment of existing storm sewers including large diameter pipes	
P23-016	RP	Storm Sewer Spot Repairs		City-Wide	100,000	Spot repairs of storm sewers at various locations as necessary	
				Subtotal	**$ 799,000**		
					$ 1,608,000		
		Additional budget for Storm Sewers within Regional Projects (Schedule K)			$ 525,000		

NOTES: CP - Co-ordinated projects involving more than one asset group (see Schedule S)

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

Wastewater (Sanitary Sewers and Pollution Control Plan)
(Schedules E & F)

The City of St. Catharines is committed to providing sustainable and reliable collection and conveyance of wastewater that avoids basement flooding and environmental impacts.

Provided by:
568 kilometres of wastewater sewers
9 Wastewater Storage Facilities
1 Wastewater Pump Station

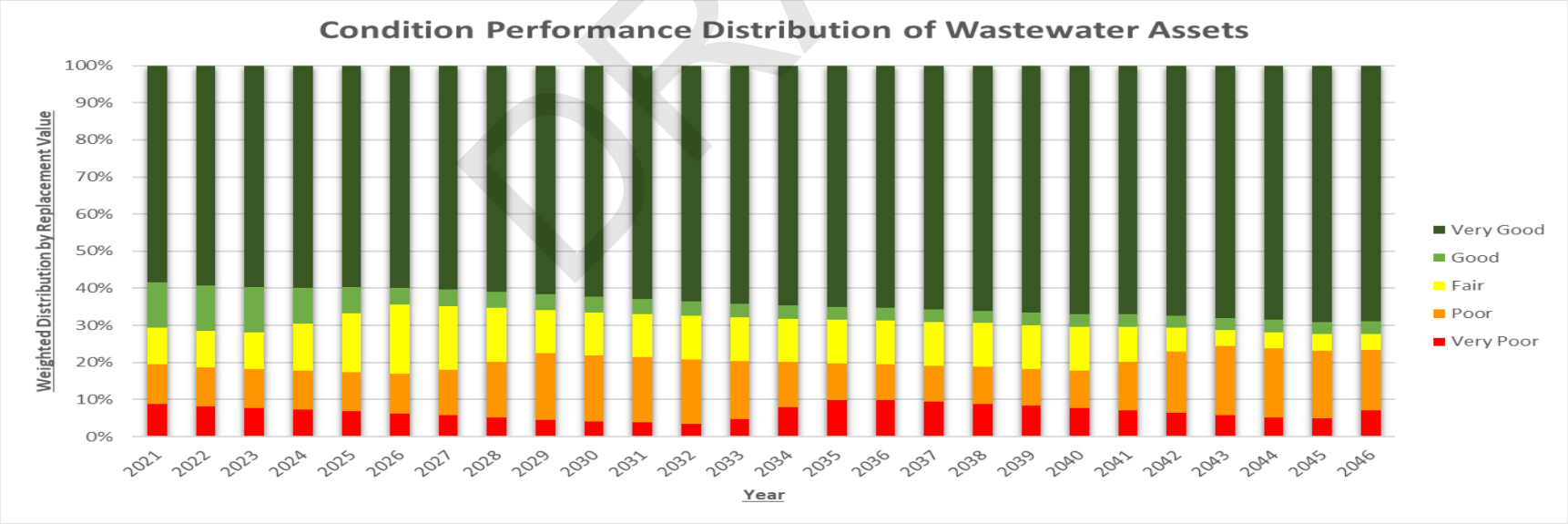
Value and Condition (As provided in the 2021 Corporate AMP for Core Assets)

Total replacement value:	$1.6 billion
Current backlog of work:	$172 million
Current average condition:	Good

Highlights

- Sewer replacement budget for two existing projects and two new projects.
- Budget for citywide CCTV inspections, spot repairs, re-lining of sewers and other annual programs.
- Coordination with Niagara Region for RR87 Main Street / Lock Street / Lakeport Road and RR48 Niagara Street (see Schedule K).

Projected Condition Distribution Performance with Anticipated Budget (Source: 2021 AMP)



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The Wastewater system includes the City's sanitary sewers, combined sewers and partially separated combined sewers and associated sewage storage facilities. Combined sewers convey both sanitary sewage and stormwater within one pipe and are a legacy of pre1960's construction.

A City-wide Zoom camera inspection of the sewer systems started in August 2017 which is now complete. Results from the zoom camera inspection have helped develop a baseline of sewer conditions. The zoom camera inspection also has helped in targeting sewer sections for further detailed investigations such as CCTV (Closed Circuit TV) camera inspections. Zoom camera inspections followed by CCTV inspections of sewers guide the decisions to rehabilitate or replace sewers independently or in conjunction with other infrastructure projects.

Current Strategy

In 2019, Council approved a 10 - Year Financial Plan for Water and Wastewater (The Water/Wastewater Plan). The Plan includes year over year increases for investment in capital infrastructure, which will reduce the funding gap for this asset class. As a result of the financial and operational challenges facing the City caused by COVID19, the budget and forecast years shown in Table 1 reflect a reallocation of the investment in Sanitary Sewer Collection Systems and Pollution Control. Increases in spending in the years of 2024 through 2026 result in approximately the same net investment in infrastructure, over the next 6 years. A Pollution Control Plan guides the City's efforts to meet provincial guidelines for the discharge of combined sewage to the natural environment

Renewal and Replacement: Deficiencies in the sewer system include blockages from collapsed pipe sections, grease accumulation and severe root infiltration, which restricts capacity and may lead to backup during periods of high flow. Deficiencies also include apparent physical condition of the sewers and expected consequences such as a structurally deteriorated sewer section that is still functioning but on the verge of collapsing. Rehabilitation of these sewers is intended to ensure an adequate level of service and to reduce the likelihood of basement flooding in adjacent and upstream areas of the sewer system.

Table 1

Year	Plan ($000)	Proposed ($000)	Change ($000)
2021	5,362	4,762	(600)
2022	5,959	2,884	(3,075)
2023	6,562	6,087	(475)
2024	7,173	9,737	2,564
2025	7,797	8,481	684
2026	8,433	9,596	1,163
Total	41,286	41,547	261

Non-infrastructure Solutions: Tools such as zoom camera inspections and CCTV inspections are utilized to gauge the condition of sewers and to implement suitable maintenance, rehabilitation, or replacement strategies at appropriate times. These tools/methods also help in prioritizing needed works to match available budgets. Hydraulic studies and modelling in house and by third party consultants are completed to evaluate system capacity.

Expansion of Services: Expansion of the network may be undertaken to support growth and development or to meet demands of users. Pollution Control (Schedule F) includes $250,000 for implementation of recommendations of a pending Pollution Control Plan Update.

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2023 CAPITAL BUDGET
SANITARY SEWER COLLECTION SYSTEM (SCHEDULE E)

Project No.	Project Type	Project Name/Location	From	To	Gross Cost	Details	Notes
Previously Budgeted Projects - Additional Budget Requirements							
P18-062	RP	Lake Street Underground Improvements	Ontario St	Welland Ave.	221,000	Construction of sanitary sewer in conjunction with underground improvements and road reconstruction	
				Subtotal	**$ 221,000**		
New Projects							
P23-061	RP	Brimley Crescent Road Rehabilitation & Underground Improvements	Gaywood Drive	Cul-de-sac	190,000	Replacemen of sanitary sewer section in conjunction with watemrain replacement	CP
P18-063	RP	Chestnut / Merritt Underground Improvements	Merritt St.	Glengarry Road	378,000	construction funding for replacement of san sewers in conjunction with road reconstruction	CP
P23-015	NI	Design for next years projects		City-Wide	50,000	Engineering services for future sanitary collection system projects as required	
P23-010	NI	Extraneous Flow Elimination		City-Wide	50,000	Study to determine sources of inflow and infiltration into sanitary sewer	

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

2023 CAPITAL BUDGET
SANITARY SEWER COLLECTION SYSTEM (SCHEDULE E)

Project No.	Project Type	Project Name/Location	From	To	Gross Cost	Details	Notes
P23-001	E / RN	Phelps/Turner/Smythe	Ellis Avenue	Turner Crescent	95,000	Installation of a new sewer section in conjunction with works for new development	CP
P23-012	M	Sanitary Sewer Flushing & Reaming		City-Wide	25,000	Sewer flushing and reaming for physical cleaning of selected sewer sections with operational issues	
P23-005	RN	Sanitary Sewer Reaming & Lining		City-Wide	1,000,000	Sewer lining to address identified deficiencies City Wide	
P23-011	M	Sanitary Sewer Spot Repair Program		City-Wide	500,000	Spot repairs for sanitary sewers as required	
P23-014	NI	Sewer CCTV Inspections		City-Wide	300,000	CCTV inspections of existing sewers to identify condition and future works	-
P23-019	NI	Sewershed Analysis		City-Wide	10,000	Engineering services for sewershed capacity analysis as required	
				Subtotal	**$2,598,000**		
					$2,819,000		
Additional budget for Sanitary Sewers within Regional Projects (Schedule K)					$3,018,000		

NOTES: CP - Co-ordinated projects involving more than one asset group (see Schedule S)

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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2023 CAPITAL BUDGET
POLLUTION CONTROL (SCHEDULE F)

Project No.	Project Type	Project Name	Gross Cost	Details
New Projects				
P23-018	E	Pollution Control Priority Program	250,000	Implement Pollution Control Plan initiatives to reduce combined sewer overflows
			$ 250,000	

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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Water Distribution System (Watermains)
(Schedule G)

The City of St. Catharines is committed to providing a sustainable and reliable supply of safe, high quality drinking water in accordance with regulatory requirements.

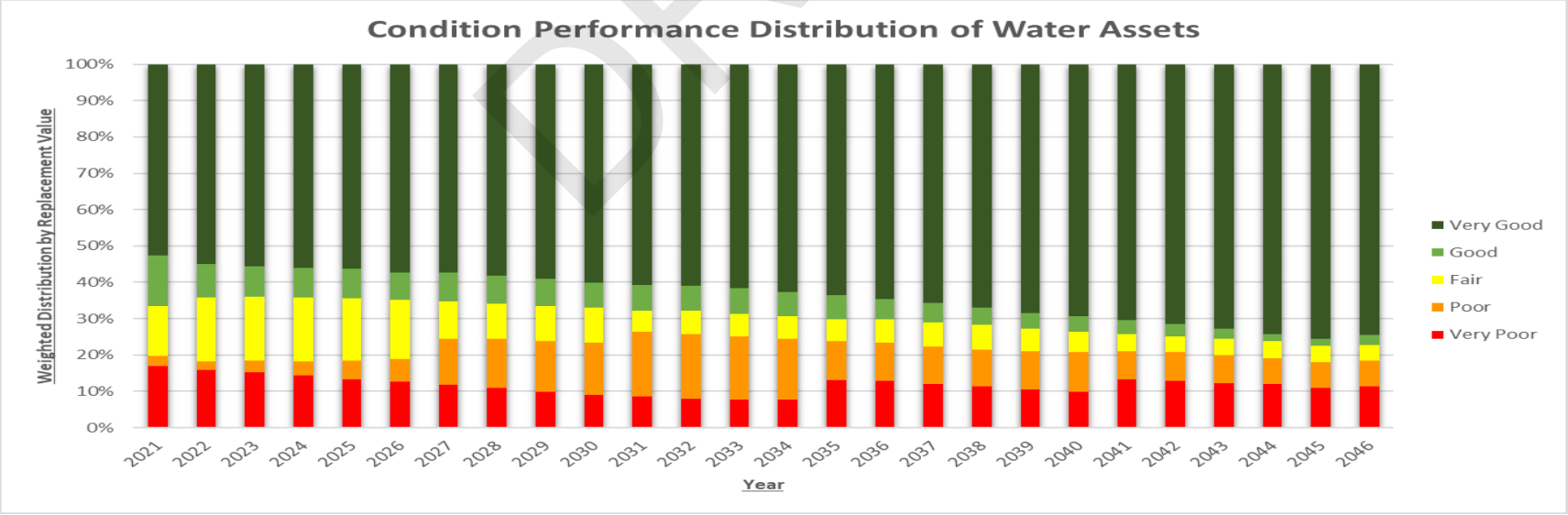
Provided by:
593 kilometres of Watermains
3,562 Hydrants
5,693 Valves
Over 41,800 Water Meters
1 Booster Pumping Station and 1 Bulk Water Station

Highlights

- Construction funding for 2 existing projects
- Budget for 10 projects at 23 locations for future watermain replacement
- 5,415m of cast iron watermains budgeted to be replaced
- Budget for ongoing stortz hydrant port conversions in key areas

Value and Condition (As provided in the 2021 Corporate AMP for Core Assets)
Total replacement value: $ 1.366 billion
Current backlog of work: $ 259 million
Current average condition: Good

Projected Condition Distribution Performance with Anticipated Budget (Source: 2021 AMP)



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Current Strategy
Staff continues to monitor the number and location of existing watermain breaks. Figures 1 and 2 present records for the past 15 years and reflect the high variability in the number of annual watermain breaks. Despite the variability in annual watermain breaks, a continuous targeting of watermains with relative high break rates for replacements seems to be gradually reducing the long-term average number of annual watermain breaks. The increasing age of existing watermains makes the watermains more prone to possible failures. A proactive approach is necessary to keep the watermain system in a good and reliable condition which also reduces maintenance costs and the risks of contamination of the system. Despite these mitigation strategies and with capital reinvestment at current target levels, it is possible other risk factors are realized, resulting in increased break rates.

In 2019, Council approved a 10 - Year Financial Plan for Water and Wastewater (The Water/Wastewater Plan). The Plan includes year over year increases for investment in capital infrastructure, which will reduce the funding gap for this asset class. As a result of the financial and operational challenges facing the City caused by COVID19, the 2023 budget and 2024-2027 forecast reflects a reallocation of the investment in the water distribution system, as shown in the table 1. Increases in spending in the years of 2024 through 2026 result in the same net investment in infrastructure, over the next 6 years. However, in the short term, the spending deferrals will continue to contribute to the widening infrastructure gap.

Renewal and Replacement:
Replacements are prioritized based on watermain break histories, coloured water issues, and in conjunction with other projects. Council directed that each year's water budget should include an allocation of at least $750,000 for the replacement of deteriorated cast iron watermains in areas experiencing coloured water problems. Approximately 24% of the City's watermain system is comprised of cast iron watermains. Not all cast iron watermains have reached the end of their useful lives.

Table 1

Year	Plan ($000)	Proposed ($000)	(Decrease)/Increase ($000)
2021	9,329	8,129	(1,200)
2022	10,516	8,287	(2,229)
2023	11,726	11,755	29
2024	12,961	13,761	800
2025	14,220	15,420	1,200
2026	15,504	16,904	1,400
Total	74,256	74,256	-

Expansion of Services: Expansion of a watermain network could be undertaken to support growth and development or to meet existing users' demand. Installation of a new watermain section on Chestnut Street West between Hastings Street and Brookdale Avenue and another watermain section between Chestnut Street and Glendale Avenue have been included to improve watermain looping and water supply in the area.

Non-Infrastructure Solutions: Environmental assessments, geotechnical investigation and design for future waterworks are undertaken in advance of proposed larger construction projects. Watermain projects can take several months to years; and could include public consultation and the preparation of finalized designs. Hydraulic modelling and studies are undertaken by third party engineering experts, as require, to understand system capacity.

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Figure 1

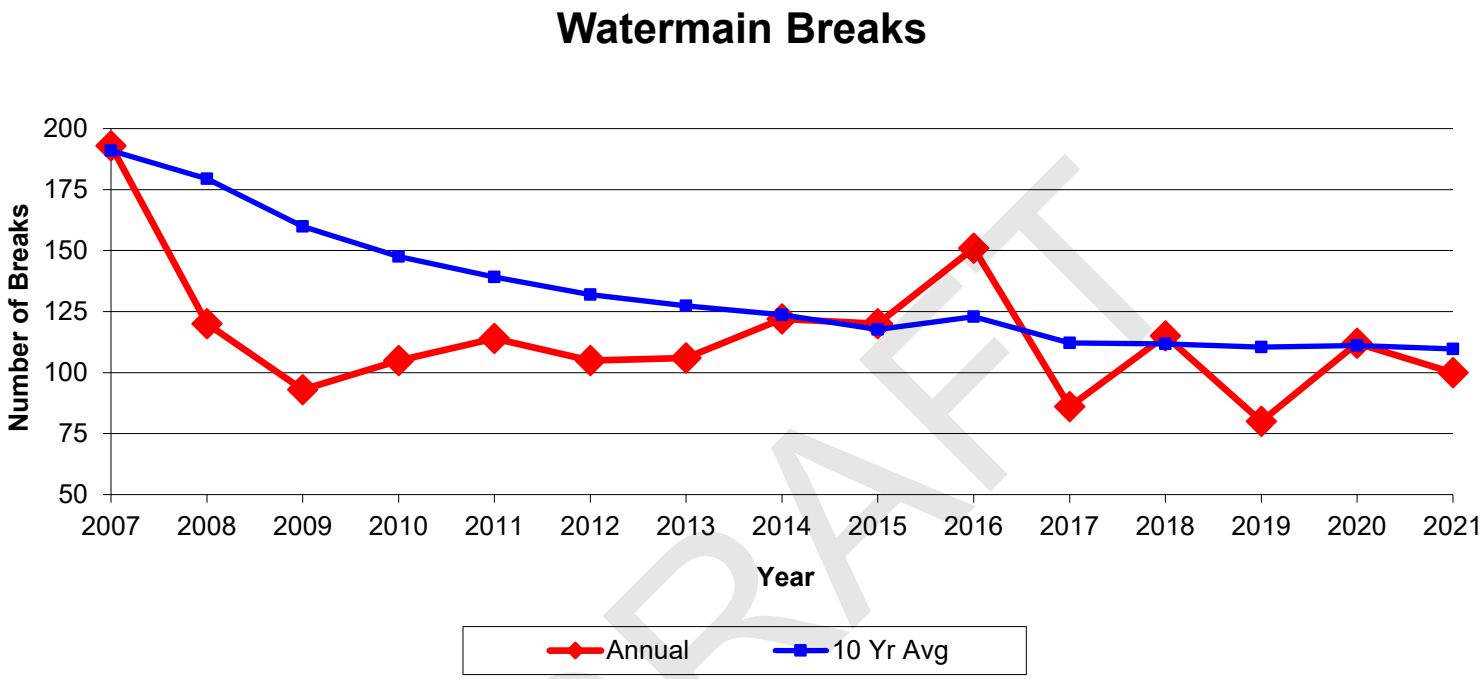

Figure 2

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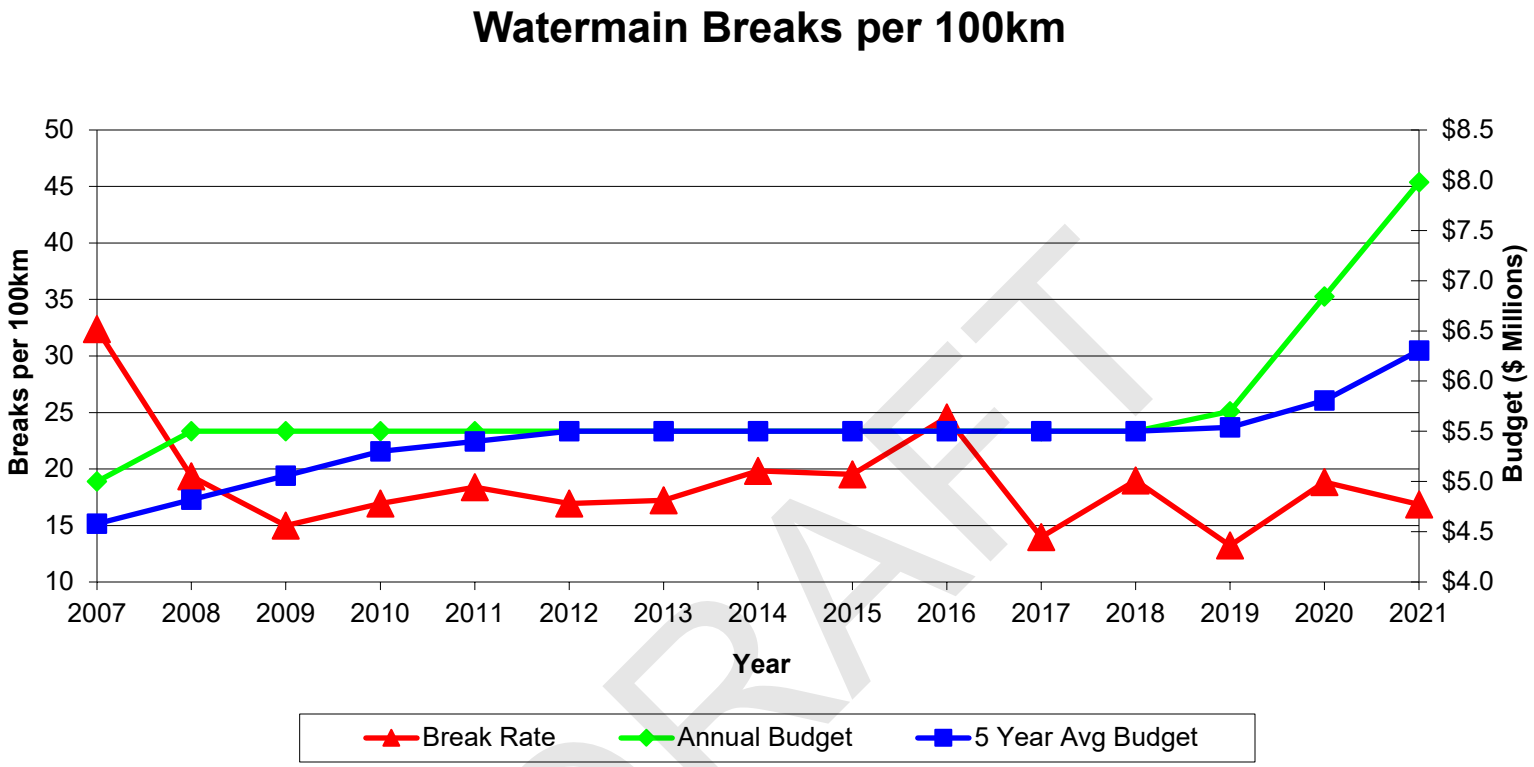
Watermain Breaks per 100km
Breaks per 100km
Budget ($ Millions)
Year
50
45
40
35
30
25
20
15
10
$8.5
$8.0
$7.5
$7.0
$6.5
$6.0
$5.5
$5.0
$4.5
$4.0
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Break Rate
Annual Budget
5 Year Avg Budget

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2023 CAPITAL BUDGET
WATER DISTRIBUTION SYSTEM - WATERMAINS (SCHEDULE G)

Project No.	Project Type	Project Name/Location	From	To	Gross Cost	Details	Notes
Previously Budgeted Projects - Additional Budget Requirements							
P18-062	RP	Lake Street Underground Improvements	Ontario St.	Welland Ave.	348,000	Construction funds for replacement of existing C.I. watermain in conjunction with road reconstruction	
P18-063	E	Chestnut / Merritt Underground Improvements			629,000	Construction funding for replacement of w/m in conjunction with road reconstruction	CP
			Merritt St.	Glengarry Road			
			Almond Lane	Walnut St.			
			Glendale Ave.	Chestnut St.			
				Subtotal	**$ 977,000**		
New Projects							
P23-102	RP	Adel / Donalda / Dundalk / Regent / Rainbow			1,610,000	Replacement of existing C.I. and D.I. watermain	
		Adel Drive	Shade Tree	Shade Tree			
		Donalda Court	Adel Drive	Cul-de-sac			
		Dundalk Court	Regent Drive	Cul-de-sac			
		Rainbow Drive	Rochelle Drive	Malibu			
		Regent Drive	Sunrise Drive	Cul-de-sac			
P23-103	RN	Briarsdale / Donlon			543,000	Replacement of existing C.I. and D.I. watermain	CP
		Briarsdale Drive	Glen Morris Drive (N)	Jacobson Avenue			
		Donlon Circle	Woodcrest Drive	Cul-de-sac			

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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2023 CAPITAL BUDGET
WATER DISTRIBUTION SYSTEM - WATERMAINS (SCHEDULE G)

Project No.	Project Type	Project Name/Location	From	To	Gross Cost	Details	Notes
P23-061	RP	Brimley Crescent Road Rehabilitation & Underground			566,000	Replacement of existing D.I. watermain in conjunction with sewer and road works	CP
			Cindy Drive	Cul-de-sac			
P23-015	NI	Design for next years projects			50,000	Engineering services for future waterworks projects as required	
P23-101	RN	Dundas / Leeson			865,000	Replacement of existing C.I. watermain	CP
		Dundas Crescent	Bradley Street	Bradley Street			
		Leeson Street	Wanda Road	Dundas Crescent			
P23-104	RP	Kimbermount / Lake / Monique			1,450,000	Replacement of existing C.I. watermain	
		Kimbermount Drive	Westgate Park Drive	Hazelwood Gate			
		Lake Street	Lakeshore Road	Kimbermount Drive			
		Monique Crescent	Parnell Road	Bradmon Drive			
P23-105	RP	Mohawk/Scott/Village Green			1,335,000	Replacement of existing C.I. watermain	
		Mohawk Drive	Thorndale Avenue	160m East			
		Scott Street West	Collingwood Avenue	Haig Street			
		Village Green Drive	Royal Henley Boulevard	Royal Henley Boulevard			

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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2023 CAPITAL BUDGET
WATER DISTRIBUTION SYSTEM - WATERMAINS (SCHEDULE G)

Project No.	Project Type	Project Name/Location	From	To	Gross Cost	Details	Notes
P23-106	RP	Jasmine/Josephine			680,000	Replacement of existing C.I. watermain	
		Jasmin Crescent	Wakil Drive	Cul-de-sac			
		Josephine Street	Pelham Road	Hillview Road North			
P23-107	RP	Carriage / Grove			1,044,000	Replacement of existing C.I. watermain	
		Carriage Road	Rockwood Avenue	Grove Avenue			
			Grove Avenue	Appleford Road			
		Grove Avenue	Merritt Street	Orchard Street			
P23-001	RN	Phelps/Turner/Smythe			450,000	Replacement of watermain in conjunction with work for new development	CP
		Phelps Street	Ellis Avenue	Turner Crescent			
		Turner Crescent	Phelps Street	Oakdale Avenue			
P23-116	RN	Stortz Hydrant Port Conversions			450,000	Year 2 of multi-year conversion of existing hydrants to Stortz type pumper connections in priority areas	
P23-118	RN	Valves, Hydrants & Services			50,000	Replacement of existing valves, hydrants and services etc. in conjunction with other works	

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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2023 CAPITAL BUDGET
WATER DISTRIBUTION SYSTEM - WATERMAINS (SCHEDULE G)

Project No.	Project Type	Project Name/Location	From	To	Gross Cost	Details	Notes
P23-100	RP	Welland Avenue	Grantham Avenue	Bunting Road	1,860,000	Replacement of existing C.I. watermain	
				Subtotal	**$ 10,953,000**		
					$ 11,930,000		

NOTES: CP - Co-ordinated projects involving more than one asset group (see Schedule S)

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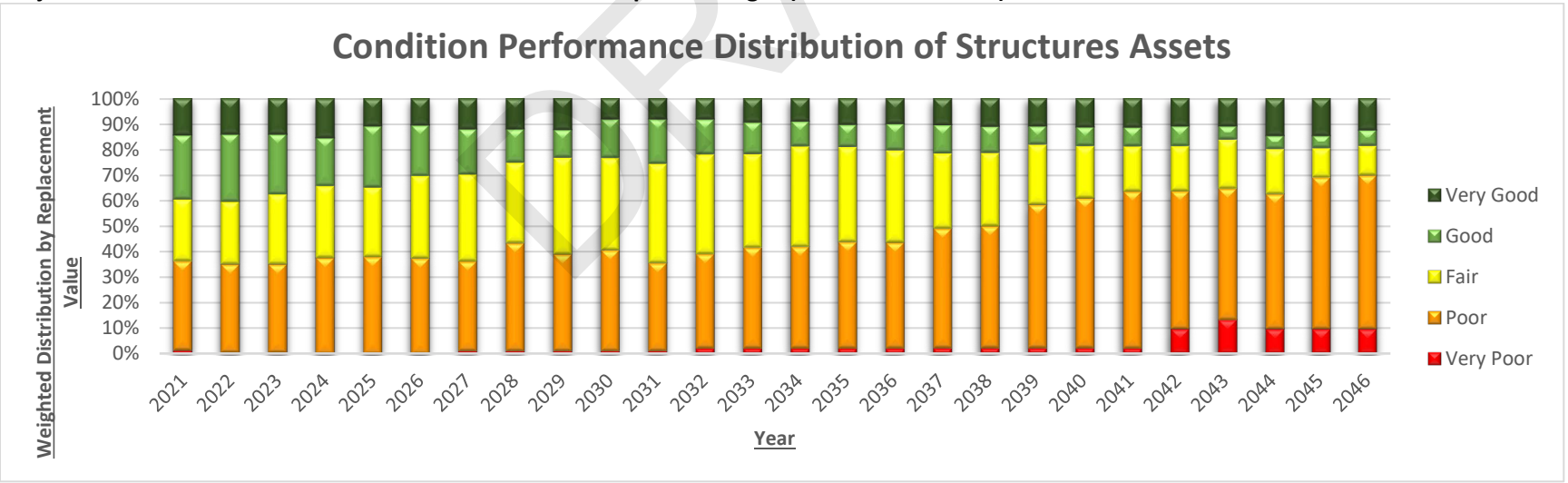
Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

Bridges and Major Culverts (Structures)
(Schedule H)

The City of St. Catharines is committed to providing structures that connect transportation routes to provide a safe, efficient, accessible, and sustainable transportation system for all required uses and modes of transportation in accordance with regulatory requirements and expectations of the community.
Provided by:
71 Bridges (including culverts with span > 3m)
46 smaller diameter culverts on major water courses

Value and Condition (As provided in the 2021 Corporate AMP for Core Assets)
Total replacement value: $66 million
Current backlog of work: $ 8 million
Current average condition: Fair

Projected Condition Distribution Performance with Anticipated Budget (Source: 2021 AMP)



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The City follows the standards and best practices outlined in the Ontario Structure Inspection Manual to determine the condition of the bridges and culverts. Third party consultants, who are experts in the design and assessment of bridges, are engaged to complete these assessments. The inspection of bridges with a span of 3m or greater are legislated to be inspected every 2 years. All structures were inspected in 2020 and those with a span of 3m or greater are currently being reinspected in 2022 to meet regulatory requirements.

Current Strategy

Renewal and Replacement: Both pedestrian bridges and roadway structures are replaced when they reach the end of their useful life. Rehabilitation is undertaken to prolong the life of the asset. The recommended works are determined through inspections undertaken every two years, or as recommended. Other considerations such as the timing of proposed roadworks and watercourse improvements may advance or delay renewal or replacement of a structure.

Expansion of Services: Expansion of the network may be undertaken to support growth and development or to meet demands of users. When bridges are replaced, they are widened where possible to support active transportation or improve accessibility for all users.

Non- infrastructure Solutions: No new locations for rehabilitation are included in the 2023 budget. This year the budget aims to fund the construction of certain structures currently in design.

2023 Highlights

- Construction funds for the replacement, or relining, of three roadway culverts, including one which is co-ordinated with watercourse rehabilitation works
- Construction funds for the removal or replacement of one bridge
- Construction funds for a culvert replacement in conjunction with road works
- Additional construction funds for the replacement of a box culvert

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2023 CAPITAL BUDGET
BRIDGES AND MAJOR CULVERTS (SCHEDULE H)

Project No.	Project Type	Project Name	Location	Gross Cost	Details	Notes
Previously Budgeted Projects - Additional Budget Requirements						
P22-122	RP	Battersea Avenue Culvert (C118M)		600,000	Replace or reline the structure.	
		Battersea Avenue Culvert (C118M)	170m East of Ferndale Ave.			
P22-130	RP	Secord Creek Construction and Culvert (C109M) Replacement		179,700	Replace existing structure with watercourse rehabilitation works	CP
		Rosedale Avenue Culvert (C109M)	36m East of Bunting Rd.			
P22-063	RP	Parnell Road Reconstruction		1,767,500	Replacement of the structure with road works	
		Parnell Drive Culvert (C088S)	5m east of Bradman Dr			
		Parnell Road Culvert (C094M)	120m Southwest of Niagara St.			
P15-122	RP	Third Street Culvert Replacement, 90 m South of CN Tracks		150,000	Additional funding for box culvert replacement	
		Third Street Culvert (B028S)	Approximately 95m south of CNR			
P22-122	RP	Melody Trail Culvert (C077S)		700,000	Replace or reline the structure.	
		Melody Trail Culvert (C077S)	20m east of Arthur St			
P17-125	RP	South Service Road Bridge Removal or replacement (B011S)		805,000	Following the C/S and RRA, the minimum rehabilitation work would include the following: Patch, Waterproof, and Pave, and concrete patch repair rehabilitation of the structure in 1-5 years. The City may also consider eliminating the south end of the structure or the entire structure in lieu of rehabilitating.	
		South Service Road Bridge (B011S)	Just north of Queenston St			
		Third Street Culvert (B028S)	Approximately 95m south of CNR			
				$ 4,202,200		

NOTES: CP - Co-ordinated projects involving more than one asset group (see Schedule S)

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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Shoreline Protection
(Schedule I)

The City of St. Catharines is committed to providing sustainable and reliable Lake Ontario shoreline protection to prevent the erosion of City owned property and reduce impacts to private property.

Provided by:
3.625 kilometres of Protected Shoreline
1.100 kilometres of Unprotected City owned Shoreline

Value and Condition
Total replacement value: $ 77 million
Current backlog of work: $ 9.2 million

2023 Highlights
- Construction of 50 metres of new shoreline protection

The City is working towards improving the stability of the City owned Lake Ontario shoreline and installing protection at the high priority locations experiencing significant erosion due to fluctuating lake water levels.

Current Strategy
Renewal and Replacement:
Over time material within shoreline protection can wash away, creating weak points within the protection. Typically, rehabilitation of the material can be undertaken to prolong the life of the protection, however at times, replacement of the protection is required.

Non-infrastructure Solutions: City of St. Catharines engages third party consultants, who are experts in the design and assessment of shoreline protection, to complete reviews of the City owned shoreline. These reviews are completed every 3 to 5 years, dependent on the water levels of Lake Ontario, and provide the City with a list of priority locations for installation of new or replacement/renewal of existing protection.

The last review of the City owned protected and unprotected shoreline was completed in 2019 and the report was finalized in late 2020. The next review is currently planned to be completed in 2024.

Expansion of Services: Expansion of the shoreline protection may be undertaken to support rising lake levels. The City is working to address known areas of erosion requiring new shoreline protection according to priority level. As additional areas of erosion along the shoreline are identified, the City will review these areas and determine the appropriate remediation actions.
Construction of new assets will have a direct impact on the operation and maintenance budget. The full extent of the impacts will be dependent on the design and level of services to be provided.

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2023 CAPITAL BUDGET
SHORELINE PROTECTION (SCHEDULE I)

Project No.	Project Type	Project Name / Location	Gross Cost	Details
Previously Budgeted Projects - Additional Budget Requirements				
P22-152	E	Sunset Beach (Municipal Beach)	208,000	Additional funds for construction of shoreline protection to address deficiencies along Lake Ontario in conjunction with parking lot reconstruction
			$ 208,000	

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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Watercourse Rehabilitation
(Schedule J)

The City of St. Catharines is committed to maintaining sustainable natural watercourses to prevent the erosion of City owned property and reduce impacts to private property

Provided by:
36.5 kilometres of natural watercourse
2 flood control structures
21 former Welland Canal locks and 1 related feature

Value and Condition
Current backlog of work (watercourse only): $46.1M based on 2015 Flooding and Erosion Control Priority Study Report

The 2015 study (Watercourse Flooding and Erosion Control Priority Study Report) identified 87 watercourse sites within the urban boundary that are eroded and need rehabilitation. Of those sites not yet addressed, 16 were identified as highest priority based on erosion levels with an estimated $8.9 million cost for remediation. Based on high level estimates, the total citywide watercourse rehabilitation costs within the urban boundary, excluding Twelve Mile Creek, will be approximately $46.1 million in 2020 dollars.

In 2018, a Dam Safety Review was completed for the Martindale Pond Weir and Heywood Generating Station on Twelve Mile Creek. These two structures control the water level in Martindale Pond. The review concludes that deficiencies exist in the existing weir and to a much lesser extent at the Heywood Generating Station. Additional studies will be carried out with existing funding to suggest alternatives and recommend a preferred option for the Weir.

In 2018, a detailed inspection program was undertaken on the exposed lock walls constructed for the first three Welland Canals. The report highlighted the need for capital work and translates into an average annual funding level of more than $170,000 over a 10-year period.

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Current Strategy

Renewal and Replacement: Natural watercourses will meander naturally within their valley bottoms. Rehabilitation is undertaken using natural channel design techniques when possible if a watercourse is negatively impacting public or private infrastructure.

Dam structures and structures associated with the former Welland Canals are rehabilitated as identified to maintain watercourse function.

Coordination with other infrastructure improvements such as bridge and culverts may accelerate or delay watercourse rehabilitation.

Non- infrastructure Solutions: City of St. Catharines engages third party consultants, who are experts in the design and assessment of watercourses, to complete reviews of the City owned watercourses and culverts which have less than 3m spans (i.e., are not bridges) in the watercourses. These reviews are completed every 5 to 10 years and provide the City with a list of priority locations for erosion rehabilitation and / or flooding.

Highlights

- Martindale Pond Weir – funding for construction
- Dick's Creek Main Branch (Tremont Creek) and East Brach (Briarsdale Creek) – funding for the environmental assessment and design
- Secord Creek - funding for construction

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2023 CAPITAL BUDGET
WATERCOURSES (SCHEDULE J)

Project No.	Project Type	Project Name	From	To	Gross Cost	Details	Notes
Previously Budgeted Projects - Additional Budget Requirements							
P17-129	RP	Martindale Pond Weir Replacement			$4,000,000	Replacement weir to address identified deficiencies in weir controlling water level in Martindale Pond and in conjunction with Heywood Generating Station improvements	
P22-130	RP	Secord Creek Construction and Culvert (C109M) Replacement			100,000	Construction to address priority items identified by EA	CP
				Subtotal	**$4,100,000**		
New Projects							
P23-130	NI	Dick's Creek EA/Design for Constr Ph 1, Ph 2 & Ph 3			600,000	Engineering Services (EA and design for highest priority) to address previously identified deficiencies	
		Rosedale Creek	Burgoyne Woods	Highway 406			
				Subtotal	**$ 600,000**		
					$4,700,000		

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NOTES: CP - Co-ordinated projects involving more than one asset group (see Schedule S)

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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Regional Projects
(Schedule K)

This schedule includes the City's share of municipal works (such as sewer repairs, watermain replacements, new or replacement sidewalk and new storm sewer construction) on projects undertaken in cooperation with the Regional Municipality of Niagara. The Region consults with the City, when determining the timing of projects, which are managed by the Region. Coordinating the City's efforts in this way helps to minimize cost and disruption to the affected residents and businesses and provides infrastructure renewal within the City.

For more information on the service areas impacted by these regional projects refer to other sections of this document, Sidewalks, Storm Sewer, Sanitary Sewer, and Water Distribution.

Previously, Niagara Region Transportation Division advised they may proceed with tendering for road reconstruction on Regional Road 87 consisting of Main Street, Lock Street and Lakeport Road in Port Dalhousie. The 2023 Capital budget includes partial funding for the City's share of costs for coordinated underground infrastructure improvements.

Also recommended for 2023 is additional for the cast iron watermain replacement which will benefit from being coordinated with the Region's St. Paul Street West bridge replacement project and / or the Region's redevelopment of the St. Catharines train station precinct.

Another recommended project is the reconstruction of Regional Road 48 Niagara Street. The 2023 Capital budget includes partial funding for the City's share of costs for coordinated underground infrastructure improvements.

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2023 CAPITAL BUDGET
REGIONAL PROJECTS (SCHEDULE K)

Project No.	Project Type	Project Name	From	To	Gross Cost	Details
Previously Budgeted Projects- Additional Budget Requirements						
Roads						
RN20-stp	RN	St. Paul Street at CNR Bridge Replacement			76,000	City share of the St Paul Street at CNR Bridge Replacement Project
				Subtotal	**$ 76,000**	
New Projects						
Sanitary						
RNxx-MLL	RP	Region RR87 Main Street, Lock Street & Lakeport Road			2,350,000	Partial funding for Replacement and spot repairs of existing sewers in conjunction with road reconstruction. Capital repairs to existing sewers in conjunction with Region's roadworks. Partial funding for replacement and spot repairs of existing sewers in conjunction with road reconstruction
		Lakeport Road (RR87)	Embassy Ave.	North End		
RNxx-LL	E / RP	Region - Niagara Street (RR48) Reconstruction			668,000	Rehabilitation of existing sewer with identified deficiencies inconjunction with Regional roadworks
		Niagara St.	Carlton St.	Scott St.		

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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2023 CAPITAL BUDGET
REGIONAL PROJECTS (SCHEDULE K)

Project No.	Project Type	Project Name	From	To	Gross Cost	Details
Sidewalk						
RNxx-GDR	RP	Region - Glenridge Ave at CNR Bridge Replacement			800,000	City's share of costs for sidewalks during Regional bridge replacement, cost sharing determined by CNR Board Order
		Glenridge Avenue	Edgedale Road	Riverview Boulevard		
Storm						
RNxx-LL	E / RP	Region - Niagara Street (RR48) Reconstruction			525,000	Partial funding of City's share of costs of new storm sewer and existing storm sewer repairs in conjunction with Regional roadwork
		Ontario St.	Linwell Rd.	Lakeshore Rd.		
				Subtotal	**$4,343,000**	
					$4,419,000	

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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Community, Recreation, and Culture Services (CRCS)
(Schedule L)

The City of St. Catharines is committed to being The City Where Everybody Can Play.

CRCS Spotlight – Parks Renewal Plan
The City's Parks Renewal Plan prioritizes asset renewal based on asset condition, as well as health and safety considerations, with the assets in the poorest condition being prioritized for replacement. Playground equipment and court renewal as well as upgrades are required to maintain service levels and ongoing safe play spaces.

Provided by:
72 Playgrounds
15 Tennis courts (4 locations convertible to pickleball)
23 Basketball courts

Value and Condition
Total replacement value within the next 5 years: $11.65 million
Total replacement value within the next 10 years: $13.62 million
Note: Table 1 below provides additional information for other areas of CRCS

Current Strategy
Renewal and Replacement

The **Aquatics Facilities Strategy** provides recommendations on the long-term operating sustainability and health of the City's aquatics system. The 2023 Capital Budget includes $0.35M towards the installation of a splashpad, seasonal washroom facility and sun shelter.

The **Environmental Hanging Basket Program** will transition assets to a more environmentally responsible product. The Environmentally Friendly Hanging Baskets Program will replace baskets each year from 2022-2024. This program is aligned with the City's declaration of a Climate State of Emergency.

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The City's **Tree Planting Program** helps improve air quality and add economic value, beauty, and shade to its neighborhoods. Trees are planted on public boulevards, road allowances fronting residences, and in circles where trees are currently not planted. This capital program assists in increasing the tree canopy percentage on both public and private property. The 2023 budget will allow the City to hold two tree giveaways intended to assist in reaching the City's 30% tree canopy goal by 2030.

The **Welland Canal Fallen Workers Memorial** requires a panel replacement to update the name plaque and a tree replanting. The Welland Canal Fallen Workers Memorial Maintenance Reserve Fund will be utilized as it is intended for the on-going maintenance and preservation of the Memorial.

The **Memorial Bench Program** will replace 50 benches per year from 2020-2025 with the replacements concluding in 2025. The new benches will be made from composite materials that are expected to last 25-30 years. The City currently has an inventory of wooden benches with many of the benches approaching end of useful life

Expansion of Services:
The goal of the Parks Legacy Fund is to match alternative sources of funding such as donations, legacy giving and community projects to renew, and upgrade play assets in City parks. The Parks Legacy Fund will help to mitigate the financial implications of the Parks Renewal Plan by leveraging City funds with matching community donations so that twice as much work can be completed.

See Schedule M and the related narrative for information on Sunset Beach.

Highlights

- The Parks Renewal Plan will replace 2 playgrounds, 2 basketball courts, and 2 tennis courts
- Over 55 hanging baskets converted to environmentally friendly
- 50 memorial benches replaced
- Two free tree giveaways

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2023 CAPITAL BUDGET
COMMUNITY, RECREATION AND CULTURE SERVICES (SCHEDULE L)

Project No.	Project Type	Project Name	Gross Cost	Details	Notes
Previously Budgeted Projects - Additional Budget Requirements					
P21-156	E	Splashpad, Sun Shelter & Washroom (funding top-up)	350,000	The 2022 Capital budget included $1M towards the project but it is estimated that an additional $350,000 will be required. Additional funding required for the installation of a splashpad, seasonal washroom facility and sun shelter as per the Aquatics Facilities Strategy approved by Council in Q3 2021 (CRCS-042-2021) due to the increase to construction costs.	
PRC20-01	NI	Tree Planting Program	375,000	Address asset deficiencies and move torwards achieving Council approved tree canopy goal of 30%	PA
PRC22-03	RN	Environmentally Friendly Hanging Baskets Program (Year 2 of 3)	35,000	This project will transition to a more environmentally responsible product, requiring less frequent watering	PA
PRC20-04	RP	Memorial Bench Program (Year 4 of 6)	80,000	Replace assets which are approaching end of useful life and maintain level of service	PA

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

2023 CAPITAL BUDGET
COMMUNITY, RECREATION AND CULTURE SERVICES (SCHEDULE L)

Project No.	Project Type	Project Name	Gross Cost	Details	Notes
PCR21-05-1 & PCR22-04	RP	Parks Legacy Fund	250,000	The Parks Legacy Fund will annually leverage and match alternative funding to maintain and enhance parks levels of service. Project(s) still to be determined for 2023 (As approved by Council on October 7, 2019)	
		Subtotal	**$ 1,090,000**		
New Projects					
P23-160	RN	Parks Renewal Plan - Port Dalhousie Multi-Use Court	332,931	Replace court which is at end of useful life, and maintain level of service as per the Parks Renewal Plan (CRCS-B017-2021)	
P23-161	RN	Parks Renewal Plan - Alex Mackenzie Basketball Court & Playground	444,612	Replace court and playground which is at end of useful life, and maintain level of service as per the Parks Renewal Plan (CRCS-B017-2021)	
P23-162	RN	Parks Renewal Plan - Bartlett Park - Playground & multi-use court	527,845	Replace court and playground which is at end of useful life, and maintain level of service as per the Parks Renewal Plan (CRCS-B017-2021)	
P23-163	RN	Parks Renewal Plan - Community Park Multi-Use Courts	444,612	Replace court which is at end of useful life, and maintain level of service as per the Parks Renewal Plan (CRCS-B017-2021)	

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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2023 CAPITAL BUDGET
COMMUNITY, RECREATION AND CULTURE SERVICES (SCHEDULE L)

Project No.	Project Type	Project Name	Gross Cost	Details	Notes
PCR23-01	M	Welland Canal Fallen Workers Memorial	33,000	Replace panel to insert a name in chronological order. The panel will be reinstalled with the ability to remove and adjust more simply in the future if required. Additionally, this work will include resetting a panel that has shifted since installation.	
		Subtotal	**$ 1,783,000**		
			$ 2,873,000		
	Less:				
	PA	Parks Renewal Plan Projects	$ 1,750,000	Council approval (CRCS-B017-2021)	
		Total budget requiring Council Approval	$ 1,123,000		

Notes:
PA- Previously approved by Council in 2021
CP - Co-ordinated projects involving more than one asset group (see Schedule S)

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
NI = Non-Infrastructure Solutions, M = Maintenance, D = Disposal

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Buildings and Facilities (including accessibility)

(Schedule M, N, O)

The City of St. Catharines is committed to providing safe and accessible Buildings and Facilities for all citizens and staff. The focus is to maintain life safety elements, barrier free accessibility, building envelope and interior conditions for all user groups.

Provided by:
174 Buildings and facilities spread across 73 properties

Value and Condition

Estimated total replacement value of City owned buildings and facilities:	$553 million
Estimated Current Backlog of Work	$55.5 million

The Arena Strategy was updated in 2019 and highlighted the need to right size the City's arenas (excluding Meridian Centre), to ensure that current levels of service can be delivered at an optimal cost. The 2017 Fire Master Plan confirmed the need for asset renewal at Firehalls, with priority given to renovations at Fire Hall 1, which would allow for the relocation of one of the Aerial Firetrucks. A 2020 Feasibility Study, to determine future needs and capital cost estimates for Fire Hall asset renewal, identified the need to replace three Fire Halls (1, 2, 3) and upgrade Fire Hall 6. These Fire Halls are nearing their end of life and they do not meet operational needs (including Accessibility).

Recent condition assessments and regulatory requirements were also considered in determining the Facilities Capital Budget. The assets included within this section of the capital budget will be addressed within the AMP for non-core assets scheduled for completion prior to July 1, 2024, in compliance with O. Reg.588/17.

Current Strategy
Renewal and Replacement

The City maintains many buildings differentiated by factors such as usage, (i.e. arenas, fire halls, operations work centres), or third party designation (i.e. Historical buildings). Various components within buildings also receive attention (i.e. roofs, washrooms) as well as overall standards for buildings (i.e. accessibility).

The City undertakes several ongoing key initiatives and programs to maintain and improve City owned facility assets such as structures, buildings and related land improvements.

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There are numerous smaller projects which include the renewal and replacement of structural, architectural, mechanical, and electrical components of various City buildings that have reached the end of their service life. These projects are funded from the related reserve.

Heritage Assets: The Old Court House, Montebello Park Pavilion and Band Shell, City Hall, the Morningstar Mill, Dalhousie House, and the Old Robertson School at 85 Church Street are examples of City owned buildings which are classified as Heritage Buildings.

Due to the age of the heritage buildings, many of the architectural, structural, mechanical, and electrical components of these structures have well exceeded their useful service life and require regular maintenance and rehabilitation to preserve the integrity of these buildings. There are some components within these structures that do not meet current codes and safety regulations and require retrofits to remain in operation.

Accessibility: The City is striving to meet the provincially mandated accessibility standards by the 2025 target as set out by the Accessibility for Ontarians with Disability Act (AODA). To rectify the estimated $5.750 million in non-compliant items, the City continues to complete accessibility upgrades, including barrier free washrooms and elevators. The 2023 Capital budget for accessibility includes $600,000 for upgrades to the washroom and change room facilities at Port Dalhousie Lions Park Pool and $2,500,000 for washroom, elevator and entrance upgrades to Robertson school.

Based on 2024-2027 forecast budget levels (with an annual minimum of $250,000), the highest priority items will be completed, however some portion of the lower priority items will remain unaddressed, at the target date.

Non-infrastructure Solutions: The City's Arena strategy was developed and approved in 2019. The 2023 Capital budget incorporates this strategy with the decommissioning of the Garden City Arena.

Highlights

- Renovation to the Central Library including window replacement, atrium redesign and leak repairs
- Funds for Seymour Hannah Arena dehumidification, compressor replacement and change room upgrades.
- Replacement of the Kiwanis Turf Field
- Baseball field lighting replacement and control system implementation at George Taylor Field
- Replacement of air handling units at City Hall

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2023 CAPITAL BUDGET
BUILDINGS AND FACILITIES (SCHEDULE M)

Project No.	Project Type	Project Name	Gross Cost	Details
Previously Budgeted Projects- Additional Budget Requirements				
P22-187	NI	Garden City Arena Complex Demolition & Decommisioning of GCA complex	380,000	Garden City Arena Complex Demolition & Decommisioning of GCA complex
P22-150	RN	Municipal Beach (Sunset Beach) - Site Funding Matching (City Portion) for ICIP work - Phase 1	800,000	Funding Matching (City Portion) for ICIP work - Phase 1
P22-137	E	Buchanan House Top up funds for accessibility upgrades	420,000	Top up funds for accessibility upgrades
P22-138	RP	Old Court House replace and repair basement windows	200,000	replace and repair basement windows
P23-134	RN	Robertson School - Main Accessibility Upgrades	2,500,000	Accessibility Upgrades, add universal washroom on each floor (3), install elevator, renovate existing washrooms to FADS (4), misc internal ramps and entrance mods for barrier free access.
Subtotal			**$ 4,300,000**	

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
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2023 CAPITAL BUDGET
BUILDINGS AND FACILITIES (SCHEDULE M)

Project No.	Project Type	Project Name	Gross Cost	Details
New Projects				
Administrative and Operational Centres				
P23-133	RP	City Hall Replace 3 modulating air handling units	1,000,000	Replace 3 modulating air handling units
Administrative and Operational Centres			**$ 1,000,000**	
PRCS - Arenas and Recreation Facilities				
P18-164	RP	Seymour Hannah Upgrade dehumidification system for pad 2/3 - additional funds to combine with phase 1	1,000,000	Upgrade dehumidification system for pad 2/3 - additional funds to combine with phase 1
P23-139	E	Seymour Hannah renovation for Junior B Falcons	150,000	renovation of the retail space and dressing rooms for Junior B Falcons ($75K for removal; $75K fitout = $150K total)
P23-138	RP	Seymour Hannah Replacement Vilter Compressor & panel (one compressor) - Phase 2 (compressor #2)	350,000	Replacement Vilter Compressor & panel (one compressor) - Phase 2 (compressor #2)
P23-140	RP	Seymour Hannah - Kiwanis Field Replace Turf	1,300,000	Replace Turf
PRCS - Arenas and Recreation Facilities			**$ 2,800,000**	

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2023 CAPITAL BUDGET
BUILDINGS AND FACILITIES (SCHEDULE M)

Project No.	Project Type	Project Name	Gross Cost	Details
PRCS - Parks Structures and Facilities				
P23-141	RP	Merritton Park - Site Replace existing baseball field (George Taylor) lighting with LED fixtures & Musco Controls	400,000	Replace existing baseball field (George Taylor) lighting with LED fixtures & Musco Controls
P23-142	RP	Port Dalhousie Lions Park - Pool Renovate Change rooms - interior/exterior & add accessibility	600,000	Renovate Change rooms - interior/exterior & add accessibility
PRCS - Parks Structures and Facilities			**$ 1,000,000**	
Senior Facilities				
P23-144	RP	Dunlop Drive Seniors Centre Roofing	260,000	Roofing Replacement
Senior Facilities			**$ 260,000**	
Other Special Purpose Facilities				
P23-143	RN	Dalhousie House - Site Reconstruct Retaining wall & stairs	500,000	Reconstruct Retaining wall & stairs
P18-181	RP	St. Catharines Museum Replace / Upgrades	500,000	Replace air handling unit 6, condensing unit 5, install humidifier including all BAS connection and structural/electrical components
P17-129	RP	Martindale Pond Weir Replacement	400,000	Top up funds for weir reconstruction (design)

Project Type: RP = Replacement, RN = Renewal, E = Expansion,
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2023 CAPITAL BUDGET
BUILDINGS AND FACILITIES (SCHEDULE M)

Project No.	Project Type	Project Name	Gross Cost	Details
TBD23-16	RN	Meridian Centre Plant motor upgrade (2 glycol pumps, 2 compressor motors)	50,000	As per CIMCO's Life cycle of the Meridian Centre Refrigeration Plant, we need to start replacing motors on the system. Glycol pump 1&2, as well as Compressor 1 &2 have motors due for replacement.
TBD23-17	RP	Meridian Centre - Parking booth - front lot	20,000	For health and saftey concerns, the Meridain Centre requires a parking booth for employees who are required to monitor the lot, outside in all weather conditions. Health & safety concerns can be avoided by having a parking booth that serves as shelter and security for the employees during all four seasons.
TBD23-18	RP	Meridian Centre - POS Replacement	136,000	In July 2021, Meridian Centre received an "End of Life/Support" Notice from our current POS Service Provider, NCR/Quest, effective 12/31/2023.
TBD23-19	RP	Meridian Centre - Daktronics Upgrade	136,000	Our current DMP-7000/VIP-4400/Show Control system has been discontinued and is no longer supported by Daktronics. Servicing the current system and sourcing replacement Parts will become hard to do moving forward. Upgrading to the newest version DMP-8000/ VP-6000/Show Control.

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2023 CAPITAL BUDGET
BUILDINGS AND FACILITIES (SCHEDULE M)

Project No.	Project Type	Project Name	Gross Cost	Details
TBD23-20	RP	Meridian Centre - Main curtain modification	67,000	Modify the current Main Curtain that creates a required backdrop for concerts and events. The size of the curtain is a major labour and expense challenge, modification will solve the challenges
TBD23-21	RP	Meridian Centre - Suite level food cooking equipment addition	70,000	In anticipation of a Post Covid-19 food service environment, additional cooking equipment is needed for Suite Level Food and Beverage Outlets. In order to enhance cooking ability for Club Lounge and Suite holder ordering and delivery of premium food menu items, additional equipment has been procured. Two (2) cooking solutions to be added, two (2) Perfect Fry Countertop Solution (Club/Suites) and one (1) Turbo Fresh Double Stack Pizza and Cooking oven (Suite Pantry). Projected 6-8 year return on investment.
TBD23-22	RP	Meridian Centre - Mobile ordering platform	30,000	In anticipation of a Post Covid-19 food service environment, mobile ordering is the solution to enhance and support new and necessary safety measures for service during all Meridian Centre events. To reduce the risk to patrons and staff while providing premium and quick service food and beverage services, mobile ordering is necessary to implement to enhance Covid-19 practices/ protocols.

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2023 CAPITAL BUDGET
BUILDINGS AND FACILITIES (SCHEDULE M)

Project No.	Project Type	Project Name	Gross Cost	Details
P23-145	RP	PAC - Replace lighting fixtures in film house	80,000	PAC - Replace lighting fixtures in film house
P23-146	RP	PAC - Replacement of Leviton Lighting control system	60,000	PAC - Replacement of Leviton Lighting control system
P23-147	RP	PAC - Door replacements (Sliding Doors & other high priority doors)	50,000	PAC - Door replacements (Sliding Doors & other high priority doors)
TBD23-26	RN	Central Branch renovation (Phase 1)	4,850,000	Central Branch renovation (Phase 1)
Other Special Purpose Facilities			**$ 6,949,000**	
		New Projects Subtotal	**$ 12,009,000**	
			$ 16,309,000	

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2023 CAPITAL BUDGET
PARKING SERVICES (SCHEDULE N)

Project No.	Project Type	Project Name	Gross Cost	Details
New Projects				
P23-135	RN	Carlisle Street Parking Garage Structural crack repairs (basement & stair D), and associated membrane repairs on garden park entrance ramp.	100,000	Structural crack repairs (basement & stair D), and associated membrane repairs on garden park entrance ramp.
PCI23-05	RN	Ontario Street Parking Garage Upgrade - Parking system, cameras, servers.	600,000	Parking system, cameras, servers.
			$ 700,000	

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2023 CAPITAL BUDGET
FIRE SERVICES (SCHEDULE O)

Project No.	Project Type	Project Name	Gross Cost	Details
New Projects				
PFR23-02	RP	CAD (Computer Aid Dispatch) Software upgrade	350,000	CAD (Computer Aid Dispatch) Software upgrade
P23-136	NI	Firehall #3 - Pelham Rd Rebuild Station No. 3 - Design Funds only	500,000	Rebuild Station No. 3 - Design Funds only
P23-137	RP	Fire Hall #4 - Merritt St Parapet Flashing/Siding rework to prevent water infiltration	100,000	Parapet Flashing/Siding rework to prevent water infiltration
		Subtotal	**$ 950,000**	

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
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2023 CAPITAL BUDGET
FLEET (SCHEDULE P)

Project No.	Project Type	Project Name	Gross Cost	Details
New Projects				
PFL23-01	RP	International 7400 SIngle Axle Dump Truck (#203)	360,000	Replacement of International 7400 SIngle Axle Dump Truck (#203)
PFL23-02	RP	Freightliner Tandem Dump Truck with Roller Pro (61)	380,000	Replacement of Freightliner Tandem Dump Truck with Roller Pro (61)
PFL23-03	RP	International Workstar 7600 Tandem Dump Truck (72)	420,000	Replacement of International Workstar 7600 Tandem Dump Truck (72)
PFL23-04	RP	International Workstar 7600 Tandem Dump Truck (73)	420,000	Replacement of International Workstar 7600 Tandem Dump Truck (73)
PFL23-05	RP	2004 Sutphen 95’ aerial - Unit 26	1,946,780	Industry standard is to replace every 23 years. Project request expedited due to long procurement lead times
			$3,526,780	

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Project Type: RP = Replacement, RN = Renewal, E = Expansion,
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2023 CAPITAL BUDGET
CORPORATE INFRASTRUCTURE (SCHEDULE Q)

Project No.	Project Type	Project Name	Gross Cost	Details	Notes
Previously Budgeted Projects- Additional Budget Requirements					
ST-20-15	NI	Asset Management Plan - Phase 2	260,000	Additional budget to align with requirements of Oreg 588/17 to review level of service.	PA
PCI17-01	RP	Enterprise Resource Planning (ERP) System Implementation (included in 2023 Capital Forecast)	3,270,000	Partial budget for implementation of an ERP system that will replace the City's existing financial systems and provide enhanced support for accounts receivable, accounts payable, procurement, commitments and project management	PA
PCI17-02	RP	Customer Relationship Management (additional funding)	300,000	Software licensing fees and set-up of system to track soil movement as required by Ont. Regulation 406/19	
		Subtotal	**$ 3,830,000**		
New Projects					
PCI23-02	E	Backup Data Centre	500,000	Additional budget for implementation of property tax software - CentralSquare and related modules for tax certificates, point-of-sale, and citizen engagement portal. Replaces the City's current systems which are past end of life and receiving very limited vendor support (FMS-122-2021)	
PCI23-03	RP	Annual Computer Infrastructure Replacement	150,000	Replacement for Work Manager, GIS system and asset management software	
PCI23-04	E	IT Security software (log management tools)	200,000	Replace current switches which are at end of useful life	
		Subtotal	**$ 850,000**		
			$ 4,680,000		
Less:					
	PA	Enterprise Resource Planning (ERP) System Implementation (included in 2023 Capital Forecast)	3,270,000	Council Approval FMS-122-2021	
		Total budget requiring Council approval	**$ 1,410,000**		

Notes:
PA- Previously approved by Council in 2021
Project Type: RP = Replacement, RN = Renewal, E = Expansion,
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Co-ordinated Projects
(Schedule S)

For asset categories within the road allowance (roads, sidewalks, sewers, water mains), coordination with other construction activities is taken into consideration to take advantage of economies of scale and reduce the impact of construction on abutting property owners and the travelling public.

Determination of the final construction program for all the assets for a particular year is the result of an iterative effort by staff in reviewing all the asset categories. Schedule S reports on the new and continuing projects included within the 2023 Capital Budget. For each project in the schedule, each of the asset categories previously reported in Schedule B to J is shown.

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2023 CAPITAL BUDGET
COORDINATED PROJECTS (SCHEDULE S)

PROJECT NO	SCH	DESCRIPTION	GROSS COST	COMMENTS
P23-060		**2023 Road Resurfacing Program**		
	B	Roads	2,361,400	Spot curb repairs & replace asphalt road surface & extension of catch
	D	Storm Sewer Collection System	138,000	basin lead for combined sewer separation
			$ 2,499,400	
P23-103		**Briarsdale / Donlon**		
	B	Roads	207,700	Spot curb repairs & replace asphalt road surface & Replacement of
	G	Water Distribution System	543,000	existing C.I. and D.I. watermain
			$ 750,700	
P23-061		**Brimley Crescent Road Rehabilitation & Underground Improvements**		
	B	Roads	427,500	Curb replacement and asphalt road surface replacement in
	D	Storm Sewer Collection System	311,000	conjunction with watermain and storm sewer section replacement
	E	Sanitary	190,000	and sewer repairs
	G	Water Distribution System	566,000	
			$ 1,494,500	
P18-063		**Chestnut / Merritt Underground Improvements**		
	B	Roads	3,169,000	Additional funding for utility relocates, streetscaping, streetlights and
	D	Storm Sewer Collection System	498,000	road reconstruction in conjunction with replacement of storm sewer,
	E	Sanitary	378,000	sanitary sewers and watermain replacement
	G	Water Distribution System	629,000	
			$ 4,674,000	
P23-101		**Dundas / Leeson**		
	B	Roads	67,000	Additional funding for utility relocates, streetscaping, streetlights and
	G	Water Distribution System		road reconstruction in conjunction with replacement of storm sewer,
			865,000	sanitary sewers and watermain replacement
			$ 932,000	
P20-065		**New Access Road - Ridley Road**		
	B	Roads	505,000	Additional funds for new road and storm infrastructure to train
	D	Storm Sewer Collection System	231,000	station
			$ 736,000	
P23-001		**Phelps/Turner/Smythe**		
	E	Sanitary	95,000	Installation of a new sewer section and watermain replacement in
	G	Water Distribution System	450,000	conjunction with works for new development
			$ 545,000	

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2023 CAPITAL BUDGET
COORDINATED PROJECTS (SCHEDULE S)

PROJECT NO	SCH	DESCRIPTION	GROSS COST	COMMENTS
P22-130		**Secord Creek Construction and Culvert (C109M) Replacement**		
	H	Bridges and Major Culverts	179,700	Replace existing structure with watercourse rehabilitation works
	J	Watercourse	100,000	
			$ 279,700	
		Total	**$ 11,911,300**	

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CITY OF ST.CATHARINES

2024 CAPITAL FORECAST (SCHEDULE T)

DESCRIPTION	GROSS COSTS	CANADA COMMUNITY BUILDING FUND	OTHER EXTERNAL/ RESERVES	TAX/RATE PAYER	DEBT
ROADS					
2024 Roads Priority Program	$ 11,904,951	$ 1,803,831	$ 296,000	$ 2,426,000	$ 7,379,120
Street Lights	217,000	-	-	110,000	107,000
Traffic Signals Specific Locations	728,000	-	-	292,000	436,000
	12,849,951	1,803,831	296,000	2,828,000	7,922,120
SIDEWALKS, WALKWAYS AND MULTIUSE PATHS					
Active Transportation	1,241,663	210,000	198,700	71,000	761,963
Sidewalks and Walkways	1,479,000	-	24,000	597,000	858,000
	2,720,663	210,000	222,700	668,000	1,619,963
STORM SEWER - 2024 PRIORITIES	3,815,100	39,420	745,500	258,000	2,772,180
SANITARY SEWER - 2024 PRIORITIES	8,737,000	1,000,000	-	5,329,908	2,407,092
POLLUTION CONTROL - 2024 PRIORITIES	1,000,000		-	500,000	500,000
WATERMAINS - 2024 PRIORITIES	13,761,000	1,352,000	-	8,846,037	3,562,963
BRIDGES AND MAJOR CULVERTS					
Culvert Replacements	1,552,500	-	-	131,000	1,421,500
Disher St Bridge (B010S) Condition Survey & Detailed Design	68,000	-	-	6,000	62,000
Niagara Street Pedestrian Bridge E (P052S)	75,000	-	-	6,000	69,000
	1,695,500	-	-	143,000	1,552,500
SHORELINE PROTECTION	255,000	-	-	22,000	233,000
WATERCOURSES					
Old Welland Canal Lockwall Stabilization Ph2 Design	200,000	-	-	17,000	183,000
Other Creek Renewal Projects	1,600,000	-	-	136,000	1,464,000
	1,800,000	-	-	153,000	1,647,000
REGIONAL					
Region - Niagara Street (RR48) Reconstruction	462,000	-	-	39,000	423,000
Region - Martindale Road JR Stock Bridge at Richardson Creek	150,000	-	-	74,900	75,100
Region - Glendale Avenue RR89 Improvements	490,000	-	78,400	411,600	-
	1,102,000	-	78,400	525,500	498,100
Total Linear	47,736,214				

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CITY OF ST.CATHARINES

2024 CAPITAL FORECAST (SCHEDULE T)

DESCRIPTION	GROSS COSTS	CANADA COMMUNITY BUILDING FUND	OTHER EXTERNAL/ RESERVES	TAX/RATE PAYER	DEBT
COMMUNITY, RECREATION AND CULTURE SERVICES					
Multi-Use Recreational Facility Feasibility Study	400,000	-	-	34,000	366,000
James Street Park	1,620,000	-	-	138,000	1,482,000
Parks Legacy Fund	250,000		125,000	125,000	-
Parks Renewal Plan	1,586,000	-	111,100	125,000	1,349,900
Lion Dunc Schooley Outdoor Pool	5,000,000		-	425,000	4,575,000
Tree Planting, Memorial Benches and Hanging Baskets	495,000	-	-	42,000	453,000
	9,351,000	-	236,100	889,000	8,225,900
BUILDINGS AND FACILITIES					
Administrative and Operational Facilities	545,000	-	75,000	314,000	156,000
Arenas and Recreational Facilities	4,330,000	-	480,000	662,500	3,187,500
Parks Structure and Facilities	2,425,000	-	235,000	186,000	2,004,000
Special Purpose Facilities	5,243,000	-	2,548,890	229,000	2,465,110
	12,543,000	-	3,338,890	1,391,500	7,812,610
FIRE SERVICE	120,000	-	20,000	9,000	91,000
FLEET	2,536,231	-	-	216,000	2,320,231
Parking	1,075,000	-	-	91,000	984,000
CORPORATE INFRASTRUCTURE					
ERP system	700,000	-	-	60,000	640,000
IT Security software (log management tools)	200,000	-	-	17,000	183,000
Annual Computer Infrastructure Replacement	200,000	-	-	17,000	183,000
Customer Relationship Management (additional funding)	1,000,000	-	-	85,000	915,000
Other Corporate Infrastructure	500,000		-	43,000	457,000
	2,600,000	-	-	222,000	2,378,000
TOTAL 2024 CAPITAL FORECAST	**$ 75,961,445**	**$ 4,405,251**	**$ 4,937,590**	**$ 22,091,945**	**$ 44,526,659**

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CITY OF ST.CATHARINES
2023 CAPITAL BUDGET AND FOUR YEAR FORECAST (SCHEDULE U)

	2023	2024	2025	2026	2027
CAPITAL EXPENDITURES					
Roads	9,824,600	12,849,951	12,051,000	9,347,000	9,712,000
Sidewalks, Walkways and Multi-Use Pathways	2,413,000	2,720,663	1,887,663	1,718,663	1,736,663
Storm Sewer Collection System (including Sewer Separation)	1,608,000	3,815,100	4,542,000	4,130,000	4,290,000
Sanitary Sewer Collection System	2,819,000	8,737,000	6,245,844	8,032,781	9,081,436
Pollution Control	250,000	1,000,000	1,000,000	1,000,000	-
Water Distribution System (Watermain)	11,930,000	13,761,000	10,498,964	15,442,363	17,986,110
Bridges and Major Culverts	4,202,200	1,695,500	1,765,000	230,000	-
Shoreline Protection	208,000	255,000	2,002,000	1,544,000	5,299,000
Watercourses	4,700,000	1,800,000	2,794,000	910,000	420,000
Regional Projects	4,419,000	1,102,000	10,114,000	2,991,000	-
Community, Recreation and Culture Services	2,873,000	9,351,000	3,901,000	7,221,500	2,309,000
Buildings and Facilities (including Accessibility)	16,309,000	12,543,000	12,489,000	14,300,000	16,120,000
Parking Services	700,000	1,075,000	-	-	-
Fire Services	950,000	120,000	7,700,000	8,627,299	2,191,118
Fleet	3,526,780	2,536,231	-	-	-
Corporate Infrastructure	4,680,000	2,600,000	470,000	200,000	200,000
	$ 71,412,580	$ 75,961,445	$ 77,460,471	$ 75,694,606	$ 69,345,327
SOURCES OF FINANCING					
Canada Community - Building Fund	4,405,251	4,405,251	4,405,251	4,405,251	4,405,251
Other External Funding (including Grants)	158,000	675,000	675,000	675,000	675,000
Reserve Funds (including D.C)	5,846,314	4,262,590	11,951,320	3,884,400	2,476,300
TOTAL GRANTS/ 3rd PARTY/ RESERVES	$ 10,409,565	$ 9,342,841	$ 17,031,571	$ 8,964,651	$ 7,556,551
Infrastructure Levy	1,569,000	1,680,000	1,680,000	1,680,000	1,680,000
Tax Support	1,800,000	2,200,000	2,472,000	2,472,000	2,472,000
Water/Wastewater	8,584,119	8,205,747	8,728,981	8,739,462	9,779,909
Capital Out of Revenue (1)	6,475,000	10,006,198	10,125,189	12,533,913	12,357,195
TOTAL TAX/ RATE PAYER	$ 18,428,119	$ 22,091,945	$ 23,006,170	$ 25,425,375	$ 26,289,104
DEBENTURE (2)	42,574,896	44,526,659	37,422,730	41,304,580	41,499,672
TOTAL	$ 71,412,580	$ 75,961,445	$ 77,460,471	$ 75,694,606	$ 75,345,327

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CITY OF ST.CATHARINES
2023 CAPITAL BUDGET AND FOUR YEAR FORECAST (SCHEDULE U)

	2023	2024	2025	2026	2027
Note (1)					
Capital out of Revenue Allocation					
Tax Supported	3,127,000	3,536,000	3,300,000	3,845,000	3,894,000
Water/Wastewater	3,348,000	6,470,198	6,825,189	8,688,913	8,463,195
				-	
Total Capital out of Revenue	$ 6,475,000	$ 10,006,198	$ 10,125,189	$ 12,533,913	$ 12,357,195
Note(2)					
Debenture Allocation					
Tax Supported	38,482,015	38,056,604	31,427,092	34,583,811	35,027,230
Water/Wastewater	4,092,881	6,470,055	5,995,638	6,720,769	6,472,442
Total Debenture	$ 42,574,896	$ 44,526,659	$ 37,422,730	$ 41,304,580	$ 41,499,672

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OTHER POTENTIAL CAPITAL PROJECTS - 2028 and BEYOND
SCHEDULE V

The intent of the list below is to highlight projects that have been raised to Council or discussed by Council. As these projects have not been included in the forecast at this time they would be considered in years six through ten (2028- 2032). However, some of these items represent underfunding of current programs, and so if funding was available the expenditures could be accelerated. The costs provided are based on high level estimates. Costs are expected to change as the scope is refined and project planning proceeds. This list does not include the regular ongoing annual replacement of linear assets, buildings and facilities that are being accomodated in the annual Capital Budget. Also, sidewalks and Roads underfunding has not included on this list, as they are currently under review.

Project Type	Asset	Facility/location	Description	Estimated Cost ($000)	Supporting reports plans/strategy	Estimated Year
E	Road/ Bridge	Chestnut St Extension	new roadway from Hastings St. to Brookdale Ave (scope subject to Class Environmental Assessment process)	694	Included in Transportation Master Plan and 2021 DC Study. EA ongoing	2030
E	Road/ Bridge	Ridley & Vansickle signals	New traffic signal	291	Included in the 2021 DC Study	2030-2036
E	Equipment	Various locations	Waterbottle filling stations	459	Included in the 2021 DC Study	2028-2029
E	Land Improvement	Parkland	Parkland Development near GO Station	306	Included in the 2021 DC Study	2028-3031
E	Land Improvement	Parkland & Amenities	Parkland Development/Amenities near Glendale & Welland Canal	306	Included in the 2021 DC Study	2028-3031
E	Land Improvement	Parkland	Parkland Development at former General Motors Site	510	Included in the 2021 DC Study	2032
R	Bridges	Bridges	Replacements -Costs over $500k annual budget	6,132	2018 Bridge and Culvert Inspection	2028-2032
E	Arena	Bill Burgoyne Arena	Twin Arena (option 1)	21,800	PRCS-124-2019 - Arena Strategy	2029
R	Facility	To be determined	Aquatics facilities	20,000	Aquatics Facility Strategy	2028
	Pool	Lincoln Park	Lincoln Park Outdoor Pool	4,000	Aquatics Facility Strategy	2028
R	Playground Replacements - various locations		57 playground replacements as planned from 2020-29	11,118	PRCS-B002-2018 - Parks Renewal Plan & CRCS-B017-2021 (2021 Update)	2028-2032
R	Tennis Court Replacements - various locations		10 tennis court replacements as planned from 2020-29	220		
R	Basketball Courts	Basketball Courts	18 basketball court replace. as planned from 2020 -29	663		
SI	Park	To be determined	Skateboard Park (north of the QEW)	500	Recreation Facility & Programming Master Plan Recommendation #28 / Recreation Master Plan Advisory Committee's highest prioritized recommendation	2028-2030
R	Vehicles	Fire Fleet	Fire Supression Vehicles	2,714	Planned Replacement Schedule	2028-2030
R	Equipment	Fire Equipment	Fire Supression Equipment	1,455	Planned Replacement Schedule	2028-2030
R	Corporate Infrastructure	To be determined	Replacement of servers and equipment at data center	2,000		2028-2030
			2028-2032 identified unfunded projects	**$ 73,168**		

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AGENDA ITEM #9.2

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2023 CAPITAL BUDGET
PROJECT FUNDING (SCHEDULE W)

				FUNDING SOURCES								
				GRANTS/DEV.CHRGS/RESERVES			RATE/TAX PAYER SUPPORT					
Sch	Project No.	Facility/Project Name	Gross Cost	Canada Community Building Fund	Other External Funding	Reserves & Dvlpmnt Chrg	Infrastruct. Levy	Tax Support	Water / Wastewater	Capital out of Revenue	Debenture	Notes
B	P23-060	2023 Road Resurfacing Program	2,361,400	519,000		-				138,000	1,704,400	
B	P22-064	Blue Spruce / Huntingwood	411,000			-				31,000	380,000	
B	P23-103	Briarsdale / Donlon	207,700			-		207,700		-	-	
B	P23-061	Brimley Crescent Road Rehabilitation & Underground Improvements	427,500			-				32,000	395,500	
B	P18-063	Chestnut / Merritt Underground Improvements	3,169,000			-				238,000	2,931,000	
B	P23-101	Dundas / Leeson	67,000			-		67,000		-	-	
B	P23-062	Facer Street road and underground improvements	170,000			-		170,000		-	-	
B	P21-100	Flanders Watermain Improvements	129,400			-		129,400		-	-	
B	P22-061	James Street	773,000			-		85,000		52,000	636,000	
B	P19-066	Moffatt Secondary Access - Utilities	500,000			80,000				32,000	388,000	5
B	P20-065	New Access Road - Ridley Road	505,000			151,500				27,000	326,500	5
B	P22-063	Parnell Road Reconstruction	200,000			-		200,000		-	-	
B	P23-097	Traffic Signals (including pedestrian crossings)	242,000			38,720		203,280		-	-	5
B	P23-097	Traffic Signs (40 KM)	262,600			42,016		135,620		6,000	78,964	5
B	P23-067	Third Street / Old Martindale Road Reconstruction	257,000			-				19,000	238,000	
B	P23-064	Welland Canal Parkway Road Rehabilitation & Drainage Improvements	142,000			-		142,000		-	-	
C	P23-040	2023 Sidewalk Replacement Program	360,000			-		253,720		8,000	98,280	
C	P23-040-1	2023 Walkway Improvements	50,000			-		50,000		-	-	
C	P18-063	Chestnut / Merritt Underground Improvements	650,000			325,000				24,000	301,000	5
C	P23-041	New Sidewalk installation Program	67,000			10,720		56,280		-	-	5
C	P23-068	Active Transportation	250,000	250,000		-				-	-	
C	P23-068	Active Transportation Priorities	1,036,000			165,760				65,000	805,240	5
D	P20-065	New Access Road - Ridley Road	231,000			-				17,000	214,000	
D	P23-060	2023 Road Resurfacing Program	138,000			-				10,000	128,000	
D	P23-061	Brimley Crescent Road Rehabilitation & Underground Improvements	311,000	270,000		-				3,000	38,000	
D	P23-006	Catch Basins and Storm Service Installations	100,000			-	100,000			-	-	
D	P18-062	Lake Street Underground Improvements	80,000			-				6,000	74,000	
D	P18-063	Chestnut / Merritt Underground Improvements	498,000	386,000		-				8,000	104,000	
D	P23-015	Design for next years projects	50,000			-	50,000			-	-	
D	P23-014	Sewer CCTV Inspections	100,000			-	100,000			-	-	
D	P23-016	Storm Sewer Spot Repairs	100,000			-				8,000	92,000	
E	P23-061	Brimley Crescent Road Rehabilitation & Underground Improvements	190,000			-			190,000	-	-	
E	P18-062	Lake Street Underground Improvements	221,000			-				99,000	122,000	
E	P18-063	Chestnut / Merritt Underground Improvements	378,000			-			378,000	-	-	
E	P23-015	Design for next years projects	50,000			-			50,000	-	-	
E	P23-010	Extraneous Flow Elimination	50,000			-			50,000	-	-	
E	P23-001	Phelps/Turner/Smythe	95,000			-			95,000	-	-	
E	P23-012	Sanitary Sewer Flushing & Reaming	25,000			-			25,000	-	-	
E	P23-005	Sanitary Sewer Reaming & Lining	1,000,000	800,000		-			200,000	-	-	

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2023 CAPITAL BUDGET
PROJECT FUNDING (SCHEDULE W)

				FUNDING SOURCES								
				GRANTS/DEV.CHRGS/RESERVES			RATE/TAX PAYER SUPPORT					
Sch	Project No.	Facility/Project Name	Gross Cost	Canada Community Building Fund	Other External Funding	Reserves & Dvlpmnt Chrg	Infrastruct. Levy	Tax Support	Water / Wastewater	Capital out of Revenue	Debenture	Notes
E	P23-011	Sanitary Sewer Spot Repair Program	500,000	200,000		-			300,000	-	-	
E	P23-014	Sewer CCTV Inspections	300,000			-			300,000	-	-	
E	P23-019	Sewershed Analysis	10,000			-			10,000	-	-	
F	P23-018	Pollution Control Priority Program	250,000			-			250,000	-	-	
G	P23-102	Adel / Donalda / Dundalk / Regent / Rainbow	1,610,000			-			175,000	646,000	789,000	
G	P23-103	Briarsdale / Donlon	543,000			-			543,000	-	-	
G	P23-061	Brimley Crescent Road Rehabilitation & Underground Improvements	566,000			-			566,000	-	-	
G	P18-062	Lake Street Underground Improvements	348,000			-			348,000	-	-	
G	P18-063	Chestnut / Merritt Underground Improvements	629,000			-			629,000	-	-	
G	P23-015	Design for next years projects	50,000			-			50,000	-	-	
G	P23-101	Dundas / Leeson	865,000			-			865,000	-	-	
G	P23-104	Kimbermount / Lake / Monique	1,450,000	1,352,000		-			98,000	-	-	
G	P23-105	Mohawk/Scott/Village Green	1,335,000			-			281,000	474,000	580,000	
G	P23-106	Jasmine/Josephine	680,000			-			241,731	197,000	241,269	
G	P23-107	Carriage / Grove	1,044,000			-				470,000	574,000	
G	P23-001	Phelps/Turner/Smythe	450,000			-			450,000	-	-	
G	P23-116	Stortz Hydrant Port Conversions	450,000			0			450,000	-	-	
G	P23-118	Valves, Hydrants & Services	50,000			0			50,000	-	-	
G	P23-100	Welland Avenue	1,860,000			0				837,000	1,023,000	
H	P22-122	Battersea Avenue Culvert (C118M)	600,000			0				45,000	555,000	
H	P22-130	Secord Creek Construction and Culvert (C109M) Replacement	179,700			0				13,000	166,700	
H	P22-063	Parnell Road Reconstruction	1,767,500			0				133,000	1,634,500	
H	P15-122	Third Street Culvert Replacement, 90 m South of CN Tracks	150,000			0				11,000	139,000	
H	P22-122	Melody Trail Culvert (C077S)	700,000			0				53,000	647,000	
H	P17-125	South Service Road Bridge Removal or replacement (B011S)	805,000			0				60,000	745,000	
I	P22-152	Sunset Beach(Municipal Beach)	208,000			52000				12,000	144,000	5
J	P23-130	Dick's Creek EA/Design for Constr Ph 1, Ph 2 & Ph 3	600,000			0				45,000	555,000	
J	P17-129	Martindale Pond Weir Replacement	4,000,000	503,251		0				262,000	3,234,749	
J	P22-130	Secord Creek Construction and Culvert (C109M) Replacement	100,000			0				8,000	92,000	
K	RN20-stp	St. Paul Street at CNR Bridge Replacement	76,000			0				6,000	70,000	
K	RNxx-GDR	Region - Glenridge Ave at CNR Bridge Replacement	800,000			0				60,000	740,000	
K	RNxx-MLL	Region RR87 Main Street, Lock Street & Lakeport Road	2,350,000			0			961,388	625,000	763,612	
K	RNxx-LL	Region - Niagara Street (RR48) Reconstruction	525,000			0				39,000	486,000	
K	RNxx-LL	Region - Niagara Street (RR48) Reconstruction	668,000			0			668,000	-	-	
L	P21-156	Splashpad, Sun Shelter & Washroom (funding top-up)	350,000			350000				-	-	5
L	P23-160	Parks Renewal Plan - Port Dalhousie Multi-Use Court	332,931			21905		20,000		22,000	269,026	5
L	P23-161	Parks Renewal Plan - Alex Mackenzie Basketball Court & Playground	444,612			29372		25,000		29,000	361,240	5
L	P23-162	Parks Renewal Plan - Bartlett Park - Playground & multi-use court	527,845			34849		30,000		35,000	427,996	5

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2023 CAPITAL BUDGET
PROJECT FUNDING (SCHEDULE W)

				FUNDING SOURCES								
				GRANTS/DEV.CHRGS/RESERVES			RATE/TAX PAYER SUPPORT					
Sch	Project No.	Facility/Project Name	Gross Cost	Canada Community Building Fund	Other External Funding	Reserves & Dvlpmnt Chrg	Infrastruct. Levy	Tax Support	Water / Wastewater	Capital out of Revenue	Debenture	Notes
L	P23-163	Parks Renewal Plan - Community Park Multi-Use Courts	444,612			29372		25,000		29,000	361,240	5
L	PRC20-01	Tree Planting Program	375,000			-	375,000			-	-	
L	PRC22-03	Environmentally Friendly Hanging Baskets Program (Year 2 of 3)	35,000			-	35,000			-	-	
L	PRC20-04	Memorial Bench Program (Year 4 of 6)	80,000			-	80,000			-	-	
L	PCR21-05-1	Parks Legacy Fund	250,000		125,000	-	125,000			-	-	3
L	PCR23-01	Welland Canal Fallen Workers Memorial	33,000		33,000	-				-	-	3
M	P22-137	Buchanan House Top up funds for accessibility upgrades (previously used for BBA Decomm)	120,000			4,800				9,000	106,200	5
M	P22-187	Garden City Arena Complex Demolition & Decommisioning of GCA complex	380,000			-				29,000	351,000	
M	P22-150	Municipal Beach (Sunset Beach) - Site Funding Matching (City Portion) for ICIP work - Phase 1	800,000			200,000				45,000	555,000	5
M	P22-137	Buchanan House Top up funds for accessibility upgrades (previously used for Museum HVAC)	300,000			12000				22,000	266,000	5
M	P22-138	Old Court House replace and repair basement windows	200,000			200000				-	-	4
M	P23-134	Robertson School - Main Accessibility Upgrades, add universal washroom on each floor (3), install elevator, renovate existing washrooms to FADS (4), misc internal ramps and entrance mods for barrier free access.	2,500,000			100000				180,000	2,220,000	5
M	P23-133	City Hall Replace 3 modulating air handling units	1,000,000			-				75,000	925,000	
M	P18-164	Seymour Hannah Upgrade dehumidification system for pad 2/3 - additional funds to combine with phase 1	1,000,000			0				75,000	925,000	PA
M	P23-139	Seymour Hannah renovation for Junior B Falcons	150,000			150000				-	-	4
M	P23-138	Seymour Hannah Replacement Vilter Compressor & panel (one compressor) - Phase 2 (compressor #2)	350,000			0				26,000	324,000	
M	P23-140	Seymour Hannah - Kiwanis Field Replace Turf	1,300,000			-				98,000	1,202,000	
M	P23-141	Merritton Park - Site Replace existing baseball field (George Taylor) lighting with LED fixtures & Musco Controls	400,000			-				30,000	370,000	
M	P23-142	Port Dalhousie Lions Park - Pool Renovate Change rooms - interior/exterior & add accessibility	600,000			-				45,000	555,000	
M	P23-144	Dunlop Drive Seniors Centre Roofing Replacement	260,000			260,000				-	-	4
M	P23-143	Dalhousie House - Site Reconstruct Retaining wall & stairs	500,000			-				38,000	462,000	
M	P18-181	St. Catharines Museum Replace air handling unit 6, condensing unit 5, install humidifier including all BAS connection and structural/electrical components	500,000			-				38,000	462,000	
M	P17-129	Martindale Pond Weir Replacement	400,000			0				30,000	370,000	
M	TBD23-16	Meridian Centre Plant motor upgrade (2 glycol pumps, 2 compressor motors)	50,000			50,000				-	-	2
M	TBD23-17	Meridian Centre - Parking booth - front lot	20,000			-				2,000	18,000	
M	TBD23-18	Meridian Centre - POS Replacement	136,000			-				10,000	126,000	
M	TBD23-19	Meridian Centre - Daktronics Upgrade	136,000			-				10,000	126,000	
M	TBD23-20	Meridian Centre - Main curtain modification	67,000			67,000				-	-	2
M	TBD23-21	Meridian Centre - Suite level food cooking equipment addition	70,000			70,000				-	-	2

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2023 CAPITAL BUDGET
PROJECT FUNDING (SCHEDULE W)

				FUNDING SOURCES								
				GRANTS/DEV.CHRGS/RESERVES			RATE/TAX PAYER SUPPORT					
Sch	Project No.	Facility/Project Name	Gross Cost	Canada Community Building Fund	Other External Funding	Reserves & Dvlpmnt Chrg	Infrastruct. Levy	Tax Support	Water / Wastewater	Capital out of Revenue	Debenture	Notes
M	TBD23-22	Meridian Centre - Mobile ordering platform	30,000			30,000				-	-	2
M	P23-145	PAC - Replace lighting fixtures in film house	80,000			-				6,000	74,000	
M	P23-146	PAC - Replacement of Leviton Lighting control system	60,000			-				5,000	55,000	
M	P23-147	PAC - Door replacements (Sliding Doors & other high priority doors)	50,000			-				4,000	46,000	
M	TBD23-26	Central Branch renovation (Phase 1)	4,850,000			3,055,500				135,000	1,659,500	5
N	P23-135	Carlisle Street Parking Garage Structural crack repairs (basement & stair D), and associated membrane repairs on garden park entrance ramp.	100,000			-				8,000	92,000	
N	PCI23-05	Ontario Street Parking Garage Upgrade - Parking system, cameras, servers.	600,000			-				45,000	555,000	
O	PFR23-02	CAD (Computer Aid Dispatch) Software upgrade	350,000			-				26,000	324,000	
O	P23-136	Firehall #3 - Pelham Rd Rebuild Station No. 3 - Design Funds only	500,000			185,000				24,000	291,000	5
O	P23-137	Fire Hall #4 - Merritt St Parapet Flashing/Siding rework to prevent water infiltration	100,000			-				8,000	92,000	
P	PFL23-01	International 7400 SIngle Axle Dump Truck (#203)	360,000			-			360,000	-	-	
P	PFL23-02	Freightliner Tandem Dump Truck with Roller Pro (61)	380,000			-				29,000	351,000	
P	PFL23-03	International Workstar 7600 Tandem Dump Truck (72)	420,000			-				32,000	388,000	
P	PFL23-04	International Workstar 7600 Tandem Dump Truck (73)	420,000			-				32,000	388,000	
P	PFL23-05	2004 Sutphen 95' aerial - Unit 26	1,946,780			-				146,000	1,800,780	
Q	PCI17-01	Enterprise Resource Planning (ERP) System Implementation (included in 2023 Capital Forecast)	3,270,000		-	130,800				235,000	2,904,200	5, PA
Q	PCI23-02	Backup Data Centre	500,000			-				38,000	462,000	
Q	PCI23-03	Annual Computer Infrastructure Replacement	150,000		-	-	69,000			6,000	75,000	
Q	PCI23-04	IT Security software (log management tools)	200,000			-	200,000			-	-	
Q	ST-20-15	Asset Management Plan - Phase 2	260,000	125,000		-	135,000			-	-	
Q	PCI17-02	Customer Relationship Management (additional funding)	300,000			-	300,000			-	-	
	TOTAL		**$ 71,412,580**	**$ 4,405,251**	**$ 158,000**	**$ 5,846,314**	**$ 1,569,000**	**$ 1,800,000**	**$ 8,584,119**	**$ 6,475,000**	**$ 42,574,896**	
	Less Amounts Previously Approved by Council		**$ 4,270,000**	**$ -**	**$ -**	**$ 130,800**	**$ -**	**$ -**	**$ -**	**$ 310,000**	**$ 3,829,200**	
	Capital Budget Requiring Council Approval		**$ 67,142,580**	**$ 4,405,251**	**$ 158,000**	**$ 5,715,514**	**$ 1,569,000**	**$ 1,800,000**	**$ 8,584,119**	**$ 6,165,000**	**$ 38,745,696**	

Notes:
1 - Provincial Funding
2 - Meridian Reserve
3 - Donations
4 - Building Reserve
5 - Development Charges / Community Benefit Charges

PA - Previously Approved by Council

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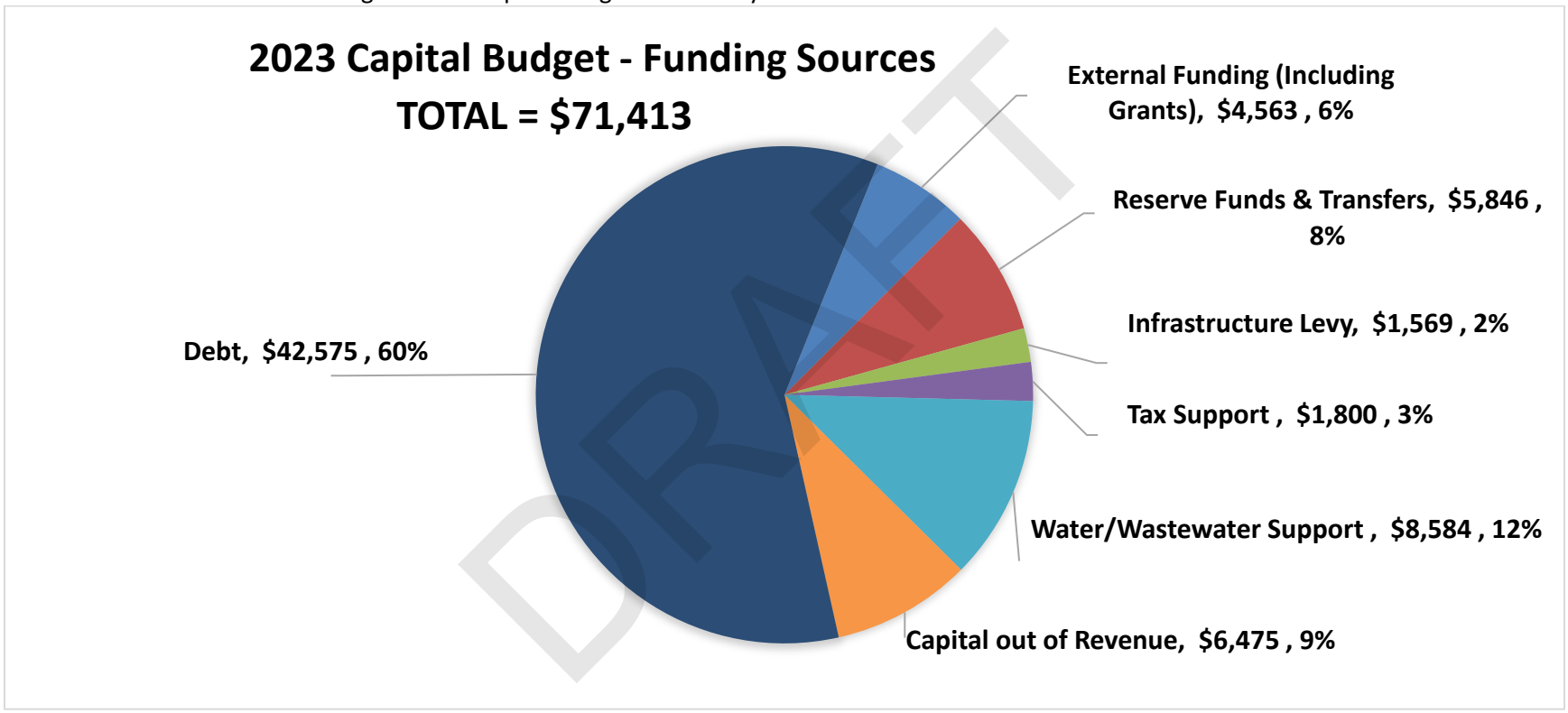
Funding Our Capital Assets
(Schedule X)

Seven different sources of funding for 2023 Capital Budget for the City of St. Catharines are shown below:

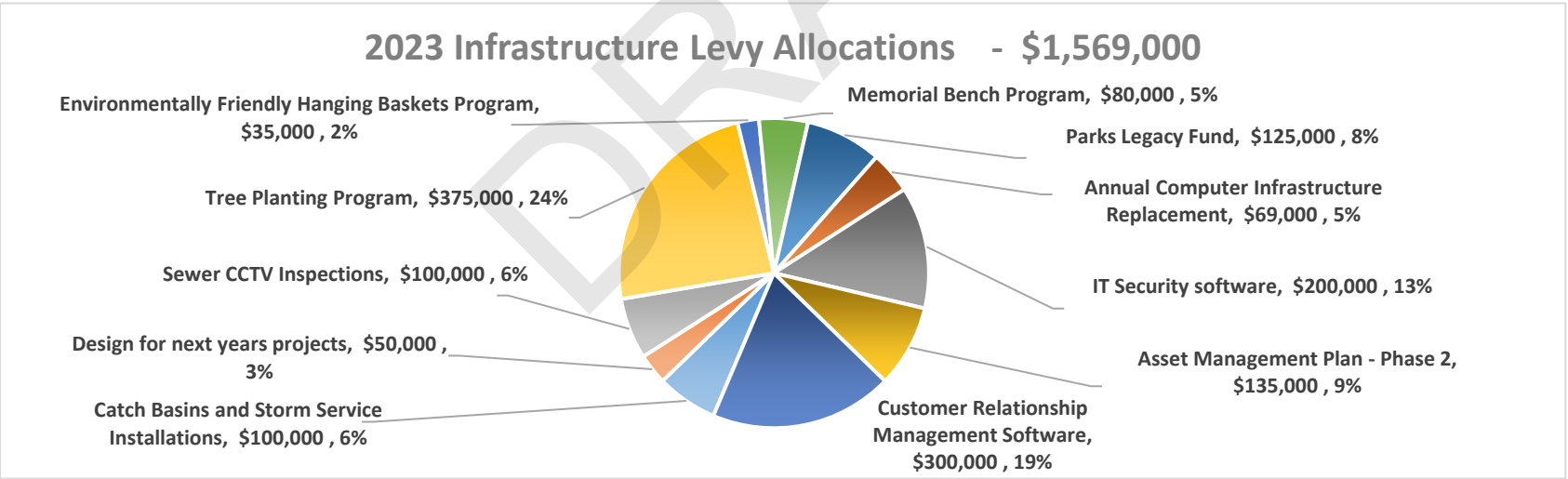


External Funding (Including Grants) - $4,563,251
Canada Community-Building Fund (CCBF) provides $4,405,251 which is the largest portion of external funding for capital projects. The CCBF grants fund various linear projects that are discussed in further detail in Schedule Y. The Parks Legacy Fund projects rely upon donor contributions of $125,000. An additional $33,000 of donations is from donations for the Welland Canal Fallen Workers memorial.

Infrastructure Levy - $1,569,000
The Infrastructure Levy was established in 2016 to address the infrastructure deficit. The funds are being utilized to fund renewal. Any funds not allocated in the year will be maintained in a reserve for use in future years for eligible projects. The annual funding has been set at 1.5% of the City's portion of the prior year tax levy, providing $1,569,000. The projects funded by the 2023 infrastructure levy are shown in the graph below.

Reserves and Project Transfers - $5,846,314
In 2022, the City introduced Community Benefit Charges to compliment the reintroduced Development Charges to recover growth costs in 2021. The 2023 Budget includes $5,019,314 of funding from these sources. The Building Reserve Fund ($610,000), Meridian Centre Capital Reserve ($50,000) and Meridian Centre Event Reserve ($167,000) is providing a total of $827,000 of funding for works related to building and facilities infrastructure.

Tax Support - $1,800,000
Road and Sidewalk rehabilitation projects and park renewal projects are included in the Capital Budget and funded from the Operating Budget. Tax support has increased from the prior year in line with the prior year forecast.



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Water/Wastewater (Rate) Support - $8,584,119
In 2019 Council approved the 10-year Financial Plan for Water and Wastewater (Water/Wastewater Plan) that included a significant increase in capital renewal, funded from rates. The Water/Wastewater Plan includes annual increases of no more than 6.5% on a typical residential household bill. The Water/Wastewater Plan was guided by the following principles (FMS-057-2019):
1) to reduce existing funding gaps, and
2) moving towards a sustainable replacement level of capital spending year over year.

The capital spending and funding amounts from rates, capital out of revenue, and debt that were included in The Water/Wastewater Plan, have been adjusted in the 2023 budget in response to the financial and operational challenges facing the City caused by COVID19. The 2023 budget and 2024-2027 forecast reflect the reallocation of the investment in Water and Wastewater. Decreased spending in years 2021-2023 is offset by increases in spending in the years 2024 - 2026, resulting in the same net investment in infrastructure over the next 6 years. However, in the short term the spending deferrals will continue to contribute to the widening infrastructure gap.

Capital out of Revenue - $6,475,000
Capital out of revenue is the portion of the project cost that is funded from the tax or rate budgets. This Council supported strategy, sets the contribution rate at 10% of the project costs funded from debt. The capital out of revenue contribution approximates one year's worth of debenture costs of the project.

As part of the COVID-19 Financial Recovery Plan, the capital out of revenue was reduced to 5% in 2022 and will slowly phase back to the 10% Council supported strategy. For 2023, capital out of revenue was set to 7.5%.

Where the City is issuing debt for water or wastewater, a separate capital out of revenue payment is required from the respective area. The capital out of revenue contribution rates for Water and Wastewater set out in the Water/Wastewater Plan range from 40% to 60%, so as to manage debt levels while increasing investment in capital. For 2023, the capital out of revenue contribution percentage has been set to 45% (Water) and 45%(Wastewater) to slowly phase in the recovery from the impacts of COVID-19.

Debt - $42,574,896
Debt is the most significant funding source for the annual Capital Budget and is utilized after all other funding has been applied. Debenture financing allows the City to spread the costs of capital over the term of debt, rather than requiring funding in the year of construction. Consistent with council approved debt strategy, debt terms for specific projects have been increased to 30 years. This change results in better alignment between debt repayment terms and expected asset life. Debt Management is necessary to ensure that the City maintains an appropriate debt level. The Council Approved Debt Management Strategy is outlined in schedule AB.

Debenture funding has been utilized to balance tax payer affordability and infrastructure sustainability. As a result of the recommendations from the Council approved Asset Management Plan, the Capital Budget has been right sized to maintain the existing level of service. As a result of this, debt now makes up 60% of the capital financing. A strategy to balance the use of debt will be developed as part of the requirement of a financial strategy for 2025 in alignment with the provincial legislation on Asset Management (O.Reg 588/17).

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Funding from Canada Community-Building Fund - $4,405,251

(Schedule Y)

The Canada Community-Building Fund (CCBF), formally known as the Federal Gas Tax Program (FGT) provides the largest ongoing external funding contribution for capital projects.

Council endorsed a five-year capital investment plan for FGT revenues in 2009 which identified continued funding for combined sewer system upgrades (storm sewer separations) and watermain replacement in conjunction with the combined sewer system upgrade and various road resurfacing projects. Council subsequently shifted focus away from underground infrastructure to include facility energy related initiatives and non-resurfacing roadwork. One of the requirements of the CCBF is that the expenditures are incremental, meaning that the funds cannot be used to displace current capital investment or reduce municipal taxes.

The City's $4,405,251 of CCBF funding is in the last year of the funding schedule. An updated 5-year funding schedule is anticipated to be released with next years Federal budget.

Below is a list of the 2023 capital projects funded by CCBF:

Schedule	Asset Category	Amount
B	Road Construction	$519,000
C	Multi-use Pathways	250,000
D	Storm Sewer Collection	656,000
E	Sanitary Sewer Collection	1,000,000
G	Water Distribution	1,352,000
J	Watercourses	503,251
Q	Asset Management Plan	125,000
	Total	4,405,251

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Debt Management Strategy
(Schedule Z)

The currently established Debt Management Strategy, with Council's ongoing support, has the following criteria:

1. **Eligibility**: Not all capital projects are suited for debt financing. The City's strategy is to recommend debt financing only for infrastructure purposes. Large projects that provide assets with well-defined benefits to the community, have long asset lives and the ability to leverage additional financing elsewhere are eligible for debt financing.
2. **Sustainable Level of Borrowing:** For debt management purposes, the City shall limit external debt charges to a maximum of 10% of the City's total own source revenues. This guideline ensures that the debt service costs are sustainable within the operating budget. It protects against debt servicing becoming an increasing burden and a larger portion of the City's budget.
3. **Capital Out of Revenue Contributions:**

   Tax Supported Projects - The City requires a down payment equal to 10% of the tax supported capital costs eligible for debt financing. This down payment reduces the amount to be borrowed and matches the approximate costs of one year's debt service to the year in which project is approved. As a result, Council will raise, through property taxes, an amount which will be equivalent of at least one year's debt charges for each particular tax supported project.

   Water / Wastewater Projects - The capital from revenue contributions for Water/Wastewater projects include increasing revenue percentages over the next ten (10) years. Consistent with the Water / Wastewater Financial Plan, targets of at least 40/60 are intended to balance asset renewal and debt levels.
4. **Debenture Term considerations and Limitations:** Tax supported debentures may be issued for terms between 5 to 10 years. Debentures funding Water and Wastewater capital assets may be issued for terms up to 30 years. Debentures funding specific large projects, may in consultation with Council be issued for terms up to 30 years. Furthermore, debt terms will be for no more than 75% of the Asset's useful life and the selection of term will consider available interest rates.

The capital out of revenue contributions of 7.5% for tax supported projects included in the 2023 Capital Budget are outside of the current Debt Management Strategy's guidance. These reduced rates will provide temporary relief to the 2023 Operating Budget. The debt funded projects remain in compliance with criteria 1 listed above.

The debt charges for 2023 are forecast to increase marginally above 10% of the City's own source revenues. In compliance with criteria 2 of the Strategy, the future year forecasts outlined below indicate that the debt charge ratio will move above 10%. These forecasts will be updated and the debt servicing ratios will continue to be monitored and reviewed with Council on a regular basis.

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Debt Management Strategy
(Schedule Z)

The Municipal Act requires that a Municipality have a five-year capital financing forecast. Ontario Regulation 403/02 limits annual debt charges to no more than 25% of the City's own source revenues. Using this guideline, the City could increase its debt (approximately) by a further $126.4 million based on an interest rate of 7%, which is the rate the Ministry of Municipal Affairs uses for illustrative purposes. (Calculation is provided on Schedule AA). Using a lower estimated borrowing rate of 5%, the City's additional debt capacity would be $143.2 million.

The City Treasurer has updated the Debt Repayment Limit for the City, and the debenture amount proposed in the 2023 Capital Budget will not cause the City to exceed its limit.

In 2021, the City's debt charges were 9.6% of the City's own source revenues. Each year, the Ministry of Municipal Affairs, produces a financial indicator review that states that debt costs between 5% and 10% are considered moderate risk – which is where the City of St Catharines currently resides. Table 1 below reports the estimated impact of increased borrowing activities for the next five years.

Table 1 below shows the total debt charges as a percentage of own source revenues exceeding the 10% upper limit in 2022. There are many assumptions to determine this percentage, including the amount of debt to be issued, timing of the debt issuances and total amount of expenditures. The assumptions made are conservative. The forecasts are also impacted by the reduction in own source revenues in 2020 as a result of COVID-19. This projection assumes that future debt is issued for a 10-year term with an interest rate of 5%, or a 30 year term with an interest rate of 6%. Debt terms are consistent with the Council Approved Capital Financing and Debt Management Strategy. The interest rate on recent debentures issues has been increasing but still lower than our assumptions (2022-3.80%, 2021 -1.78%). Any changes made to any of the assumptions – whether that is timing, term or interest rate for debt issuances, or the level of capital spending supported by debt, will have an impact on the debt charges as a percentage of own source revenues, the projected debt balance and future tax levy impacts.

As the City continues to refine its Asset Management Plan and formulate its future debt needs these forecasts will be updated and the debt servicing will continue to be monitored and reviewed on a regular basis, for compliance with Council set limits.

Table 1

	2022	2023	2024	2025	2026	2027
Outstanding Debt (external)	$118.9m	$141.7m	$155.1m	$179.5m	195.2m	192.1m
Outstanding Debt (internal)	2.8m	2.2m	1.5m	0.8m	-	-
Debt per Household	2,028	2,407	2,574	2,925	3,126	3,038
Total Annual Debt Servicing	20.4m	20.7m	22.4m	24.9m	29.4m	31.1m
Debt Servicing as % of Own Source Revenues	10.02%	10.18%	10.76%	11.74%	13.61%	14.10%

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2023 CAPITAL BUDGET -MUNICIPAL ACT DEBT LIMITS (SCHEDULE AA)

Calculation of Debt Charges:	(Per 2021 FIR schedule 81)					
Total Principal					$	13,944,756
Total Interest						3,990,928
						17,935,684
Payments of Long Term Commitments and Liabilities (SLC42 6010 01)						1,648,359
NET DEBT CHARGES				A	$	19,584,043
Calculation of Annual Repayment Limit:						
Total Revenue Fund Revenue (sch10 9910)					$	256,981,146
Excluded Revenue Amounts						
Tile Drainage and Shoreline Assistance (SLC 12 1850 04)						-
Ontario Grants - incl. Grants for TCAs (SLC 10 0699 01+SLC 10 0810 01+ SLC10 0815 01)						(10,955,474)
Canada Grants - incl. Grants for TCAs (SLC 10 0820 01+SLC 10 0825 01)						(8,223,116)
Deferred Revenue Earned (Provincial Gas Tax) (SLC 10 830 01)						(2,000,033)
Deferred Revenue Earned (Canada Gas Tax) (SLC 10 831 01)						(6,895,767)
Other Municipalities including revenue for TCA (SLC 10 1098 01+SLC 101099 01)						(4,560,473)
Gain/Loss on sale of land & capital assets (SLC 10 1811 01)						(352,317)
Deferred revenue earned (Development Charges) (SLC 10 1812 01)						-
Deferred revenue earned (Development Charges) (SLC 10 1812 01)						(30,169)
Deferred revenue earned (Recreation Land(the planning act) (SLC 10 1813 01)						(218,636)
Other Deferred revenue earned (SLC 10 1814 01)						(5,097,904)
Donated Tangible Capital Assets (SLC 53 0610 01)						(14,290,943)
Increase/Decrease in Gov't Business Enterprise equity (SLC 10 1905 01)						(271,323)
						(52,896,155)
NET REVENUE FUND REVENUES					$	204,084,991
25% OF NET REVENUE FUND REVENUE				B	$	51,021,248
Adjustments to Annual Repayment Limit						
ANNUAL REPAYMENT LIMIT UNDER REGULATION				C (B - A)	$	31,437,205
Unfinanced prior year capital projects/unissued debt (details in AA-1)			$ 56,934,155			
Capitalized Annual Repayment	Years	Rate				
	10	5.00%		D		7,373,234
ADJUSTED ANNUAL REPAYMENT LIMIT				(C - D)	$	24,063,971
Remaining Debt Capacity						
Capitalized Debt Capacity						$185,815,605
2023 Capital Budget						(42,574,896)
REMAINING DEBT CAPACITY						143,240,709

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2023 CAPITAL BUDGET - SCHEDULE AA-1

MUNICIPAL ACT DEBT LIMITS

UNFINANCED PRIOR YEAR CAPITAL PROJECTS/UNISSUED DEBT
(INCLUDES 2022 CAPITAL PROJECTS)

	Debt Amount
Administration & Operational Centres	$ 1,006,277
Arenas and Recreational Faciltiies	5,361,308
Bridges and Culverts	1,292,996
Cemetery	38,017
Corporate Infrastructure	6,827,000
Fire	4,853,643
Other Special Purpose Facilities	3,211,996
Parking Operations	90,972
Parks, Structures and Facilities	3,116,700
Pollution Control Plan	1,175,438
Regional Projects	351,900
Roads	13,185,116
Sanitary Sewer Collection	760,520
Shoreline Protection	335,700
Sidewalks, Walkways & Multi Use Pathways	3,160,049
Storm Sewer Collection (incl. Separation)	5,422,204
Water Distribution System	4,086,118
Watercourses	2,658,200
TOTAL	$ 56,934,155

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Capital Budget and Debt – Municipal Comparators
(Schedule AB)

Unlike Federal and Provincial budgets, municipal budgets are very capital intensive. Borrowing for capital projects provides many economic benefits for the future of the municipality, especially so, as choosing to be debt-free would result in substantially less infrastructure being renewed and available to the public.
City Council has identified five single-tier and five lower-tier municipalities with similar characteristics to the City of St. Catharines, which are shown in Graph 1 below

Graph 1. Debt Levels Comparator Municipalities

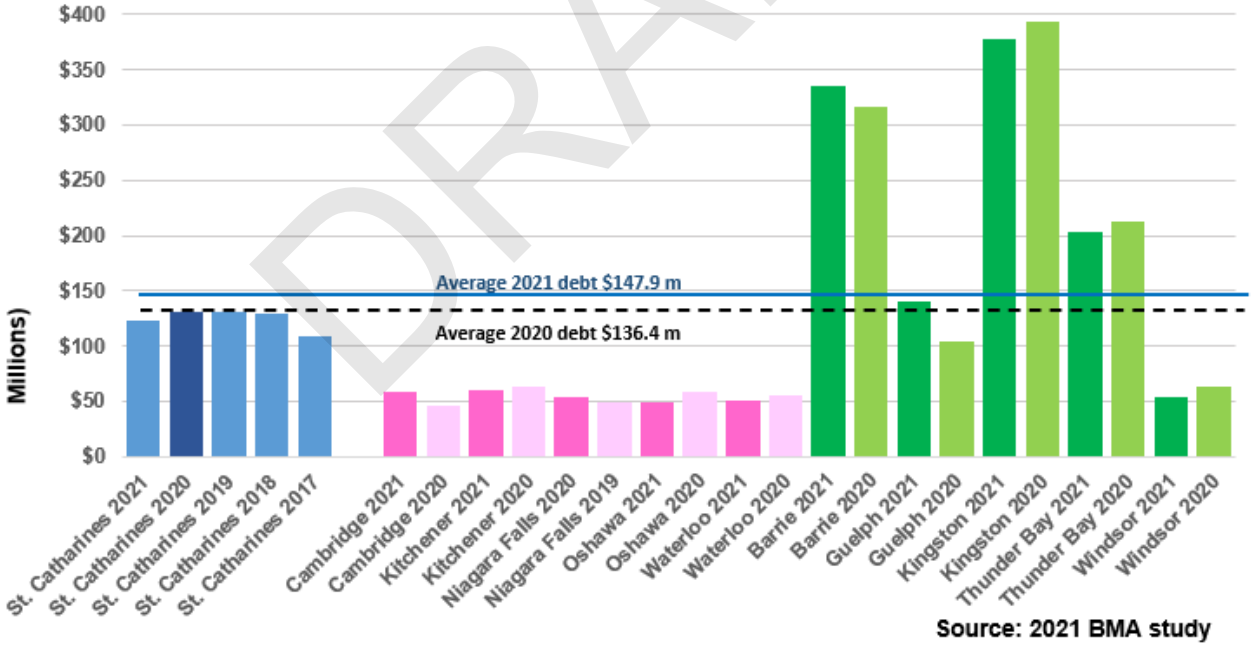

Table 2 below shows the City of St. Catharines debt burden for the last four years (including internal debt).

Table 2 – City of St. Catharines Outstanding Debt (Millions)

2018	$128.5
2019	$131.1
2020	$130.1
2021	$123.0

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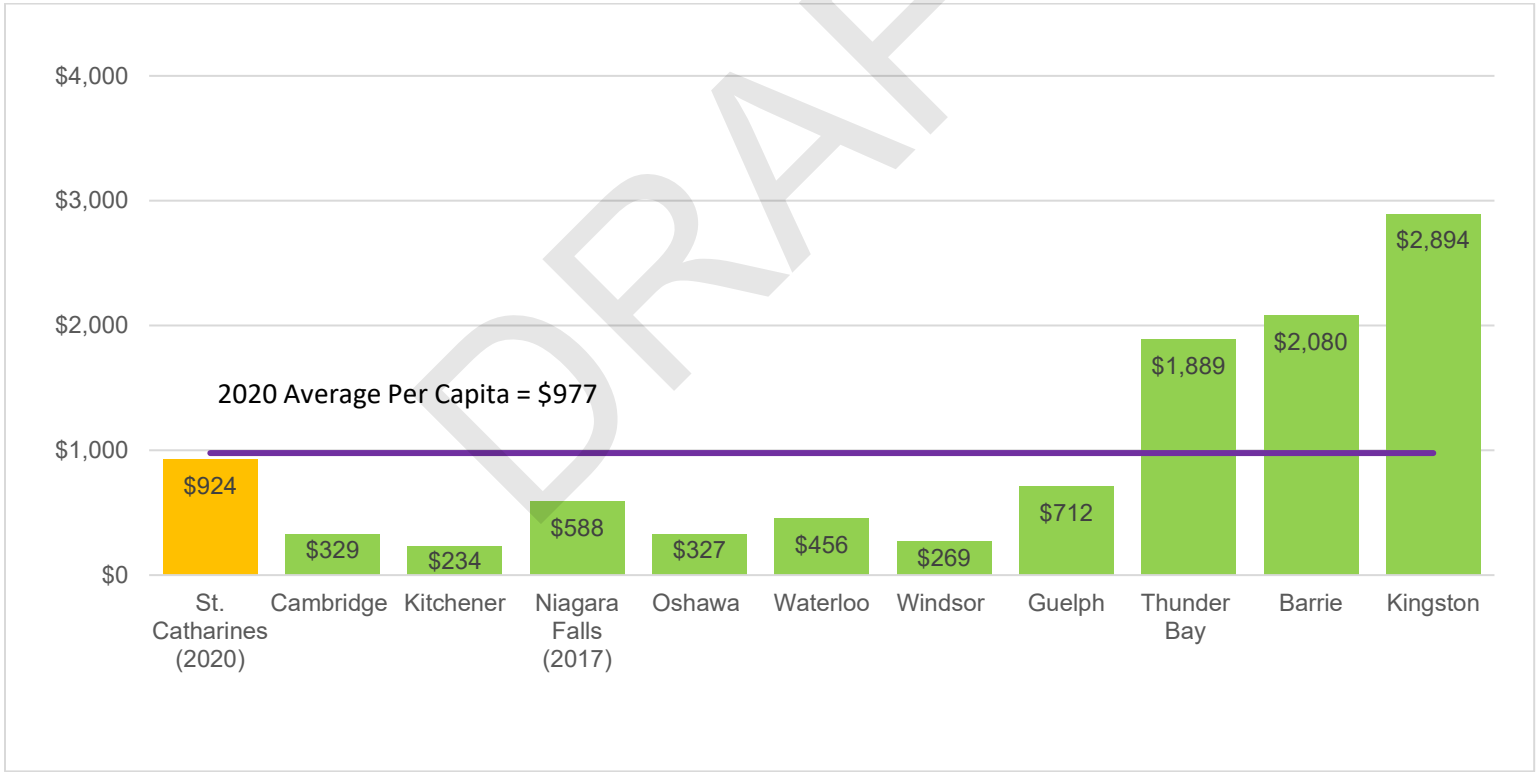
Capital Budget and Debt – Municipal Comparators
Schedule AB (continued)

Debt per capita is another common debt ratio. The latest data available from the 2021 BMA Study based on 2020 FIR data is shown in the Graph 2 below. The City of St. Catharines total debt outstanding per capita for 2020 was $924, which is above the average for all reporting municipalities in the BMA study. The 2020 average for municipalities in the 2020 BMA Study was $685.

Looking amongst our comparators the data is a bit different. The comparator municipalities' average for 2019 was $977.

St. Catharines outstanding debt per capita of $924 for 2020 (2019 - $933) is below the average for the Council approved municipal comparators. While St. Catharines' debt is at the higher end of the comparators, it is still at a reasonable level in comparison to other municipalities, particularly older cities with similar aged infrastructure.

Graph 2. Debt Per Capita Comparator Municipalities



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2023 CAPITAL BUDGET
REPRIORITIZED PRIOR FOUR YEAR FORECASTS (SCHEDULE AC)

This summary of capital expenditures compares the projected four year forecast (2023-2026) included in the 2022 Capital Budget with the 2023 capital budget and forecast for the same forecast time period.

	2023			2024			2025			2026		
	2022 Forecast	2023 Forecast	Variance $	2022 Forecast	2024 Forecast	Variance $	2022 Forecast	2025 Forecast	Variance $	2022 Forecast	2026 Forecast	Variance $
CAPITAL EXPENDITURES												
Roads	12,654,000	9,824,600	(2,829,400)	10,771,951	12,849,951	2,078,000	8,595,001	12,051,000	3,455,999	9,147,000	9,347,000	200,000
Sidewalks, Walkways and Multi-Use Pathways	2,092,400	2,413,000	320,600	1,808,663	2,720,663	912,000	1,701,663	1,887,663	186,000	1,701,663	1,718,663	17,000
Storm Sewer Collection System (Incl. Sewer Sep.)	2,275,168	1,608,000	(667,168)	3,815,100	3,815,100	-	3,970,000	4,542,000	572,000	4,130,000	4,130,000	-
Sanitary Sewer Collection System	5,087,133	2,819,000	(2,268,133)	5,805,376	8,737,000	2,931,624	6,245,844	6,245,844	-	8,032,781	8,032,781	-
Pollution Control	1,000,000	250,000	(750,000)	1,000,000	1,000,000	-	1,000,000	1,000,000	-	1,000,000	1,000,000	-
Water Distribution System (Watermains)	8,240,225	11,930,000	3,689,775	13,760,749	13,761,000	251	12,629,964	10,498,964	(2,131,000)	16,904,363	15,442,363	(1,462,000)
Bridges and Major Culverts	2,540,000	4,202,200	1,662,200	1,300,000	1,695,500	395,500	-	1,765,000	1,765,000		230,000	230,000
Shoreline Protection	284,000	208,000	(76,000)	140,000	255,000	115,000	1,693,000	2,002,000	309,000	1,481,000	1,544,000	63,000
Watercourses	6,830,000	4,700,000	(2,130,000)	3,930,000	1,800,000	(2,130,000)	664,000	2,794,000	2,130,000	910,000	910,000	-
Regional Projects	8,041,200	4,419,000	(3,622,200)	1,862,000	1,102,000	(760,000)	7,492,000	10,114,000	2,622,000		2,991,000	2,991,000
Community Recreation and Culture Services	3,860,000	2,873,000	(987,000)	7,270,000	9,351,000	2,081,000	3,255,000	3,901,000	646,000	7,125,000	7,221,500	96,500
Buildings and Facilities (Including Accessibility)	6,083,000	16,309,000	10,226,000	9,745,000	12,543,000	2,798,000	7,930,000	12,489,000	4,559,000	8,080,000	14,300,000	6,220,000
Parking Services	25,000	700,000	675,000	1,050,000	1,075,000	25,000	-	-	-	60,000	-	(60,000)
Fire Services	7,600,000	950,000	(6,650,000)	8,186,000	120,000	(8,066,000)	8,000,000	7,700,000	(300,000)		8,627,299	8,627,299
Fleet	1,260,000	3,526,780	2,266,780	-	2,536,231	2,536,231	310,000	-	(310,000)	1,797,000	-	(1,797,000)
Corporate Infrastructure	5,300,000	4,680,000	(620,000)	2,920,000	2,600,000	(320,000)	2,000,000	470,000	(1,530,000)	2,000,000	200,000	(1,800,000)
Transit Commission	1,050,000	-	(1,050,000)	1,050,000	-	(1,050,000)	1,050,000	-	(1,050,000)	1,050,000	-	(1,050,000)
	74,222,126	71,412,580	(2,809,546)	74,414,839	75,961,445	1,546,606	66,536,472	77,460,471	10,923,999	63,418,807	75,694,606	12,275,799

Projects Added/Increased	
Central Library Renovation Added	4,850,000
Buidling/Facility Upgrades & Repairs Increased	2,276,000
Robertson School Accessibility Added	2,500,000
Kiwanis Turf Field Replacement Increased	600,000
Parnell Road Increased Reconstruction	1,512,200
Third Street Culvert Replacement Added	150,000
Asset Management Study - LOS Review Added	260,000
Customer Mgmt Software Added	300,000
Enterprise Resource Planning Increased	470,000
Park Renewal Plan	250,000
Splashpad, Sun Shelter & Washroom Increased	350,000
Welland Canal Fallen Workers Mem. Added	33,000
Firehall upgrade and repairs Increased	400,000
Dispatch Software upgrade Added	350,000
Single Axle Dump Truck Added	360,000
Fire Truck aerial Added	1,946,780
Parking Garage Repairs Increased	675,000
Region - Niagara Street Reconstruction Added	525,000
Region - Glenridge Ave/CNR Bridge Added	800,000
Region - St. Paul Street/ CNR Bridge Added	76,000
Sunset Beach (Municipal Beach) Increased	24,000
Active Transportation Increased	187,600
Sidewalk Installation & Replace Increased	133,000
Watermain Improvement Program Increased	3,514,775
	$ 22,543,355

Projects Added/Increased	
Bridges and Major Culverts Increased	395,500
ERP Software Increased	680,000
Data Centre and Other Hardware Increased	1,500,000
James Street Park Added	1,620,000
Multi-Use Recreational Facility Feasibility Study	400,000
Park Renewal Program Increased	56,000
Tree Planting Program	5,000
Firetruck Replacement Increased	350,231
Carlisle Street Parking Garage Replacement Added	25,000
Region - Glendale Avenue RR89 Improvements Added	490,000
Region - Martindale Road JR Stock Bridge at Richardson Creek Added	150,000
Sanitary Sewer Improvement Program Increased	2,931,624
Shoreline Protection Increased	115,000
Active Transportation Increased	250,000
Priority Road Program Increased	1,133,000
Sidewalk Improvement Program Increased	1,607,000
Watermain Improvement Program Increased	251
Central Library Renovation Added	3,903,000
	$ 15,611,606

Projects Added/Increased	
Building and Facilities Improvement Increased	1,495,000
Bridges and Culvert Program Increased	1,765,000
ERP Software Increased	270,000
Parks Renewal Plan Increased	36,000
Port Dalhousie Splash Pad Increased	600,000
Tree Planting Program Increased	10,000
Firehall Upgrades and Repairs Increased	700,000
Region - Louth Street (RR72) Reconstruction Increased	78,000
Region RR87 Main Street, Lock Street & Lakeport Road Added	5,535,000
Shoreline Improvement Program Increased	309,000
Storm Sewer Improvement Program and Combined Sewer Separations Increased	572,000
Active Transportation Increased	186,000
Roads Priority Program Increased	3,455,999
Francis Creek Added	2,130,000
Central Library Renovation Added	3,064,000
Firehall #3 Rebuild	5,500,000
	$ 25,705,999

Projects Added/Increased	
Building and Facilities Increased	6,220,000
Bridges and Culverted Deferred	230,000
Memorial Bench Program Added	80,000
Park Renewal Program Increased	1,500
Tree Planting Program Increased	15,000
Firehall #1 - Geneva St Renovation and expansion of headquarters - Added	6,000,000
Fleet Increased	330,299
Region - St Paul St. W (RR81) Reconstruc	2,991,000
Shoreline Protection Program Increased	63,000
Sidewalk Replacement	17,000
Roads Priority Program Increased	200,000
Firehall #1 Expansion Phase 1	6,500,000
	$ 22,647,799

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Less: Projects Decreased/Deferred	
IT Hardware & Software Deferred	1,650,000
James Street Park Deferred	1,620,000
Firehall #1 Renovation / Expansion Deferred	6,500,000
Fire Equipment SCBA - expedited approval	900,000
Dump Truck with Roller Decreased	40,000
Pollution Control Program Decreased	750,000
Region - Glendale Avenue RR89 Deferred	490,000
Region - RR87 Main St., Lock St. & Lakeport Rd. Decreased	5,201,200
Sanitary Sewer Improvement Decreased	1,600,133
Shoreline Protection Study Deferred	100,000
Storm Sewer Improvement Program and Combined Sewer Separations Decreased	667,168
Transit - Removed	1,050,000
Traffic Signal Program Decreased	331,400
Roads Priority Program Decreased	2,323,000
Francis Creek Watercourse Deferred	2,130,000
	$ 25,352,901
	$ (2,809,546)

Less: Projects Decreased/Deferred	
Building and Facilities Decreased	1,105,000
Customer Relationship Management	1,500,000
Water Wastewater System Deferred	1,000,000
Firehall Upgrades and Repairs Decreased	380,000
Region - Niagara Street (RR48) Reconstruc	1,400,000
Transit - Removed	1,050,000
Francis Creek -	2,130,000
Firehall #3 Rebuild	5,500,000
	$ 14,065,000
	$ 1,546,606

Less: Projects Decreased/Deferred	
Computer Infrastructure Replacement	1,800,000
Fleet deferred	310,000
Region - St Paul St. W (RR81) Reconstruction Deferred	2,991,000
Transit - Removed	1,050,000
Watermain Improvement Program	2,131,000
Firehall #1 Expansion Phase 1	6,500,000
	$ 14,782,000
	$ 10,923,999

Less: Projects Deferred/Decreased	
Annual Computer Infrastructure Replacement	1,800,000
Parking Lot Upgrades	60,000
Transit - Removed	1,050,000
Watermain	1,462,000
Firehall #1 Expansion Phase 2	6,000,000
	$ 10,372,000
	$ 12,275,799

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2023 CAPITAL BUDGET SORTED BY WARD - LINEAR PROJECTS
(SCHEDULE AD)

Schedule	Project No.	Project Name / Location	Details	WARD
B	P23-103	Briarsdale / Donlon	Spot curb repairs & replace asphalt road surface	1
B	P18-063	Chestnut / Merritt Underground Improvements	Additional funding for utility relocates, streetscaping, streetlights and road reconstruction	1
B	P23-101	Dundas / Leeson	Spot curb repairs mill and resurface existing roadway in conjunction with watermain replacement	1
B	P19-066	Moffatt Secondary Access - Utilities	Utility relocates for Moffat Secondnary Access	1
B	P23-067	Third Street / Old Martindale Road Reconstruction	Reconstruction, realignment and widening of roadway to allow for bike lanes	1
C	P18-063	Chestnut / Merritt Underground Improvements	Additional funding for installation of new and replacement of s/w in conjunction with road reconstruction	1
D	P18-063	Chestnut / Merritt Underground Improvements	Additional funding for replacement of storm sewer in conjunction with road reconstruction	1
E	P18-063	Chestnut / Merritt Underground Improvements	construction funding for replacement of san sewers in conjunction with road reconstruction	1
E	P23-001	Phelps/Turner/Smythe	Installation of a new sewer section in conjunction with works for new development	1
G	P23-103	Briarsdale / Donlon	Replacement of existing C.I. and D.I. watermain	1
G	P18-063	Chestnut / Merritt Underground Improvements	Construction funding for replacement of w/m in conjunction with road reconstruction	1
G	P23-101	Dundas / Leeson	Repalcement of existing C.I. watermain	1
G	P23-107	Carriage / Grove	Replacement of existing C.I. watermain	1
G	P23-001	Phelps/Turner/Smythe	Replacement of watermain in conjunction with work for new development	1
H	P22-122	Battersea Avenue Culvert (C118M)	Replace or reline the structure.	1
H	P22-130	Secord Creek Construction and Culvert (C109M) Replacement	Replace existing structure with watercourse rehabilitation works	1

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2023 CAPITAL BUDGET SORTED BY WARD - LINEAR PROJECTS
(SCHEDULE AD)

Schedule	Project No.	Project Name / Location	Details	WARD
H	P22-122	Melody Trail Culvert (C077S)	Replacement of the structure now. The City may consider lining the structure.	1
J	P23-130	Dick's Creek EA/Design for Constr Ph 1, Ph 2 & Ph 3	Engineering Services (EA and design for highest priority) to address previously identified deficiencies	1
B	P20-065	New Access Road - Ridley Road	Additional funds for new road to train station	2
D	P20-065	New Access Road - Ridley Road	Installation of storm infrastructure along new road to train station	2
G	P23-106	Jasmine/Josephine	Replacement of existing C.I. watermain	2
H	P15-122	Third Street Culvert Replacement, 90 m South of CN Tracks	Additional funding for box culvert replacement	2
K	RNxx-GDR	Region - Glenridge Ave at CNR Bridge Replacement	City's share of costs for sidewalks during Regional bridge replacement, cost sharing determined by CNR Board Order	2
B	P23-062	Facer Street road and underground improvements	Design for future road improvements	3
B	P21-100	Flanders Watermain Improvements	Resurfacing in conjunction with watermain replacement	3
G	P23-102	Adel / Donalda / Dundalk / Regent / Rainbow	Replacement of existing C.I. and D.I. watermain	3
G	P23-100	Welland Avenue	Replacement of existing C.I. watermain	3
H	P17-125	South Service Road Bridge Removal or replacement (B011S)	Following the C/S and RRA, the minimum rehabilitation work would include the following: Patch, Waterproof, and Pave, and concrete patch repair rehabilitation of the structure in 1-5 years. The City may also consider eliminating the south end of the structure or the entire structure in lieu of rehabilitating.	3
B	P22-061	James Street	Design and Utility relocates for road reconstruction and development of a multiuse space	4
D	P18-062	Lake Street Underground Improvements	Construction of storm sewer in conjunction with underground improvements and road reconstruction	4

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2023 CAPITAL BUDGET SORTED BY WARD - LINEAR PROJECTS
(SCHEDULE AD)

Schedule	Project No.	Project Name / Location	Details	WARD
E	P18-062	Lake Street Underground Improvements	Construction of sanitary sewer in conjunction with underground improvements and road reconstruction	4
G	P18-062	Lake Street Underground Improvements	Construction funds for replacement of existing C.I. watermain in conjunction with road reconstruction	4
G	P23-105	Mohawk/Scott/Village Green	Replacement of existing C.I. watermain	4
B	P23-061	Brimley Crescent Road Rehabilitation & Underground Improvements	Curb replacement and asphalt road surface replacement in conjunction with watermain replacement and sewer repairs	5
B	P22-063	Parnell Road Reconstruction	replacement of the structure with road works	5
B	P23-064	Welland Canal Parkway Road Rehabilitation & Drainage Improvements	Design for Future replacement of existing asphalt road surface with drainage improvements	5
D	P23-061	Brimley Crescent Road Rehabilitation & Underground Improvements	Replacement of storm sewer sections in conjunction with watermain replacement	5
E	P23-061	Brimley Crescent Road Rehabilitation & Underground Improvements	Replacement of sanitary sewer section in conjunction with watemrain replacement	5
G	P23-061	Brimley Crescent Road Rehabilitation & Underground Improvements	Replacement of existing D.I. watermain in conjunction with sewer and road works	5
G	P23-104	Kimbermount / Lake / Monique	Replacement of existing C.I. watermain	5
H	P22-063	Parnell Road Reconstruction	Replacement of the structure with road works	5
J	P22-130	Secord Creek Construction and Culvert (C109M) Replacement	Construction to address priority items identified by EA	5
K	RNxx-LL	Region - Niagara Street (RR48) Reconstruction	Partial funding of City's share of costs of new storm sewer and existing storm sewer repairs in conjunction with Regional roadwork	5
K	RNxx-LL	Region - Niagara Street (RR48) Reconstruction	Rehabilitation of existing sewer with identified deficiencies inconjunction with Regional roadworks	5
B	P22-064	Blue Spruce / Huntingwood	Spot curb repairs & replace asphalt road surface	6
J	P17-129	Martindale Pond Weir Replacement	Replacement weir to address identified deficiencies in weir controlling water level in Martindale Pond and in conjunction with Heywood Generating Station	6

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2023 CAPITAL BUDGET SORTED BY WARD - LINEAR PROJECTS
(SCHEDULE AD)

Schedule	Project No.	Project Name / Location	Details	WARD
K	RNxx-MLL	Region RR87 Main Street, Lock Street & Lakeport Road	Replacement and spot repairs of existing sewers in conjunction with road reconstruction, Replacement and spot repairs of existing sewers	6
B	P23-060	2023 Road Resurfacing Program	Spot curb repairs & replace asphalt road surface	City Wide
B	P23-097	Traffic Signals (including pedestrian crossings)	Annual - priority location(s) to be determined	City Wide
B	P23-097	Traffic Signs (40 KM)	Expansion of the neighbourhood 40 km/h speed limit project	City Wide
C	P23-040	2023 Sidewalk Replacement Program	Annual - priority location(s) to be determined	City Wide
C	P23-040-1	2023 Walkway Improvements	Annual walkway repair program locations to be determined	City Wide
C	P23-041	New Sidewalk installation Program	Annual - priority location(s) to be determined	City Wide
C	P23-068	Active Transportation	Annual - priority location(s) to be determined (100% CCBF funded portion)	City Wide
C	P23-068	Active Transportation Priorities	Various initiative locations	City Wide
D	P23-060	2023 Road Resurfacing Program	Extension of catch basin lead for combined sewer separation on Lloyd Street	City Wide
D	P23-006	Catch Basins and Storm Service Installations	Installation of catch basins, catch basin leads and storm laterals to alleviate issolated surface flooding	City Wide
D	P23-015	Design for next years projects	Engineering services for future storm drainage system projects as required	City Wide
D	P23-014	Sewer CCTV Inspections	CCTV sewer inspections for condition assessment of existing storm sewers including large diameter pipes	City Wide
D	P23-016	Storm Sewer Spot Repairs	Spot repairs of storm sewers at various locations as necessary	City Wide
E	P23-015	Design for next years projects	Engineering services for future sanitary collection system projects as required	City Wide
E	P23-010	Extraneous Flow Elimination	Study to determine sources of inflow and infiltration into sanitary sewer system	City Wide

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2023 CAPITAL BUDGET SORTED BY WARD - LINEAR PROJECTS
(SCHEDULE AD)

Schedule	Project No.	Project Name / Location	Details	WARD
E	P23-012	Sanitary Sewer Flushing & Reaming	Sewer flushing and reaming for physical cleaning of selected sewer sections with operational issues	City Wide
E	P23-005	Sanitary Sewer Reaming & Lining	Sewer lining to address identified deficiencies City Wide	City Wide
E	P23-011	Sanitary Sewer Spot Repair Program	Spot repairs for sanitary sewers as required	City Wide
E	P23-014	Sewer CCTV Inspections	CCTV inspections of existing sewers to identify condition and future works	City Wide
E	P23-019	Sewershed Analysis	Engineering services for sewershed capacity analysis as required	City Wide
G	P23-015	Design for next years projects	Engineering services for future waterworks projects as required	City Wide
G	P23-116	Stortz Hydrant Port Conversions	Year 2 of multi-year conversion of existing hydrants to Stortz type pumper connections in priority areas	City wide
G	P23-118	Valves, Hydrants & Services	Replacement of existing valves, hydrants and services etc. in conjunction with other works	City wide

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2023 CAPITAL BUDGET SORTED BY WARD - NON LINEAR PROJECTS
(SCHEDULE AE)

Schedule	Project No.	Project Name / Location	Details	WARD
L	P23-163	Parks Renewal Plan - Community Park Multi-Use Courts	Replace court which is at end of useful life, and maintain level of service as per the Parks Renewal Plan (CRCS-B017-2021)	1
M	P23-141	Merritton Park - Site Replace existing baseball field (George Taylor) lighting with LED fixtures & Musco Controls	Replace existing baseball field (George Taylor) lighting with LED fixtures & Musco Controls	1
O	P23-137	Fire Hall #4 - Merritt St Parapet Flashing/Siding rework to prevent water infiltration	Parapet Flashing/Siding rework to prevent water infiltration	1
K	RN20-stp	St. Paul Street at CNR Bridge Replacement	City share of the St Paul Street at CNR Bridge Replacement Project	2
M	P18-164	Seymour Hannah Upgrade dehumidification system for pad 2/3 - additional funds to combine with phase 1	Upgrade dehumidification system for pad 2/3 - additional funds to combine with phase 1	2
M	P23-139	Seymour Hannah renovation for Junior B Falcons	renovation of the retail space and dressing rooms for Junior B Falcons ($75K for removal; $75K fitout = $150K total)	2
M	P23-138	Seymour Hannah Replacement Vilter Compressor & panel (one compressor) - Phase 2 (compressor #2)	Replacement Vilter Compressor & panel (one compressor) - Phase 2 (compressor #2)	2
M	P23-140	Seymour Hannah - Kiwanis Field Replace Turf	Replace Turf	2
O	P23-136	Firehall #3 - Pelham Rd Rebuild Station No. 3 - Design Funds only	Rebuild Station No. 3 - Design Funds only	2
L	P23-162	Parks Renewal Plan - Bartlett Park - Playground & multi-use court	Replace court and playground which is at end of useful life, and maintain level of service as per the Parks Renewal Plan (CRCS-B017-2021)	3
L	PCR23-01	Welland Canal Fallen Workers Memorial	Replace panel to insert a name in chronological order. The panel will be reinstalled with the ability to remove and adjust more simply in the future if required. Additionally, this work will include resetting a panel that has shifted since installation.	3
M	P23-144	Dunlop Drive Seniors Centre Roofing Replacement	Roofing Replacement	3
L	P23-161	Parks Renewal Plan - Alex Mackenzie Basketball Court & Playground	Replace court and playground which is at end of useful life, and maintain level of service as per the Parks Renewal Plan (CRCS-B017-2021)	4
M	P22-138	Old Court House replace and repair basement windows	replace and repair basement windows	4

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2023 CAPITAL BUDGET SORTED BY WARD - NON LINEAR PROJECTS
(SCHEDULE AE)

Schedule	Project No.	Project Name / Location	Details	WARD
M	P23-134	Robertson School - Main Accessibility Upgrades, add universal washroom on each floor (3), install elevator, renovate existing washrooms to FADS (4), misc internal ramps and entrance mods for barrier free access.	Accessibility Upgrades, add universal washroom on each floor (3), install elevator, renovate existing washrooms to FADS (4), misc internal ramps and entrance mods for barrier free access.	4
M	P23-133	City Hall Replace 3 modulating air handling units	Replace 3 modulating air handling units	4
M	TBD23-16	Meridian Centre Plant motor upgrade (2 glycol pumps, 2 compressor motors)	As per CIMCO's Life cycle of the Meridian Centre Refrigeration Plant, we need to start replacing motors on the system. Glycol pump 1&2, as well as Compressor 1 &2 have motors due for replacement.	4
M	TBD23-17	Meridian Centre - Parking booth - front lot	For health and saftey concerns, the Meridain Centre requires a parking booth for employees who are required to monitor the lot, outside in all weather conditions. Health & safety concerns can be avoided by having a parking booth that serves as shelter and security for the employees during all four seasons.	4
M	TBD23-18	Meridian Centre - POS Replacement	In July 2021, Meridian Centre received an "End of Life/Support" Notice from our current POS Service Provider, NCR/Quest, effective 12/31/2023.	4
M	TBD23-19	Meridian Centre - Daktronics Upgrade	Our current DMP-7000/VIP-4400/Show Control system has been discontinued and is no longer supported by Daktronics. Servicing the current system and sourcing replacement Parts will become hard to do moving forward. Upgrading to the newest version DMP-8000/VP-6000/Show Control.	4
M	TBD23-20	Meridian Centre - Main curtain modification	Modify the current Main Curtain that creates a required backdrop for concerts and events. The size of the curtain is a major labour and expense challenge, modification will solve the challenges	4

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2023 CAPITAL BUDGET SORTED BY WARD - NON LINEAR PROJECTS
(SCHEDULE AE)

Schedule	Project No.	Project Name / Location	Details	WARD
M	TBD23-21	Meridian Centre - Suite level food cooking equipment addition	In anticipation of a Post Covid-19 food service environment, additional cooking equipment is needed for Suite Level Food and Beverage Outlets. In order to enhance cooking ability for Club Lounge and Suite holder ordering and delivery of premium food menu items, additional equipment has been procured. Two (2) cooking solutions to be added, two (2) Perfect Fry Countertop Solution (Club/Suites) and one (1) Turbo Fresh Double Stack Pizza and Cooking oven (Suite Pantry). Projected 6-8 year return on investment.	4
M	TBD23-22	Meridian Centre - Mobile ordering platform	In anticipation of a Post Covid-19 food service environment, mobile ordering is the solution to enhance and support new and necessary safety measures for service during all Meridian Centre events. To reduce the risk to patrons and staff while providing premium and quick service food and beverage services, mobile ordering is necessary to implement to enhance current Covid-19 practices and protocols.	4
M	P23-145	PAC - Replace lighting fixtures in film house	PAC - Replace lighting fixtures in film house	4
M	P23-146	PAC - Replacement of Leviton Lighting control system	PAC - Replacement of Leviton Lighting control system	4
M	P23-147	PAC - Door replacements (Sliding Doors & other high priority doors)	PAC - Door replacements (Sliding Doors & other high priority doors)	4
M	TBD23-26	Central Branch renovation (Phase 1)	Central Branch renovation (Phase 1)	4
N	P23-135	Carlisle Street Parking Garage Structural crack repairs (basement & stair D), and associated membrane repairs on garden park entrance ramp.	Structural crack repairs (basement & stair D), and associated membrane repairs on garden park entrance ramp.	4
N	PCI23-05	Ontario Street Parking Garage Upgrade - Parking system, cameras, servers.	Parking system, cameras, servers.	4
I	P22-152	Sunset Beach (Municipal Beach)	Additional funds for construction of shoreline protection to address deficiencies along Lake Ontario in conjunction with parking lot reconstruction	5
M	P22-137	Buchanan House Top up funds for accessibility upgrades (previously used for BBA Decomm)	Top up funds for accessibility upgrades (previously used BBA GCA)	5
M	P22-187	Garden City Arena Complex Demolition & Decommisioning of GCA complex	Garden City Arena Complex Demolition & Decommisioning of GCA complex	5

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2023 CAPITAL BUDGET SORTED BY WARD - NON LINEAR PROJECTS
(SCHEDULE AE)

Schedule	Project No.	Project Name / Location	Details	WARD
M	P22-150	Municipal Beach (Sunset Beach) - Site Funding Matching (City Portion) for ICIP work - Phase 1	Funding Matching (City Portion) for ICIP work - Phase 1	5
M	P22-137	Buchanan House Top up funds for accessibility upgrades (previously used for Museum HVAC)	Top up funds for accessibility upgrades (previously used for Museum HVAC)	5
M	P18-181	St. Catharines Museum Replace air handling unit 6, condensing unit 5, install humidifier including all BAS connection and structural/electrical components	Replace air handling unit 6, condensing unit 5, install humidifier including all BAS connection and structural/electrical components	5
L	P23-160	Parks Renewal Plan - Port Dalhousie Multi-Use Court	Replace court which is at end of useful life, and maintain level of service as per the Parks Renewal Plan (CRCS-B017-2021)	6
M	P23-142	Port Dalhousie Lions Park - Pool Renovate Change rooms - interior/exterior & add accessibility	Renovate Change rooms - interior/exterior & add accessibility	6
M	P23-143	Dalhousie House - Site Reconstruct Retaining wall & stairs	Reconstruct Retaining wall & stairs	6
M	P17-129	Martindale Pond Weir Replacement	Top up funds for weir reconstruction (design)	6
F	P23-018	Pollution Control Priority Program	Implement Pollution Control Plan initiatives to reduce combined sewer overflows	City Wide
L	P21-156	Splashpad, Sun Shelter & Washroom (funding top-up)	The 2022 Capital budget included $1M towards the project but it is estimated that an additional $350,000 will be required. Additional funding required for the installation of a splashpad, seasonal washroom facility and sun shelter as per the Aquatics Facilities Strategy approved by Council in Q3 2021 (CRCS-042-2021) due to the increase to construction costs.	City Wide
L	PRC20-01	Tree Planting Program	Address asset deficiencies and move towards achieving Council approved tree canopy goal of 30%	City Wide
L	PRC22-03	Environmentally Friendly Hanging Baskets Program (Year 2 of 3)	This project will transition to a more environmentally responsible product, requiring less frequent watering	City Wide
L	PRC20-04	Memorial Bench Program (Year 4 of 6)	Replace assets which are approaching end of useful life and maintain level of service	City Wide
L	PCR21-05-1 & PCR22-04	Parks Legacy Fund	The Parks Legacy Fund will annually leverage and match alternative funding to maintain and enhance parks levels of service. Project(s) still to be determined for 2023 (As approved by Council on October 7, 2019)	City Wide

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2023 CAPITAL BUDGET SORTED BY WARD - NON LINEAR PROJECTS
(SCHEDULE AE)

Schedule	Project No.	Project Name / Location	Details	WARD
O	PFR23-02	CAD (Computer Aid Dispatch) Software upgrade	CAD (Computer Aid Dispatch) Software upgrade	City Wide
P	PFL23-01	International 7400 SIngle Axle Dump Truck (#203)	Replacement of International 7400 SIngle Axle Dump Truck (#203)	City Wide
P	PFL23-02	Freightliner Tandem Dump Truck with Roller Pro (61)	Replacement of Freightliner Tandem Dump Truck with Roller Pro (61)	City Wide
P	PFL23-03	International Workstar 7600 Tandem Dump Truck (72)	Replacement of International Workstar 7600 Tandem Dump Truck (72)	City Wide
P	PFL23-04	International Workstar 7600 Tandem Dump Truck (73)	Replacement of International Workstar 7600 Tandem Dump Truck (73)	City Wide
P	PFL23-05	2004 Sutphen 95’ aerial - Unit 26	Industry standard is to replace every 23 years - this was originally in 2026 - as per meeting with Finance changed to 2024	City Wide
Q	PCI17-01	Enterprise Resource Planning (ERP) System Implementation (included in 2023 Capital Forecast)	Partial budget for implementation of an ERP system that will replace the City's existing financial systems and provide enhanced support for accounts receivable, accounts payable, procurement, commitments and project management	City Wide
Q	PCI23-02	Backup Data Centre	Additional budget for implementation of property tax software - CentralSquare and related modules for tax certificates, point-of-sale, and citizen engagement portal. Replaces the City's current systems which are past end of life and receiving very limited vendor support (FMS-122-2021)	City Wide
Q	PCI23-03	Annual Computer Infrastructure Replacement	Replacement for Work Manager, GIS system and asset management software	City Wide
Q	PCI23-04	IT Security software (log management tools)	Replace current switches which are at end of useful life	City Wide
Q	ST-20-15	Asset Management Plan - Phase 2	Additional budget to align with requirements of Oreg 588/17 to review level of service.	City Wide
Q	PCI17-02	Customer Relationship Management (additional funding)	Software licensing fees and set-up of system to track soil movement as required by Ont. Regulation 406/19	City Wide

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2023 Capital Budget Deferrals (in $000's)
Projects listed have been deferred from the prior year capital forecast for 2023

Project		Amount	Deferred	Decreased	Increased	Added
2023 Capital Forecast	**74,222,126.00**					
City Projects						
Firehall #1 Renovation / Expansion		(6,500,000.00)	(6,500,000.00)			
Roads Priority Program		(2,323,000.00)	(2,323,000.00)			
Francis Creek Watercourse		(2,130,000.00)	(2,130,000.00)			
IT Hardware and Software		(1,650,000.00)		(1,650,000.00)		
James Street Park		(1,620,000.00)	(1,620,000.00)			
Sanitary Sewer Improvement Program		(1,600,133.00)	(1,600,133.00)			
Self Contained Breathing Apparatus*		(900,000.00)		(900,000.00)		
Pollution Control		(750,000.00)		(750,000.00)		
Storm Sewer Improvement Program and Combined Sewer Separation		(667,168.00)		(667,168.00)		
Traffic Signal Program		(331,400.00)		(331,400.00)		
City Owned Shoreline Protection Review Study		(100,000.00)	(100,000.00)			
Freightliner Tandem Dump Truck with Roller Pro		(40,000.00)	(40,000.00)			
Sunset Beach (Municipal Beach)		24,000.00			24,000.00	
Welland Canal Fallen Workers Memorial**		33,000.00				33,000.00
Sidewalk Installation and Replacement Program		133,000.00			133,000.00	
Third Street Culvert Replacement, 90 m South of CN Tracks		150,000.00				150,000.00
Active Transportation		187,600.00			187,600.00	
Park Renewal Plan		250,000.00			250,000.00	
Asset Management Plan Phase 2		260,000.00				260,000.00
Customer Relationship Management Software		300,000.00				300,000.00
Splashpad, Sun Shelter & Washroom (funding top-up)		350,000.00			350,000.00	
CAD (Computer Aid Dispatch) Software upgrade		350,000.00				350,000.00
International 7400 SIngle Axle Dump Truck (#203)		360,000.00				360,000.00
Firehall upgrade and repairs		400,000.00			400,000.00	
Enterprise Resource Planning Software		470,000.00			470,000.00	
Kiwanis Turf Field Replacement		600,000.00			600,000.00	

2023 Capital Budget Deferrals (in $000's) Appendix 2

Projects listed have been deferred from the prior year capital forecast for 2023

Project	Amount	Deferred	Decreased	Increased	Added
Parking Garage Repairs - Ontario and Carlisle	675,000.00			675,000.00	
Parnell Road Reconstruction	1,512,200.00			1,512,200.00	
2004 Sutphen 95' aerial - Unit 26	1,946,780.00				1,946,780.00
Buidling and Facilities Upgrades and Repairs	2,276,000.00			2,276,000.00	
Robertson School Accessibility Upgrades	2,500,000.00				2,500,000.00
Watermain Improvement Program	3,514,775.00			3,514,775.00	
Total City Projects	**(2,319,346.00)**	**(14,313,133.00)**	**(4,298,568.00)**	**10,392,575.00**	**5,899,780.00**
Region Projects					
Region RR87 Main St., Lock St. & Lakeport Rd.	(5,201,200.00)	(5,201,200.00)			
Region - Glendale Avenue RR89 Improvements	(490,000.00)	(490,000.00)			
St. Paul Street at CNR Bridge Replacement	76,000.00			76,000.00	
Region - Niagara Street (RR48) Reconstruction	525,000.00				525,000.00
Region - Glenridge Ave at CNR Bridge Replacement	800,000.00				800,000.00
Total Regional Projects	**(4,290,200.00)**	**(5,691,200.00)**	**-**	**76,000.00**	**1,325,000.00**
Board/ Commission Projects					
Central Library Renovation	4,850,000.00				4,850,000.00
Transit Funding	(1,050,000.00)		(1,050,000.00)		
Total Board/ Commission Projects	**3,800,000.00**	**-**	**(1,050,000.00)**	**-**	**4,850,000.00**
2023 Capital Budget Recommended	**71,412,580.00**				

*Approved in-year (2022) to avoid inflationary price increases

**Fully funded with Welland Canal Fallen Workers Memorial Reserve

2023 Projects Supporting Outdoor Recreation and Active Transportation

Sch	Project #	Project Name	Gross Cost
Active Transportation			
C	P23-068	Active Transportation Priorities	1,286,000
			$ 1,286,000
Recreational Facilities			
L	P21-156	Splashpad, Sun Shelter & Washroom (funding top-up)	350,000
L	PRC20-01	Tree Planting Program	375,000
L	PRC22-03	Environmentally Friendly Hanging Baskets Program (Year 2 of 3)	35,000
L	PRC20-04	Memorial Bench Program (Year 4 of 6)	80,000
L	PCR21-05-1 & PCR22-04	Parks Legacy Fund	250,000
L	P23-160	Parks Renewal Plan - Port Dalhousie Multi-Use Court	332,931
L	P23-161	Parks Renewal Plan - Alex Mackenzie Basketball Court &	444,612
L	P23-162	Parks Renewal Plan - Bartlett Park - Playground & multi-use court	527,845
L	P23-163	Parks Renewal Plan - Community Park Multi-Use Courts	444,612
L	PCR23-01	Welland Canal Fallen Workers Memorial	33,000
M	P18-164	Seymour Hannah Upgrade dehumidification system for pad 2/3 - additional funds to combine with phase 1	1,000,000
M	P23-139	Seymour Hannah renovation for Junior B Falcons	150,000
M	P23-138	Seymour Hannah Replacement Vilter Compressor & panel (one compressor) - Phase 2 (compressor #2)	350,000
M	P23-140	Seymour Hannah - Kiwanis Field Replace Turf	1,300,000
			5,673,000
			$ 6,959,000

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St. Catharines Public Library
Central Library Branch Renovation

Phase One Conceptual Design Report

Prepared by ward99 architects inc.
Date: October 14, 2022

St. Catharines Public Library
Central Library Branch Renovation

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1-2	Introduction
2-6	1. Building Assessment and Design Objectives
6-7	2. Proposed Conceptual Design
8	3. Preliminary Ontario Building Code Review
9	4. Cost Estimation Summary
10	5. Construction Phasing

Appendix A:
Mechanical and Electrical Design Brief, prepared by Jain Sustainability Consultants.

Appendix B:
Class D Cost Estimate, prepared by A.W. Hooker Quantity Surveyors.

Appendix C:
Conceptual Design Drawings; Architectural, Mechanical and Electrical.

Appendix D:
Conceptual Renderings.

St. Catharines Public Library
Central Library Branch - Phase One Conceptual Design Report

Introduction

St. Catharines Public Library (SCPL) Central Branch, located in downtown St. Catharines, at 54 Church Street, is the largest library in the SCPL system. It provides for four building levels, including a basement level for library staff operations and access to covered parking, ground and second floors which provide space for library staff offices and public library space including access to collections, computers, and community meeting spaces, and a third floor dedicated to library administration staff. The Central Library Branch was constructed in 1976, with ongoing building improvements occurring up to 2022 with the replacement of the building HVAC. Though the existing library building provides for extensive physical space for library functions, services, programming and community opportunities, the quality and configuration of the existing building spaces and the physical building infrastructure of the facility does not adequately represent, accommodate well or promote the programming and services it currently provides. As well, the current building layout, configuration and space allocation does not sufficiently support the inclusion of future and flexible community programming and library services and functions.

St. Catharines Public Library proposes to revitalize the existing Central Branch to provide for versatility, flexibility and modernization of space, inclusive design, accessibility upgrades and to establish enhanced visual and functional connections between library spaces. SCPL's objective is to complete an extensive interior building renovation to all four levels of the existing library. The renovation will include a ground floor expansion below the existing second floor level, reconfiguration of two main building entrances from James Street and from Church Street, provision for a new superior building envelope assembly at the existing main entrance lobby and foyer and the inclusion for enhanced interior and exterior building spaces, within the existing building perimeter. The intent of the renovations is to better support and service the public and library staff and provide a revitalized library that is a distinct destination place for the community.

ward99 architects was engaged by St. Catharines Public Library to provide professional consulting services

to assist in achieving their goal to revitalize the Central Library Branch. Phase One of the building renovation and expansion project, includes the provision of a final design concept and report that describes SCPL's vision for the Central Branch. Phase One includes an investigative review of the building and base building documentation, an understanding of library requirements and services, and the development of conceptual design drawings. Through the completion of thorough reviews of base building documentation, observational reviews of the existing building, team discussions and design charettes, the following summarizes the consultant team's findings:

1. Building Assessment and Design Objectives

Central Library Branch is a three-storey building, with basement, comprised of a building area of 2680m2 (28,847sf). The building is constructed of a concrete and steel structure and provides the following gross floor area (GFA);

- Basement GFA: 1070m2 (11,517sf).
- Ground Floor GFA: 2461m2 (26,490sf).
- Second Floor GFA: 2025m2 (21,797sf).
- Third Floor GFA: 467m2 (5,027m2).

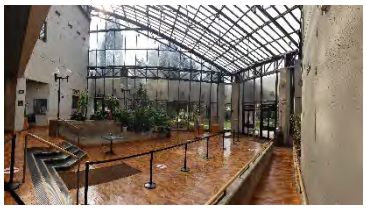
Building Concerns and Project Goals:

Building Exterior:

- The building is clad in concrete panels but does have ample areas of window glazing throughout the basement, ground and second floor levels.
  - The building renovation should take advantage of the exterior glazed windows and provide for an animated library interior to place library spaces and activities on display to the exterior and attract passer-bys and library patrons to enter the building.
- There are several entrances to the building, with poor wayfinding, no easy access and not one distinct, identifiable main access to the library that is clearly indentifiable from the street.
  - The Church Street building entrance is reached by a large, covered walkway that is dark and uninviting. The existing walkway has been fenced-off and gated by the City of St. Catharines for protection of building property. As this exterior walkway does not function as intended, the Library prefers to expand the ground floor to incorporate this exterior space as part of a new Church street entrance.

  - The James Street entrance is considered the library's main building entrance. This entrance does not have any identifying signage or distinct features that would distinguish it as the building's prominent and main entry point. The entrance does not provide a vestibule and the adjancent glazed building envelope, with sloping glazed roof, provides for a cold entrance and unpleasant foyer space. In addition, this entrance, at times, is dangerous and becomes unusable in the winter, when snow and ice fall from the sloped roof and pile in front of the main entry doors. The Library prefers to replace the existing glazed building envelope, with sloped roof, and provide for a proper identifiable entrance with a vestibule and a glazed foyer with flat roof.

Ground Floor Atrium and Foyer:



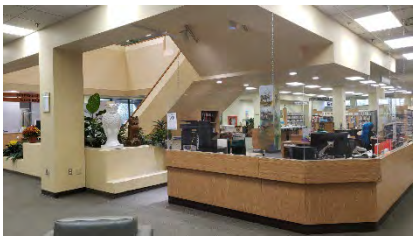
- The double-height atrium incorporates two levels; a lower level aligned with the west building entrance from James Street and an upper level aligned with the main library ground floor. The two levels are both connected and separated by stairs, a barrier-free ramp and landscape planters. The atrium is the entry foyer to the library building and was intended to provide opportunities for both structured and spontaneous community gathering. The multiple levels, poor acoustics and poor thermal properties of the space, limits the use of the foyer regarding library services and programming and renders the space unusable. There are several exterior entry points to the space and the existing café, within the foyer, is not well-integrated into the space. The foyer also lacks visual connections to the main public library space on the ground floor, as sightlines to this space are blocked by the existing ground floor program rooms and the stair to the basement level.
    - In addition to the replacement of the glazed building envelope and the inclusion of a main entrance vestibule, the foyer should provide for an accessible space on one level that is visually connected to the main public library. The foyer should be redesigned as a flexible space that accommodates a variety of library programming and that encourages community gathering.

Ground Floor Configuration:

- Mulitipurpose Rooms: A group of four program rooms provide for meeting rooms, a computer training room and a multipurpose room with a stage. These rooms are physically separated from the main public area, making them difficult to access and resulting in security and safety concerns. The room layouts are static and rigid and obstruct sightlines into the public library space from the main building entrance and foyer.
    - The Library's preference is to remove these rooms to accommodate a more open and flexible public library space and to provide for new multi-purpose rooms, that are accessible from the public library space and that can be used for a variety of functions and be transformed into different sizes to accommodate a variety of occupancies. The new multipurpose rooms should be dedicated to library programming with rental opportunities as a secondary use.
    - Program rooms are to be technologically outfitted to support a variety of activities and programming with provision for more flexibility of use. In this regard, a dedicated room for computer training is not required. Computers are to be mobile and can be set-up in any program room to facilitate group or individual training.
    - The renovated library should accommodate a minimum of five multipurpose program rooms of varying sizes, on the ground and second floors, to suit smaller groups of ten (10) to fourteen (14) persons to larger groups of one hundred (100) persons.
    - Though after-hours access to program rooms is not required, as rental hours align with library hours and library security hours, a dedicated exterior access point to one or more program rooms, on the ground floor, would be an asset.
- The Children's area incorporates space for children from preschool age to school age, including Tweens. The Children's story room is physically separated from the children's area, does not provide views to the children's area and is used as a storage room, due to the lack of existing storage space in the library.
    - The Children's area should provide for a variety of space, including provision of the collection,

lounge, study, computers and gaming and should provide for distinction and separation of preschool, tweens and teens. The shared program room should provide for ease of access and visual connections to the main library space.

- The central open building stairwell to the second floor and the main stair to the basement level parking area, are opaque elements and enclosures, that visually obstruct views to the public library space and that provide physical separations within the library.
  - The renovated interior should consider the removal of both stairwells and the inclusion of new stair assemblies, that are visually accessible and that provide for proper placement within the renovated library space.
- The ground floor provides more than one staff point. The main service counter provides a connection to the lower level staff work area.
  - The redesign of the ground floor should provide a single service point and consider an expanded main service point with direct connection to a ground floor staff work area.
- The long display case for trophies is not required to be included in the renovated space, as the trophies will be relocated to another facility.



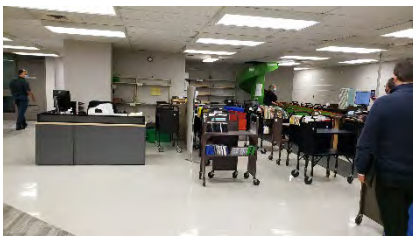
Second Floor Configuration:

- The staff service point is located so that staff have their backs to open library space and does not provide for sight lines throughout second floor library spaces. Staff offices are located throughout the second floor, with no connection to the service point.
  - A new service point is to be located to maximize sightlines and provide direct connection to staff work areas.
- Local History/Special Collections is physically separated from the open public library space with walls.
  - Special collections may be relocated but must remain accessible to the public and integrated as part of the main open library collection. Portions of the collection may be vulnerable/delicate and may require a separate storage room with humidity/climate control. Two (2) to four (4) microfilm readers are to be incorporated into the renovated special collections area.

Third Floor Configuration:

- The third floor provides offices and work areas for library administration and a board room that accommodates fifteen (15) to twenty (20) people. The board room is used primarily for board meetings that occur once a month. The board room is supposed to be accessible to the public, though it currently is not due to its location of the third floor.
  - Renovate the third floor to become an accessible public space and relocate administrative staff to other levels of the building. The board room can be relocated to the first floor where it would be easily accessible to the public and can become a multi-purpose program room utilized for various programs when not in use as a board room. There is no requirement to locate the board room adjacent to staff areas.
  - The CEO's office is too large. The CEO and administrative assistant offices may be relocated to ground floor level for access to the public.
  - The third floor will require an accessible washroom for use by the public.

Basement Configuration:



- The basement level provides for staff work areas and space for maintenance and operational staff, as well as building mechanical and electrical services. The work areas and the staff lunchroom area quite large but require reorganization.
  - Staff from upper levels can be relocated to the lower level. Renovation, reorganization of space and the inclusion of smaller workstations can accommodate additional staff in the basement.
  - Collaborative/break-out spaces dedicated to staff use are to be included in the redesign.
  - Storage requirements are to be reviewed and incorporated in the basement level.

General Building Elements:

- Ground floor washrooms are difficult for the public to access and their location do not facilitate proper sightlines. Second floor washrooms are highly visible with direct views to washroom doors, which may make some patrons uncomfortable and discourage their use by patrons.
  - Washrooms should be replaced to accommodate the new building interior layout and are to be located to provide proper sightlines and ease of access to washrooms, while providing patrons with privacy.
  - Washrooms should be accessible and provide for universal gender-neutral washrooms on both ground and second floors.
- A single elevator services four building levels. There is an anticipated higher-use for the existing elevator once the renovation is complete.
  - The renovation should include for a second elevator adjacent to the existing elevator. This will also accommodate the removal of the existing dumbwaiter and associated machine room.
- Collection shelving is old and inaccessible and requires replacement. Building finishes are old and require replacement.
  - The extensive renovation will require complete replacement of the collection shelving and all building finishes.

- Glazed building corners provide for natural light and great views to the exterior, but they are problem areas as tall shelving currently hides views to these corners. Furniture has been removed from these areas as a result to prevent public use/lounging in these areas.
  - The renovated building layout is to consider the removal of shelving from the building perimeter and the inclusion of large, open gathering spaces along exterior building walls.

- Storage occupies various spaces throughout the library.
  - Provide for larger and dedicated storage spaces throughout the renovated library. Dedicated storage is required for local history archives in the basement level, storage for larger loan items is required on the ground floor, in proximity to the service counter and additional storage for equipment and book club kits is required on the second floor.
- A business hub area with copiers/printers is provided on the second floor.
  - Business hubs/print centres should be easily accessible by the public and are to be located on each level of the library.
- There are not enough study rooms in the library.
  - A minimum of ten (10) study rooms are to be provided throughout the ground, second and third floors.
- The library currently lacks the space and infrastructure to provide for collaborative digital spaces.
  - Digital innovation spaces are to be integrated into the public library space, with a variety of open and enclosed spaces, with clear sightlines to the open public library space.
- The library provides for fourteen (14) to fifteen (15) computers. All computers are actively used in the library.
  - Space for public computers in the main library space is required. A minimum of six (6)

computers are required in the Children's area and a minimum of fifteen (15) computers shall be included for use by adults.

Mechanical and Electrical Systems

- Refer to Appendix A for the Mechanical and Electrical Design Brief prepared by Jain Sustainability Consultants.

2. Proposed Conceptual Design

The final proposed design concept is a result of collaborative design meetings, discussions with library staff and team charette sessions. Refer to Appendix C for the proposed conceptual design drawings, including architectural, mechanical and electrical design drawings and refer to Appendix D for proposed exterior and interior conceptual building renderings.

Proposed Ground Floor Elements:

- Renovation of the complete ground floor to provide for an open concept public floor that is accessible and provides visual connections throughout.
- Expansion of the ground floor to the north-west area of the building by 164m2 (1,765sf) to enclose the existing exterior concrete walkway and to provide for a new building entrance from Church Street.
- Provision for two distinct entrances to the building;
    - Renovated main building entrance from James Street provides for a new interior vestibule and a new identifiable building canopy.
    - New building entrance from Church Street provides for a new distinct building canopy that projects over the existing ramp to provide shelter and a new interior entry vestibule that connects patrons entering from the existing building stairs and from the existing barrier-free ramp. The new canopy and the new adjacent wall mounted building signage provides for distinct and identifiable library signage.
- A renovated entry foyer with new barrier-free ramp, a raised floor level to align with the existing ground floor, new perimeter glazed walls and a new roof assembly that provides for a green roof and an exterior community space on the second level. The new foyer is designed as a large, open, flexible multipurpose space that integrates a café and perimeter BYOD counters with views to the exterior. The new foyer serves as a community lounge space with direct views to other areas of the ground floor library.
- Distinct spaces for children and teens to the east side of the ground floor. The Children's area and Teens occupy the south-east and north-east areas of the building, taking advantage of the existing corner windows. The east side also provides space for tweens, a Children's Program Room with associated storage and Family Washroom, study tables and computer counters.
- Urban lounge and mobile marketing display in the central open area.
- Space for collections throughout.
- Two multipurpose program rooms, which can be separated by a folding partition and with connection to the Church Street building entrance to accommodate after-hours use. The spaces have access to a kitchen and storage room.
- Staff spaces include a new service counter with direct connection to a staff work room and exterior book return. Additional staff offices, including office of the CEO and a staff collaborative break-out room are also located on the ground floor for ease of connection with the public.
- Space for holds and storage for large loan items.
- Space for self-checkout stations near the main entrance.
- A business hub for printing and copying.
- A second elevator that services all four levels.
- Service areas include a new IT Room, and new washrooms, including a universal washroom, with all washrooms having secure doors for implementation of after-hours use in conjunction with rental of the program rooms.
- A new convenience stair to the second floor with a new adjacent stair to the basement, enclosed in glass walls. The configuration of the stairwells ensures that sightlines are maintained throughout the ground floor space.

Proposed Second Floor Elements:

- Renovation of the complete second floor to provide for an open concept public floor that is accessible and provides visual connections throughout.
- Seven (7) small and medium size bookable study/meeting rooms with glazed partitions to provide visual connections to the main library space.
- Three (3) large digital innovation and makerspace program rooms with glazed partitions to provide visual connections to the main library space.
- Views to two green roofs; one on the south-west side of the building and one on the east side of the building.
- Access to two exterior rooftop lounge and reading areas.
- BYOD counters along the perimeter of the opening to the ground floor.
- Ample space for computers and lounge.
- Collaboration furniture pods, outfitted with power, along the north-west area of the building.
- Space for collections throughout.
- Staff spaces include a new service point with direct connection to a staff work room and provision for sightlines throughout the second floor.
- A business hub for printing and copying.
- Service areas include a new IT Room and new washrooms, including a universal washroom.

Proposed Third Floor Elements:

- Renovation of the complete third floor to provide additional public space that is accessible and provides visual connections throughout.
- Three (3) small and medium size bookable study/meeting rooms with glazed partitions to provide visual connections to the main library space.
- A business hub for printing and copying.
- Service areas include a new IT Room and a new barrier-free washroom.
- Space for collections.
- Space for both lounge and study.

Proposed Basement Elements:

- Renovation of the complete basement floor to provide for accessible space throughout, enclosed offices for managers, additional staff workstations and open work counters.
- Three (3) medium size collaborative break-out rooms with glazed partitions to provide visual connections to the main office work area.
- A business hub for printing and copying.
- Renovated staff washrooms and a new IT/Server Room.
- Storage rooms, including an archive room for Special Collections.
- Space for file storage and staff lockers.
- Renovated staff kitchen/lounge to reduce the size of the kitchen for provision of more office space.
- A renovated vestibule and stair access from the parking area to the ground floor public library.

Proposed Exterior View to North Entrance from Church Street.

3. Preliminary Ontario Building Code Review

The Central Library Branch is a three-storey building with a basement, that provides a building area of 2680m2 (28847sf). The building is not sprinklered in its entirety, providing sprinklers only at the basement level open parking garage and adjacent service rooms, with additional sprinkler heads provided at the ground floor level at the perimeter of the second floor opening.

The Ontario Building Code classifies library buildings as Assembly Occupancies of type Group A, Division 2, under Part 3 of the Ontario Building Code. The building construction of the Central Library Branch does not comply with current Ontario Building Code requirements. As the branch is three stories in height, the Ontario Building Code would require the building to be constructed according to article O.B.C. 3.2.2.24. Group A, Division 2, up to 6 Storeys, Any Area, Sprinklered. O.B.C. 3.2.2.24 requires the following:

- The building is not more than 6 storeys.
- The building must be sprinklered in its entirety.
- There are no limitations on building area.
- The building shall be of non-combustible construction and floor assemblies shall be fire separations that provide a fire-resistance rating, not less than 1 hour, mezzanines shall have a fire-resistance rating of not less than 1 hour and all load-bearing walls, columns and arches shall have a fire-resistance rating not less than that required for the supported assembly.

In order to comply with O.B.C. 3.2.2.24, the proposed library building renovation would require the inclusion of building sprinklers on all library building levels and would require confirmation that existing floor assemblies are fire separations provide for the required 1 hour fire-resistance rating. The existing base building drawings do indicate that the existing steel floor structure provides for spray fire-proofing, but additional investigation will be required to confirm that this fire separation exists throughout the building.

As the library is an existing building and the construction of the library building is proposed to occur in multiple phases, the renovation may be classified under Part 11, O.B.C. article 11.3.3.2. Extensive Renovation. O.B.C. 11.3.3.2. indicates that structural and fire-resistance elements must comply with Part 3 of the Ontario Building Code. The article also indicates that sprinklering of the building is only required where the building under renovation is of type Group C and more than 3 stories in height. Additional review of the building construction phases and the Ontario Building Code will occur in Phase Two of the project.

The building renovation provides for additional washroom fixtures for use by the public. The proposed plumbing fixtures are provided as follows:

- Ground floor: three (3) water closets and three (3) lavatories for men, three (3) water closets and three (3) lavatories for women, one (1) universal washroom and one (1) barrier-free washroom.
- Second floor: three (3) water closets and three (3) lavatories for men, three (3) water closets and three (3) lavatories for women and one (1) universal washroom
- Third floor: one (1) barrier-free washroom.
- Basement: three (3) existing water closets and three (3) existing lavatories and one (1) barrier-free washroom.

Ontario Building Code Table 3.7.4.3.A – Water Closets for Assembly Occupancies indicates that eight (8) water closets can service 200 females. Sixteen (16) water closets can service over 400 persons. The proposed quantity of washrooms will adequately support the needs of the building occupants.

4. Cost Estimation Summary

A Class D Estimate was prepared by A.W. Hooker Quantity Surveyors based on the architectural, mechanical and electrical conceptual design drawings. Refer to Appendix B for the Class D Estimate Report. The Class D Estimate describes the following building costs (excluding applicable taxes):

- The total estimated construction cost: $11,963,000 (excluding separate prices).
- The total estimate construction cost including the separate prices described below: $14,117,000.

- The total estimated construction cost of $11,963,000, includes the following contingencies:
  - 15% design and pricing contingency at a cost of $1,170,400.
  - 21.2% escalation contingency of $1,902,300, assuming construction start of fall 2023.
  - 10% construction contingency of $1,087,600 for post construction changes.

- The following separate prices are excluded from the total estimated construction cost of $11,963,000:
  - Separate Price One: $1,270,000.
    - Description: Ground floor foyer building envelope improvements, including replacement of exterior glazed walls and roof assembly and provision for new curtain wall glazing and a flat roof construction with green roof and outdoor rooftop reading area accessible from the second floor.
  - Separate Price Two: $229,000.
    - Description: New green roof and outdoor rooftop terrace on the east side of the building and accessible from the second floor.
  - Separate Price Three: $655,000.
    - Description: Sprinkler the entire building to comply with current Ontario Building Code Classification.
  - Total estimated cost of the Separate Prices is $2,154,000.

- The total estimated construction cost of $11,963,000 can be itemized by building level as follows:
  - Basement: $2,740,000.
  - Ground: $5,093,000.
  - Second: $3,290,000.
  - Third: $840,000.

- The estimated costs described above include only hard construction costs and exclude applicable taxes, soft costs, professional consulting fees, equipment, appliances, furniture and metal shelving costs. In addition, the construction estimate is based on a construction start of Fall 2023. Refer to Appendix B for a complete list of exclusions.

5. Construction Phasing

St. Catharines Public Library requires the construction for the renovation to the Central Library Branch to occur in phases to ensure the building remains operational and to accommodate the appropriate construction funding over several years. The current construction climate indicates that material and labour costs will continue to increase. It is recommended that the renovation occur in the shortest time possible to provide a successful and efficient construction process and that the project be awarded to one General Contractor to ensure continuity of the work. Optimal construction timing would include a period of one to two years of construction to complete the proposed scope of work outlined in the proposed conceptual drawings. The maximum recommended timing for construction would be a phased construction approach over a three-year period from September 2023 to September 2026. A three-year construction period could be phased as follows:

Year One: September 2023 to September 2024.

o Basement Floor:	$2,740,000
o Separate Price One:	$1,270,000
o Partial Separate Price Three-Sprinklers:	$ 105,000
Estimated Total for Phase One:	$4,115,000

Year Two: September 2024 to September 2025.

o Ground Floor:	$5,093,000
o Partial Separate Price Three-Sprinklers:	$ 245,000
Estimated Total for Phase Two:	$5,338,000

Year Three: September 2025 to September 2026

o Second Floor:	$3,290,000
o Third Floor:	$ 840,000
o Separate Price Two:	$ 229,000
o Partial Separate Price Three-Sprinklers:	$ 305,000
Estimated Total for Phase Two:	$4,664,000
Total Estimated Construction Cost:	$14,117,000

*Note: Total estimated construction cost does not include additional escalation costs regarding the time extension of construction phasing.

The described scenario is only one option regarding the required construction phasing plan for the Central Library Renovation. The final construction phasing plan requires further review, discussion and consultation with the Library team to confirm that all requirements are met in the allotted time frame and to align with the appropriate funding available. A detailed construction phasing plan will be developed in the next project phase in collaboration with the Library team.

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St. Catharines Public Library
Central Library Branch Renovation

Phase One Conceptual Design Report

Appendix A - Mechanical and Electrical Brief

St. Catherines Library
Central Branch
54 Church Street
St. Catharines, Ontario

Mechanical and Electrical

Design Brief

Date: September 13, 2022

Prepared by:
Jain Sustainability Consultants Inc.
7405 East Danbro Crescent
Mississauga, ON, L5N

GENERAL

1. The building presently in operation as a library and also work as hub for other branches of the City Libraries. The original building was built in 70's with some renovation in 2002.

2. Following is a brief description of the proposed Mechanical and Electrical system for the building:

PLUMBING

1. It appears the plumbing services are serving the building washroom facilities only as no other services like automatic lawn sprinkler system or kids play features are present at the building.

2. The existing cold, hot water supply system will be reused and revised to suit new / renovated washrooms. Due to age of the building, any existing pipe is removed or needs to be relocated, will not be re-used. All new water supply lines will be copper pipe and cast iron pipes for above ground drains and PVC pipes for buried drains.

3. All new plumbing fixtures, will be of low flow, hard wired sensor operated fixtures.

4. The building will remain in operation during the renovation that requires all work to be done in phases. The plumbing services will be disconnected only for the areas to be renovated. The other areas where the fixtures to remain in operation, the plumbing services will be available. If required, a temporary service will be provided to keep plumbing fixtures operational.

FIRE STAND PIPE SYSTEM

1. The building has fire standpipe system with fire hose cabinets. The coverage of each fire hose cabinet will be verified and any deficiency due to renovation a new fire hose cabinet will be provided.

EXISTING HVAC SYSTEMS

HEATING AND AIR-CONDITIONING

1. The building is heated, ventilated and air conditioned using three types of systems:

   i) Built-up air handling unit (AHU-1) with return air fan (F-1), hot water coil, DX coil serves the basement.

      Remote air cooled condensing unit (CU-1) is located on the second floor roof.

      13 hot water duct coils are used for zoning.

      Another built-up air handling unit (AHU-2) with return air fan (F-2), hot water coil, DX coil serves the atrium.

Remote air cooled condensing unit (CH-2) is located on the second floor roof.

ii) Five roof-top multizone units serves the three floors as follows:

- RT-1 and RT-2 – Serve the ground floor
- RT-3 and RT-4 - Serve the second floor
- RT-5 – Serves the third floor

iii) Single zone RT-6 serves the atrium.

HUMIDIFICATION

1. Six electric steam humidifiers inject steam in the supply air ducts of AHU-1 and RT-1 to RT-5 to provide humidification to the building.

VENTILATION

1. Fresh air is provided to the two AHU's via wall louvers.

   Roof-top units are provided with fresh air hoods and dampers.

PROPOSED SYSTEMS

HEATING AND AIR-CONDITIONING

1. Relocation of the existing diffusers and grilles to suit the new layout.
2. Provision of bypass boxes to allow for individual control for private offices.
3. Provision of a roof-top HVAC unit to serve the new vestibule using linear diffusers.
4. Provision of a new roof exhauster for the ground floor public washroom and second floor public washrooms.
5. Ventilation for the new elevator machine room using exhaust wall louvers to the garage.
6. Relocation of the split system serving the computer room in the basement, to air condition the new entrance vestibule.
7. Exhausting the new private washrooms next to the Children's program through a ceiling fan and wall cap.

ELECTRICAL

ELECTRICAL SERVICE

1. The existing electrical service rated 1000Amp at 347/600V will remain but will be modified to suit the renovation scope of work.

POWER DISTRIBUTION SYSTEM

1. New Distribution Transformers and New Panelboards:

    a) 600/347V equipment (including HVAC) and will be fed from new power distribution panel which will be fed from the main switchboard.
    b) Distribution transformers (600V/208V) will be provided located in main and sub- electrical rooms/closets.
    c) Dedicated 120/208V panels for 120/208V typical floor electrical power supplies, mechanical/electrical equipment, receptacles and lighting loads.

2. Wiring shall be minimum #12 AWG insulated copper.

3. A short circuit and coordination study performed by an independent third party is recommended to be included under the base scope.

4. Electrical panel boards, etc. will be with copper bus or as indicated in the tender package.

5. Lighting panels, receptacle panels will be copper bus with bolt-on type circuit breakers.

6. Conceal all conduits except in unfinished areas and service spaces.

GROUNDING

1. Grounding and bonding materials shall be manufactured to CSA C22.2 No. 41 and installed to CSA C22.3 No. 2.

NEW LIGHTING

1. Lighting levels shall be in accordance with IESNA Standards for this type of building and Owner's specific requirements.

2. Interior lighting will generally consist of LED luminaires with colour temperature of 4000K and a CRI of min 85.

3. Luminaires will be selected in accordance with ceiling types, finish, etc. in coordination with the Architect and Owner.

4. Luminaires in all enclosed spaces such as common areas, corridors, storage, service rooms and will be controlled via occupancy sensors with manual override switches unless otherwise requested or noted.

5. Daylight sensors will be provided for control of lighting at building perimeter where ample daylighting is available as per ASHRAE 90.1 requirements.

6. A low voltage relay lighting control system will be provided for lighting in corridors and other common areas.

7. Exit signs shall be energy efficient LED type, green running man with built-in battery unit.

8. Emergency lighting will be provided in accordance with OBC requirements. 120 VAC input, 24 VDC output battery units shall be provided with 7 watt LED, 24 VDC lighting heads spaced throughout means of egress to provide the minimum 0.9 fc or 10 lux as required by code

MISCELLANEOUS ITEMS

1. All power connection for mechanical equipment, etc. will be provided and coordinated by electrical division.

2. Power to barrier-free door operators, etc. will be provided as per the architectural door hardware schedule.

3. Power to infrared-operated plumbing fixtures will be provided as per plumbing design.

4. Electric heaters will be provided as indicated in the Mechanical Section.

5. Call for assistance system c/w push button and horn strobe devices will be provided in Universal (Barrier-free) Washroom per OBC Section 3.8.

Specification grade 15 ampere, 250 volt, grounded duplex receptacles will be provided in addition to the following special receptacles/ devices/connections:

1. Ground fault interrupting receptacles near lavatories in washrooms
2. General purpose (cleaning) receptacles will be provided in Corridors.

TELECOMMUNICATIONS SYSTEM

1. New pathway rough-in infrastructure for a communications system will be provided for this facility based on Owner's requirements. Cables, jacks, racks, patch panel and switches will be under a separate scope/contract.

2. Incoming telecommunication services shall remain.

ACCESS CONTROL AND SECURITY SYSTEM

1. New power provisions and rough-in conduits and back boxes for Access control card readers and electric door strikes will be provided at designated doors as per the architectural door schedule and as required by Owner's Security Consultant/Provider.

2. Rough-in infrastructure for Access control and/or security systems will be provided for this facility based on Owner's requirements. Cables, devices and equipment related for access control and/o security system will be under separate scope/contract.

FIRE ALARM

1. New Fire alarm system will be provided as a fully addressable, single stage, zoned, electrically supervised system conforming to the requirements of all latest editions of OBC and CSA standards.

2. The main Fire Alarm Control Panel will be installed in the Main Electrical Room.

3. The fire alarm annunciator will be installed at the designated fire fighter's entrance.
4. Smoke and heat detectors will be provided for all other areas as required by Codes.

5. Fire alarm horn or combination horn/strobe will be installed in all areas per codes requirements.

END

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St. Catharines Public Library
Central Library Branch Renovation

Phase One Conceptual Design Report

Appendix B - Class D Cost Estimate

St. Catharine's Public Library Renovation

Class D Estimate (R.0)

Prepared for:

Ward99 Architects Inc.

Prepared by:

A.W. HOOKER ®
QUANTITY SURVEYORS

2265 Upper Middle Rd. E Suite 400
Oakville, ON L6H 0G5

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September 28, 2022

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September 28, 2022
Tina Ranieri-D'Ovidio
7500 Highway 27, Unit 27B
Vaughan, ON, L4H 0J2

Attn: Tina Ranieri-D'Ovidio, Principal

Re: St. Catharine's Public Library Renovation – Class D Estimate (R.0)

Dear Tina,

Please find enclosed our Class D Estimate (R.0) for the above project. The estimate is based on design drawings and information provided by Ward99 Architect received on August 29, 2022, and September 14, 2022.

This estimate is meant to reflect the fair market value for the construction of this project; it is not intended to be the prediction of the lowest bid and should be representative of the median bid amount received in a competitive bidding scenario.

We recommend that the owner and/or the design team carefully review the cost estimate report, including line item descriptions, unit price clarifications, exclusions, inclusions and assumptions, contingencies, escalation, and mark-ups. This is to ensure that the design intent is captured within the content of the report.

Please refer to the preamble of our cost report for all exclusions, assumptions, and information pertaining to the estimate.

Requests for modifications of any apparent errors or omissions to this document must be made to A.W. Hooker Associates Ltd. within ten (10) business days of receipt of this estimate. Otherwise, it will be understood that the contents in this estimate have been concurred with and accepted as final version of the cost report.

We trust our work will assist in the decision making process and look forward to our continued involvement in this important project.

Sincerely,
A.W. Hooker Associates Ltd

Jeremy Smith, PQS, CET
Senior Quantity Surveyor

Sincerely,
A.W. Hooker Associates Ltd

Stew Kyle, PQS, CET
Partner

Encl. (Class D Estimate (R.0) – September 28, 2022)

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1. Introduction to the Estimate

1.1 Project Description

Central Branch is a renovation of 3 existing floors and basement staff area and an expansion (GFA not building area) of the ground floor. Note the following:

Basement Scope of Work:

- Complete demolition of interiors and Interior Renovation to occupied staff space.
- Small expansion to basement entry lobby from the parking garage (must be fire-rated).
- New elevator adjacent to existing elevator to provide access to all floors.
- Dumbwaiter and book return chute to be demolished and floor openings to be filled with new floor assembly.
- Two existing stairs in the basement to be demolished and ground floor opening covered with new floor assembly.
- New stair and floor opening to be provided to access the second floor.
- Renovation to ceilings, walls and flooring throughout. Provide acoustic ceiling tile assemblies (refer to RCP) and carpet flooring, except for porcelain at washrooms.
- Existing parking garage is sprinklered. Basement occupied space is not sprinklered.
- Refresh of existing washrooms and staff lounge.

Ground Floor Scope of Work:

- Complete demolition of interiors and Interior Renovation to entire floor; new open space, new staff areas, new program rooms, new washrooms, new entry.
- Small expansion to ground floor below second floor to provide for the new entry from Church Street and washrooms (refer to plans and interior elevations and renderings). Provide new curtain wall framing with IGU, new entry vestibule, new exterior signage and logo wall covering.
- New canopy at new Church street entrance.
- Expansion at ground floor main entrance to provide for a glazed vestibule and new canopy.
- New elevator adjacent to existing elevator to provide access to all floors.
- Dumbwaiter to be demolished and floor opening to be filled with new floor assembly.
- New fire-rated glazed enclosure at new stair from the basement.
- Renovation to ceilings, walls and flooring throughout. Provide new ceiling assemblies (refer to RCP) and carpet flooring, except for porcelain at washrooms and at main entry areas and pathway.
- Entry lobby – new barrier-free ramp and provide raised floor to cover sunken floor and to make the entire ground floor one level.
- Ground Floor Separate Price Required: At the main entry and lobby area: Provide new flat roof with green roof and second floor outdoor reading terrace to replace existing sloped glazed roof. Replace with new curtain wall framing with IGU at ground floor Lobby walls. As part of this separate price, additional costs for structural works will need to be included to support this new roof (down to the renovated basement).

Second Floor Scope of Work:

- Complete demolition of interiors and Interior Renovation to entire floor; new open space, new staff areas, new glazed program rooms, new washrooms, new counters around existing floor openings.
- Provide an allowance for decorative wall feature (refer to interior renderings) off the double height atrium.
- New elevator adjacent to existing elevator to provide access to all floors.
- Dumbwaiter to be demolished and floor opening to be filled with new floor assembly.
- Renovation to ceilings, walls and flooring throughout. Provide new ceiling assemblies (refer to RCP) and carpet flooring, except for porcelain at washrooms.
- Second Floor Separate Price Required: Provide new green roof and outdoor reading terrace to replace existing flat roof (adjacent to glazed program rooms).

Third Floor Scope of Work:

- Complete demolition of interiors and Interior Renovation to entire floor; new open space, new glazed program rooms, new washroom.
- New elevator adjacent to existing elevator to provide access to all floors.
- Renovation to ceilings, walls and flooring throughout. Provide new ceiling assemblies (refer to RCP) and carpet flooring, except for porcelain at washrooms.

General Scope:

- Furniture and equipment N.I.C.
- Library shelving: Provide an allowance for new metal book stacks.
- Include an allowance for interior signage.
- Include an allowance for inspection and testing during construction.

1.2 Type of Estimate

This Class D Estimate is intended to establish a realistic elemental estimate of the hard construction costs based on the level of design information provided. Detailed quantities have been measured from drawings where possible for the proposed building (excluding site). This estimate reflects our opinion as to the fair market value for the hard construction of this project.

The accuracy of the estimate is based on the documentation provided and design stage is intended to be +/- 20%. This accuracy is based on the definition for Estimate Classifications (Class D) outlined in the *Guide to Cost Predictability in Construction prepared by the Joint Federal Government & an Industry Cost Predictability Taskforce. Contingencies are included to offset the accuracy risk, to the extent that the estimated amount represents the current opinion of the likely fair market value at the time of tender.

The intention of the estimate is not to predict the low bid price received; typically based on historical tender results estimates are more likely to be towards the median value of bids received under competitive conditions. This is a deliberate methodology due to the inherent risk in attempting to predict the low bid and numerous factors which can contribute to lower than anticipated tender submissions which are beyond our control.

*Reference: http://www.cca-acc.com/pdfs/en/CCA/Guide_to_Cost_Predictability.pdf

2. Basis of the Estimate

2.1 General Information

From the design information provided, we have measured quantities where possible and applied typical unit rates for each of the specific elements based on the project specifications. Where specific design information has not been provided, unit rates are based on historical cost data for this type of project. In some instances where design information is limited, we have made reasonable assumptions based on our experience with projects of a similar scope and design. Estimates for mechanical and electrical systems are developed based on information prepared by the project engineers.

Significant changes to the basis of design will impact the estimate value; this is particularly critical where changes are made after the final estimate prior to tender. We recommend that all major design or scope changes be reviewed for their cost, time and constructability impact prior to incorporation in a finalized tender package.

2.2 Location Cost Base

The location cost base for this estimate is St. Catharines, Ontario.

2.3 Unit Rates

The unit rates in the preparation of the elemental estimate include labour and material, equipment, and subcontractors overheads and profits. We have assumed for pricing purposes that non-union contractors would perform the work. We have assumed the fair wage policy would be in effect. The unit rates for each of the elements are based on typical mid-range costs for the type of design, construction, and materials proposed.

Unit rates in all estimates combine the material, labour, and equipment components for a single unit cost for ease of presentation. This estimate is not a prediction of low bid. Pricing assumes competitive bidding for every aspect of the work.

2.4 Taxes

Harmonized Sales Tax (HST) is excluded from our estimate.

2.5 Construction Schedule

The estimate has been prepared on the assumption that the work will be performed within the timelines of a 3-year phased construction schedule. The duration of the schedule would be based on the work being performed during regular daytime work hours. We have assumed the structural components of the building would be constructed in predominantly non-winter months. No allowances have been included for premium time and after hours work associated with an accelerated construction schedule.

2.6 General Requirements and Fees

The General Requirements for the General Contractor are included as a percentage of the hard construction cost. This estimate of the prime contractor's site overheads includes site supervision and labour, access to the site, site accommodations, site protection, temporary utilities, clean up, equipment, and other miscellaneous project requirements provided by the General Contractor.

The Fee element of the estimate is meant to cover the General Contractor's fee to perform the work. The fee would be based on the competitive nature of the bidding process and the market conditions at the time of tender.

2.7 Bonding and Insurance

We have included the median estimated costs for 50% Performance, 50% Labour and Materials, and 10% bid bonds. These are the traditional bonding requirements commonly requested by the owner. The actual final bonding costs will vary depending on the selected contractors' performance history.

The estimate includes an allowance for general liability and builder's risk insurance based on an average cost per $1,000 of estimated hard construction costs. The actual insurance costs would be subject to the insurance requirements for the project.

2.8 Procurement

It was assumed for the preparation of this estimate that the project would be tendered to a prequalified list of bidders with a project specific lump sum contract. Pricing is based on competitive tender results with a minimum of four (preferably six tender submissions) at general contractor and major trade level. Pre-qualification with a restrictive list of contractors or subcontractors may result in a higher tendered cost due to the inherent reduction in competitiveness. Tenders receiving two or less submissions (occasionally three) historically tend to have a much higher risk of an overrun in cost when compared to the budget established in an estimate. Ensuring adequate bonafide bidders is a prerequisite for competitive bidding scenarios, on which the estimate is predicated.

2.9 Specifications

As detailed and comprehensive specifications are unavailable, we have assumed that no onerous special requirements will be applicable to this project. It was assumed that all materials and equipment could be substituted with an alternative product to avoid sole-sourcing which results in a non-competitive market condition.

2.10 Soft Costs

The estimated soft costs have been excluded from this estimate.

These costs include items traditionally funded by the owner and separate from the hard construction costs which would be applicable to the contractor. The soft costs include items such as consultant fees; disbursements; project management fees; independent inspection and testing; third party commissioning; legal fees; permits and development charges; operational and moving expenses; financing and loan fees; owner supplied furnishings, fixtures, and equipment; land acquisition costs; and Harmonized Sales Tax.

3. Contingencies

3.1 Design and Pricing Contingency

A design and pricing contingency of **15%** has been included in the estimate as a percentage of the hard construction costs including the general requirements and fees. This contingency is meant to cover design and pricing unknowns in the preparation of this estimate and reflect the incomplete nature of the design information provided at the time the estimate is prepared.

The contingency where included in our estimate is not meant to cover significant additional program space or quality modifications, but rather to provide some flexibility as the design develops. The design contingency typically decreases as the design progresses and more definition and detail is available to refine the basis of the cost estimate. If the owner anticipates significant changes to the basis of design we recommend additional contingency be retained as a reserve for the scope modifications.

3.2 Escalation Contingency

The estimate includes an allowance for escalation. This allowance of is meant to provide for increases in construction costs due to changes in market conditions between the time of the estimate and the potential construction commencement. For projects with a schedule in excess of 12 months, the contingency is based on a timeframe that takes escalation to the midpoint of the construction phase.

Escalation Contingency		
Assumed Tender Date	-	Sept (Q3) 2023
Escalation % per annum	-	8.0%
Total % Escalation	-	21.2%

Escalation during construction is included in the unit rates; essentially this allowance is the risk carried by the general contractor and trades with a fixed price made years before the work is completed or carried out for some trades.

3.3 Construction Contingency (Post Contract Changes)

The estimate includes a contingency for the construction phase of the project. This contingency is meant to cover the potential cost of post contract changes that may occur after the project is tendered. This allowance of **10%** is to provide for increases in construction costs due to Change Orders issued during construction. This contingency excludes any major program or scope requests by the client; these should form part of an overall project management reserve or be reflected in increased funding.

4. General Liability

4.1 Statement of Probable Costs

A.W. Hooker Associates Ltd. (HOOKER) has no control over the cost of labour and materials, the general contractors or any subcontractors' methods of determining prices, or competitive bidding and market conditions. This opinion of probable cost of construction is based on the experience, qualifications, and best judgment of the professional consultant familiar with the construction industry. HOOKER does not warranty that proposals or actual construction costs will not vary from this or subsequent estimates.

4.2 Ongoing Cost Control

A.W. Hooker Associates Ltd. recommends that the owner and/or the design team carefully review the cost estimate report, including line item descriptions, unit price clarifications, exclusions, inclusions and assumptions, contingencies, escalation, and mark-ups. This is to ensure that the design intent is captured within the content of the report. This is especially important at early stage estimates which tend to be based on a lesser level of design completion.

If the project is over budget or there are unresolved budget issues, alternative systems or schemes should ideally be evaluated before proceeding with the design phase. We recommend that cost control be implemented throughout the various stages of the design process to ensure the proposed design remains within the overall budget. It is recommended that the final estimate be produced by HOOKER using Bid Documents to determine overall cost changes, which may have occurred since the preparation of this estimate. The final update estimate will address changes and additions to the documents as well as addenda issued during the bidding process. HOOKER cannot reconcile bid results to any estimate not produced from bid documents including all addenda.

5. Estimate Scope Clarifications

5.1 List of Exclusions

1. Harmonized Sales Tax (HST)
2. Project Soft Costs (as described in item 2.10 above)
3. Furniture, furnishings, and equipment (except as noted in the estimate)
4. Premium time / after hours work
5. Accelerated construction schedule
6. Handling and removal of contaminated soils
7. Special foundation systems such as caissons or pile foundations
8. Premium for construction management or alternate approaches to procurement
9. Sole sourced equipment or building control systems
10. Security and Communications Equipment & Cabling; estimate includes empty conduit only
11. Building permit
12. Landscaping/siteworks

5.2 List of Assumptions

Architectural / Structural:

1. Work to be completed in phases per floor during regular working hours, starting with the basement.
2. Allowance to make good slab on grade where effected by new elevator construction.
3. New stairs to be metal pan concrete filled.
4. Exterior wall assembly has been assumed to match existing.
5. Allowance for exterior signage and logo has been included.
6. Cash allowances have been included. Refer to detailed estimate.

Mechanical:

7. Work will be conducted by fair wage contractor generally during regular working hours.
8. Allowance is included for plumbing fixtures of premium commercial quality.
9. Refer to estimate for scope specific assumptions.
10. No modifications to fire protection have been included in the estimate.
11. Assume controls are standalone type.

Electrical:

12. Work will be performed during regular working hours.
13. Existing main service will require remedial work to accommodate renovation requirements.
14. Upgrade to existing building grounding system has been included.
15. An allowance for third-party short circuit and coordination study has been included.
16. New lighting fixtures will be energy efficient dimmable LEDs.
17. Fire alarm will be addressable single stage.
18. Supply, programming, and installation of security equipment has been included.
19. Refer to estimate for further assumption of scope.

General:

20. Various assumptions have been made based on the design information available and our experience with projects of a similar nature. Please refer to the specific items within the estimate for the detailed assumptions made.

6. Documentation Received

Drawings and design documentation were prepared by the following consultants:

Pages	Documentation Received	Documentation Issued
6 Pages	St. Catherines Library – M&E Design Brief	September 14, 2022
12 Pages	Rendering(interior and exterior)_St. Catherines Lib 20220826s prepared by Ward99 Architects Inc	August 29, 2022
2 Dwgs	St. Catharine's Library_PDF's-2022.08.26 prepared Ward99 Architects Inc	August 29, 2022
9 Dwgs	St. Catharines Library-Mechanical Drawings-Schematic-R prepared by Jain	September 19, 2022
9 Dwgs	St. Catharines Library-Electrical Drawings-Schematic prepared by Jain	September 19, 2022

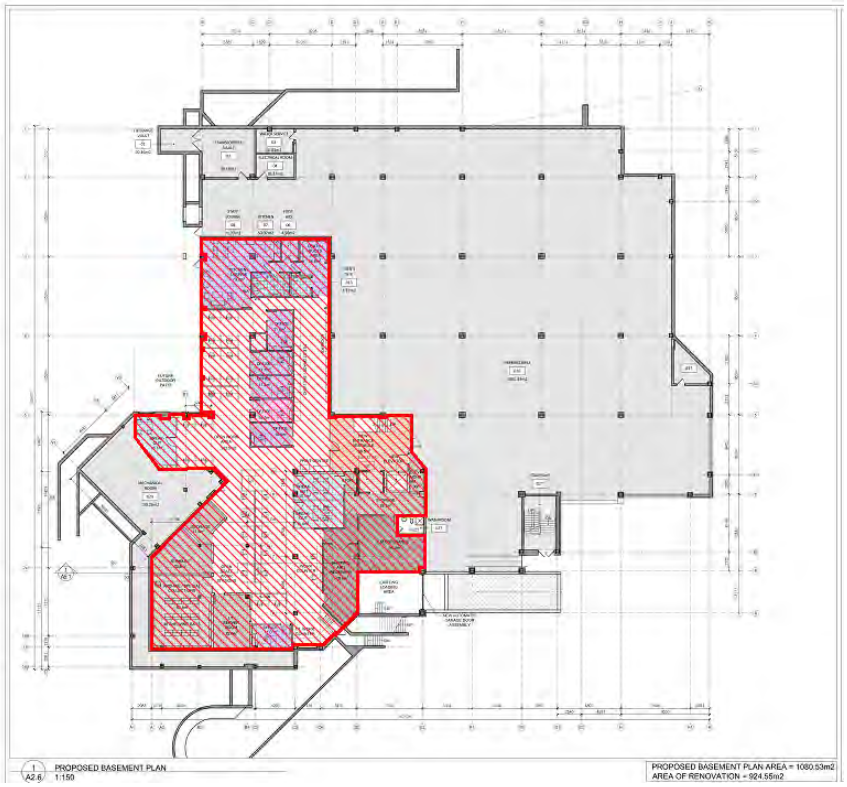
7. Gross Floor Area Summary

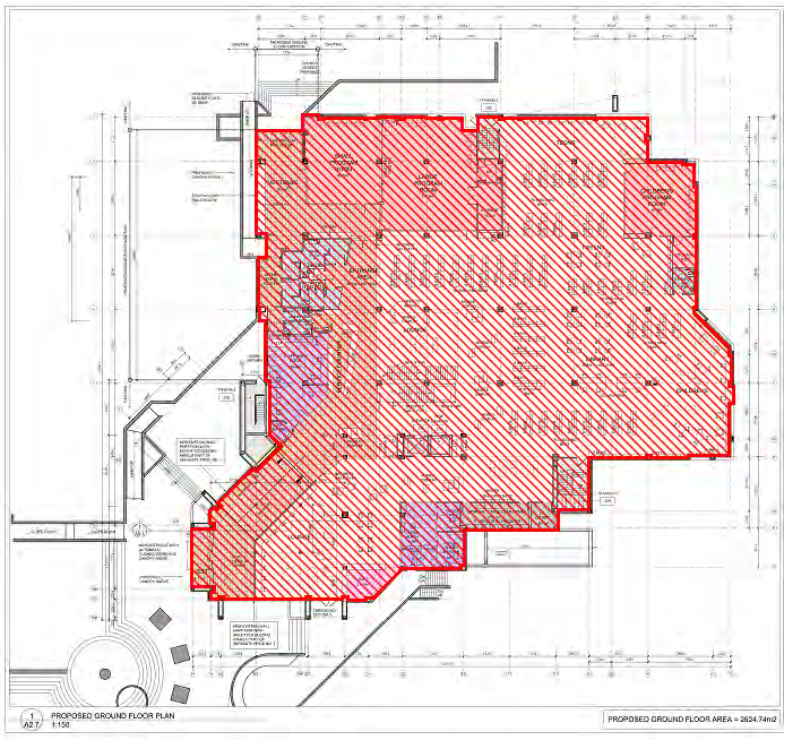
The following gross floor areas of renovation construction have been measured from floor plan drawings. The areas were measured electronically with a digitizer and checked longhand by dimensioning and scaling. The gross area calculations were performed in accordance with the Standard Method of Measurement published by the Canadian Institute of Quantity Surveyors.

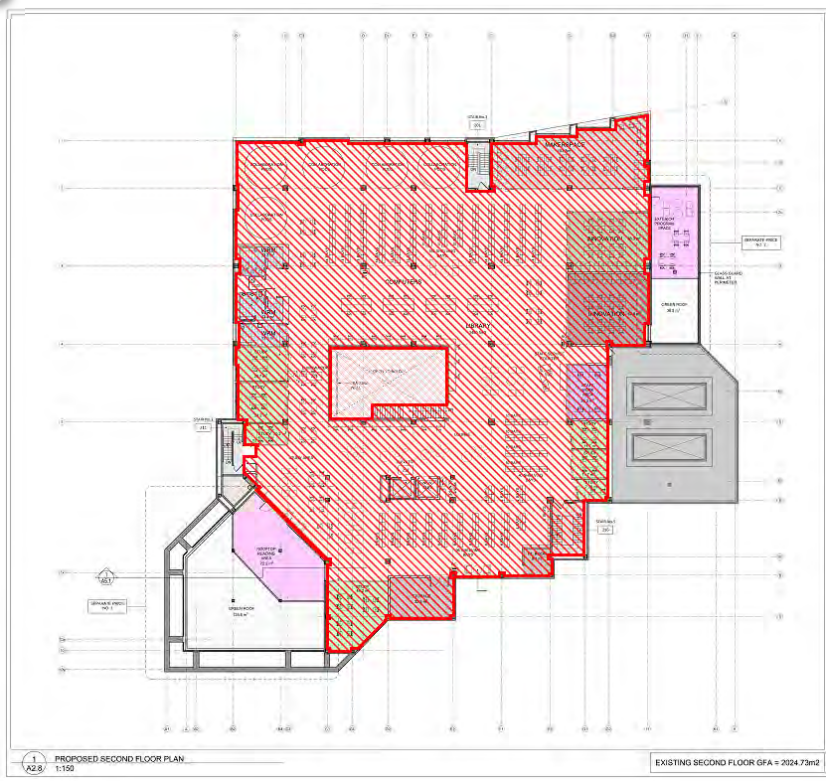
7.1 Summary of Renovation Construction Area

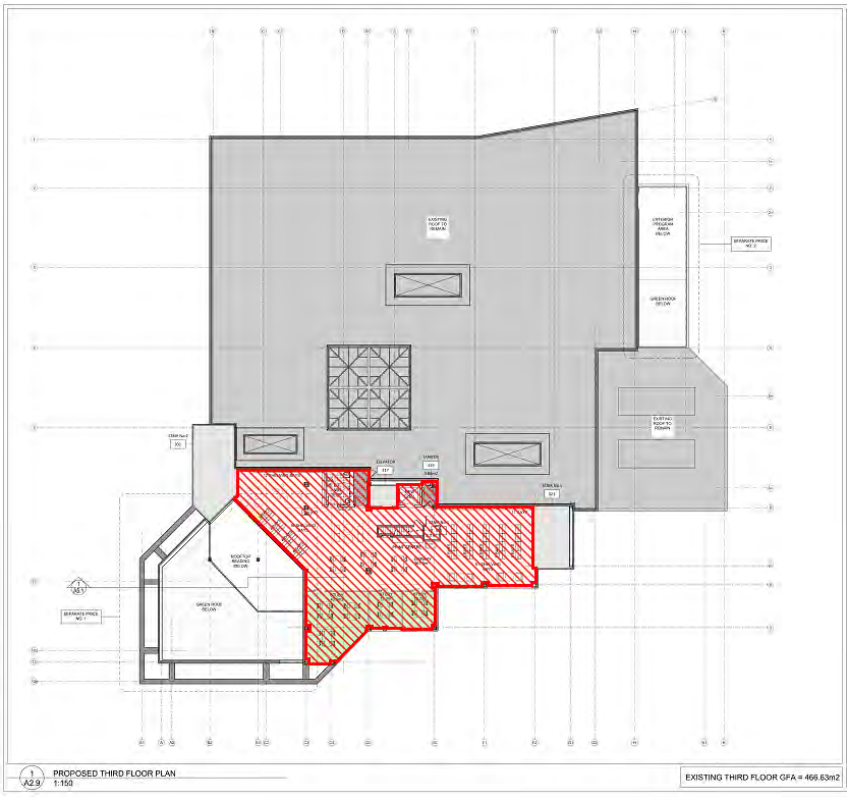
Area Description	Gross Floor Area
Basement Level	877
Ground	2,538
Second	1,915
Third	372
Total Gross Floor Area (square meters)	5,702
Total Gross Floor Area (square feet)	61,376

7.2 Gross Floor Areas (graphical representations)






PROPOSED SECOND FLOOR PLAN
1:150
EXISTING SECOND FLOOR GFA = 2024.73m2


PROPOSED THIRD FLOOR PLAN
1:150
EXISTING THIRD FLOOR GFA = 466.63m2

MASTER ESTIMATE SUMMARY

ST. CATHARINE'S PUBLIC LIBRARY RENOVATION

CLASS D ESTIMATE (Rev.0)
AUGUST 28, 2022

A.W. HOOKER QUANTITY SURVEYORS

	Hard Construction Costs		GFA (m2)	Unit (Cost/m2)	Sub Total	Estimated Total	% of Total
1	Building Shell		5,702	$69.03		$393,600	3.3%
	- Sub Structure			$4.38	$25,000		
	- Structure			$13.61	$77,600		
	- Exterior Enclosure			$51.03	$291,000		
2	Building Interiors		5,702	$507.08		$2,891,389	24.2%
	- Partitions and Doors			$212.69	$1,212,773		
	- Finishes			$157.95	$900,656		
	- Fittings and Equipment			$136.44	$777,960		
3	Mechanical		5,702	$58.46		$333,325	2.8%
	- Plumbing and Drainage			$42.11	$240,100		
	- Fire Protection			$0.00	$0		
	- Heating, Ventilation, Air Conditioning			$15.38	$87,725		
	- Controls			$0.96	$5,500		
4	Electrical		5,702	$366.42		$2,089,339	17.5%
	- Service and Distribution			$64.96	$370,394		
	- Lighting, Devices, and Heating			$178.27	$1,016,467		
	- Systems and Ancillaries			$123.20	$702,478		
5	Site Work		5,702	$0.00		$0	0.0%
	- Site Development (prep, surfaces, landscaping)			$0.00	$0		
	- Mechanical Site Services			$0.00	$0		
	- Electrical Site Services			$0.00	$0		
6	Ancillary Work		5,702	$66.71		$380,365	3.2%
	- Demolition			$66.71	$380,365		
	- Alterations			$0.00	$0		
7	Contractor's General Requirements	10.0%	5,702	$235.50		$1,342,800	11.2%
8	Contractor's Fees (OH&P)	5.0%	5,702	$65.24		$372,000	3.1%
9	Design & Pricing Contingency	15.0%	5,702	$205.26		$1,170,400	9.8%
	Sub Total (current dollars)		**5,702**	**$1,573.66**		**$8,973,000**	
10	Escalation Contingency	21.2%	5,702	$333.62		$1,902,300	15.9%
	Sub Total (including escalation to SEPT (Q3) 2023)		**5,702**	**$1,907.23**		**$10,875,000**	
11	Construction Contingency (Post Contract Changes)	10.0%	5,702	$190.74		$1,087,600	9.1%
	Total Estimated Hard Construction Cost		**5,702**	**$2,098.04**		**$11,963,000**	
	Imperial Conversion		**61,376**	**$194.91**		**Per SF**	

	Estimated Construction Costs (Breakdown by Major Component)	GFA m2	Unit Cost/m2	Estimated Total	% of Total
1	Building	5,702	$1,967.03	$11,216,000	93.8%
2	Alterations and Demolition	5,702	$131.01	$747,000	6.2%
3	Site Work (including M&E site services)	0	$0.00	$0	0.0%
4	Soft Costs	5,702	$0.00	Excluded	0.0%
	Total Estimated Hard and Soft Construction Costs	**5,702**	**$2,098.04**	**$11,963,000**	
	Imperial Conversion	**61,376**	**$194.91**	**Per SF**	

ITEMIZED AND SEPARATE ESTIMATE SUMMARY

ST. CATHARINE'S PUBLIC LIBRARY RENOVATION

CLASS D ESTIMATE (Rev.0)
AUGUST 28, 2022

A.W. HOOKER® QUANTITY SURVEYORS

No.	Description	Quant.	Unit	Rate	Sub Total
	Itemized Estimates: (Included Above)				
	The Itemized costs listed below are INCLUDED in our estimate. The amount identified for each item is inclusive of all mark ups on a prorated basis (General Requirements, Fee and Contingencies).				
1	Basement	877	m2	$3,124.29	$2,740,000
2	Ground Floor	2,538	m2	$2,006.70	$5,093,000
3	Second Floor	1,915	m2	$1,718.02	$3,290,000
4	Third Floor	372	m2	$2,258.06	$840,000
	Sub Total of Itemized Estimates				**$11,963,000**
	Separate Estimates: (Not Included Above)				
	The Separate costs listed below are EXCLUDED from our estimate. The amount identified for each item is inclusive of all mark ups on a prorated basis (General Requirements, Fee and Contingencies).				
1	Main lobby: remove existing glass roof and provide new roof structure and green roof and provide new curtain wall at lobby				$1,270,000
2	Second Floor: provide new green foor and outdoor reading terrace to replace existing				$229,000
3	Sprinkler the entire building				$655,000
	Sub Total of Separate Estimates				**$2,154,000**

MECHANICAL ESTIMATE SUMMARY

ST. CATHARINE'S PUBLIC LIBRARY RENOVATION

CLASS D ESTIMATE (Rev.0)

AUGUST 28, 2022

Gross Floor Area **5,702** **m2**

Description Element\Sub-Element	Specialty Sub Break down	Sub Element Total	Element Total	$ per m2 Sub Element	$ per m2 Element	% Element
C1 Mechanical						
C1.1 Plumbing & Drainage			**$240,100**		**$42.11**	**72.0%**
C1.11 - Plumbing Fixtures		$101,750		$17.84		
C1.12 - Domestic Water		$42,600		$7.47		
C1.13 - Sanitary Waste & Vent		$50,150		$8.80		
C1.14 - Storm		$0		$0.00		
C1.15 - Natural Gas		$0		$0.00		
C1.16 - Specialty Systems:		$14,600		$2.56		
- C1.16.1 - Medical Gases	$0					
- C1.16.2 - Fine Gases	$0					
- C1.16.3 - Compressed air	$0					
- C1.16.4 - Vacuum	$0					
- C1.16.5 - Oil Storage and Transfer System	$0					
- C1.16.6 - Purified Water System	$0					
- C1.16.7 - Specialty Drainage	$0					
- C1.16.8 - Selective / General Demolition	$14,600					
C1.17 - Miscellaneous Works and General Accounts		$31,000		$5.44		
C1.2 Fire Protection			**$0**		**$0.00**	**0.0%**
C1.21 - Standpipe		$0		$0.00		
C1.22 - Sprinklers		$0		$0.00		
C1.23 - Specialty Systems		$0		$0.00		
C1.24 - Fire Extinguisher		$0		$0.00		
C1.25 - Miscellaneous Works and General Accounts		$0		$0.00		
C1.3 Heating, Ventilation & Air Conditioning			**$87,725**		**$15.38**	**26.3%**
C1.31 - Liquid Heat Transfer (Heating)		$0		$0.00		
C1.32 - Liquid Heat Transfer (Cooling)		$3,500		$0.61		
C1.33 - Steam and Condensate		$0		$0.00		
C1.34 - Air Distribution		$49,750		$8.73		
C1.35 - Exhaust Systems		$17,650		$3.10		
C1.36 - Specialty Systems		$0		$0.00		
C1.37 - Support Systems and Works		$4,825		$0.85		
- C1.37.1 - Noise and Vibration Isolation	$1,200					
- C1.37.2 - Mechanical Wiring and Starters	$0					
- C1.37.3 - Balancing and Commissioning	$2,500					
- C1.37.4 - Heat recovery Systems	$0					
- C1.37.5 - Laboratory Exhaust Systems	$0					
- C1.37.6 - Generator Support	$0					
- C1.37.7 - Humidification	$0					
- C1.37.8 - Selective Demolition	$1,125					
C1.38 - Miscellaneous Works and General Accounts		$12,000		$2.10		
C1.4 Controls			**$5,500**		**$0.96**	**1.7%**
C1.41 - Controls and Automation		$5,500		$0.96		
C1.42 - Miscellaneous Works and General Accounts		$0		$0.00		
Total Building (C1) Mechanical			**$333,325**		**$58.46**	**Per m2**
Imperial Conversion		**61,376 SF**			**$5.43**	**Per SF**

ELECTRICAL ESTIMATE SUMMARY

ST. CATHARINE'S PUBLIC LIBRARY RENOVATION

CLASS D ESTIMATE (Rev.0)
AUGUST 28, 2022

Gross Floor Area 5,702 m2

Description Element\Sub-Element	Sub Element Total	Element Total	$ per m2 Sub Element	$ per m2 Element	% Element
C2 Electrical					
C2.1 Service & Distribution		**$370,394**		**$64.96**	**17.7%**
C2.11 - Main Service	$24,400		$4.28		
C2.12 - Emergency Power	$0		$0.00		
C2.13 - Distribution	$102,636		$18.00		
C2.14 - Feeders	$71,845		$12.60		
C2.15 - Motor Controls & Wiring	$85,530		$15.00		
C2.16 - Miscellaneous	$28,400		$4.98		
C2.17 - Electrical Contractors Overhead	$57,583		$10.10		
C2.2 Lighting, Devices & Heating		**$1,016,467**		**$178.27**	**48.7%**
C2.21 - Lighting	$656,476		$115.13		
C2.22 - Branch Devices & Wiring	$216,666		$38.00		
C2.23 - Heating	$0		$0.00		
C2.24 - Electrical Contractors Overhead	$143,325		$25.14		
C2.3 Systems & Ancillaries		**$702,478**		**$123.20**	**33.6%**
C2.31 - Fire Alarm System	$142,550		$25.00		
C2.32 - Security System	$85,530		$15.00		
C2.33 - Communications	$213,864		$37.51		
C2.34 - P.A. System	$125,444		$22.00		
C2.35 - Miscellaneous	$21,610		$3.79		
C2.36 - Electrical Contractors Overhead	$113,480		$19.90		
Total Building (C2) Electrical		**$2,089,339**		**$366.42**	**Per m2**
Imperial Conversion	**61,376 SF**			**$34.04**	**Per SF**

ELEMENTAL SUMMARY

ST. CATHARINE'S PUBLIC LIBRARY RENOVATION

CLASS D ESTIMATE (Rev.0)
AUGUST 28, 2022

A.W. HOOKER ®
QUANTITY SURVEYORS

Gross Floor Area 5,702 m2

Description Element\Sub-Element	Ratio	Quantity	Unit	Unit Rate	Elemental Cost Sub Element	Elemental Cost Element Total	$ per m2 Sub Element	$ per m2 Element	%
A. SHELL									
A1. Sub-Structure						**$25,000**		$4.38	0.2%
A1.1 Foundations	0.15	877	m2	$28.51	$25,000		$4.38		
A1.2 Basement Excavation	0.00	0	m2	$0.00	$0		$0.00		
A2. Structure						**$77,600**		$13.61	0.6%
A2.1 Lowest Floor Construction	0.15	877	m2	$5.70	$5,000		$0.88		
A2.2 Upper Floor Construction	0.02	116	m2	$625.86	$72,600		$12.73		
A2.3 Roof Construction	0.00	0	m2	$0.00	$0		$0.00		
A3. Exterior Enclosure						**$291,000**		$51.03	2.4%
A3.1 Walls Below Grade	0.00	0	m2	$0.00	$0		$0.00		
A3.2 Walls Above Grade	0.00	28	m2	$3,342.86	$93,600		$16.42		
A3.3 Windows & Entrances	0.00	10	m2	$4,397.61	$43,400		$7.61		
A3.4 Roof Finish	0.00	0	m2	$0.00	$0		$0.00		
A3.5 Projections	1.00	5,702	m2	$27.01	$154,000		$27.01		
B. INTERIORS									
B1 Partitions & Doors						**$1,212,773**		$212.69	10.1%
B1.1 Partitions	0.51	2,916	m2	$322.06	$939,123		$164.70		
B1.2 Doors	0.03	159	m2	$1,721.07	$273,650		$47.99		
B2 Finishes						**$900,656**		$157.95	7.5%
B2.1 Floor Finishes	0.95	5,439	m2	$72.37	$393,633		$69.03		
B2.2 Ceiling Finishes	0.95	5,439	m2	$77.74	$422,855		$74.16		
B2.3 Wall Finishes	1.23	7,014	m2	$12.00	$84,168		$14.76		
B3 Fittings & Equipment						**$777,960**		$136.44	6.5%
B3.1 Fittings & Fixtures	1.00	5,702	m2	$48.75	$277,960		$48.75		
B3.2 Equipment	0.00	0	m2	$0.00	$0		$0.00		
B3.3 Conveying Systems	1.00	5,702	m2	$87.69	$500,000		$87.69		
C. SERVICES									
C1 Mechanical						**$333,325**		$58.46	2.8%
C1.1 Plumbing & Drainage	1.00	5,702	m2	$42.11	$240,100		$42.11		
C1.2 Fire Protection	0.00	0	m2	$0.00	$0		$0.00		
C1.3 HVAC	1.00	5,702	m2	$15.38	$87,725		$15.38		
C1.4 Controls	1.00	5,702	m2	$0.96	$5,500		$0.96		
C2 Electrical						**$2,089,339**		$366.42	17.5%
C2.1 Service & Distribution	1.00	5,702	m2	$64.96	$370,394		$64.96		
C2.2 Lighting, Devices & Heating	1.00	5,702	m2	$178.27	$1,016,467		$178.27		
C2.3 Systems & Ancillaries	1.00	5,702	m2	$123.20	$702,478		$123.20		
D. SITE & ANCILLARY WORK									
D1 Site Work						**$0**		$0.00	0.0%
D1.1 Site Development	1.00	5,702	m2	$0.00	$0		$0.00		
D1.2 Mechanical Site Services	0.00	0	m2	$0.00	$0		$0.00		
D1.3 Electrical Site Services	0.00	0	m2	$0.00	$0		$0.00		
D2 Ancillary Work						**$380,365**		$66.71	3.2%
D2.1 Demolition	1.00	5,702	m2	$66.71	$380,365		$66.71		
D2.2 Alterations	0.00	0	m2	$0.00	$0		$0.00		
Z. GENERAL REQUIREMENTS & CONTINGENCIES									
Z1 General Requirements & Fees						**$1,714,800**		$300.74	14.3%
Z1.1 General Requirements	1.00	5,702	m2	$235.50	$1,342,800		$235.50		
Z1.2 Fees	1.00	5,702	m2	$65.24	$372,000		$65.24		
Z2 Allowances						**$4,160,300**		$729.62	34.8%
Z2.1 Design & Pricing Contingency	1.00	5,702	m2	$205.26	$1,170,400		$205.26		
Z2.2 Escalation Contingency	1.00	5,702	m2	$333.62	$1,902,300		$333.62		
Z2.3 Construction Contingency	1.00	5,702	m2	$190.74	$1,087,600		$190.74		
TOTAL ESTIMATED CONSTRUCTION COST (nearest ,000)						**$11,963,000**		**$2,098.06**	**100.0%**

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	A. SHELL					
	A1.1 SUB-STRUCTURE - Foundations					
	A1.11 - Standard Foundations					
	Basement					
1	Elevator foundations including:	1	NO	$25,000.00	$25,000	
1.1	- excavation, backfill and dispose of excavated material					
1.2	- concrete pad footing					
1.3	- concrete pit walls with waterproofing membrane					
	A1.12 - Special Foundations					
2	NIL					
	TOTAL FOR SUB-STRUCTURE - Foundations	0.15 × 877	m2	$28.51	$25,000	
	A2.1 STRUCTURE - Lowest Floor Construction					
	Basement					
3	Make good slab on grade effected by new elevator pit	1	LS	$5,000.00	$5,000	
	TOTAL FOR STRUCTURE - Lowest Floor Construction	0.15 × 877	m2	$5.70	$5,000	
	A2.2 STRUCTURE - Upper Floor Construction					
	A2.21 - Upper Floor Construction					
	Ground Floor					
4	Infill opening where book return chute was removed on ground floor	1	NO	$3,500.00	$3,500	
5	Infill opening where book return chute was removed on second floor	1	NO	$3,500.00	$3,500	
6	Infill upper floor construction where stairs were removed	12	m2	$500.00	$6,000	
7	Framed up infill at ground floor lobby	116	m2	$250.00	$29,000	
8	Extra over for ramp	54	m2	$50.00	$2,700	
	A2.22 - Stair Construction					
	Ground Floor					
9	Metal pan concrete filled stairs basement to ground	22	m	$450.00	$9,900	
10	Metal pan concrete filled stairs ground to second	40	m	$450.00	$18,000	
	TOTAL FOR STRUCTURE - Upper Floor Construction	0.02 × 116	m2	$625.86	$72,600	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	A3.2 EXTERIOR ENCLOSURE - Walls Above Grade					
	A3.21 - Walls Above Grade					
	Ground Floor					
11	Exterior wall including:	28	m2	$700.00	$19,600	
11.1	- composite panel cladding with z-clips					
11.2	- vapour barrier					
11.3	- exterior sheathing					
11.4	- structural steel studs					
11.5	- gypsum board					
12	Allowance for exterior signage and logo wall covering	1	LS	$25,000.00	$25,000	
	A3.22 - Structural Walls Above Grade					
13	NIL					
	A3.23 - Glazed Curtain Wall					
	Ground Floor					
14	Aluminum framed curtain wall system, assumed double glazed, low e coating, and argon filled	35	m2	$1,400.00	$49,000	
	TOTAL FOR EXT. ENCLOSURE - Walls Above Grade	0.00 / 28	m2	$3,342.86	$93,600	
	A3.3 EXTERIOR ENCLOSURE - Windows & Entrances					
	A3.31 - Windows & Louvers					
	Ground Floor					
15	Aluminum framed windows, assumed double glazed, low e coating, and argon filled	2	m2	$950.00	$1,900	
	A3.32 - Entrance Glazed Screens					
	Ground Floor					
16	Aluminum framed glazed entrance screens				Included in A3.23	
	A3.33 - Exterior Doors					
	Ground Floor					
17	Aluminum framed fully glazed doors including installation and finish					
17.1	- single, 915 mm × 2150mm	1	NO	$4,000.00	$4,000	
17.2	- automatic single sliding	1	NO	$12,500.00	$12,500	
17.3	- automatic double sliding	1	PR	$25,000.00	$25,000	
	TOTAL FOR EXT. ENCLOSURE - Windows & Entrances	0.00 / 10	m2	$4,397.61	$43,400	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	A3.4 EXTERIOR ENCLOSURE - Roof Covering					
	A3.41 - Roofing					
18	NIL					
	A3.42 - Skylights & Roof Glazing					
19	NIL					
	A3.43 - Roof Hatches & Doors					
20	NIL					
	TOTAL FOR EXT. ENCLOSURE - Roof Covering	0.00 0	m2	$0.00	$0	
	A3.5 EXTERIOR ENCLOSURE - Projections					
	A3.51 - Projections					
	Ground Floor					
21	Canopy at NW/SW Entrance including structure, roof finish, soffit finish, and fascia	77	m2	$2,000.00	$154,000	
	TOTAL FOR EXT. ENCLOSURE - Projections	1.00 5,702	m2	$27.01	$154,000	
	B. INTERIORS					
	B1.1 PARTITIONS & DOORS - Partitions					
	B1.11 - Fixed Partitions					
	Basement					
22	Concrete block partitions	66	m2	$225.00	$14,850	
23	Gypsum board partitions	450	m2	$135.00	$60,750	
23.1	- gypsum board					
23.2	- metal studs					
23.3	- sound attenuation batts					
23.4	- gypsum board					
24	Aluminum framed glazed partitions	92	m2	$850.00	$78,200	
25	Extra over for fire rated glazing to above	27	m2	$250.00	$6,750	
26	Rough carpentry	877	m2	$6.00	$5,262	
27	Caulking, sealing, and firestopping	877	m2	$8.00	$7,016	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	Ground Floor					
28	Concrete block partitions	44	m2	$225.00	$9,900	
29	Gypsum board partitions including:	1,074	m2	$135.00	$144,990	
29.1	- gypsum board					
29.2	- metal studs					
29.3	- sound attenuation batts					
29.4	- gypsum board					
30	Aluminum framed glazed partitions	210	m2	$850.00	$178,500	
31	Extra over for fire rated glazing to above	46	m2	$250.00	$11,500	
32	Rough carpentry	2,538	m2	$6.00	$15,228	
33	Caulking, sealing, and firestopping	2,538	m2	$8.00	$20,304	
	Second Floor					
34	Concrete block partitions	43	m2	$225.00	$9,675	
35	Gypsum board partitions to including:	607	m2	$135.00	$81,945	
35.1	- gypsum board					
35.2	- metal studs					
35.3	- sound attenuation batts					
35.4	- gypsum board					
36	Aluminum framed glazed partitions	148	m2	$850.00	$125,800	
37	Allowance for feature wall	1	LS	$50,000.00	$50,000	
38	Rough carpentry	1,915	m2	$6.00	$11,490	
39	Caulking, sealing, and firestopping	1,915	m2	$8.00	$15,320	
	Third Floor					
40	Concrete block partitions	34	m2	$225.00	$7,650	
41	Gypsum board partitions to including:	101	m2	$135.00	$13,635	
41.1	- gypsum board					
41.2	- metal studs					
41.3	- sound attenuation batts					
41.4	- gypsum board					
42	Aluminum framed glazed partitions	47	m2	$850.00	$39,950	
43	Rough carpentry	372	m2	$6.00	$2,232	
44	Caulking, sealing, and firestopping	372	m2	$8.00	$2,976	
	B1.12 - Moveable Partitions					
	Ground Floor					
45	Folding partition to Program room (assumed manual operation, standard quality)	28	m2	$900.00	$25,200	
	B1.13 - Structural Partitions & Shear Walls					
46	NIL					
	TOTAL FOR INTERIOR PARTITIONS & DOORS - Partitions	0.51	2,916 m2	$322.06		$939,123

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	B1.2 PARTITIONS & DOORS - Interior Doors					
	B1.21 - Interior Doors & Hardware					
	Basement					
47	Hollow metal door and frame including installation and paint finish					
47.1	- single	21	NO	$1,500.00	$31,500	
48	Door hardware supply allowance	21	NO	$850.00	$17,850	
49	Barrier free operators	2	NO	$3,000.00	$6,000	
	Ground Floor					
50	Aluminum framed fully glazed automatic sliding doors including installation and finish to entrance vestibule	1	NO	$25,000.00	$25,000	
51	Aluminum framed fully glazed sliding doors including installation and finish	3	NO	$5,000.00	$15,000	
52	Hollow metal door and frame including installation and paint finish					
52.1	- single	25	NO	$1,500.00	$37,500	
52.2	- double	1	PR	$3,000.00	$3,000	
53	Door hardware supply allowance	27	NO	$850.00	$22,950	
54	Barrier free operators	1	NO	$3,000.00	$3,000	
	Second Floor					
55	Aluminum framed fully glazed sliding doors including installation and finish	13	NO	$5,000.00	$65,000	
56	Hollow metal door and frame including installation and paint finish					
56.1	- single	6	NO	$1,500.00	$9,000	
56.2	- double	1	PR	$3,000.00	$3,000	
57	Door hardware supply allowance	8	NO	$850.00	$6,800	
58	Barrier free operators	1	NO	$3,000.00	$3,000	
	Third Floor					
59	Aluminum framed fully glazed sliding doors including installation and finish	3	NO	$5,000.00	$15,000	
60	Hollow metal door and frame including installation and paint finish					
60.1	- single	3	NO	$1,500.00	$4,500	
61	Door hardware supply allowance	3	NO	$850.00	$2,550	
62	Barrier free operators	1	NO	$3,000.00	$3,000	
	TOTAL FOR INTERIOR PARTITIONS & DOORS - Doors	0.03 | 159	m2	$1,721.07	$273,650	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	B2.1 FINISHES - Floor Finishes					
	B2.11 - Floor Finishes					
	Basement					
63	Porcelain tile	113	m2	$180.00	$20,340	
64	Carpet tile	491	m2	$55.00	$27,005	
65	Concrete sealer	206	m2	$15.00	$3,090	
66	Flooring bases including:					
66.1	- porcelain tile	84	m	$25.00	$2,100	
66.2	- carpet	353	m	$15.00	$5,295	
66.3	- rubber	192	m	$8.00	$1,536	
67	**Ground Floor**					
68	Porcelain tile	476	m2	$160.00	$76,160	
69	Carpet tile	1,853	m2	$55.00	$101,915	
70	Concrete sealer	96	m2	$15.00	$1,440	
71	Flooring bases including:					
71.1	- porcelain tile	333	m	$25.00	$8,325	
71.2	- carpet	482	m	$15.00	$7,230	
71.3	- rubber	108	m	$8.00	$864	
72	**Second Floor**					
73	Porcelain tile	42	m2	$160.00	$6,720	
74	Carpet tile	1,749	m2	$55.00	$96,195	
75	Concrete sealer	59	m2	$15.00	$885	
76	Flooring bases including:					
76.1	- porcelain tile	61	m	$25.00	$1,525	
76.2	- carpet	522	m	$15.00	$7,830	
76.3	- rubber	54	m	$8.00	$432	
77	**Third Floor**					
78	Porcelain tile	19	m2	$160.00	$3,040	
79	Carpet tile	329	m2	$55.00	$18,095	
80	Concrete sealer	6	m2	$15.00	$90	
81	Flooring bases including:					
81.1	- porcelain tile	32	m	$25.00	$800	
81.2	- carpet	167	m	$15.00	$2,505	
81.3	- rubber	27	m	$8.00	$216	
	TOTAL FOR FINISHES - Floor Finishes	0.95	5,439 m2	$72.37		$393,633
	B2.2 FINISHES - Ceiling Finishes					
	B2.21 - Ceiling Finishes					
	Basement					
82	Suspended gypsum board with paint finish	9	m2	$140.00	$1,260	
83	Suspended acoustical tile	764	m2	$55.00	$42,020	
84	Exposed structure with paint finish	37	m2	$20.00	$740	
85	Gypsum board bulkheads	2	m2	$200.00	$400	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	Ground Floor					
86	Suspended gypsum board with paint finish	199	m2	$140.00	$27,860	
87	Suspended acoustical tile	1,698	m2	$55.00	$93,390	
88	Suspended acoustical cloud	140	m2	$200.00	$28,000	
89	Wood grille ceiling	44	m2	$450.00	$19,800	
90	Composite ceiling panel cladding, assumed similar to Trespa Panels	107	m2	$500.00	$53,500	
91	Exposed structure with paint finish	376	m2	$20.00	$7,520	
92	Gypsum board bulkheads	75	m2	$200.00	$15,000	
	Second Floor					
93	Suspended gypsum board with paint finish	62	m2	$140.00	$8,680	
94	Suspended acoustical tile	1,788	m2	$55.00	$98,340	
95	Suspended acoustical cloud ceiling	27	m2	$200.00	$5,400	
	Third Floor					
96	Suspended gypsum board with paint finish	16	m2	$140.00	$2,240	
97	Suspended acoustical tile	335	m2	$55.00	$18,425	
98	Exposed structure with paint finish	4	m2	$20.00	$80	
99	Gypsum board bulkheads	1	m2	$200.00	$200	
	TOTAL FOR FINISHES - Ceiling Finishes	0.95	5,439 m2	$77.74		$422,855
	B2.3 FINISHES - Wall Finishes					
	B2.31 - Wall Finishes					
	Basement					
100	Paint	1,512	m2	$12.00	$18,144	
	Ground Floor					
101	Paint	2,879	m2	$12.00	$34,548	
	Second Floor					
102	Paint	2,036	m2	$12.00	$24,432	
	Third Floor					
103	Paint	587	m2	$12.00	$7,044	
	TOTAL FOR FINISHES - Wall Finishes	1.23	7,014 m2	$12.00		$84,168

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	B3.1 FITTINGS & EQUIPMENT - Fittings & Fixtures					
	B3.11 - Miscellaneous Metals					$123,160
	Basement					
104	Miscellaneous metals including lintels, bracing, and so forth	877	m2	$5.00	$4,385	
105	Wall mounted handrails, assumed painted metal	5	m	$350.00	$1,750	
106	Elevator pit ladder	1	NO	$1,500.00	$1,500	
	Ground Floor					
107	Miscellaneous metals including lintels, bracing, and so forth	2,538	m2	$5.00	$12,690	
108	Floor mounted handrail and balustrade, assumed painted metal	16	m	$500.00	$8,000	
109	Glass guard to lounge	16	m	$700.00	$11,200	
110	Allowance for book return slot	1	NO	$5,000.00	$5,000	
	Second Floor					
111	Miscellaneous metals including lintels, bracing, and so forth	1,915	m2	$5.00	$9,575	
112	Floor mounted glass and metal handrails	16	m	$1,200.00	$19,200	
113	Floor mounted glass balustrade as wood rail	40	m	$1,200.00	$48,000	
	Third Floor					
114	Miscellaneous metals including lintels, bracing, and so forth	372	m2	$5.00	$1,860	
	B3.12 - Millwork					$56,550
	Basement					
115	Kitchen type counter with upper and lower cabinets	4	m	$1,600.00	$6,400	
116	Kitchen type upper cabinets	2	m	$350.00	$700	
117	Closet shelf and rod	7	m	$150.00	$1,050	
	Ground Floor					
118	Kitchen type counter with lower cabinets	15	m	$1,200.00	$18,000	
119	Full height storage closets	22	NO	$1,000.00	$22,000	
	Second Floor					
120	Kitchen type counter with lower cabinets	7	m	$1,200.00	$8,400	
	B3.13 - Specialties					$98,250
	Basement					
121	Washroom partitions					
121.1	- standard	3	NO	$1,200.00	$3,600	
122	Washroom accessories including:					
122.1	- toilet paper dispenser	5	NO	$65.00	$325	
122.2	- soap dispenser	5	NO	$85.00	$425	
122.3	- paper towel dispenser	2	NO	$150.00	$300	
122.4	- grab bars	1	NO	$350.00	$350	
122.5	- mirrors	5	NO	$350.00	$1,750	
122.6	- coat hook	5	NO	$50.00	$250	
123	Lockers, assumed phenolic	32	NO	$500.00	$16,000	
124	Interior signage (doors only)			Included in Z1.12		

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	Ground Floor					
125	Washroom partitions					
125.1	- standard	3	NO	$1,200.00	$3,600	
125.2	- urinal screens	2	NO	$500.00	$1,000	
126	Washroom accessories including:					
126.1	- toilet paper dispenser	6	NO	$65.00	$390	
126.2	- soap dispenser	6	NO	$85.00	$510	
126.3	- paper towel dispenser	4	NO	$150.00	$600	
126.4	- grab bars	1	NO	$350.00	$350	
126.5	- mirrors	6	NO	$350.00	$2,100	
126.6	- coat hook	6	NO	$50.00	$300	
127	Book security gate	4	SET	$5,000.00	$20,000	
128	Display case	13	m	$2,000.00	$26,000	
129	Interior signage (doors only)			Included in Z1.12		
	Second Floor					
130	Washroom partitions					
130.1	- standard	4	NO	$1,200.00	$4,800	
130.2	- urinal screens	2	NO	$500.00	$1,000	
131	Washroom accessories including:					
131.1	- toilet paper dispenser	5	NO	$65.00	$325	
131.2	- soap dispenser	5	NO	$85.00	$425	
131.3	- paper towel dispenser	3	NO	$150.00	$450	
131.4	- grab bars	1	NO	$350.00	$350	
131.5	- mirrors	5	NO	$350.00	$1,750	
131.6	- coat hook	5	NO	$50.00	$250	
132	Allowance for decorative wall feature	1	LS	$10,000.00	$10,000	
133	Interior signage (doors only)			Included in Z1.12		
	Third Floor					
134	Washroom accessories including:					
134.1	- toilet paper dispenser	1	NO	$65.00	$65	
134.2	- soap dispenser	1	NO	$85.00	$85	
134.3	- paper towel dispenser	1	NO	$150.00	$150	
134.4	- grab bars	1	NO	$350.00	$350	
134.5	- mirrors	1	NO	$350.00	$350	
134.6	- coat hook	1	NO	$50.00	$50	
135	Interior signage (doors only)			Included in Z1.12		
	B3.14 - Furniture					$0
136	NIL					
	TOTAL FOR FITTINGS & EQUIP. - Fittings & Fixtures	1.00	5,702 NO	$48.75	$277,960	
	B3.2 FITTINGS & EQUIPMENT - Equipment					
	B3.21 - Equipment					
137	NIL					
	TOTAL FOR FITTINGS & EQUIP. - Equipment	0.00	0 m2	$0.00	$0	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	B3.3 FITTINGS & EQUIPMENT - Conveying Systems					
	B3.31 - Elevators					
138	Elevator serving 4 floors	2	NO	$250,000.00	$500,000	
	B3.32 - Escalators & Moving Walks					
139	NIL					
	B3.33 - Material Handling Systems					
140	NIL					
	TOTAL FOR FITTINGS & EQUIP. - Conveying Systems	1.00 5,702	m2	$87.69	$500,000	
	C1. SERVICES - MECHANICAL					
	C1.1 Plumbing & Drainage					
	C1.11 - Plumbing Fixtures					$101,750
	Basement					
141	Commercial quality, water conserving fixtures and fittings as follows:					
141.1	- Water closets	5	NO	$1,500.00	$7,500	
141.2	- Lavatories	5	NO	$1,150.00	$5,750	
141.3	- Showers	1	NO	$1,300.00	$1,300	
141.4	- Sinks	1	NO	$750.00	$750	
142	Rough-ins for above fixtures	12	NO	$650.00	$7,800	
	Ground floor					
143	Commercial quality, water conserving fixtures and fittings as follows:					
143.1	- Water closets	6	NO	$1,500.00	$9,000	
143.2	- Urinals	4	NO	$1,600.00	$6,400	
143.3	- Lavatories (Long 2 Faucet)	2	NO	$5,000.00	$10,000	
143.4	- Lavatories	3	NO	$1,300.00	$3,900	
143.5	- Janitor mop sink	1	NO	$1,500.00	$1,500	
143.6	- Sinks -kitchen	1	NO	$1,000.00	$1,000	
144	Rough-ins for above fixtures	17	NO	$650.00	$11,050	
	Second floor					
145	Commercial quality, water conserving fixtures and fittings as follows:					
145.1	- Water closets	5	NO	$1,500.00	$7,500	
145.2	- Urinals	2	NO	$1,200.00	$2,400	
145.3	- Lavatories (Long 2 Faucet)	2	NO	$5,000.00	$10,000	
145.4	- Lavatories	1	NO	$1,150.00	$1,150	
145.5	- Janitor mop sink	1	NO	$1,500.00	$1,500	
146	Rough-ins for above fixtures	11	NO	$650.00	$7,150	
	Third floor					
147	Commercial quality, water conserving fixtures and fittings as follows:					
147.1	- Water closets	1	NO	$1,500.00	$1,500	
147.2	- Lavatories	1	NO	$1,150.00	$1,150	
147.3	- Janitor mop sink	1	NO	$1,500.00	$1,500	
148	Rough-ins for above fixtures	3	NO	$650.00	$1,950	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	C1.12 - Domestic Water					$42,600
	Ground floor					
149	Connection to existing domestic hot and cold water piping in vicinity	6	NO	$600.00	$3,600	
150	Domestic copper type 'L' hot and cold piping c/w fittings, supports and solder joints- 1/2" to 1" dia.	1	NO	$19,000.00	$19,000	
151	Thermal insulation to above piping	1	NO	$5,000.00	$5,000	
152	Isolation valves	1	NO	$500.00	$500	
	Second floor					
153	Connection to existing domestic hot and cold water piping in vicinity	5	NO	$600.00	$3,000	
154	Domestic copper type 'L' hot and cold piping c/w fittings, supports and solder joints- 1/2" to 1" dia.	1	NO	$9,000.00	$9,000	
155	Thermal insulation to above piping	1	NO	$2,000.00	$2,000	
156	Isolation valves	1	NO	$500.00	$500	
	Green roof :			See separate price 1		
156.1	- Allowance for water piping distribution for green roof					
156.2	- Allowance for non freeze hose bibs serving green roof					
	Green roof :			See separate price 2		
156.3	- Allowance for water piping distribution for green roof					
156.4	- Allowance for non freeze hose bibs serving green roof					
	C1.13 - Sanitary Waste & Vent					$50,150
	Ground floor					
157	Connection to existing sanitary piping in vicinity	3	NO	$600.00	$1,800	
158	Above grade cast iron sanitary drainage piping c/w joints, fittings & supports	1	LS	$20,000.00	$20,000	
159	Floor drains	3	NO	$550.00	$1,650	
160	X ray, scanning and core drilling				By G.C	
161	Cleanouts and line items	1	LS	$1,500.00	$1,500	
	Second floor					
162	Connection to existing sanitary piping in vicinity	1	NO	$600.00	$600	
163	Above grade cast iron sanitary drainage piping c/w joints, fittings & supports	1	LS	$12,500.00	$12,500	
164	Floor drains	4	NO	$550.00	$2,200	
165	X ray, scanning and core drilling				By G.C	
166	Cleanouts and line items	1	LS	$1,500.00	$1,500	
	Third floor					
167	Connection to existing sanitary piping in vicinity	2	NO	$600.00	$1,200	
168	Above grade cast iron sanitary drainage piping c/w joints, fittings & supports	1	LS	$4,000.00	$4,000	
169	Floor drains	4	NO	$550.00	$2,200	
170	X ray, scanning and core drilling				By G.C	
171	Cleanouts and line items	1	LS	$1,000.00	$1,000	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	C1.14 - Storm					$0
	Green roof :			See separate price 1		
171.1	- Allowance for storm piping distribution for green roof					
171.2	- Allowance for roof drain serving green roof					
	Green roof :			See separate price 2		
171.3	- Allowance for storm piping distribution for green roof					
171.4	- Allowance for roof drains serving green roof					
	C1.15 - Natural Gas					$0
172	No work required					
	C1.16.8 - Selective / General Demolition					$14,600
173	Demolition of existing plumbing fixtures					
	Basement					
174	Demolition of existing plumbing fixtures					
174.1	- Water closets	5	NO	$350.00	$1,750	
174.2	- Lavatories	5	NO	$350.00	$1,750	
174.3	- Showers	1	NO	$350.00	$350	
174.4	- Sinks	1	NO	$350.00	$350	
	Ground Floor					
175	Demolition of existing plumbing fixtures					
175.1	- Water closets	5	NO	$350.00	$1,750	
175.2	- Urinals	4	NO	$350.00	$1,400	
175.3	- Lavatories (Long 2 Faucet)	2	NO	$500.00	$1,000	
175.4	- Lavatories	2	NO	$350.00	$700	
175.5	- Sinks -kitchen	1	NO	$350.00	$350	
	Second Floor					
176	Demolition of existing plumbing fixtures					
176.1	- Water closets	5	NO	$350.00	$1,750	
176.2	- Urinals	2	NO	$350.00	$700	
176.3	- Lavatories (Long 2 Faucet)	2	NO	$500.00	$1,000	
176.4	- Lavatories	1	NO	$350.00	$350	
176.5	- Janitor mop sink	1	NO	$350.00	$350	
	Third Floor					
177	Demolition of existing plumbing fixtures					
177.1	- Water closets	1	NO	$350.00	$350	
177.2	- Lavatories	1	NO	$350.00	$350	
177.3	- Janitor mop sink	1	NO	$350.00	$350	
	C1.17 - Miscellaneous Works and General Accounts					$31,000
178	Supervision, job set up, clean up, small tool rentals, permits and inspections, overhead / profit, etc.					
178.1	- Basement	1	NO	$4,000.00	$4,000	
178.2	- Ground floor	1	NO	$15,000.00	$15,000	
178.3	- Second floor	1	NO	$10,000.00	$10,000	
178.4	- Third floor	1	NO	$2,000.00	$2,000	
	TOTAL FOR MECHANICAL - Plumbing & Drainage	1.00	5,702 m2	$42.11	$240,100	
	C1.2 Fire Protection					
	C1.21 - Standpipe					$0
179	No work required					

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	C1.22 - Sprinklers					$0
180	No work required					
	C1.23 - Specialty Systems					$0
181	No work required					
	C1.24 - Fire Extinguisher					$0
182	No work required					
	TOTAL FOR MECHANICAL - Fire Protection	0.00 0	m2	$0.00	$0	
	C1.3 Heating, Ventilation & Air Conditioning					
	C1.31 - Liquid Heat Transfer (Heating)					$0
183	No work required					
	C1.32 - Liquid Heat Transfer (Cooling)					$3,500
	Basement					
184	Allowance for relocation of the existing condensing unit, fan coil unit and new refrigeration piping to suite	1	NO	$3,500.00	$3,500	
	C1.33 - Steam and Condensate					$0
185	No work required					
	C1.34 - Air Distribution					$49,750
	Basement					
186	Connect to existing supply / return duct	8	NO	$250.00	$2,000	
187	Allowance for Supply / return ductwork	1	LS	$1,500.00	$1,500	
188	Bypass damper BP-1	1	NO	$2,000.00	$2,000	
189	Cap of existing ductwork	2	NO	$50.00	$100	
190	Fire Damper	1	NO	$500.00	$500	
191	Return/ Supply air grilles /diffusers- New	3	NO	$150.00	$450	
192	Return/ Supply air grilles /diffusers- Relocated	8	NO	$100.00	$800	
	Ground Floor					
193	Connect to existing supply / return duct	12	NO	$250.00	$3,000	
194	Allowance for Supply / return ductwork	1	LS	$5,000.00	$5,000	
195	Cap of existing ductwork	12	NO	$50.00	$600	
196	Fire Damper	1	NO	$500.00	$500	
197	Return/ Supply air grilles /diffusers- New	4	NO	$150.00	$600	
198	Return/ Supply air grilles /diffusers- Relocated	8	NO	$100.00	$800	
199	Supply grilles Linear	12	m	$500.00	$6,000	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	Second Floor					
200	Connect to existing supply / return duct	4	NO	$250.00	$1,000	
201	Allowance for Supply / return ductwork	1	LS	$6,500.00	$6,500	
202	Cap of existing ductwork	2	NO	$50.00	$100	
203	Return/ Supply air grilles /diffusers- New	8	NO	$150.00	$1,200	
204	Return/ Supply air grilles /diffusers- Relocated	3	NO	$100.00	$300	
	Third Floor					
205	Allowance for Air Handling Unit HVAC-1 , 3 Ton , 200 cfm , equal to Lennox LGH036S4T	1	NO	$10,500.00	$10,500	
206	Allowance for Craning unit in place	1	NO	$2,500.00	$2,500	
207	Connect to existing supply / return duct	2	NO	$250.00	$500	
208	Allowance for Supply / return ductwork	1	LS	$3,000.00	$3,000	
209	Cap of existing ductwork	2	NO	$50.00	$100	
210	Return/ Supply air grilles /diffusers- Relocated	2	NO	$100.00	$200	
	C1.35 - Exhaust Systems					$17,650
	Basement					
211	Allowance for new exhaust fan-101 in basement	1	NO	$1,000.00	$1,000	
212	Allowance for exhaust duct work in basement	1	LS	$1,000.00	$1,000	
213	Exhaust air grille	1	NO	$150.00	$150	
	Ground floor					
214	Allowance for new exhaust fan-102	1	NO	$750.00	$750	
215	Allowance for exhaust duct work	1	LS	$5,000.00	$5,000	
216	Exhaust air grille	5	NO	$150.00	$750	
	Second floor					
217	Allowance for exhaust duct work	1	LS	$3,000.00	$3,000	
218	Exhaust air grille	5	NO	$150.00	$750	
	Third floor					
219	Allowance for new exhaust fan-103	1	NO	$1,500.00	$1,500	
220	Allowance for exhaust duct work	1	LS	$3,000.00	$3,000	
221	Exhaust air grille	5	NO	$150.00	$750	
	C1.37 - Support Systems and Works					$4,825
	C1.37.1 - Noise and Vibration Isolation					$1,200
222	Allowance for noise and vibration isolation					
222.1	- Basement	1	NO	$300.00	$300	
222.2	- Ground floor	1	NO	$300.00	$300	
222.3	- Second floor	1	NO	$300.00	$300	
222.4	- Third floor	1	NO	$300.00	$300	
	C1.37.2 - Mechanical Wiring and Starters					$0
223	Included in C1.41					

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	C1.37.3 - Balancing and Commissioning					$2,500
224	Allowance for balancing and commissioning					
224.1	- Basement	1	NO	$500.00	$500	
224.2	- Ground floor	1	NO	$500.00	$500	
224.3	- Second floor	1	NO	$500.00	$500	
224.4	- Third floor	1	NO	$1,000.00	$1,000	
	C1.37.8 - Selective Demolition					$1,125
	Basement					
225	No work required					
	Ground floor					
226	Demolition of existing Grilles/ diffusers	3	NO	$50.00	$150	
227	Demolition of existing exhaust fan	1	NO	$200.00	$200	
	Second floor					
228	Demolition of existing Grilles/ diffusers	1	NO	$50.00	$50	
229	Demolition of existing exhaust fan	1	NO	$200.00	$200	
	Third floor					
230	Demolition of existing ductwork	1	NO	$500.00	$500	
231	Demolition of existing Grilles/ diffusers	1	NO	$25.00	$25	
	C1.38 - Miscellaneous Works and General Accounts					$12,000
232	Supervision, job set up, clean up, small tool rentals, permits and inspections, overhead / profit, etc.					
232.1	- Basement	1	NO	$2,000.00	$2,000	
232.2	- Ground floor	1	NO	$4,000.00	$4,000	
232.3	- Second floor	1	NO	$2,000.00	$2,000	
232.4	- Third floor	1	NO	$4,000.00	$4,000	
	TOTAL FOR MECHANICAL - HVAC	1.00	5,702 m2	$15.38	$87,725	
	C1.4 MECHANICAL - Controls					
	C1.41 - Controls and Automation					$5,500
233	Allowance for standalone controls for new equipment					
233.1	- Air Handling unit AHU-1	1	NO	$3,000.00	$3,000	
233.2	- Exhaust Fan basement	1	NO	$500.00	$500	
233.3	- Exhaust Fan ground	1	NO	$500.00	$500	
233.4	- Exhaust Fan third	1	NO	$500.00	$500	
233.5	- By pass damper on basement level	1	NO	$1,000.00	$1,000	
	C1.42 - Miscellaneous Works and General Accounts					$0
234	included in rates above					
	TOTAL FOR MECHANICAL - Controls	1.00	5,702 m2	$0.96	$5,500	
	Total Mech Unit Rate			$58.46		

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	C2. SERVICES - ELECTRICAL					
	C2.1 ELECTRICAL - Service & Distribution					
	C2.11 - Main Service					$24,400
	Basement:					
235	Remedial work to existing 1000A 347/600V main service to accommodate new loads including: review of circuitry; reusing and adding breakers; and, updating directories	1	LS	$24,400.00	$24,400	
	C2.12 - Emergency Power					$0
236	Not in scope of work. Life safety lighting provided through battery units and exit signage				C2.21 - Lighting	
	C2.13 - Distribution					$102,636
	Basement:					
237	Modify/add power distribution equipment consisting of 347/600V distribution panel, 120/208V lighting and power panels and associated transformers	877	m2	$18.00	$15,786	
	Ground Floor:					
238	Modify/add power distribution equipment consisting of 347/600V distribution panel, 120/208V lighting and power panels and associated transformers	2,538	m2	$18.00	$45,684	
	Second Floor:					
239	Modify/add power distribution equipment consisting of 347/600V distribution panel, 120/208V lighting and power panels and associated transformers	1,915	m2	$18.00	$34,470	
	Third Floor:					
240	Modify/add power distribution equipment consisting of 347/600V distribution panel, 120/208V lighting and power panels and associated transformers	372	m2	$18.00	$6,696	
	C2.14 - Feeders					$71,845
	Basement:					
241	Feeders for distribution equipment using rw90 copper conductors in EMT conduit	877	m2	$12.60	$11,050	
	Ground Floor:					
242	Feeders for distribution equipment using rw90 copper conductors in EMT conduit	2,538	m2	$12.60	$31,979	
	Second Floor:					
243	Feeders for distribution equipment using rw90 copper conductors in EMT conduit	1,915	m2	$12.60	$24,129	
	Third Floor:					
244	Feeders for distribution equipment using rw90 copper conductors in EMT conduit	372	m2	$12.60	$4,687	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	C2.15 - Motor Controls & Wiring					$85,530
	Basement:					
245	Power connection with line and load side wiring including disconnect switch for mechanical equipment	877	m2	$15.00	$13,155	
	Ground Floor:					
246	Power connection with line and load side wiring including disconnect switch for mechanical equipment	2,538	m2	$15.00	$38,070	
	Second Floor:					
247	Power connection with line and load side wiring including disconnect switch for mechanical equipment	1,915	m2	$15.00	$28,725	
	Third Floor:					
248	Power connection with line and load side wiring including disconnect switch for mechanical equipment	372	m2	$15.00	$5,580	
	C2.16 - Miscellaneous					$28,400
	Basement:					
249	Remedial work to existing building grounding system to accommodate renovation	1	LS	$9,100.00	$9,100	
250	Cutting, patching, and coring	1	LS	$6,500.00	$6,500	
251	Third-party short circuit and coordination study	1	LS	$12,800.00	$12,800	
	C2.17 - Electrical Contractors Overhead					$57,583
	Basement	1	LS	$17,081.22	$17,081	
	Ground Floor	1	LS	$21,304.36	$21,304	
	Second Floor	1	LS	$16,074.80	$16,075	
	Third Floor	1	LS	$3,122.62	$3,123	
	TOTAL FOR ELECTRICAL - Service & Distribution	1.00	5,702 m2	$64.96	$370,394	
	C2.2 ELECTRICAL - Lighting, Devices & Heating					
	C2.21 - Lighting					$656,476
	Lighting costs include the supply and installation of fixtures with associated wiring and supports					
	Basement:					
252	Round LED downlight	3	NO	$520.00	$1,560	
253	2' x 4' LED troffer in kitchen area	14	NO	$600.00	$8,400	
254	2' x 4' LED troffer in offices and public circulation areas	85	NO	$650.00	$55,250	
255	2' x 4' LED troffer in service area	29	NO	$530.00	$15,370	
256	1' x 4' LED fixture in service area	1	NO	$520.00	$520	
257	Emergency lighting including battery units, remote heads, and exit sign	877	m2	$8.00	$7,016	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	Ground Floor:					
258	Round LED downlight	10	NO	$520.00	$5,200	
259	2' x 4' LED troffer in offices and public circulation areas	221	NO	$650.00	$143,650	
260	2' x 4' LED troffer in service area	3	NO	$530.00	$1,590	
261	1' x 4' LED fixture in service area	14	NO	$520.00	$7,280	
262	4.26m LED linear fixture	9	NO	$1,920.00	$17,280	
263	4.20m LED linear fixture	14	NO	$1,890.00	$26,460	
264	2.43m LED linear fixture	8	NO	$1,190.00	$9,520	
265	1.83m LED linear fixture	68	NO	$950.00	$64,600	
266	Emergency lighting including battery units, remote heads, and exit sign	2,538	m2	$8.00	$20,304	
	Second Floor:					
267	2' x 4' LED troffer in offices and public circulation areas	190	NO	$650.00	$123,500	
268	2' x 4' LED troffer in service area	8	NO	$530.00	$4,240	
269	1' x 4' LED fixture in service area	9	NO	$520.00	$4,680	
270	4.25m LED linear fixture	37	NO	$1,910.00	$70,670	
271	Emergency lighting including battery units, remote heads, and exit sign	1,915	m2	$8.00	$15,320	
	Third Floor:					
272	2' x 4' LED troffer in offices and public circulation areas	77	NO	$650.00	$50,050	
273	1' x 4' LED fixture in service area	2	NO	$520.00	$1,040	
274	Emergency lighting including battery units, remote heads, and exit sign	372	m2	$8.00	$2,976	
	C2.22 - Branch Devices & Wiring					$216,666
	Branch device costs include the supply and installation of devices with associated wiring and supports					
	Basement:					
275	20A 120V duplex receptacle, GFI	6	NO	$247.82	$1,487	
276	20A 120V duplex receptacle	3	NO	$231.39	$694	
277	15A 120V duplex receptacle	20	NO	$226.24	$4,525	
278	15A 120V duplex receptacle c/w separate neutral	40	NO	$278.75	$11,150	
279	Allowance for additional specialty/convenience receptacles and power connections c/w conduit and wire	877	m2	$10.70	$9,384	
280	Central low voltage lighting controls using occupancy / daylight sensors, dimmers in library, and local LV switching	877	m2	$16.00	$14,032	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	Ground Floor:					
281	20A 120V duplex receptacle, GFI	5	NO	$247.82	$1,239	
282	20A 120V duplex receptacle	16	NO	$231.39	$3,702	
283	15A 120V duplex receptacle	22	NO	$226.24	$4,977	
284	15A 120V duplex receptacle c/w separate neutral	14	NO	$278.75	$3,903	
285	Allowance for additional specialty/convenience receptacles and power connections c/w conduit and wire	2,538	m2	$10.70	$27,157	
286	Central low voltage lighting controls using occupancy / daylight sensors, dimmers in library, and local LV switching	2,538	m2	$16.00	$40,608	
	Second Floor:					
287	20A 120V duplex receptacle, GFI W/P	3	NO	$250.23	$751	
288	20A 120V duplex receptacle, GFI	3	NO	$247.82	$743	
289	20A 120V duplex receptacle	7	NO	$231.39	$1,620	
290	15A 120V duplex receptacle c/w separate neutral	28	NO	$278.75	$7,805	
291	15A 120V duplex receptacle in recessed floor box	35	NO	$474.93	$16,623	
292	Allowance for additional specialty/convenience receptacles and power connections c/w conduit and wire	1,915	m2	$10.70	$20,491	
293	Central low voltage lighting controls using occupancy / daylight sensors, dimmers in library, and local LV switching	1,915	m2	$16.00	$30,640	
	Third Floor:					
294	20A 120V duplex receptacle, GFI	1	NO	$247.82	$248	
295	20A 120V duplex receptacle	5	NO	$231.39	$1,157	
296	15A 120V duplex receptacle in recessed floor box	8	NO	$474.93	$3,799	
297	Allowance for additional specialty/convenience receptacles and power connections c/w conduit and wire	372	m2	$10.70	$3,980	
298	Central low voltage lighting controls using occupancy / daylight sensors, dimmers in library, and local LV switching	372	m2	$16.00	$5,952	
	C2.23 - Heating					$0
299	Power connection with line and load side wiring for heating equipment			See C2.15 - Motor Controls & Wiring		
	C2.24 - Electrical Contractors Overhead					$143,325
	Basement	1	LS	$12,093.17	$12,093	
	Ground Floor	1	LS	$23,905.68	$23,906	
	Second Floor	1	LS	$87,048.88	$87,049	
	Third Floor	1	LS	$20,277.27	$20,277	
	TOTAL FOR ELECTRICAL - Lighting, Devices & Heating	1.00	5,702 m2	$178.27	$1,016,467	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	C2.3 ELECTRICAL - Systems & Ancillaries					
	C2.31 - Fire Alarm System					$142,550
	Basement:					
300	New single stage addressable fire alarm system including fire alarm control panel, annunciator panel, passive graphic, horn/strobe devices, detectors, connection to sprinkler valves…	877	m2	$25.00	$21,925	
	Ground Floor:					
301	New single stage addressable fire alarm system including fire alarm control panel, annunciator panel, passive graphic, horn/strobe devices, detectors, connection to sprinkler valves…	2,538	m2	$25.00	$63,450	
	Second Floor:					
302	New single stage addressable fire alarm system including fire alarm control panel, annunciator panel, passive graphic, horn/strobe devices, detectors, connection to sprinkler valves…	1,915	m2	$25.00	$47,875	
	Third Floor:					
303	New single stage addressable fire alarm system including fire alarm control panel, annunciator panel, passive graphic, horn/strobe devices, detectors, connection to sprinkler valves…	372	m2	$25.00	$9,300	
	C2.32 - Security System					$85,530
	Basement:					
304	Empty raceway infrastructure for security access control of perimeter doors and CCTV monitoring of public spaces	877	m2	$15.00	$13,155	
305	Supply, programming, and installation of security equipment				By Others	
	Ground Floor:					
306	Empty raceway infrastructure for security access control of perimeter doors and CCTV monitoring of public spaces	2,538	m2	$15.00	$38,070	
307	Supply, programming, and installation of security equipment				By Others	
	Second Floor:					
308	Empty raceway infrastructure for security access control of perimeter doors and CCTV monitoring of public spaces	1,915	m2	$15.00	$28,725	
309	Supply, programming, and installation of security equipment				By Others	
	Third Floor:					
310	Empty raceway infrastructure for security access control of perimeter doors and CCTV monitoring of public spaces	372	m2	$15.00	$5,580	
311	Supply, programming, and installation of security equipment				By Others	
	C2.33 - Communications					$213,864
	Basement:					
312	Wall mounted empty conduit data/voice outlet, 2 drop	12	NO	$205.75	$2,469	
313	Wall mounted empty conduit data outlet, 1 drop	28	NO	$205.75	$5,761	
314	CAT 6 cable drop	52	NO	$410.69	$21,356	
315	Allowance for undeveloped communication system	877	m2	$10.00	$8,770	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	Ground Floor:					
316	Wall mounted empty conduit data/voice outlet, 2 drop	14	NO	$205.75	$2,881	
317	CAT 6 cable drop	28	NO	$410.69	$11,499	
318	Allowance for undeveloped communication system	2,538	m2	$10.00	$25,380	
	Second Floor:					
319	Wall mounted empty conduit data/voice outlet, 2 drop	4	NO	$205.75	$823	
320	Wall mounted empty conduit data outlet, 1 drop	24	NO	$205.75	$4,938	
321	Floor mounted empty conduit data outlet, 4 drops	35	NO	$542.71	$18,995	
322	CAT 6 cable drop	172	NO	$410.69	$70,639	
323	Allowance for undeveloped communication system	1,915	m2	$10.00	$19,150	
	Third Floor:					
324	Floor mounted empty conduit data outlet, 4 drops	8	NO	$542.71	$4,342	
325	CAT 6 cable drop	32	NO	$410.69	$13,142	
326	Allowance for undeveloped communication system	372	m2	$10.00	$3,720	
	C2.34 - P.A. System					$125,444
	Basement:					
327	Empty raceway infrastructure for Public Address equipment	877	m2	$5.00	$4,385	
328	Supply, programming, and installation of Public Address equipment	877	m2	$9.00	$7,893	
329	Empty raceway infrastructure for Audio Visual equipment	877	m2	$8.00	$7,016	
330	Supply, programming, and installation of Audio Visual equipment				By Others	
	Ground Floor:					
331	Empty raceway infrastructure for Public Address equipment	2,538	m2	$5.00	$12,690	
332	Supply, programming, and installation of Public Address equipment	2,538	m2	$9.00	$22,842	
333	Empty raceway infrastructure for Audio Visual equipment	2,538	m2	$8.00	$20,304	
334	Supply, programming, and installation of Audio Visual equipment				By Others	
	Second Floor:					
335	Empty raceway infrastructure for Public Address equipment	1,915	m2	$5.00	$9,575	
336	Supply, programming, and installation of Public Address equipment	1,915	m2	$9.00	$17,235	
337	Empty raceway infrastructure for Audio Visual equipment	1,915	m2	$8.00	$15,320	
338	Supply, programming, and installation of Audio Visual equipment				By Others	
	Third Floor:					
339	Empty raceway infrastructure for Public Address equipment	372	m2	$5.00	$1,860	
340	Supply, programming, and installation of Public Address equipment	372	m2	$9.00	$3,348	
341	Empty raceway infrastructure for Audio Visual equipment	372	m2	$8.00	$2,976	
342	Supply, programming, and installation of Audio Visual equipment				By Others	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	C2.35 - Miscellaneous					$21,610
	Basement:					
343	Allowance for miscellaneous system (LV system, intercom, etc...)	877	m2	$1.50	$1,316	
344	Provisional allowance to rework existing-to-remain conduits, wires, devices, etc…	1	LS	$594.00	$594	
345	Disconnect and make safe redundant electrical equipment for removal by Others	1	LS	$315.00	$315	
	Ground Floor:					
346	Allowance for miscellaneous system (LV system, intercom, etc...)	2,538	m2	$1.50	$3,807	
347	Supply and installation of universal washroom call assistance	1	LS	$5,031.00	$5,031	
348	Provisional allowance to rework existing-to-remain conduits, wires, devices, etc…	1	LS	$594.00	$594	
349	Disconnect and make safe redundant electrical equipment for removal by Others	1	LS	$315.00	$315	
	Second Floor:					
350	Allowance for miscellaneous system (LV system, intercom, etc...)	1,915	m2	$1.50	$2,873	
351	Provisional allowance to rework existing-to-remain conduits, wires, devices, etc…	1	LS	$594.00	$594	
352	Disconnect and make safe redundant electrical equipment for removal by Others	1	LS	$315.00	$315	
	Third Floor:					
353	Allowance for miscellaneous system (LV system, intercom, etc...)	372	m2	$1.50	$558	
354	Supple and installation of barrier free call assistance	1	LS	$4,390.00	$4,390	
355	Provisional allowance to rework existing-to-remain conduits, wires, devices, etc…	1	LS	$594.00	$594	
356	Disconnect and make safe redundant electrical equipment for removal by Others	1	LS	$315.00	$315	
	C2.36 - Electrical Contractors Overhead					$113,480
	Basement	1	LS	$16,605.60	$16,606	
	Ground Floor	1	LS	$50,609.70	$50,610	
	Second Floor	1	LS	$35,429.41	$35,429	
	Third Floor	1	LS	$10,835.29	$10,835	
	TOTAL FOR ELECTRICAL - Systems & Ancillaries	1.00	5,702 m2	$123.20	$702,478	
			Total Elec Unit Rate	$366.42		

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	D2.1 ANCILLARY WORK - Demolition					
	D2.11 - Demolition					
	Basement					
357	Remove and dispose the following:					
357.1	- double doors (exterior and interior)	2	NO	$300.00	$600	
357.2	- single doors (exterior and interior)	13	NO	$150.00	$1,950	
357.3	- glazed partitions	17	m2	$50.00	$850	
357.4	- gypsum board partitions	436	m2	$25.00	$10,900	
357.5	- floor finishes	810	m2	$10.00	$8,100	
357.6	- ceiling finishes	773	m2	$15.00	$11,595	
357.7	- millwork	10	m	$75.00	$750	
357.8	- lockers	24	NO	$25.00	$600	
357.9	- elevator, existing shaft to remain	1	NO	$10,000.00	$10,000	
357.10	- book stacks/book shelves	28	NO	$25.00	$700	
357.11	- loose furniture	1	LS	$5,000.00	$5,000	
358	Temporary partitions and hoarding	55	m2	$130.00	$7,150	
359	Garbage bins and dumping fees	1	LS	$5,000.00	$5,000	
	Ground Floor					
360	Remove and dispose the following:					
360.1	- exterior walls	105	m2	$100.00	$10,500	
360.2	- exterior glazing	143	m2	$75.00	$10,725	
360.3	- concrete floor slab	39	m2	$300.00	$11,700	
360.4	- double doors (exterior and interior)	6	NO	$300.00	$1,800	
360.5	- single doors (exterior and interior)	39	NO	$150.00	$5,850	
360.6	- gypsum board partitions	1,711	m2	$25.00	$42,775	
360.7	- concrete low wall	22	m2	$150.00	$3,300	
360.8	- floor finishes	2,425	m2	$10.00	$24,250	
360.9	- ceiling finishes	2,188	m2	$15.00	$32,820	
360.10	- millwork	43	m	$75.00	$3,225	
360.11	- lockers	14	NO	$25.00	$350	
360.12	- staircase	3	NO	$15,000.00	$45,000	
360.13	- stair to lobby	18	m	$150.00	$2,700	
360.14	- toilet partitions	6	NO	$100.00	$600	
361	Construction hoarding to block of entrances	32	m	$85.00	$2,720	
362	Garbage bins and dumping fees	1	LS	$15,000.00	$15,000	
	Second Floor					
363	Remove and dispose the following:					
363.1	- concrete floor slab	7	m2	$300.00	$2,100	
363.2	- double doors (exterior and interior)	2	NO	$300.00	$600	
363.3	- single doors (exterior and interior)	12	NO	$150.00	$1,800	
363.4	- glazed partitions	69	m2	$50.00	$3,450	
363.5	- gypsum board partitions	382	m2	$25.00	$9,550	
363.6	- floor finishes	1,850	m2	$10.00	$18,500	
363.7	- ceiling finishes	1,850	m2	$15.00	$27,750	
363.8	- millwork	11	m	$75.00	$825	
364	Garbage bins and dumping fees	1	LS	$6,500.00	$6,500	
	Third Floor					
365	Remove and dispose the following:					
365.1	- concrete floor slab	7	m2	$300.00	$2,100	
365.2	- single doors (exterior and interior)	15	NO	$150.00	$2,250	
365.3	- glazed partitions	21	m2	$50.00	$1,050	
365.4	- gypsum board partitions	443	m2	$25.00	$11,075	
365.5	- floor finishes	354	m2	$10.00	$3,540	
365.6	- ceiling finishes	351	m2	$15.00	$5,265	
365.7	- millwork	24	m	$75.00	$1,800	
365.8	- loose furniture	1	LS	$2,500.00	$2,500	
365.9	- toilet partitions	2	NO	$100.00	$200	
366	Garbage bins and dumping fees	1	LS	$3,000.00	$3,000	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	D2.12 - Hazardous Materials					
367	Allowances for asbestos abatement and the handling of hazardous materials				Included in Z1.12	
	TOTAL FOR ANCILLARY WORK - Demolition	1.00 5,702	m2	$66.71	$380,365	
	D2.2 ANCILLARY WORK - Alterations					
	D2.21 - Alterations					
368	NIL					
	TOTAL FOR ANCILLARY WORK - Alterations	0.00 0	m2	$0.00	$0	
	Z. GENERAL REQUIREMENTS & CONTINGENCIES					
	Z1.1 GENERAL REQUIREMENTS & FEES - General Requirements					
	Z1.11 - Supervision & Labour Expenses					
369	Allowance for the General Contractor's supervision & labour expenses as follows:		1 LS	$608,802	$608,800	10.0%
369.1	- supervision and coordination of subcontractors					
369.2	- site superintendent and vehicle					
369.3	- general labour expenses					
369.4	- phased construction premium (4 phases)		1 LS	$180,000.00	$180,000	3.0%
	Z1.12 - Temporary Conditions					
370	Allowance for the temporary conditions provided by the General Contractor				Included in Z1.11	
	Cash Allowances					**$450,000**
371	Independent inspection and testing		1 LS	$50,000.00	$50,000	
372	Metal book stacks		1 LS	$100,000.00	$100,000	
373	Interior signage		1 LS	$25,000.00	$25,000	
374	Window coverings		1 LS	$50,000.00	$50,000	
375	Asbestos abatement and the handling of hazardous materials		1 LS	$125,000.00	$125,000	
376	Structural modifications to suit renovation		1 LS	$100,000.00	$100,000	
	Z1.13 - Permits, Insurance & Bonds					**$104,000**
377	Building permit				Excluded	
378	General Liability and Builder's Risk insurance		1 LS	$43,000	$43,000	
379	Labour & Material and Performance bonding		1 LS	$61,000	$61,000	
	TOTAL FOR GEN. REQ'MENTS & FEES - Gen. Req'ments	1.00 5,702	m2	$235.50	$1,342,800	

No.	Description	Quant.	Unit	Rate	Sub Total	Total
	Z1.2 GENERAL REQUIREMENTS & FEES - Fees					
	Z1.21 - General Contractor's Fees					
380	Allowance for the General Contractor's Fees (Head Office Overhead, Profit and Risk). (applied to measured works plus general requirements)	1	LS	$371,541	$372,000	5.0%
	TOTAL FOR GEN. REQ'MENTS & FEES - Fees	1.00 / 5,702	m2	$65.24	$372,000	
	Z2.1 ALLOWANCES - Design Contingency					
381	Design Contingency as a percentage of the above to cover increases in the overall scope of the design during the remaining stages of the design phase (applied to measured works plus general requirements and fees)					
381.1	- Architectural	1	LS	$684,900	$684,900	15.0%
381.2	- Structural	1	LS	$19,700	$19,700	15.0%
381.3	- Siteworks				Excluded	15.0%
381.4	- Mechanical Services	1	LS	$64,100	$64,100	15.0%
381.5	- Electrical Services	1	LS	$401,700	$401,700	15.0%
	TOTAL FOR ALLOWANCES - Design Contingency	1.00 / 5,702	m2	$205.26	$1,170,400	
	Z2.2 ALLOWANCES - Escalation Contingency					
382	Contingency for escalation that might occur between the date of the estimate and the anticipated tender date (applied to measured works plus general requirements, fees and Design Contingency)	1	LS	$1,902,300	$1,902,300	21.2%
	TOTAL FOR ALLOWANCES - Escalation Contingency	1.00 / 5,702	m2	$333.62	$1,902,300	
	Z2.3 ALLOWANCES - Construction Contingency					
383	Construction Contingency for post contract changes (applied to measured works plus general requirements, fees, Design Contingency and Escalation Contingency)	1	LS	$1,087,600	$1,087,600	10.0%
	TOTAL FOR ALLOWANCES - Construction Contingency	1.00 / 5,702	m2	$190.74	$1,087,600	

APPENDIX C - CONCEPTUAL DESIGN DRAWINGS; ARCHITECTURAL, MECHANICAL AND ELECTRICAL

St. Catharines Public Library

ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH RENOVATION

ISSUED FOR PHASE ONE CONCEPTUAL DESIGN AND CLASS D COSTING

ARCHITECTURAL:
WARD99 ARCHITECTS INC.

A0.0 DRAWING LIST
A1.1 EXISTING SITE PLAN
A2.1 EXISTING BASEMENT DEMOLITION PLAN
A2.2 EXISTING GROUND FLOOR DEMOLITION PLAN
A2.3 EXISTING SECOND FLOOR DEMOLITION PLAN
A2.4 EXISTING THIRD FLOOR DEMOLITION PLAN
A2.5 PROPOSED BASEMENT PLAN
A2.6 PROPOSED GROUND FLOOR PLAN
A2.7 PROPOSED SECOND FLOOR PLAN
CEILING DEMOLITION PLAN
A3.0 PROPOSED THIRD FLOOR PLAN
A3.1 EXISTING BASEMENT REFLECTED CEILING DEMOLITION PLAN
A3.2 EXISTING GROUND FLOOR REFLECTED CEILING DEMOLITION PLAN
A3.2 EXISTING SECOND FLOOR REFLECTED CEILING DEMOLITION PLAN
A3.3 EXISTING THIRD FLOOR REFLECTED CEILING PLAN
A3.4 PROPOSED BASEMENT REFLECTED CEILING PLAN
A3.5 PROPOSED GROUND FLOOR REFLECTED CEILING PLAN
A3.6 PROPOSED SECOND FLOOR REFLECTED CEILING PLAN
A3.7 PROPOSED THIRD FLOOR REFLECTED

A4.1 DEMOLITION EXTERIOR ELEVATIONS
A4.2 PROPOSED EXTERIOR ELEVATIONS
A5.1 CONCEPT SECTION

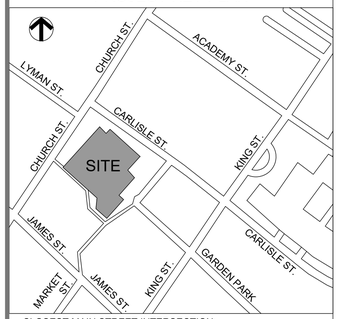
MECHANICAL:
JAIN ENGINEERS

M-1.1 PROPOSED BASEMENT PLAN - PLUMBING
M-1.2 PROPOSED GROUND FLOOR PLAN - PLUMBING
M-1.3 PROPOSED SECOND FLOOR PLAN - PLUMBING
M-1.4 PROPOSED THIRD FLOOR PLAN - PLUMBING
M-2.1 PROPOSED BASEMENT PLAN - HVAC
M-2.2 PROPOSED GROUND FLOOR PLAN - HVAC
M-2.3 PROPOSED SECOND FLOOR PLAN - HVAC
M-2.4 PROPOSED THIRD FLOOR PLAN - HVAC
M-2.5 DETAILS AND SCHEDULES

ELECTRICAL:
JAIN ENGINEERS

E1.0 LEGEND AND DETAILS
E2.0 LIGHTING LAYOUT - BASEMENT LEVEL
E2.1 LIGHTING LAYOUT - GROUND FLOOR
E2.2 LIGHTING LAYOUT - SECOND FLOOR
E2.3 LIGHTING LAYOUT - THIRD FLOOR
E3.0 POWER AND SYSTEMS LAYOUT - BASEMENT LEVEL
E3.1 POWER AND SYSTEMS LAYOUT - GROUND FLOOR
E3.2 POWER AND SYSTEMS LAYOUT - SECOND FLOOR
E3.3 POWER AND SYSTEMS LAYOUT - THIRD FLOOR

PROJECT KEY PLAN



CLOSEST MAIN STREET INTERSECTION:
CHURCH ST. AND CARLISLE ST.

PROJECT INFORMATION

PROJECT TITLE:
ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH INTERIOR RENOVATION

PROJECT ADDRESS:
54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

OWNER:
ST. CATHARINES PUBLIC LIBRARY

OWNER'S CONTACT INFORMATION:
54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

CONSULTANT:
ward99 architects inc.

CONSULTANT 'S CONTACT INFORMATION:
7500 HIGHWAY 27 UNIT 27B
VAUGHAN ON L4H 0J2
TEL: 416-613-5880
EMAIL: INFO@WARD99ARCHITECTS.COM

NOTE: THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL SITE DIMENSIONS AND FOR NOTIFYING THE ARCHITECT OF ANY SITE CONDITIONS AND SITE MEASUREMENTS THAT ARE NOT CONSISTENT WITH THE DRAWINGS.

no.	revision	date

no.	issue	date
1	Issued for Costing - Class D	Aug.26, 2022

PROJECT NORTH

project
ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
DRAWING LIST

drawing scale
N/A

ward99 project number
21036 - ST. CATHARINES LIBRARY

ward99 architects

drawing no.
A0.0

ward99 architects inc.
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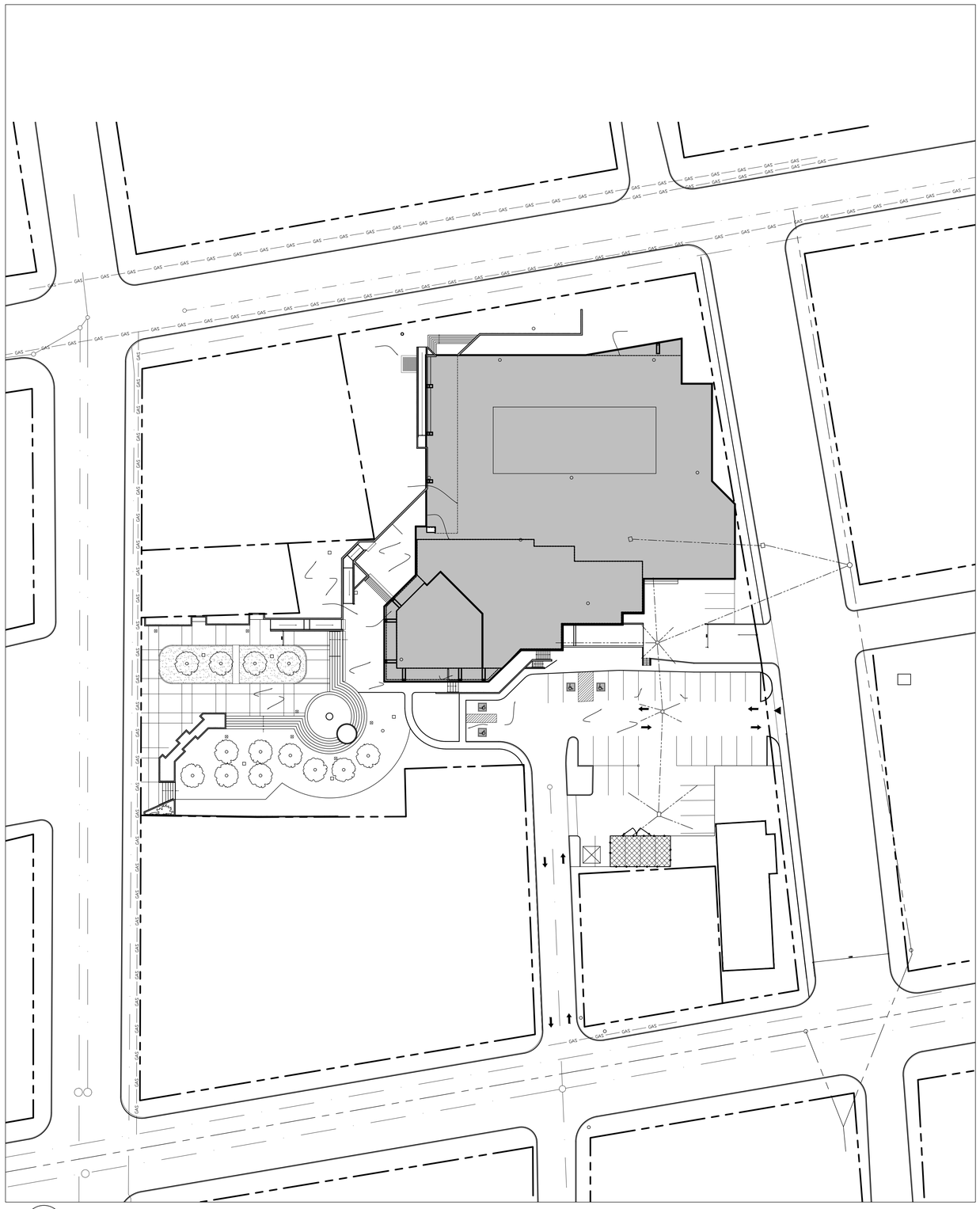

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PROJECT NORTH

project

ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

EXISTING SITE PLAN

drawing scale

AS NOTED

ward99 project number

21036 - ST. CATHARINES LIBRARY

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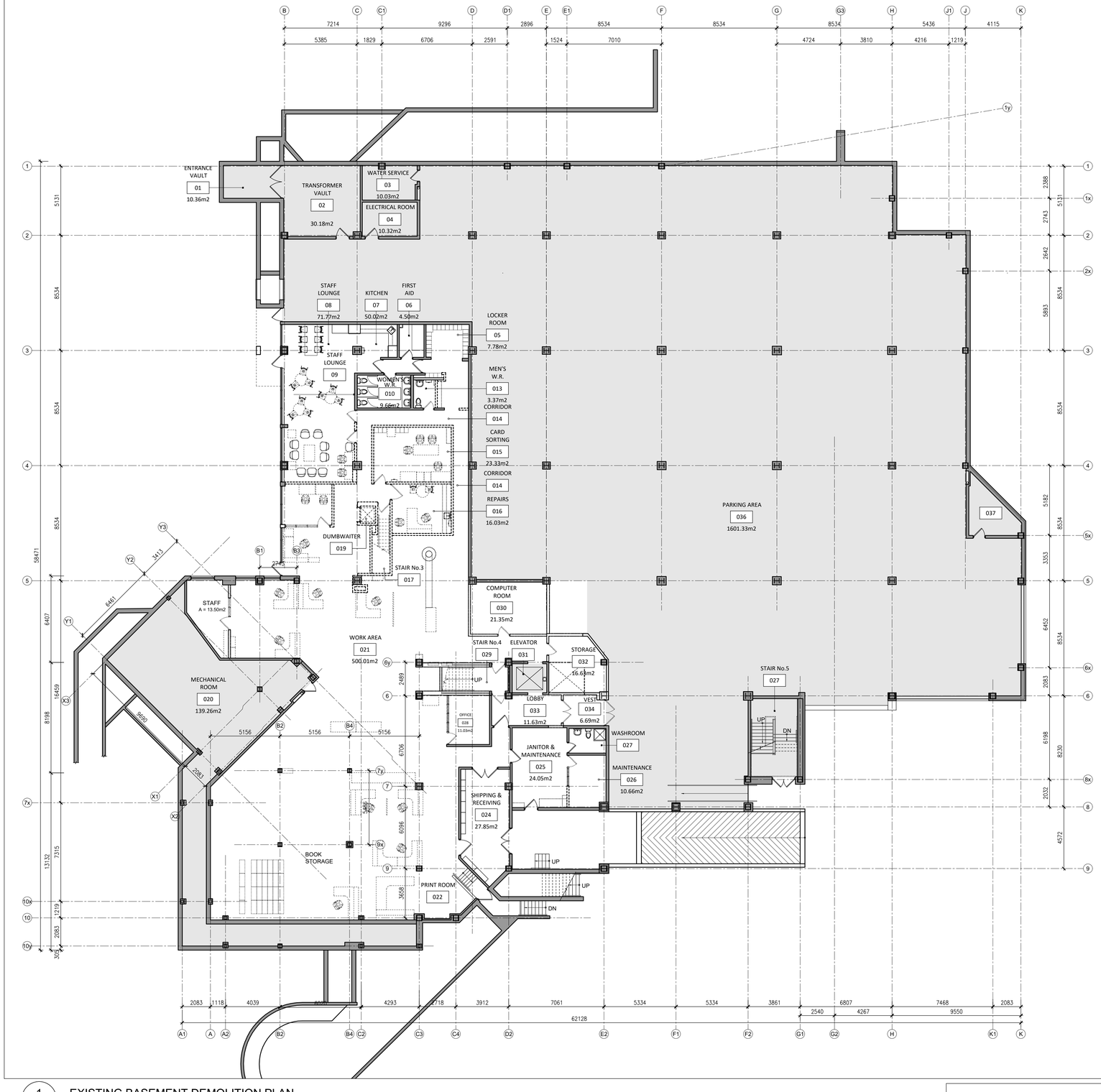
drawing no.

A1.1



1 / A2.1 EXISTING BASEMENT DEMOLITION PLAN
1:150

EXISTING BASEMENT PLAN GFA = 1069.69m2

DEMOLITION FLOOR PLAN NOTES

(#) ← DEMOLITION FLOOR PLAN NOTE. REFER TO DRAWING 1/A2.1.

1. REMOVE AND DISPOSE OF EXISTING GYPSUM BOARD FINISHED STEEL STUD PARTITION WALL IN IT'S ENTIRETY. PATCH, REPAIR, MAKE GOOD AND FLUSH EXISTING CONCRETE FLOOR SLAB, EXISTING WALL ASSEMBLY AND UNDERSIDE OF EXISTING STEEL DECK. ENSURE ALL SURFACES ARE ACCEPTABLE FOR THE INSTALLATION OF NEW FINISHES AND NEW WALL CONSTRUCTION.
2. REMOVE AND DISPOSE OF EXISTING STEEL DOOR, DOOR FRAME, SCREEN FRAME, WIRED GLASS LITES AND ASSOCIATED HARDWARE IN IT'S ENTIRETY.
3. REMOVE AND DISPOSE OF EXISTING LOCKERS AND ASSOCIATED FRAMING AND CONCRETE BASE. REPAIR, PATCH, MAKE GOOD AND FLUSH EXISTING CONCRETE FLOOR SLAB. ENSURE FLOOR SURFACE IS ACCEPTABLE FOR INSTALLATION OF NEW FLOOR FINISH.
4. REMOVE AND DISPOSE OF EXISTING STAIR AND EXISTING WALL MOUNTED STEEL HANDRAIL ASSEMBLY IN IT'S ENTIRETY.
5. REMOVE AND DISPOSE OF EXISTING BOOK STACKS/BOOK SHELVES IN THEIR ENTIRETY. OWNER TO REMOVE ALL COLLECTION MATERIALS PRIOR TO CONSTRUCTION. PATCH, REPAIR AND MAKE GOOD, FLUSH AND SMOOTH EXISTING GYPSUM BOARD WALL FINISH WHERE SHELVES ARE REMOVED FROM EXISTING WALLS.
6. ST. CATHARINES PUBLIC LIBRARY WILL REMOVE AND DISPOSE OF EXISTING LOOSE FURNITURE AND APPLIANCES. THE CONTRACTOR IS RESPONSIBLE TO UNINSTALL, REMOVE AND DISPOSE OF WALL MOUNTED ITEMS, FLOOR MOUNTED ITEMS AND CEILING MOUNTED ITEMS.
7. DEMOLISH EXISTING MILLWORK.
8. REMOVE AND DISPOSE OF EXISTING MILLWORK SHELF, WALL BOARD AND WALL UNIT. PATCH, REPAIR AND MAKE GOOD EXISTING GYPSUM BOARD FINISHED WALL IN PREPARATION FOR NEW PAINT FINISH.
9. DEMOLISH PLUMBING FIXTURE AND APPLIANCES.
10. REMOVE EXISTING ELECTRICAL PANEL.
11. REMOVE AND DISPOSE OF EXISTING PARTITION BOARD.
12. DEMOLISH THE EXISTING BOOK RETURN CHUTE AND PATCH OPENING IN THE FLOOR ABOVE.
13. DEMOLISH EXISTING ELEVATOR ASSEMBLY AND ASSOCIATED HARDWARE AND BUTTONS AND REPLACE WITH NEW ELEVATOR ASSEMBLY AND ASSOCIATED HARDWARE. PATCH EXISTING FIRE-RATED MASONRY WALLS AS REQUIRED TO PROVIDE FOR NEW ASSEMBLY, INCLUDING BUTTONS. REFER TO ELEVATOR SPECIFICATIONS IN THE PROJECT MANUAL AND MECHANICAL AND ELECTRICAL DOCUMENTS.

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1	Issued for Costing - Class D	Aug.26, 2022

project
ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
EXISTING BASEMENT DEMOLITION PLAN

drawing scale
AS NOTED

ward99 project number
21036 - ST. CATHARINES LIBRARY

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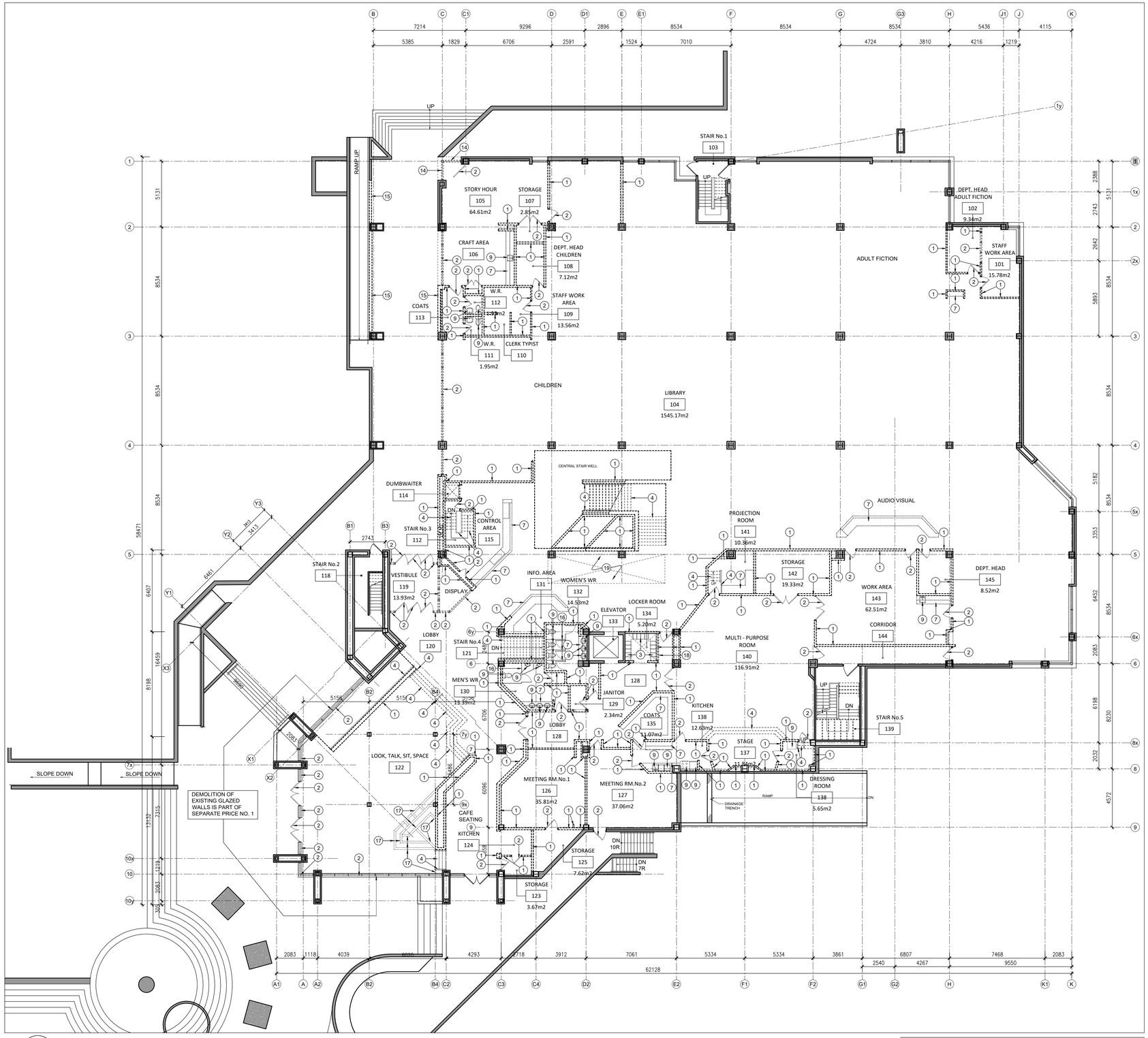
drawing no.
A2.1



1 A2.2 EXISTING GROUND FLOOR DEMOLITION PLAN
1:150

EXISTING GROUND FLOOR GFA = 2460.59m2

DEMOLITION FLOOR PLAN NOTES

(#) ← DEMOLITION FLOOR PLAN NOTE. REFER TO DRAWING 1/A2.2.

1. REMOVE AND DISPOSE OF EXISTING GYPSUM BOARD FINISHED STEEL STUD PARTITION WALL IN IT'S ENTIRETY. PATCH, REPAIR, MAKE GOOD AND FLUSH EXISTING CONCRETE FLOOR SLAB, EXISTING WALL ASSEMBLY AND UNDERSIDE OF EXISTING STEEL DECK. ENSURE ALL SURFACES ARE ACCEPTABLE FOR THE INSTALLATION OF NEW FINISHES AND NEW WALL CONSTRUCTION.
2. REMOVE AND DISPOSE OF EXISTING STEEL DOOR, DOOR FRAME, SCREEN FRAME, WIRED GLASS LITES AND ASSOCIATED HARDWARE IN IT'S ENTIRETY.
3. REMOVE AND DISPOSE OF EXISTING LOCKERS AND ASSOCIATED FRAMING AND CONCRETE BASE. REPAIR, PATCH, MAKE GOOD AND FLUSH EXISTING CONCRETE FLOOR SLAB. ENSURE FLOOR SURFACE IS ACCEPTABLE FOR INSTALLATION OF NEW FLOOR FINISH.
4. REMOVE AND DISPOSE OF EXISTING STAIR AND EXISTING WALL MOUNTED STEEL HANDRAIL ASSEMBLY IN IT'S ENTIRETY.
5. REMOVE AND DISPOSE OF EXISTING BOOK STACKS/BOOK SHELVES IN THEIR ENTIRETY. OWNER TO REMOVE ALL COLLECTION MATERIALS PRIOR TO CONSTRUCTION. PATCH, REPAIR AND MAKE GOOD, FLUSH AND SMOOTH EXISTING GYPSUM BOARD WALL FINISH WHERE SHELVES ARE REMOVED FROM EXISTING WALLS.
6. ST. CATHARINES PUBLIC LIBRARY WILL REMOVE AND DISPOSE OF EXISTING LOOSE FURNITURE AND APPLIANCES. THE CONTRACTOR IS RESPONSIBLE TO UNINSTALL, REMOVE AND DISPOSE OF WALL MOUNTED ITEMS, FLOOR MOUNTED ITEMS AND CEILING MOUNTED ITEMS.
7. DEMOLISH EXISTING MILLWORK.
8. REMOVE AND DISPOSE OF EXISTING MILLWORK SHELF, WALL BOARD AND WALL UNIT. PATCH, REPAIR AND MAKE GOOD EXISTING GYPSUM BOARD FINISHED WALL IN PREPARATION FOR NEW PAINT FINISH.
9. DEMOLISH PLUMBING FIXTURE AND APPLIANCES.
10. REMOVE EXISTING ELECTRICAL PANEL.
11. REMOVE AND DISPOSE OF EXISTING PARTITION BOARD.
12. DEMOLISH THE EXISTING BOOK RETURN TRACK.
13. DEMOLISH EXISTING ELEVATOR ASSEMBLY AND ASSOCIATED HARDWARE AND BUTTONS AND REPLACE WITH NEW ELEVATOR ASSEMBLY AND ASSOCIATED HARDWARE. PATCH EXISTING FIRE-RATED MASONRY WALLS AS REQUIRED TO PROVIDE FOR NEW ASSEMBLY, INCLUDING BUTTONS. REFER TO ELEVATOR SPECIFICATIONS IN THE PROJECT MANUAL AND MECHANICAL AND ELECTRICAL DOCUMENTS.
14. DEMOLISH EXISTING EXTERIOR ALUMINUM WINDOW FRAME ASSEMBLY.
15. DEMOLISH EXISTING EXTERIOR CONCRETE MASONRY UNIT WALL.
16. DEMOLISH EXISTING TOILET PARTITION.
17. DEMOLISH EXISTING CONCRETE LOW WALL.
18. DEMOLISH EXISTING CONCRETE FLOOR SLAB ASSEMBLY TO PROVIDE FOR NEW ELEVATOR SHAFT AND ELEVATOR ASSEMBLY.
19. DEMOLISH EXISTING CONCRETE FLOOR SLAB TO ACCOMMODATE NEW STAIR ASSEMBLY.

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no.	revision	date

no.	issue	date
1	Issued for Costing - Class D	Aug.26, 2022

project
ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
EXISTING GROUND FLOOR DEMOLITION PLAN

drawing scale
AS NOTED

ward99 project number
21036 - ST. CATHARINES LIBRARY

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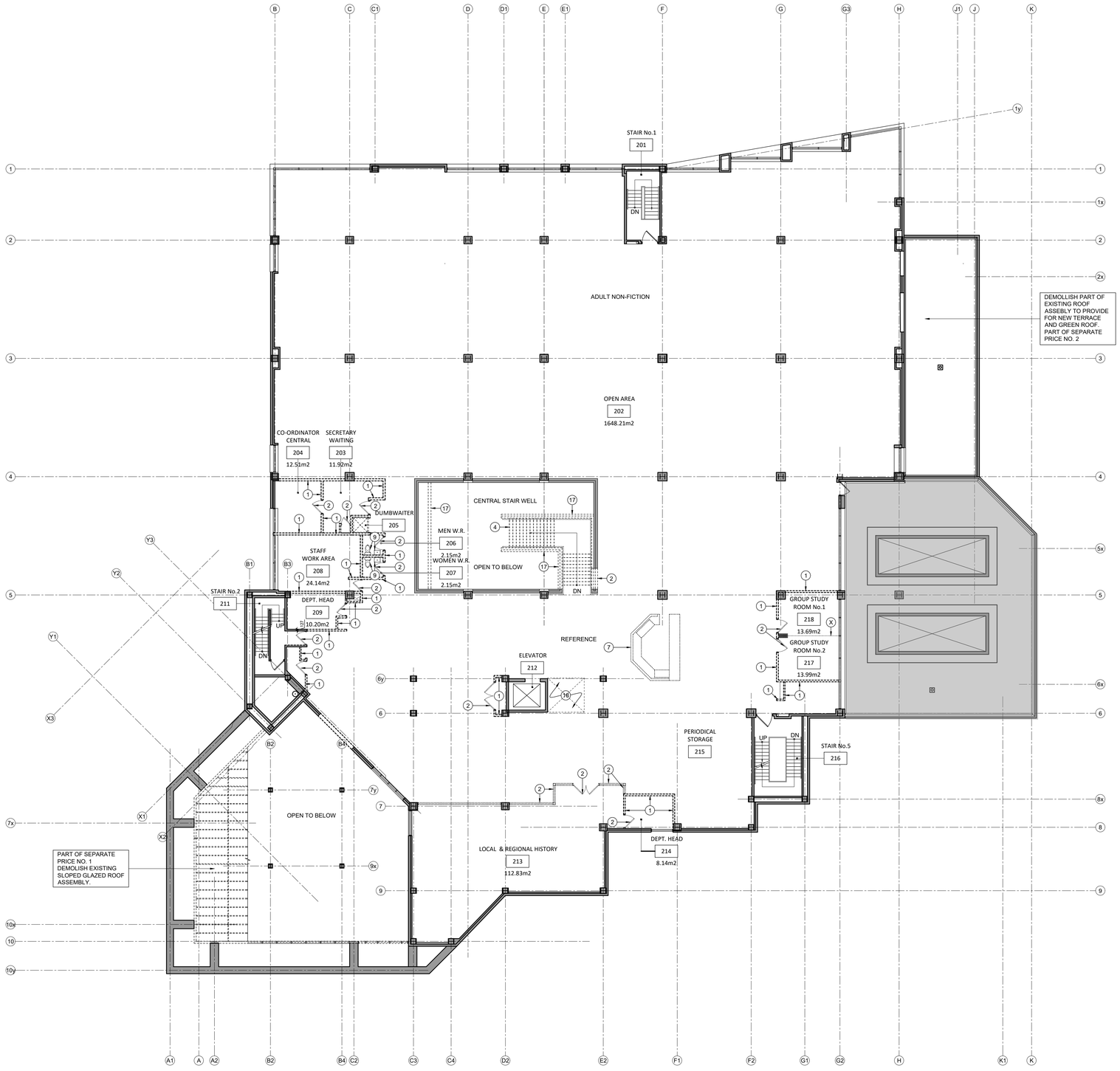
416 613 5880 www.ward99architects.com

drawing no.
A2.2



1 / A2.3 EXISTING SECOND FLOOR DEMOLITION PLAN
1:150

EXISTING SECOND FLOOR GFA = 2024.73m2

DEMOLITION FLOOR PLAN NOTES

(#) ← DEMOLITION FLOOR PLAN NOTE. REFER TO DRAWING 1/A2.3.

NOTE: THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL SITE DIMENSIONS AND FOR NOTIFYING THE ARCHITECT OF ANY SITE CONDITIONS AND SITE MEASUREMENTS THAT ARE NOT CONSISTENT WITH THE DRAWINGS.

no.	revision	date

no.	issue	date
1	Issued for Costing - Class D	Aug.26, 2022

project
ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
EXISTING SECOND FLOOR DEMOLITION PLAN

drawing scale
AS NOTED

ward99 project number
21036 - ST. CATHARINES LIBRARY

ward99 architects
ward99 architects inc.
7500 Highway 27, Unit 27B
Vaughan ON L4H 0J2
info@ward99architects.com
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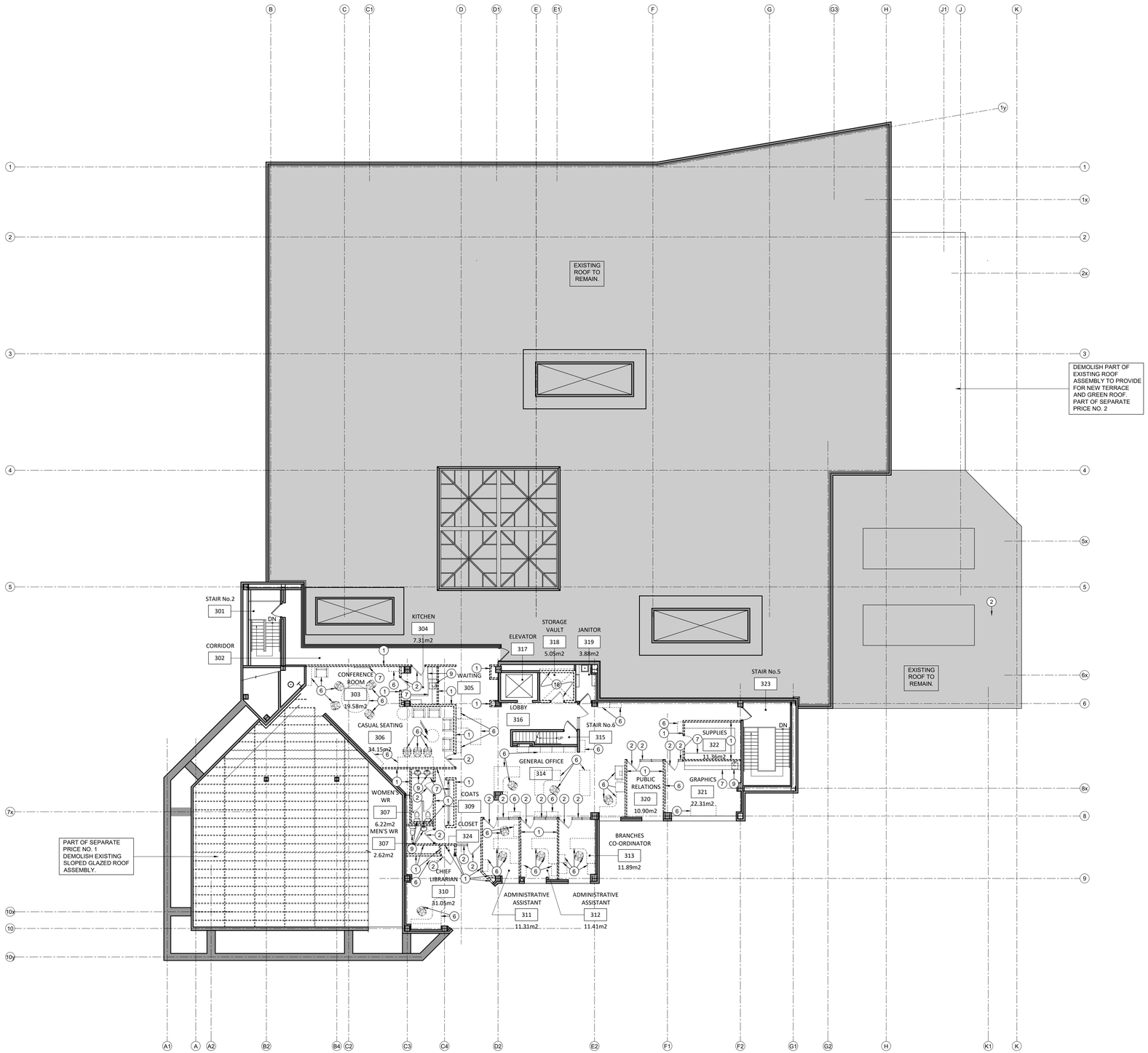
drawing no.
A2.3



1
A2.4
EXISTING THIRD FLOOR DEMOLITION PLAN
1:150

EXISTING THIRD FLOOR GFA =466.63m2

DEMOLITION FLOOR PLAN NOTES

(#) ← DEMOLITION FLOOR PLAN NOTE. REFER TO DRAWING 1/A2.2.

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PROJECT NORTH

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INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

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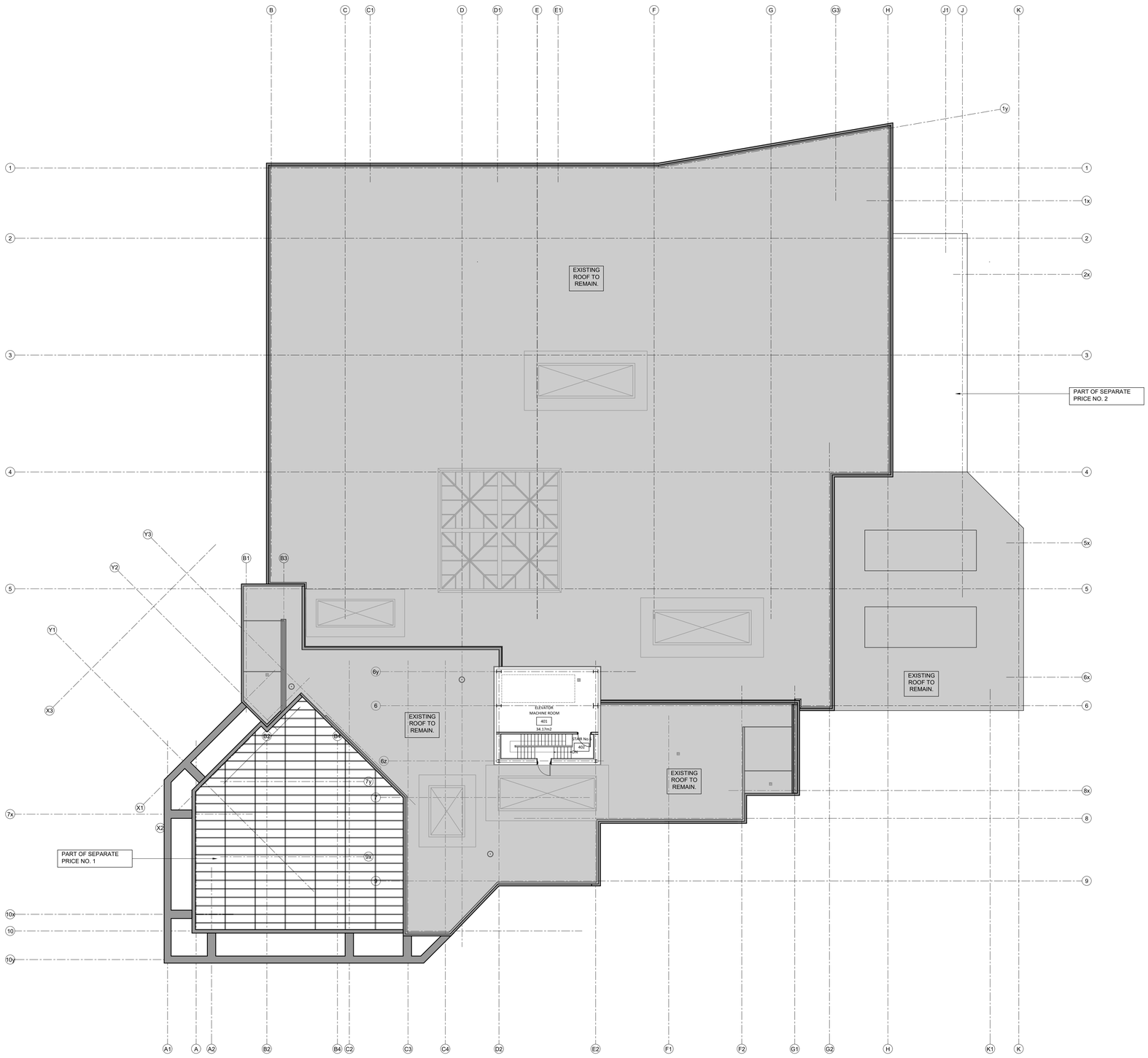

1 A2.5 EXISTING ROOF DEMOLITION PLAN
1:150

DEMOLITION FLOOR PLAN NOTES

(#) ← DEMOLITION FLOOR PLAN NOTE. REFER TO DRAWING 1/A2.x.

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INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
EXISTING ROOF DEMOLITION PLAN

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drawing no.
A2.5

PROPOSED BASEMENT PLAN AREA = 1080.53m2
AREA OF RENOVATION = 924.55m2

NOTE: THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL SITE DIMENSIONS AND FOR NOTIFYING THE ARCHITECT OF ANY SITE CONDITIONS AND SITE MEASUREMENTS THAT ARE NOT CONSISTENT WITH THE DRAWINGS.

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PROJECT NORTH
TRUE NORTH

project
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INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
PROPOSED BASEMENT PLAN

drawing scale
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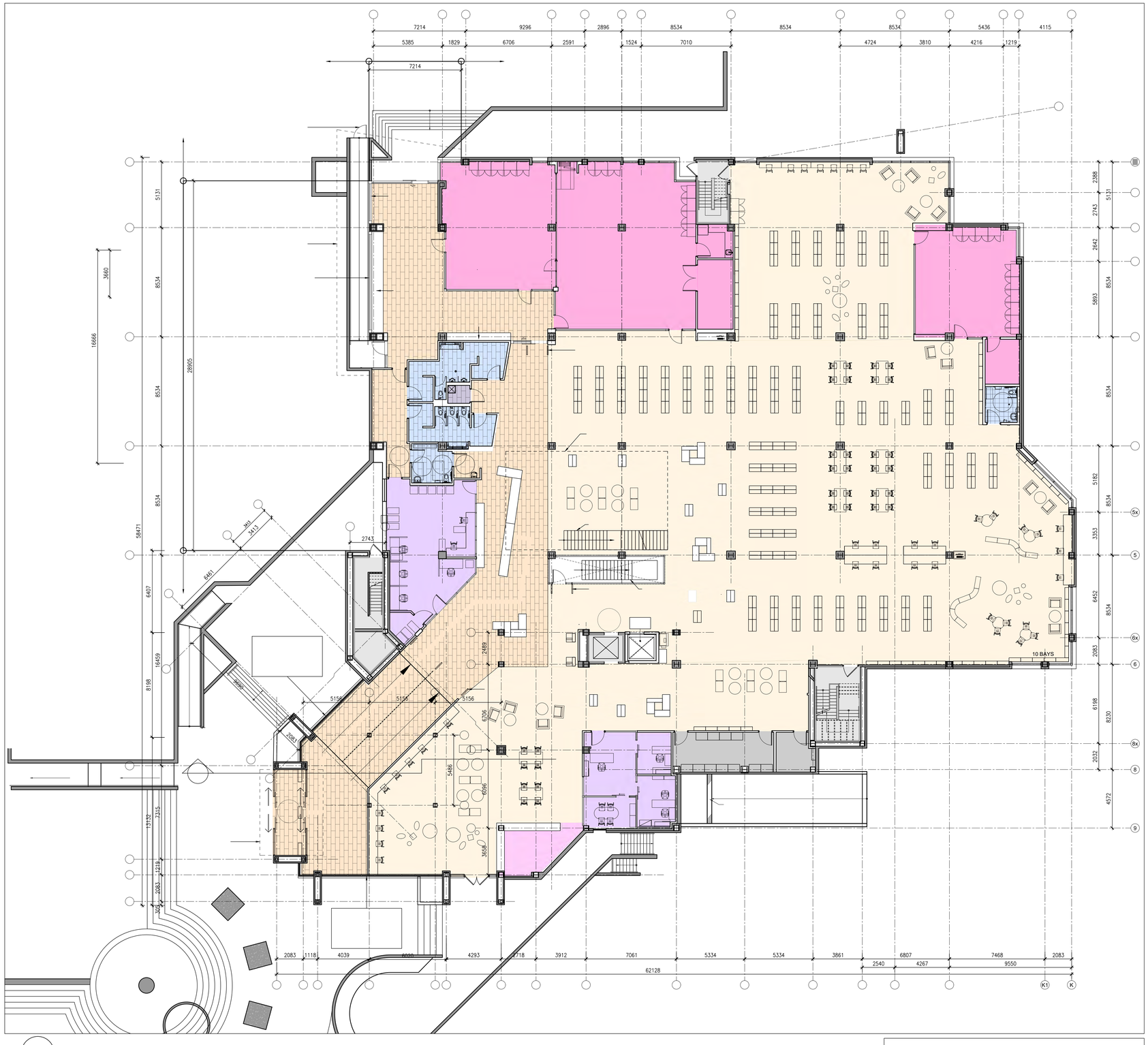
drawing no.
A2.6



PROPOSED GROUND FLOOR AREA = 2624.74m2

NOTE: THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL SITE DIMENSIONS AND FOR NOTIFYING THE ARCHITECT OF ANY SITE CONDITIONS AND SITE MEASUREMENTS THAT ARE NOT CONSISTENT WITH THE DRAWINGS.

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INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

PROPOSED GROUND FLOOR PLAN

drawing scale

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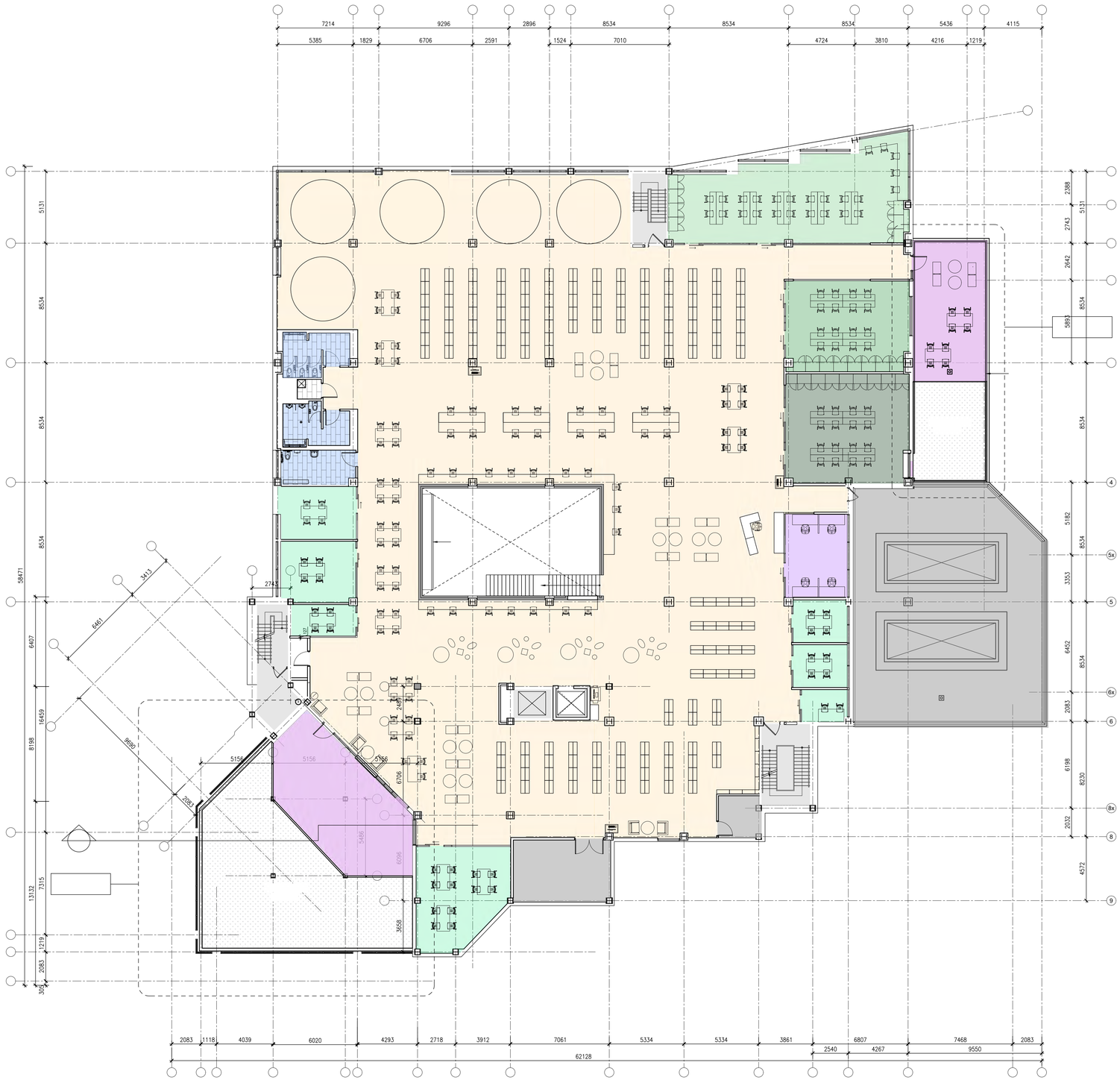
A2.7



EXISTING SECOND FLOOR GFA = 2024.73m2

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PROPOSED SECOND FLOOR PLAN

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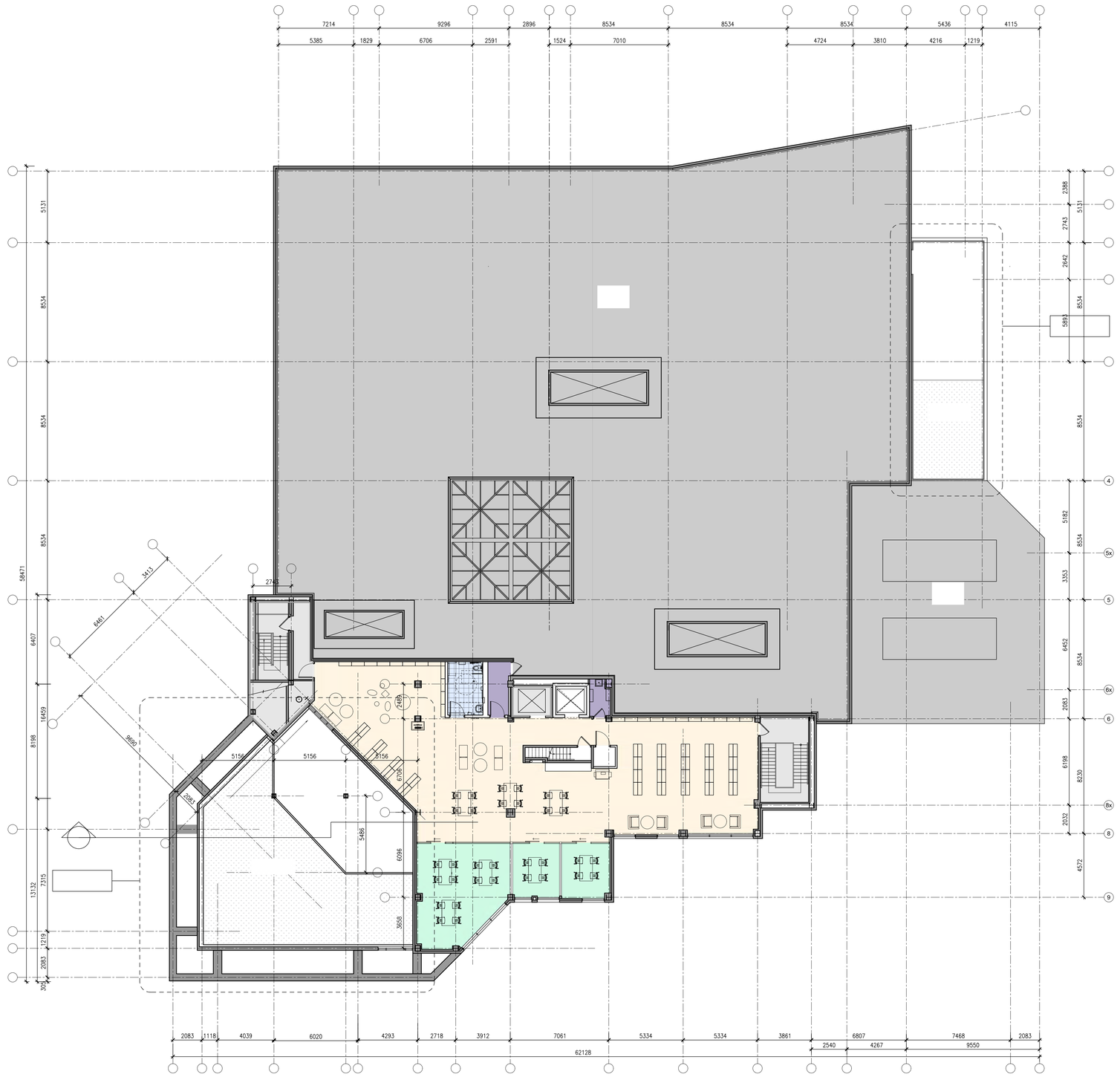
drawing no.

A2.8



EXISTING THIRD FLOOR GFA = 466.63m2

NOTE: THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL SITE DIMENSIONS AND FOR NOTIFYING THE ARCHITECT OF ANY SITE CONDITIONS AND SITE MEASUREMENTS THAT ARE NOT CONSISTENT WITH THE DRAWINGS.

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ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

PROPOSED THIRD FLOOR PLAN

drawing scale

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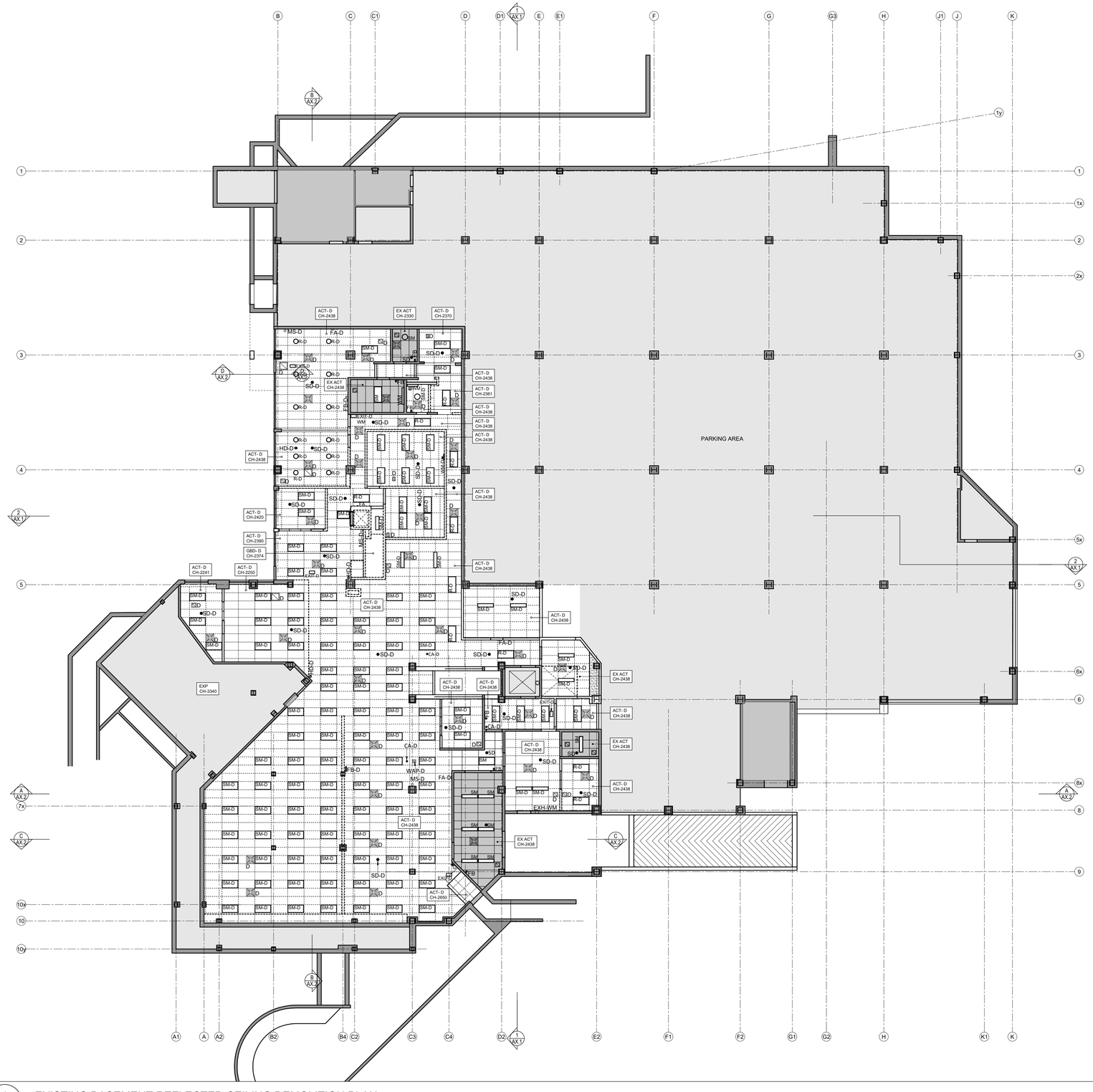
drawing no.

A2.9



1 A3.1 EXISTING BASEMENT REFLECTED CEILING DEMOLITION PLAN
1:150

REFLECTED CEILING DEMOLITION LEGEND AND NOTES

SM-D / SM / SM-D / SM — SM-D = UNINSTALL, REMOVE AND DISPOSE SURFACE MOUNT LIGHT. SM = EXISTING SURFACE MOUNT LIGHT FIXTURE TO REMAIN. REFER TO ELECTRICAL DRAWINGS.

R-D / R-D — R-D = UNINSTALL, REMOVE AND DISPOSE RECESSED LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS.

WM / WM-D — WM = EXISTING WALL MOUNTED LIGHT FIXTURE TO REMAIN. WM-D = UNINSTALL, REMOVE AND DISPOSE WALL MOUNTED LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS.

EXIT-D / EXIT-D WM — EXIT-D WM = REMOVE AND DISPOSE OF EXISTING WALL MOUNTED SIGN. EXIT-D = REMOVE AND DISPOSE OF EXISTING CEILING MOUNTED SIGN. REFER TO ELECTRICAL DRAWINGS.

WM-D / D — WM-D = REMOVE AND DISPOSE OF EXISTING WALL MOUNTED EMERGENCY LIGHT FIXTURE. D = REMOVE AND DISPOSE OF EXISTING EMERGENCY LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS.

EXISTING SUPPLY AIR GRILLE TO REMAIN.

D — D = REMOVE AND DISPOSE OF EXISTING SUPPLY AIR GRILLE. REFER TO MECHANICAL DRAWINGS.

EXISTING RETURN AIR GRILLE TO REMAIN.

WM — WM = EXISTING RETURN AIR GRILLE TO REMAIN.

D D D D — D = DEMOLISH EXISTING RETURN AIR GRILLE. WM = EXISTING RETURN AIR GRILLE TO REMAIN. REFER TO MECHANICAL DRAWINGS.

MS-D — MS-D = DEMOLISH EXISTING MOTION SENSOR. REFER TO MECHANICAL DRAWINGS.

FB / FB-D — FB = EXISTING FIRE BELL TO REMAIN. FB-D = UNINSTALL EXISTING FIRE BELL. REFER TO ELECTRICAL DRAWINGS. PATCH EXISTING PARTITIONS SURFACE FINISHED PARTITION AS REQUIRED TO MAKE SURFACES GOOD AND FLUSH.

CA-D — CA-D = UNINSTALL EXISTING SURFACE MOUNTED SECURITY CAMERA. REFER TO MECHANICAL DRAWINGS.

HD-D — HD-D = UNINSTALL EXISTING HEAT DETECTOR. REFER TO ELECTRICAL DRAWINGS.

WAP-D — WAP-D = UNINSTALL EXISTING WIRELESS ACCESS DEVICE. REFER TO ELECTRICAL DRAWINGS.

SD / SD-D — SD = EXISTING SMOKE DETECTOR TO REMAIN. SD-D = UNINSTALL EXISTING SMOKE DETECTOR. REFER TO ELECTRICAL DRAWINGS.

FA-D — FA-D = UNINSTALL EXISTING FIRE ALARM AND DEMOLISH ASSOCIATE CONDUIT. REFER TO ELECTRICAL DRAWINGS.

EX-ACT CH-0000 / ACT-D CH-0000 — EX-ACT = EXISTING SUSPENDED ACOUSTIC CEILING TILE ASSEMBLY TO REMAIN. UNINSTALL AND STORE TEMPORARILY AND REINSTATE AS REQUIRED TO COMPLETE THE WORK, INCLUDING ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL. ACT-D = REMOVE AND DISPOSE OF EXISTING SUSPENDED ACOUSTIC CEILING TILE AND T-BAR ASSEMBLY IN ITS ENTIRETY. CH = HEIGHT FROM FINISHED FLOOR TO UNDERSIDE OF EXISTING CEILING.

EX-GBD CH-0000 / GBD-D CH-0000 — EX-GBD = EXISTING GYPSUM BOARD FINISHED SUSPENDED CEILING ASSEMBLY AND/OR BULKHEAD TO REMAIN. CREATE OPENINGS AS REQUIRED TO ACCOMMODATE NEW WORK (ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL) AND PATCH AND REPAIR CEILING ASSEMBLY TO ORIGINAL CONDITION AFTER WORK IS COMPLETED AND AS REQUIRED. CH = HEIGHT FROM FINISHED FLOOR TO UNDERSIDE OF EXISTING CEILING. GBD-D = REMOVE AND DISPOSE OF EXISTING GYPSUM BOARD FINISHED SUSPENDED CEILING ASSEMBLY AND/OR BULKHEAD IN ITS ENTIRETY OR FOR THE PORTION INDICATED ON THE DRAWINGS. CEILING IS COMPRISED OF 2 LAYERS OF 16mm TYPE X GBD ON 64mm STEEL CHANNEL FRAMING AT 400mm O.C.

EXP CH-0000 — EXISTING CEILING IS EXPOSED TO ABOVE. CH - VARIES = CEILING IS SLOPED AND HEIGHT VARIES.

EXISTING INTERIOR MASONRY (CONCRETE BLOCK) WALL HEADER ABOVE EXISTING WALL OPENING.

EXISTING INTERIOR GYPSUM BOARD FINISHED STEEL STUD FRAMED WALL HEADER ABOVE EXISTING WALL OPENING.

REMOVE AND DISPOSE OF EXISTING SUSPENDED ACOUSTIC CEILING TILE AND ASSOCIATED FRAMING ASSEMBLY. SIZE: 610mm X 610mm ±; 1220mm X 610mm ±. REMOVE EXISTING ELECTRICAL AND MECHANICAL FIXTURES AND FITMENTS FROM EXISTING CEILING ASSEMBLY. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR RELOCATION OF EXISTING FIXTURES AND PROVISION FOR NEW FIXTURES. PROVIDE NEW ACOUSTIC CEILING ASSEMBLY AS INDICATED ON PROPOSED REFLECTED CEILING PLAN LAYOUT.

EXISTING SUSPENDED ACOUSTIC CEILING TILE AND ASSOCIATED FRAMING ASSEMBLY TO REMAIN. SIZE: 1220mm X 610mm ±. TEMPORARILY REMOVE, PROTECT AND STORE EXISTING CEILING ASSEMBLY IN ITS ENTIRETY AS REQUIRED TO COMPLETE DEMOLITION AND NEW WORK REGARDING ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL WORKS. TEMPORARILY UNINSTALL EXISTING MECHANICAL AND ELECTRICAL FIXTURES AND DEVICES AS REQUIRED TO COMPLETE THE WORK. REINSTALL EXISTING CEILING ASSEMBLIES AND MECHANICAL AND ELECTRICAL DEVICES AND FIXTURES AFTER COMPLETION OF ALL WORK.

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1	Issued for Costing - Class D	Aug.26, 2022

PROJECT NORTH / TRUE NORTH

project
ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
EXISTING BASEMENT REFLECTED CELING DEMOLITION PLAN

drawing scale
AS NOTED

ward99 project number
21036 - ST. CATHARINES LIBRARY

ward99 architects
ward99 architects inc.
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Vaughan ON L4H 0J2
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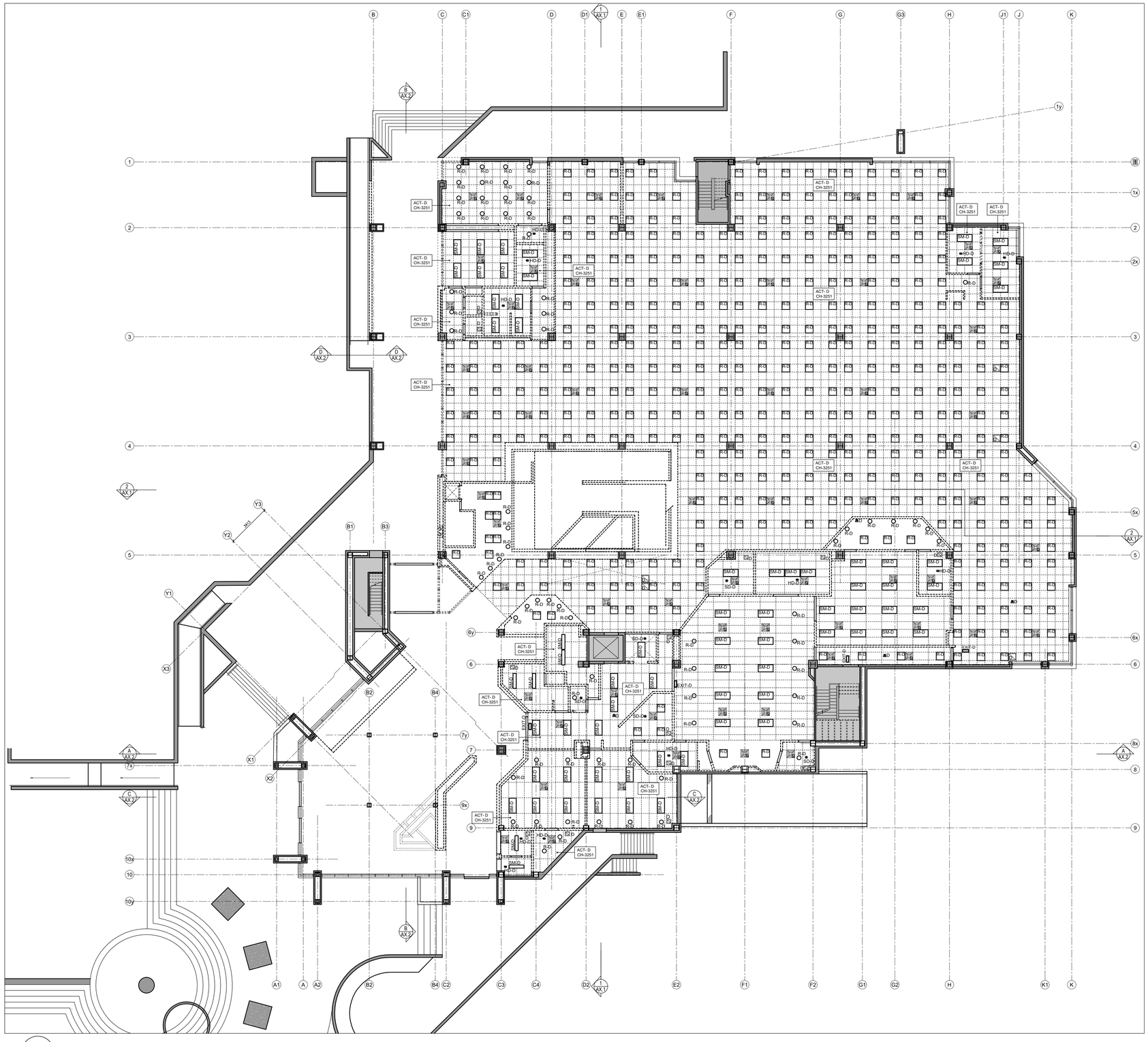
drawing no.
A3.1



1 EXISTING GROUND FLOOR REFLECTED CEILING DEMOLITION PLAN
A3.2 1:150

REFLECTED CEILING DEMOLITION LEGEND AND NOTES

SM-D / SM / SM-D / SM — SM-D = UNINSTALL, REMOVE AND DISPOSE SURFACE MOUNT LIGHT. SM = EXISTING SURFACE MOUNT LIGHT FIXTURE TO REMAIN. REFER TO ELECTRICAL DRAWINGS.

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EXISTING SUPPLY AIR GRILLE TO REMAIN.

D — D = REMOVE AND DISPOSE OF EXISTING SUPPLY AIR GRILLE. REFER TO MECHANICAL DRAWINGS.

EXISTING RETURN AIR GRILLE TO REMAIN.

WM — WM = EXISTING RETURN AIR GRILLE TO REMAIN.

D / D / D — D = DEMOLISH EXISTING RETURN AIR GRILLE. WM = EXISTING RETURN AIR GRILLE TO REMAIN. REFER TO MECHANICAL DRAWINGS.

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project
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INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
EXISTING GROUND FLOOR REFLECTED CELING DEMOLITION PLAN

drawing scale
AS NOTED

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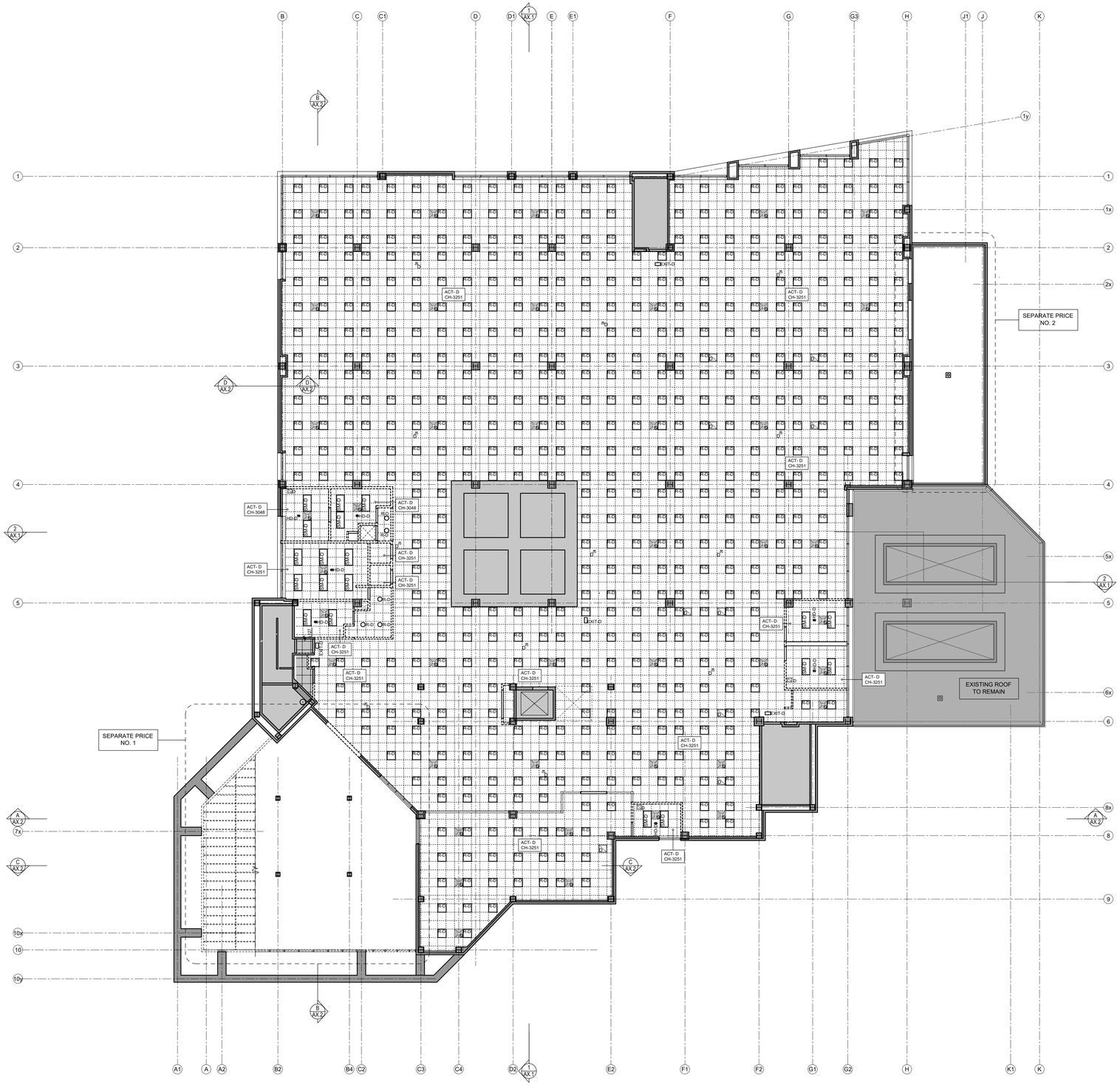
drawing no.
A3.2



1 EXISTING SECOND FLOOR REFLECTED CEILING DEMOLITION PLAN
A3.3 1:150

REFLECTED CEILING DEMOLITION LEGEND AND NOTES

SM-D / SM / SM-D / SM — SM-D = UNINSTALL, REMOVE AND DISPOSE SURFACE MOUNT LIGHT. SM = EXISTING SURFACE MOUNT LIGHT FIXTURE TO REMAIN. REFER TO ELECTRICAL DRAWINGS.

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EXISTING SUPPLY AIR GRILLE TO REMAIN.

D — D = REMOVE AND DISPOSE OF EXISTING SUPPLY AIR GRILLE. REFER TO MECHANICAL DRAWINGS.

EXISTING RETURN AIR GRILLE TO REMAIN.

WM — WM = EXISTING RETURN AIR GRILLE TO REMAIN.

D D D D — D = DEMOLISH EXISTING RETURN AIR GRILLE. WM = EXISTING RETURN AIR GRILLE TO REMAIN. REFER TO MECHANICAL DRAWINGS.

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CA-D — CA-D = UNINSTALL EXISTING SURFACE MOUNTED SECURITY CAMERA. REFER TO MECHANICAL DRAWINGS.

HD-D — HD-D = UNINSTALL EXISTING HEAT DETECTOR. REFER TO ELECTRICAL DRAWINGS.

WAP-D — WAP-D = UNINSTALL EXISTING WIRELESS ACCESS DEVICE. REFER TO ELECTRICAL DRAWINGS.

SD / SD-D — SD = EXISTING SMOKE DETECTOR TO REMAIN. SD-D = UNINSTALL EXISTING SMOKE DETECTOR. REFER TO ELECTRICAL DRAWINGS.

FA-D — FA-D = UNINSTALL EXISTING FIRE ALARM AND DEMOLISH ASSOCIATE CONDUIT. REFER TO ELECTRICAL DRAWINGS.

EX-ACT CH-0000 / ACT-D CH-0000 — EX-ACT = EXISTING SUSPENDED ACOUSTIC CEILING TILE ASSEMBLY TO REMAIN. UNINSTALL AND STORE TEMPORARILY AND REINSTATE AS REQUIRED TO COMPLETE THE WORK, INCLUDING ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL. ACT-D = REMOVE AND DISPOSE OF EXISTING SUSPENDED ACOUSTIC CEILING TILE AND T-BAR ASSEMBLY IN ITS ENTIRETY. CH = HEIGHT FROM FINISHED FLOOR TO UNDERSIDE OF EXISTING CEILING.

EX-GBD CH-0000 / GBD-D CH-0000 — EX-GBD = EXISTING GYPSUM BOARD FINISHED SUSPENDED CEILING ASSEMBLY AND/OR BULKHEAD TO REMAIN. CREATE OPENINGS AS REQUIRED TO ACCOMMODATE NEW WORK (ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL) AND PATCH AND REPAIR CEILING ASSEMBLY TO ORIGINAL CONDITION AFTER WORK IS COMPLETED AND AS REQUIRED. CH = HEIGHT FROM FINISHED FLOOR TO UNDERSIDE OF EXISTING CEILING. GBD-D = REMOVE AND DISPOSE OF EXISTING GYPSUM BOARD FINISHED SUSPENDED CEILING ASSEMBLY AND/OR BULKHEAD IN ITS ENTIRETY OR FOR THE PORTION INDICATED ON THE DRAWINGS. CEILING IS COMPRISED OF 2 LAYERS OF 16mm TYPE X GBD ON 64mm STEEL CHANNEL FRAMING AT 400mm O.C.

EXP CH-0000 — EXISTING CEILING IS EXPOSED TO ABOVE. CH - VARIES = CEILING IS SLOPED AND HEIGHT VARIES.

EXISTING INTERIOR MASONRY (CONCRETE BLOCK) WALL HEADER ABOVE EXISTING WALL OPENING.

EXISTING INTERIOR GYPSUM BOARD FINISHED STEEL STUD FRAMED WALL HEADER ABOVE EXISTING WALL OPENING.

REMOVE AND DISPOSE OF EXISTING SUSPENDED ACOUSTIC CEILING TILE AND ASSOCIATED FRAMING ASSEMBLY. SIZE: 610mm X 610mm ±; 1220mm X 610mm ±. REMOVE EXISTING ELECTRICAL AND MECHANICAL FIXTURES AND FITMENTS FROM EXISTING CEILING ASSEMBLY. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR RELOCATION OF EXISTING FIXTURES AND PROVISION FOR NEW FIXTURES. PROVIDE NEW ACOUSTIC CEILING ASSEMBLY AS INDICATED ON PROPOSED REFLECTED CEILING PLAN LAYOUT.

EXISTING SUSPENDED ACOUSTIC CEILING TILE AND ASSOCIATED FRAMING ASSEMBLY TO REMAIN. SIZE: 1220mm X 610mm ±. TEMPORARILY REMOVE, PROTECT AND STORE EXISTING CEILING ASSEMBLY IN ITS ENTIRETY AS REQUIRED TO COMPLETE DEMOLITION AND NEW WORK REGARDING ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL WORKS. TEMPORARILY UNINSTALL EXISTING MECHANICAL AND ELECTRICAL FIXTURES AND DEVICES AS REQUIRED TO COMPLETE THE WORK. REINSTALL EXISTING CEILING ASSEMBLIES AND MECHANICAL AND ELECTRICAL DEVICES AND FIXTURES AFTER COMPLETION OF ALL WORK.

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no.	issue	date
1	Issued for Costing - Class D	Aug.26, 2022

project
ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
EXISTING SECOND FLOOR REFLECTED CELING DEMOLITION PLAN

drawing scale
AS NOTED

ward99 project number
21036 - ST. CATHARINES LIBRARY

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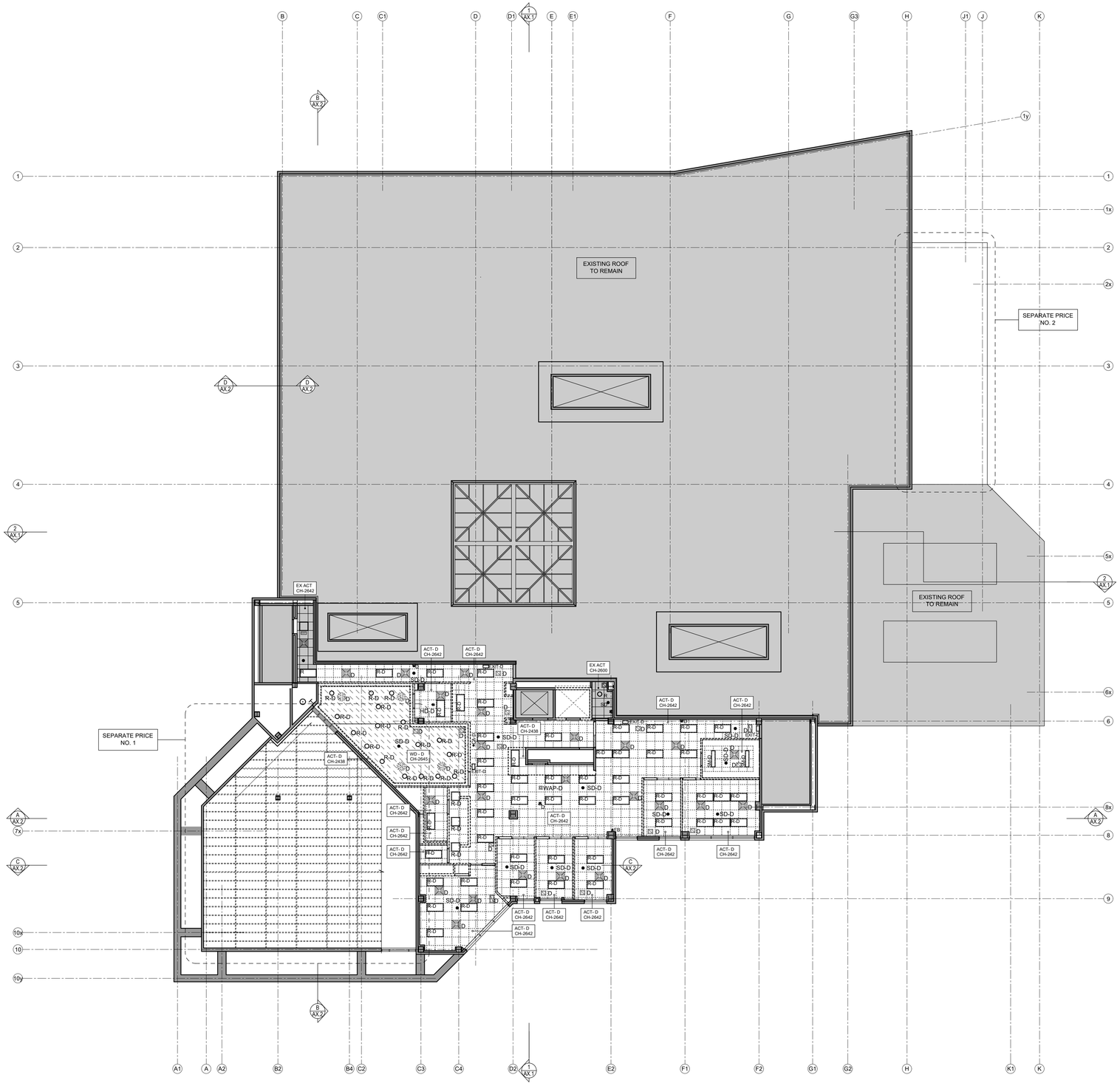
drawing no.
A3.3



1 / A3.4 EXISTING THIRD FLOOR REFLECTED CEILING DEMOLITION PLAN
1:150

REFLECTED CEILING DEMOLITION LEGEND AND NOTES

SM-D / SM / SM-D / SM — SM-D = UNINSTALL, REMOVE AND DISPOSE SURFACE MOUNT LIGHT. SM = EXISTING SURFACE MOUNT LIGHT FIXTURE TO REMAIN. REFER TO ELECTRICAL DRAWINGS.

R-D / R-D — R-D = UNINSTALL, REMOVE AND DISPOSE RECESSED LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS.

WM / WM-D — WM = EXISTING WALL MOUNTED LIGHT FIXTURE TO REMAIN. WM-D = UNINSTALL, REMOVE AND DISPOSE WALL MOUNTED LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS.

EXIT-D / EXIT-D WM — EXIT-D WM = REMOVE AND DISPOSE OF EXISTING WALL MOUNTED SIGN. EXIT-D = REMOVE AND DISPOSE OF EXISTING CEILING MOUNTED SIGN. REFER TO ELECTRICAL DRAWINGS.

WM-D / D — WM-D = REMOVE AND DISPOSE OF EXISTING WALL MOUNTED EMERGENCY LIGHT FIXTURE. D = REMOVE AND DISPOSE OF EXISTING EMERGENCY LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS.

EXISTING SUPPLY AIR GRILLE TO REMAIN.

D / D — D = REMOVE AND DISPOSE OF EXISTING SUPPLY AIR GRILLE. REFER TO MECHANICAL DRAWINGS.

EXISTING RETURN AIR GRILLE TO REMAIN.

WM — WM = EXISTING RETURN AIR GRILLE TO REMAIN.

D / D / D / D — D = DEMOLISH EXISTING RETURN AIR GRILLE. WM = EXISTING RETURN AIR GRILLE TO REMAIN. REFER TO MECHANICAL DRAWINGS.

MS-D — MS-D = DEMOLISH EXISTING MOTION SENSOR. REFER TO MECHANICAL DRAWINGS.

FB / FB-D — FB = EXISTING FIRE BELL TO REMAIN. FB-D = UNINSTALL EXISTING FIRE BELL. REFER TO ELECTRICAL DRAWINGS. PATCH EXISTING PARTITIONS SURFACE FINISHED PARTITION AS REQUIRED TO MAKE SURFACES GOOD AND FLUSH.

CA-D — CA-D = UNINSTALL EXISTING SURFACE MOUNTED SECURITY CAMERA. REFER TO MECHANICAL DRAWINGS.

HD-D — HD-D = UNINSTALL EXISTING HEAT DETECTOR. REFER TO ELECTRICAL DRAWINGS.

WAP-D — WAP-D = UNINSTALL EXISTING WIRELESS ACCESS DEVICE. REFER TO ELECTRICAL DRAWINGS.

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EXISTING INTERIOR GYPSUM BOARD FINISHED STEEL STUD FRAMED WALL HEADER ABOVE EXISTING WALL OPENING.

REMOVE AND DISPOSE OF EXISTING SUSPENDED ACOUSTIC CEILING TILE AND ASSOCIATED FRAMING ASSEMBLY.
SIZE: 610mm X 610mm ±; 1220mm X 610mm ±.
REMOVE EXISTING ELECTRICAL AND MECHANICAL FIXTURES AND FITMENTS FROM EXISTING CEILING ASSEMBLY. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR RELOCATION OF EXISTING FIXTURES AND PROVISION FOR NEW FIXTURES. PROVIDE NEW ACOUSTIC CEILING ASSEMBLY AS INDICATED ON PROPOSED REFLECTED CEILING PLAN LAYOUT.

EXISTING SUSPENDED ACOUSTIC CEILING TILE AND ASSOCIATED FRAMING ASSEMBLY TO REMAIN. SIZE: 1220mm X 610mm ±. TEMPORARILY REMOVE, PROTECT AND STORE EXISTING CEILING ASSEMBLY IN ITS ENTIRETY AS REQUIRED TO COMPLETE DEMOLITION AND NEW WORK REGARDING ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL WORKS. TEMPORARILY UNINSTALL EXISTING MECHANICAL AND ELECTRICAL FIXTURES AND DEVICES AS REQUIRED TO COMPLETE THE WORK. REINSTALL EXISTING CEILING ASSEMBLIES AND MECHANICAL AND ELECTRICAL DEVICES AND FIXTURES AFTER COMPLETION OF ALL WORK.

WD - D CH-0000 — WD - D = REMOVE AND DISPOSE OF EXISTING WOOD PANEL FINISHED SUSPENDED CEILING ASSEMBLY AND/OR BULKHEAD IN ITS ENTIRETY. CH - VARIES = CEILING IS SLOPED AND HEIGHT VARIES.

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DESIGN EXCELLENCE ARCHITECTURE PROJECT WORTH

project
ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
EXISTING THIRD FLOOR REFLECTED CELING DEMOLITION PLAN

drawing scale
AS NOTED

ward99 project number
21036 - ST. CATHARINES LIBRARY

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drawing no.
A3.4

1 A3.5 PROPOSED BASEMENT REFLECTED CEILING PLAN
1:150

REFLECTED CEILING PLAN NOTES

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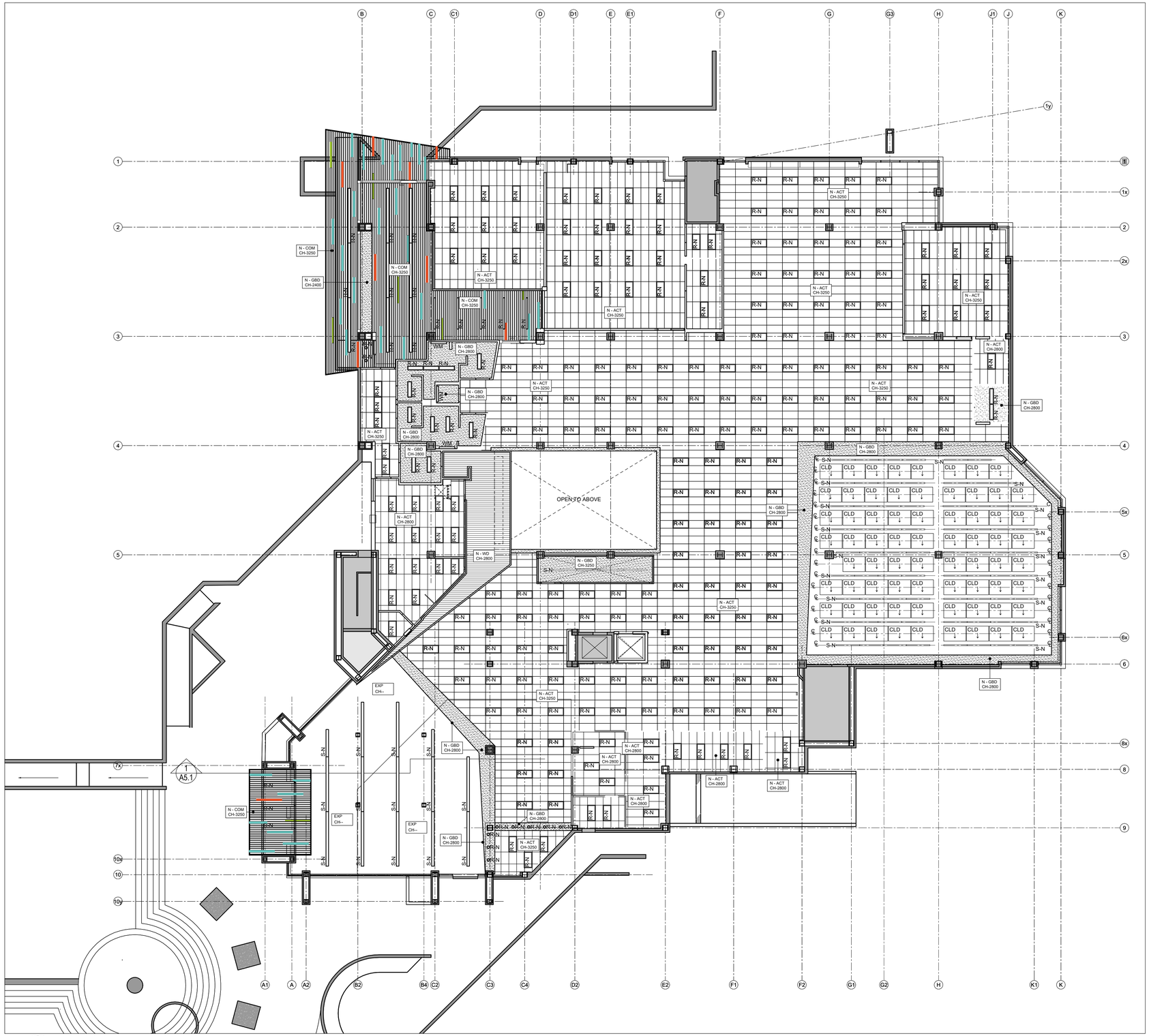
drawing no.
A3.5



1 A3.6 PROPOSED GROUND FLOOR REFLECTED CEILING PLAN
1:150

REFLECTED CEILING PLAN NOTES

NEW SUSPENDED ACOUSTIC CEILING TILE AND ASSOCIATED FRAMING ASSEMBLY.
SIZE: 610mm X 1220mm OR

NEW GYPSUM BOARD CEILING OR BULKHEAD AND ASSOCIATED FRAMING ASSEMBLY.

EXISTING SUSPENDED ACOUSTIC CEILING TILE AND ASSOCIATED FRAMING ASSEMBLY.
SIZE: 610mm X 1220mm ±
INSTALL NEW CEILING TILE FINISH, WHERE EXISTING ELECTRICAL AND MECHANICAL FIXTURES AND FITMENTS ARE INDICATED AS TO BE REMOVED. REMOVE EXISTING SUSPENDED CEILING ASSEMBLY AS REQUIRED TO COMPLETE DEMOLITION AND NEW WORK. REINSTALL CEILING ASSEMBLY ONCE WORK IS COMPLETE.

EX ACT CH-0000	EXISTING ACOUSTIC CEILING TILE AND HEIGHT FROM FINISHED FLOOR TO UNDERSIDE OF EXISTING CEILING.
N-ACT CH-0000	NEW ACOUSTIC CEILING TILE AND HEIGHT FROM FINISHED FLOOR TO UNDERSIDE OF NEW CEILING.
N-GBD CH-0000	NEW GYPSUM BOARD CEILING AND/OR BULKHEAD AND HEIGHT FROM FINISHED FLOOR TO UNDERSIDE OF NEW CEILING.
N-WD CH-0000	NEW WOOD GRILLE CEILING FINISH AND/OR BULKHEAD AND HEIGHT FROM FINISHED FLOOR TO UNDERSIDE OF NEW CEILING.
N-COM CH-0000	NEW COMPOSITE CEILING PANEL CLADDING (TRESPA) AND HEIGHT FROM FINISHED FLOOR TO UNDERSIDE OF NEW CEILING.
EXP CH-0000	NEW EXPOSED PAINTED FINISH STEEL DECK.
R-N	NEW RECESSED LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS.
S-N	NEW SUSPENDED LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS.
WM-N	NEW WALL MOUNTED LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS.
CLD	NEW SUSPENDED ACOUSTIC CLOUD CEILING .

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project
ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
PROPOSED GROUND FLOOR REFLECTED CEILING PLAN

drawing scale
AS NOTED

ward99 project number
21036 - ST. CATHARINES LIBRARY

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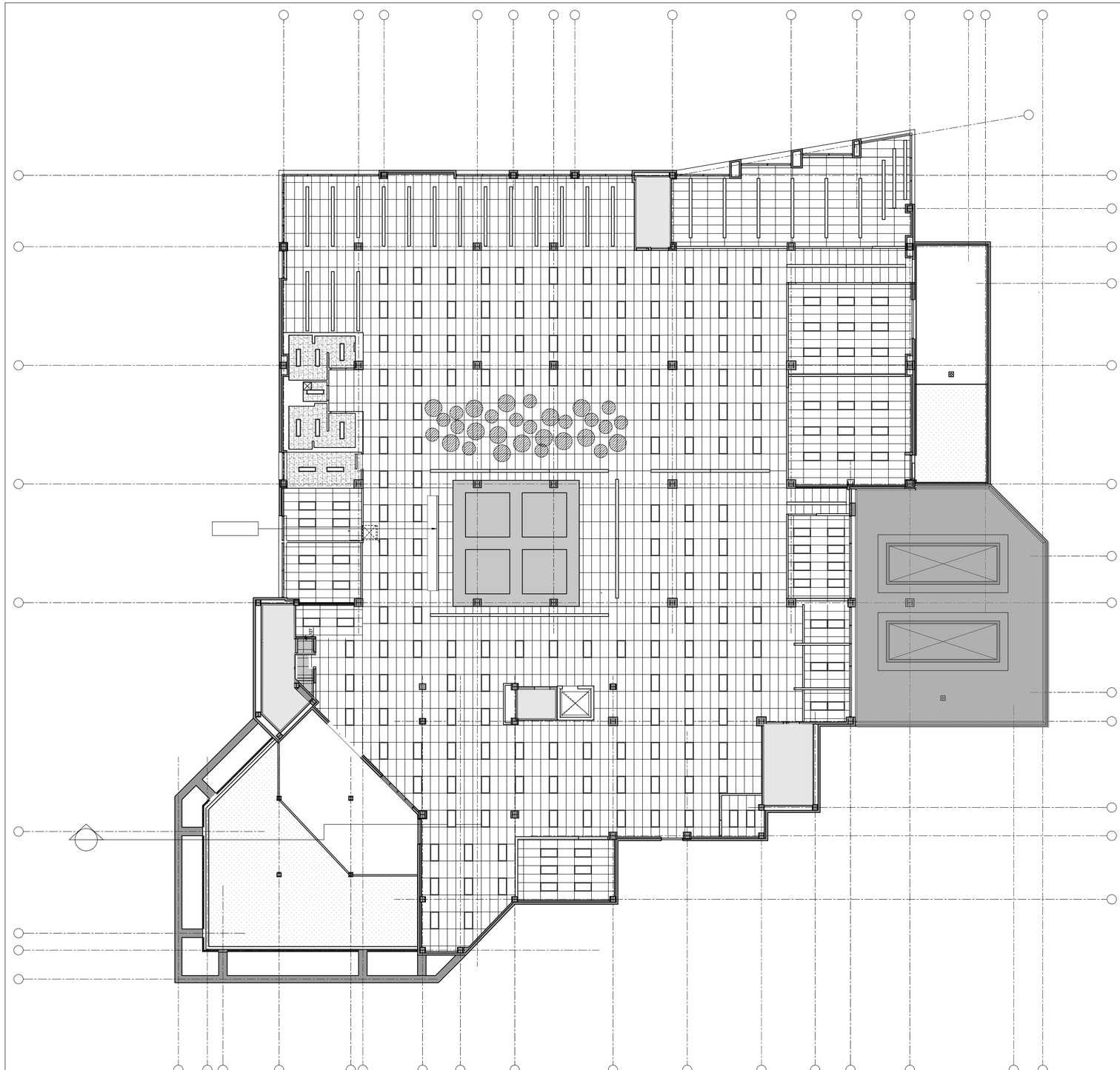
drawing no.
A3.6



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PROJECT NORTH

project

ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

PROPOSED SECOND FLOOR REFLECTED CEILING PLAN

drawing scale

AS NOTED

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WaRD99

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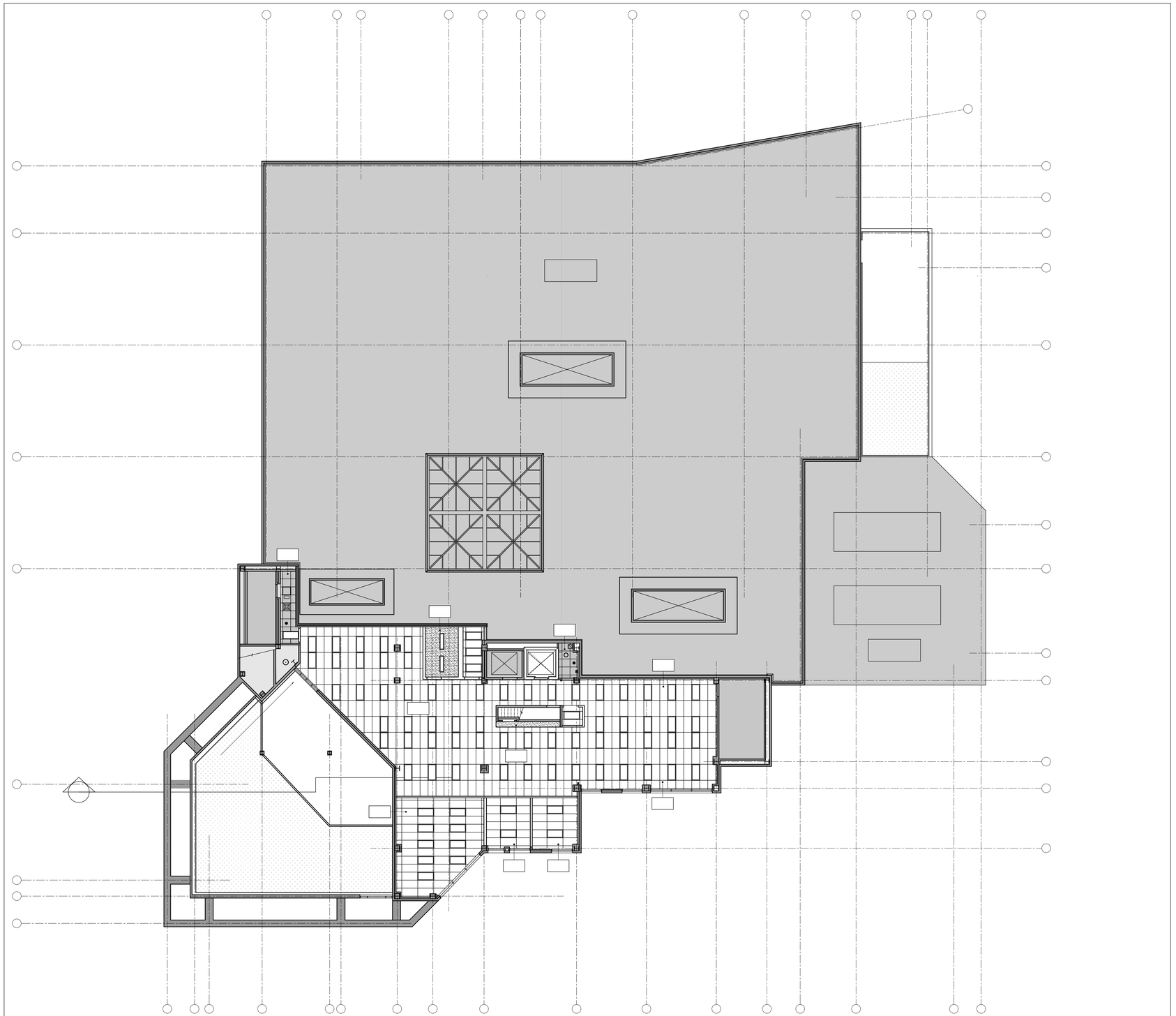
drawing no.

A3.7



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PROJECT NORTH

project

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INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

PROPOSED THIRD FLOOR REFLECTED CEILING PLAN

drawing scale

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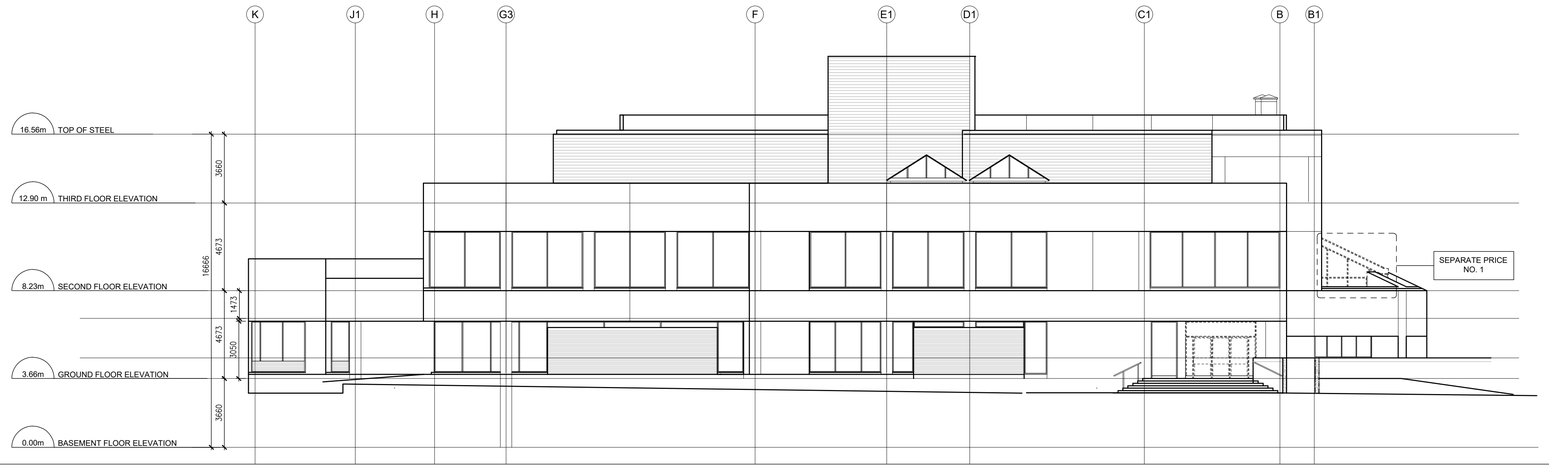
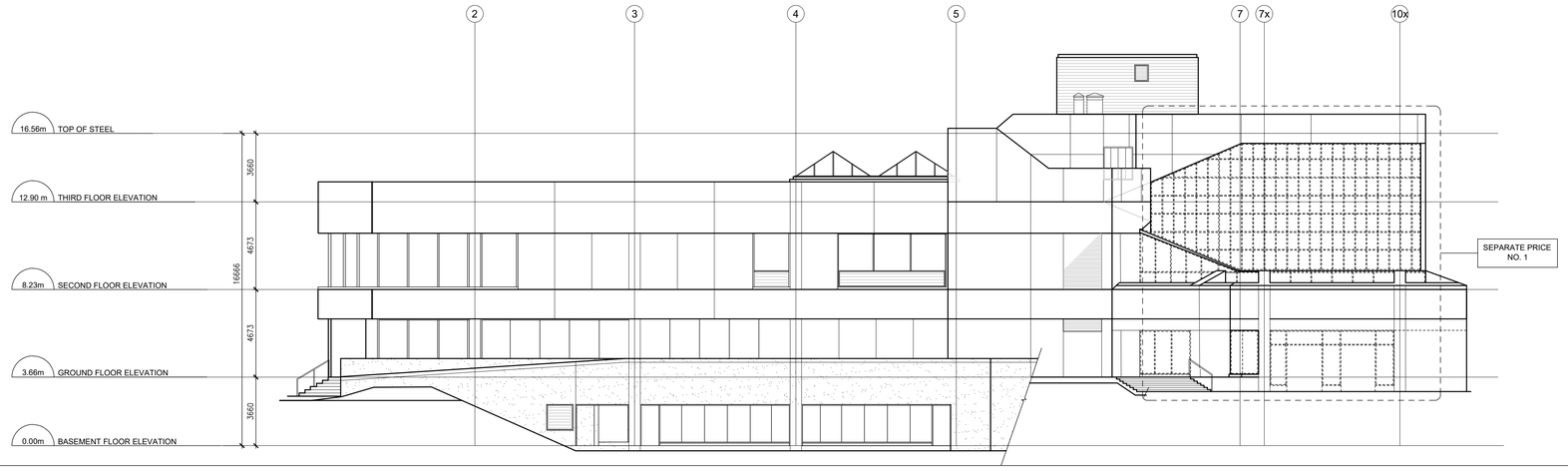
drawing no.

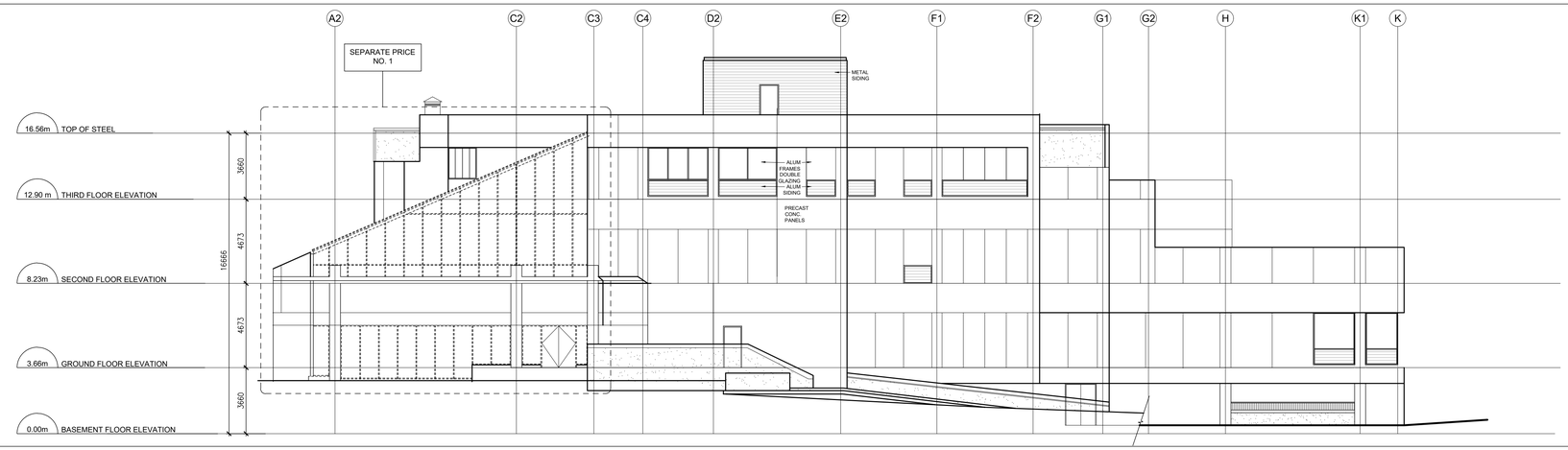
A3.8



3 A4.1 DEMOLITION NORTH WEST ELEVATION
1:150



2 A4.1 DEMOLITION SOUTH WEST ELEVATION
1:150



1 A4.1 DEMOLITION SOUTH EAST ELEVATION
1:150

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project
ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
DEMOLITION EXTERIOR ELEVATIONS

drawing scale
AS NOTED

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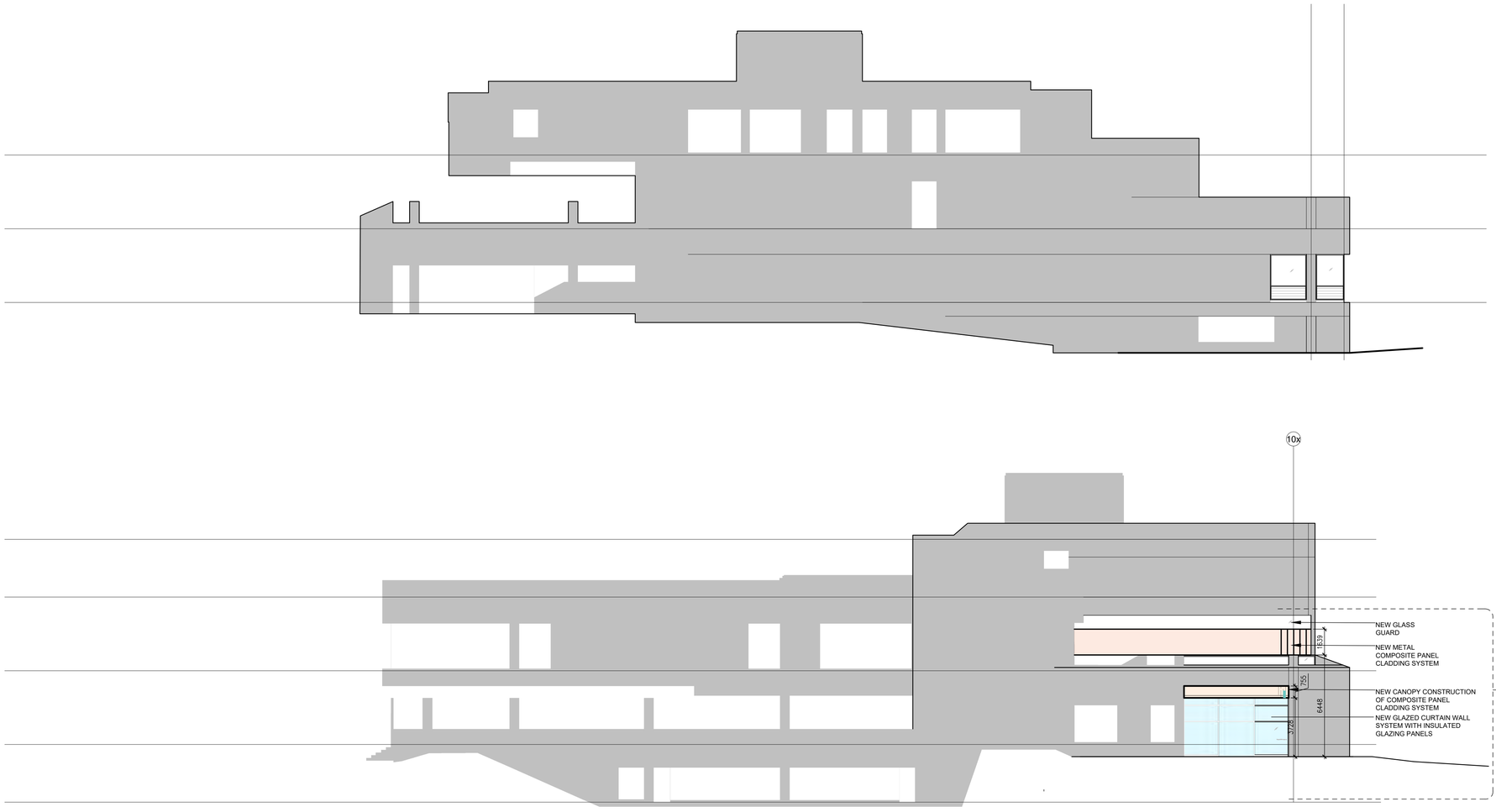
A4.1



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PROPOSED EXTERIOR ELEVATIONS

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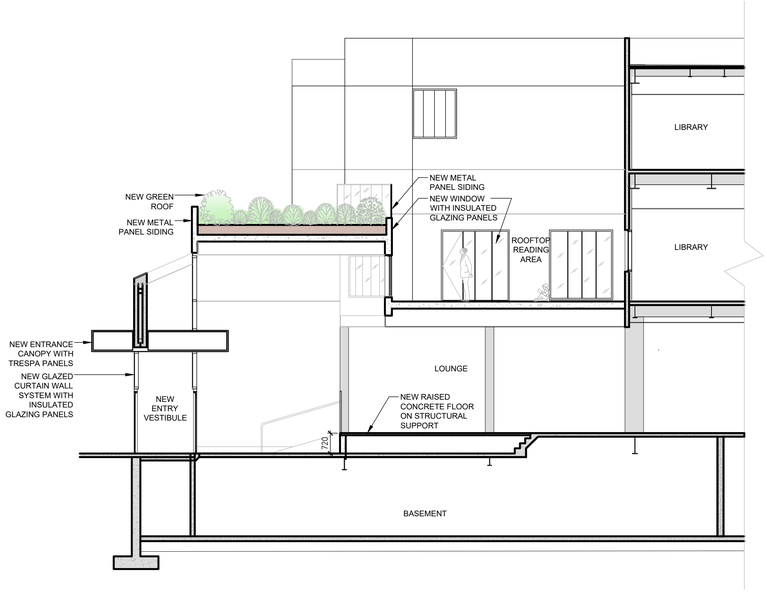
A4.2



1 A5.1 PROPOSED WEST ELEVATION
1:150

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drawing

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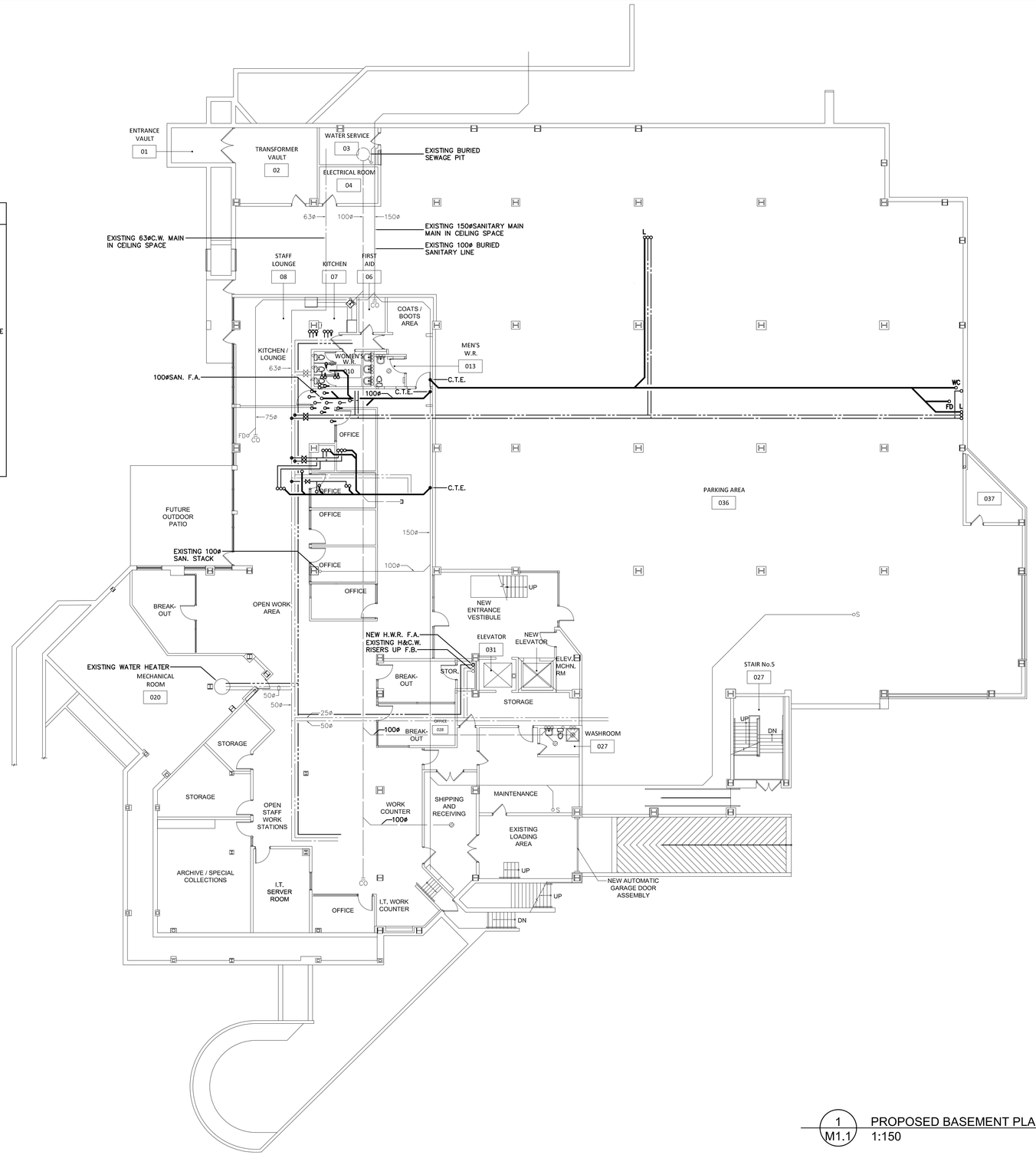
drawing no.

A5.1

PLUMBING & DRAINAGE LEGEND

	SANITARY DRAIN (ABOVE GRADE)
	SANITARY DRAIN (BELOW GRADE)
	STORM DRAIN (ABOVE GRADE)
	STORM DRAIN (BELOW GRADE)
	VENT LINE
	DOMESTIC COLD WATER LINE
	DOMESTIC HOT WATER LINE
	DOMESTIC RECIRCULATION LINE
G	GAS LINE
T	TEMPERED WATER LINE
HT	HIGH TEMPERATURE HOT WATER LINE
HTR	HIGH TEMPERATURE HOT WATER RECIRCULATION LINE
CO	CLEANOUT
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
	GATE VALVE
	CHECK VALVE
	GLOBE VALVE
	UNION
B.F.P.	BACKFLOW PREVENTER
F.E.	FIRE EXTINGUISHER
F.E. & CAB	FIRE EXTINGUISHER & CABINET
T.V.&P.	TRAP, VENT & PRIME
R.W.L.	RAINWATER LEADER
F.D.	FLOOR DRAIN (T.V. AND P.)
C.T.E.	CONNECT TO EXISTING



1 M1.1 PROPOSED BASEMENT PLAN - PLUMBING
1:150

Jain
7405 East Danbro Crescent, 2nd Floor
Mississauga, Ontario, L5N 6P8
Tel: 905 285 9900, Fax: 905 567 5246
Email : mail@jainconsultants.com

22–237

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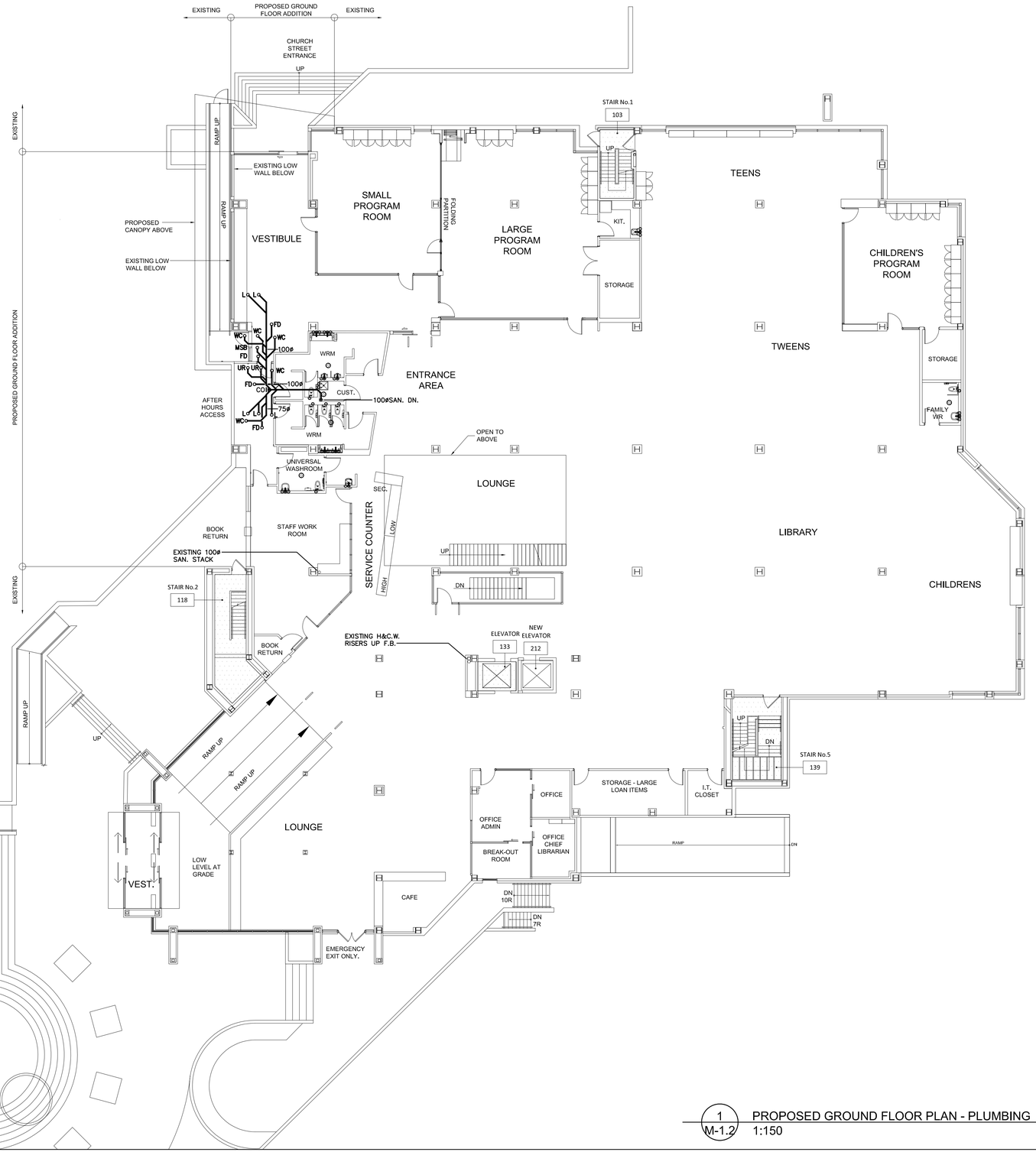
drawing no.
M1.1

PLUMBING & DRAINAGE LEGEND

	SANITARY DRAIN (ABOVE GRADE)
— — — —	SANITARY DRAIN (BELOW GRADE)
	STORM DRAIN (ABOVE GRADE)
	STORM DRAIN (BELOW GRADE)
	VENT LINE
	DOMESTIC COLD WATER LINE
	DOMESTIC HOT WATER LINE
	DOMESTIC RECIRCULATION LINE
G	GAS LINE
T	TEMPERED WATER LINE
HT	HIGH TEMPERATURE HOT WATER LINE
HTR	HIGH TEMPERATURE HOT WATER RECIRCULATION LINE
CO	CLEANOUT
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
	GATE VALVE
	CHECK VALVE
	GLOBE VALVE
	UNION
B.F.P.	BACKFLOW PREVENTER
F.E.	FIRE EXTINGUISHER
F.E. & CAB	FIRE EXTINGUISHER & CABINET
T.V.&P.	TRAP, VENT & PRIME
R.W.L.	RAINWATER LEADER
F.D.	FLOOR DRAIN (T.V. AND P.)
C.T.E.	CONNECT TO EXISTING



1 M-1.2 PROPOSED GROUND FLOOR PLAN - PLUMBING
1:150

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22–237

NOTE: THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL SITE DIMENSIONS AND FOR NOTIFYING THE ARCHITECT OF ANY SITE CONDITIONS AND SITE MEASUREMENTS THAT ARE NOT CONSISTENT WITH THE DRAWINGS.

no.	revision	date

no.	issue	date
1	Issued for Costing - Class D	Aug.26, 2022

project
ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing
PROPOSED GROUND FLOOR PLAN - PLUMBING

drawing scale
AS NOTED

ward99 project number
21036 - ST. CATHARINES LIBRARY

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ward99 architects inc.
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drawing no.
M-1.2

PLUMBING & DRAINAGE LEGEND

	SANITARY DRAIN (ABOVE GRADE)
	SANITARY DRAIN (BELOW GRADE)
	STORM DRAIN (ABOVE GRADE)
	STORM DRAIN (BELOW GRADE)
	VENT LINE
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	GATE VALVE
	CHECK VALVE
	GLOBE VALVE
	UNION
B.F.P.	BACKFLOW PREVENTER
F.E.	FIRE EXTINGUISHER
F.E. & CAB	FIRE EXTINGUISHER & CABINET
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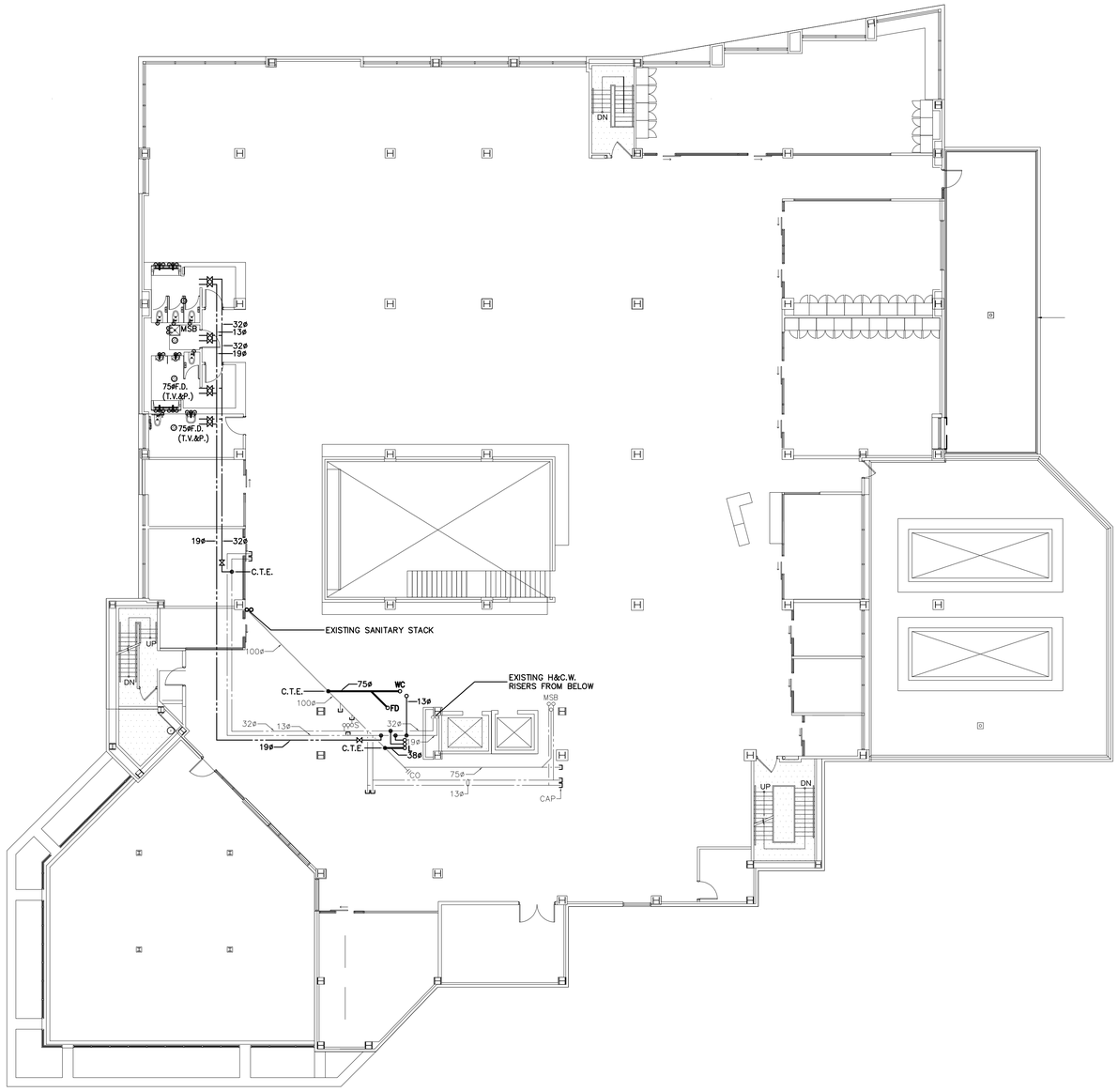
F.D.	FLOOR DRAIN (T.V. AND P.)
C.T.E.	CONNECT TO EXISTING



1 M-1.3 PROPOSED SECOND FLOOR PLAN - PLUMBING
1:150

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project
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drawing
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drawing no.
M-1.3

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PLUMBING & DRAINAGE LEGEND

	SANITARY DRAIN (ABOVE GRADE)
	SANITARY DRAIN (BELOW GRADE)
	STORM DRAIN (ABOVE GRADE)
	STORM DRAIN (BELOW GRADE)
	VENT LINE
	DOMESTIC COLD WATER LINE
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	DOMESTIC RECIRCULATION LINE
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F.E. & CAB	FIRE EXTINGUISHER & CABINET
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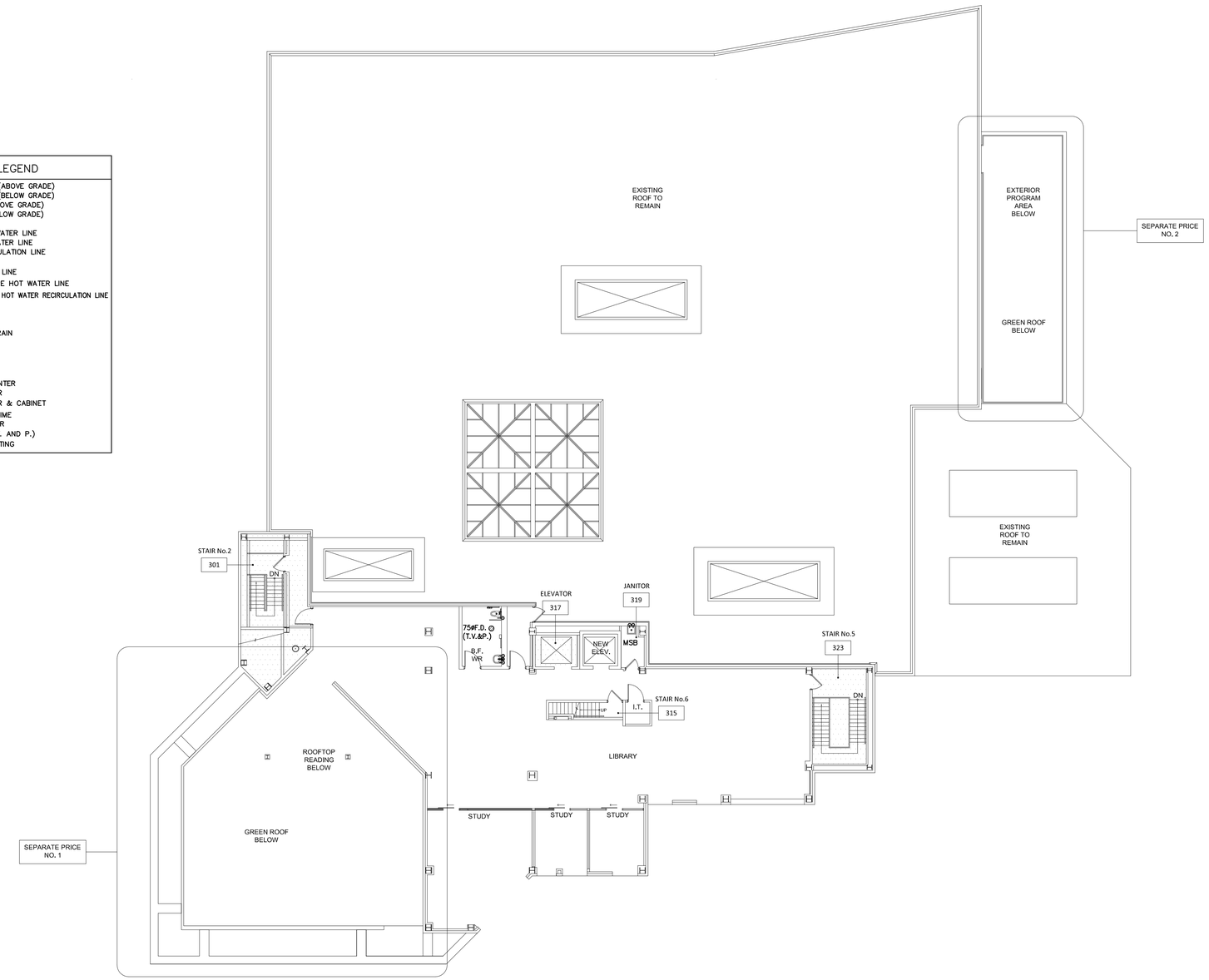
F.D.	FLOOR DRAIN (T.V. AND P.)
C.T.E.	CONNECT TO EXISTING



1 M-1.4 PROPOSED THIRD FLOOR PLAN - PLUMBING
1:150

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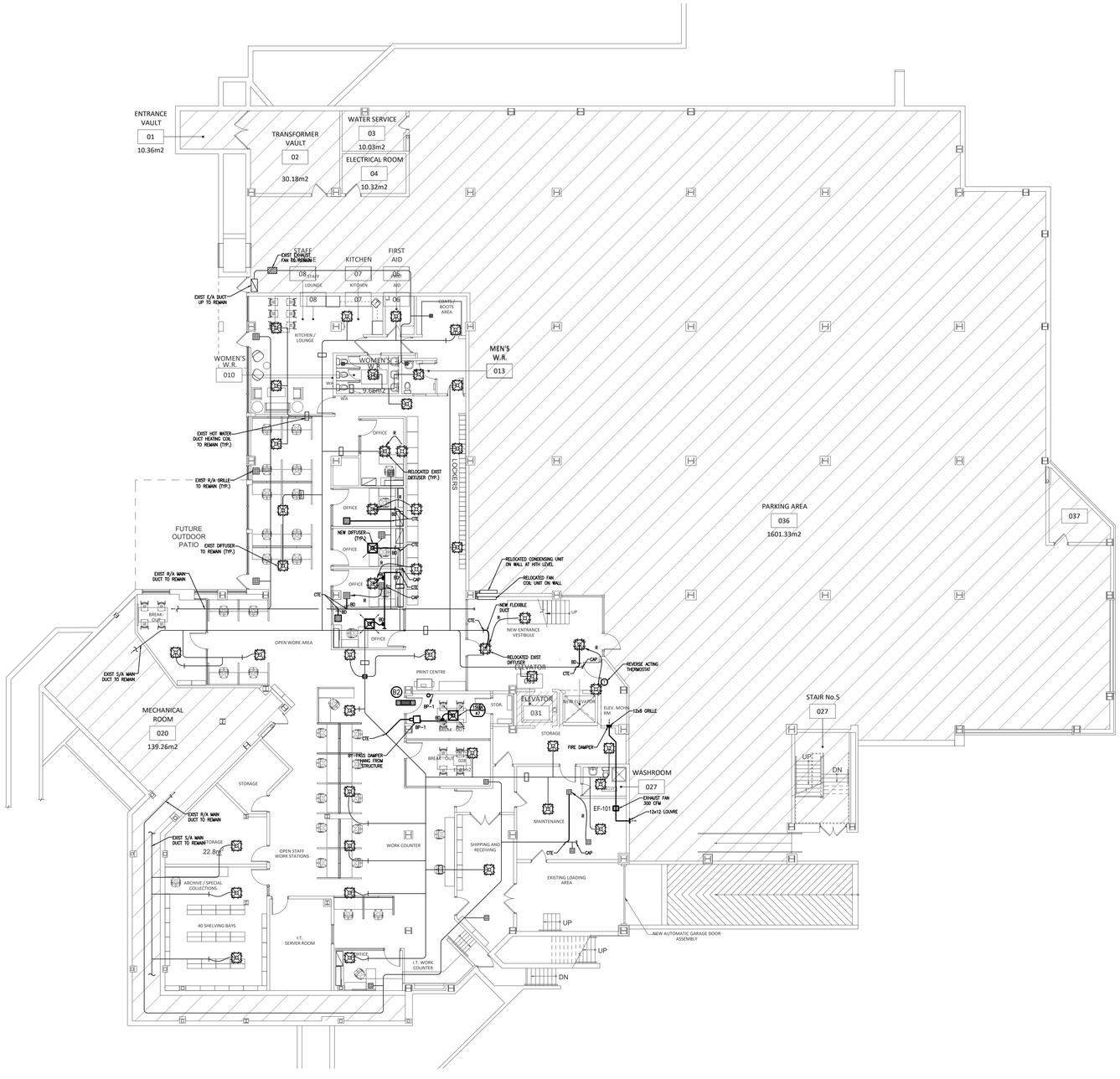
drawing no.
M-1.4



BASEMENT FLOOR PLAN - HVAC LAYOUT

SCALE: 1:150

HVAC LEGEND

300x200	DOUBLE LINE DUCT (FIRST FIGURE IS DUCT WIDTH)
	OPEN END DUCT C/W 13mm MESH SCREEN
	SUPPLY DUCT
	RETURN / EXHAUST DUCT
	TURNING VANES (DOUBLE THICKNESS-SEE SPECS).
	NEW SQUARE DIFFUSER
24	EXIST SQUARE DIFFUSER TO BE RELOCATED
	EXIST GRILLE TO BE RELOCATED / REMOVED
A1	300x300 RETURN/EXHAUST AIR GRILLE
A2	600x300 RETURN/EXHAUST AIR GRILLE
A3	600x600 RETURN/EXHAUST AIR GRILLE
B1	300x300 RETURN AIR GRILLE C/W 300x200 SOUNDLINED AIR TRANSFER DUCT
B2	2-300x300 RETURN AIR GRILLE C/W 300x200 SOUNDLINED AIR TRANSFER DUCT
B3	2-600x600 RETURN AIR GRILLE C/W 600x400 SOUNDLINED AIR TRANSFER DUCT
250|A 142	NECK SIZE (mm) TYPE OF DIFFUSER AIR AMOUNT (L/S)
300 x 200 94	SUPPLY, RETURN, & EXHAUT GRILLE SIZE (mm) AIR AMOUNT (L/S)
B.D.	BALANCING DAMPER
F.D.	FIRE DAMPER
U/C	UNDER CUT DOOR BY ANOTHER TRADE SECTION.
T	THERMOSTAT
R	RELOCATED
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED
	EXISTING TO BE RELOCATED
CTE	CONNECT TO EXISTING.

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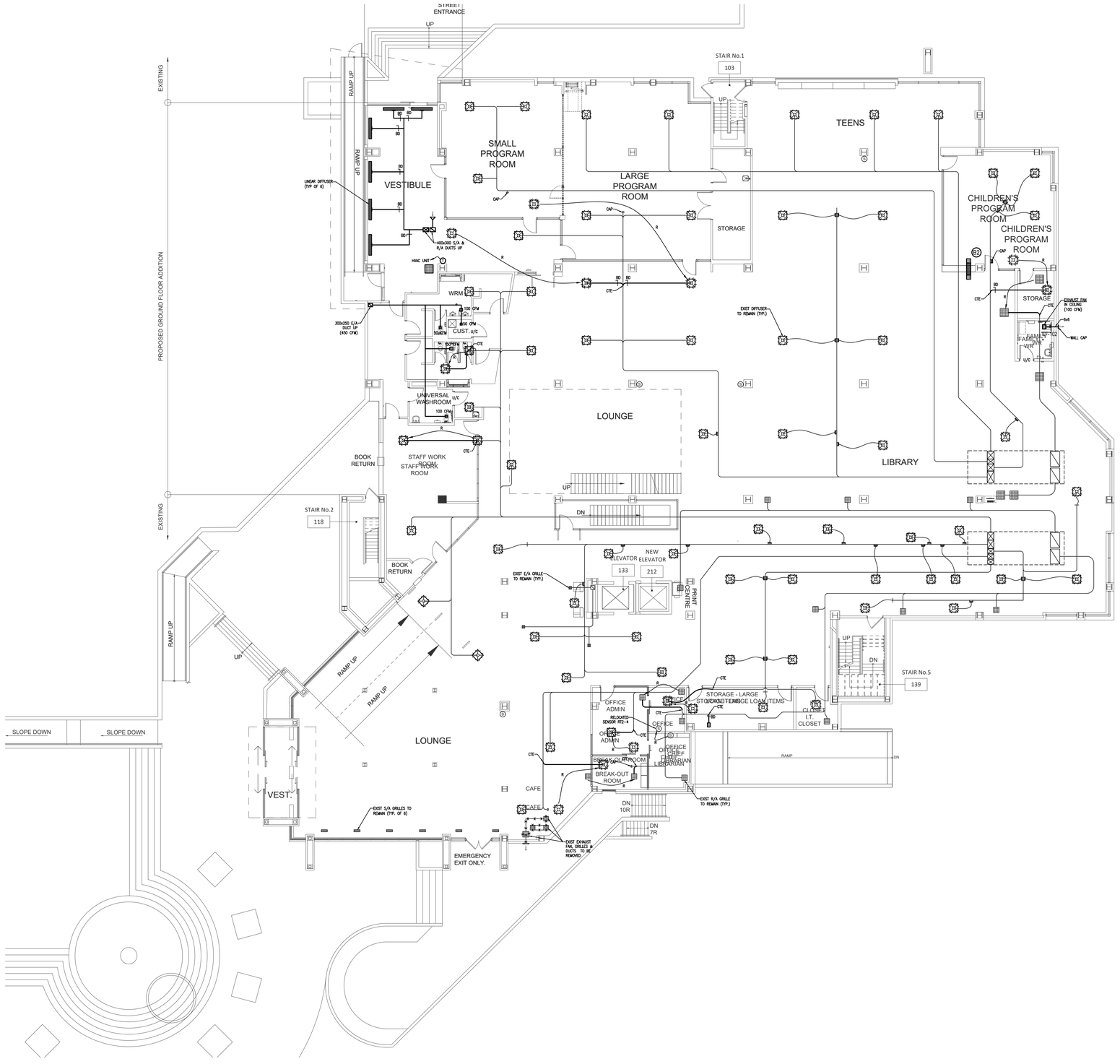

GROUND FLOOR PLAN - HVAC LAYOUT

SCALE: 1:150

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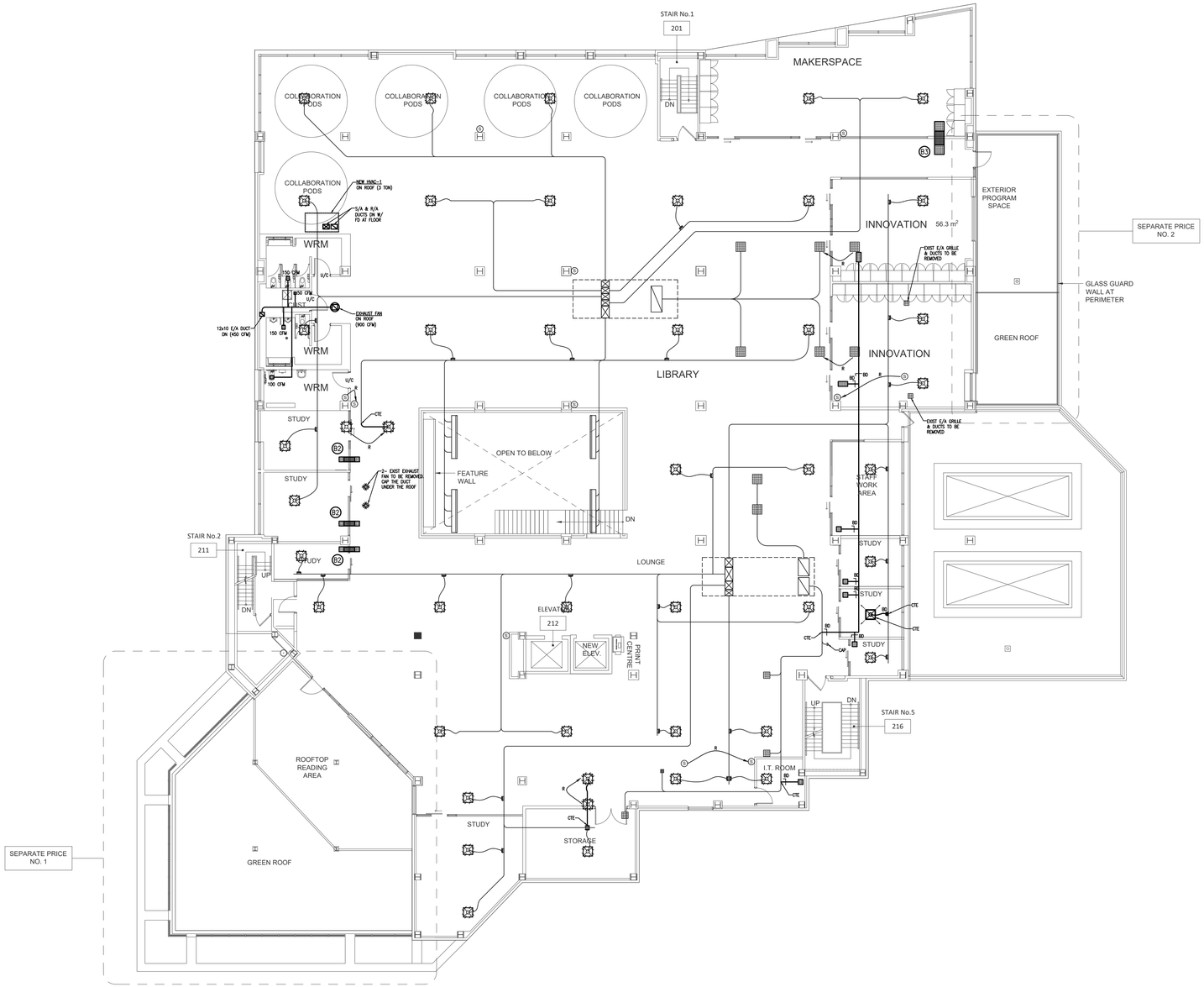

SECOND FLOOR PLAN - HVAC LAYOUT

SCALE: 1:150

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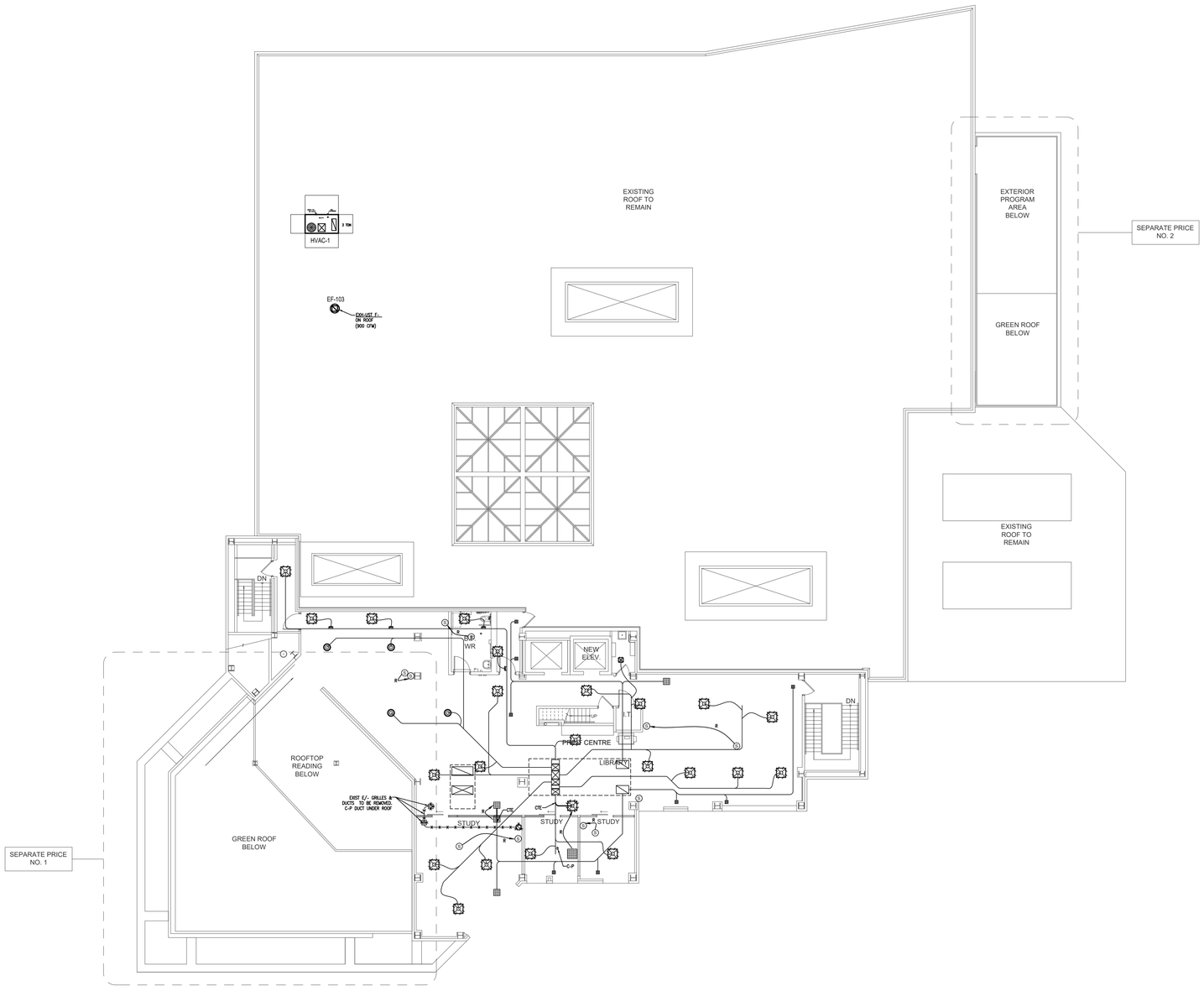

THIRD FLOOR PLAN - HVAC LAYOUT

SCALE: 1:150

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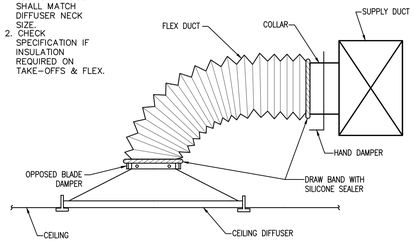
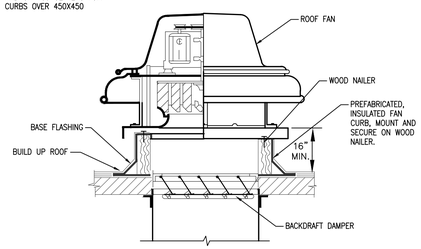
NOTE:
1. MAX. FLEX DUCT LENGTH IS 1800mm. FLEX DUCT SIZE SHALL MATCH DIFFUSER NECK SIZE.
2. CHECK SPECIFICATION IF INSULATION REQUIRED ON TAKE-OFFS & FLEX.

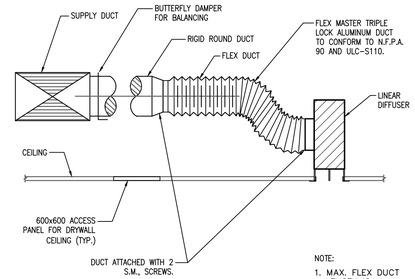


TYPICAL DIFFUSER CONNECTION
N.T.S.

SECURE FAN BASE TO CURB MIN. 2 LOCATIONS EACH SIDE AND ON 150 CENTERS FOR CURBS OVER 450X450

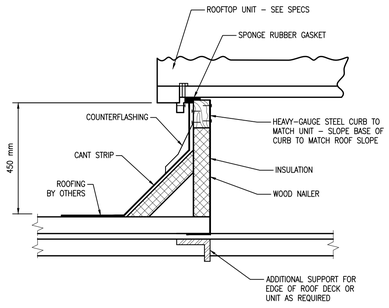


ROOF FAN MOUNTING DETAIL
N.T.S.



NOTE:
1. MAX. FLEX DUCT LENGTH IS 3000mm. FLEX DUCT SIZE SHALL MATCH DIFFUSER NECK SIZE.

TYPICAL LINEAR DIFFUSER CONNECTION
N.T.S.



ROOFTOP EQUIPMENT CURB DETAIL
N.T.S.

ROOFTOP UNIT SCHEDULE

UNIT NO:	SERVICE & LABEL	MAKE & MODEL	AIR FLOW CFM	ESP inWC	COOLING PERFORMANCE		HEATING PERFORMANCE (GAS FIRED)		ELECTRICAL DATA			FRESH AIR L/S	APPROX. WEIGHT (KG)	REMARKS
					GROSS COOLING CAPACITY (MBH/KW)	NET COOLING CAPACITY (MBH/KW)	INPUT (MBH/KW)	OUTPUT (MBH/KW)	MAX. FUSE SIZE	MCA	POWER SUPPLY			
HVAC-1	VESTIBULE	LENNOX LGH036S4T	1200	0.5	35.8/10.5	34.8/10.2	105/30.8	84/24.6	30	22	208/3/60	–	400	

EXHAUST FAN SCHEDULE

UNIT TAG	SERVICE AREA	VOLUME FLOW CFM	E.S.P. inWC	SPEED RPM	MOTOR HP	MOTOR WATTS	POWER SUPPLY V/PH/HZ	MAKE	MODEL	REMARKS
EF-101	ELECTRICAL ROOM BASEMENT	300	0.25	1550	–	130	120/1/60	PENN BARRY	ZEPHYR ZBH	
EF-102	NEW FAMILY WASHROOM GROUND FLOOR	100	0.25	1550	–	79	120/1/60	PENN BARRY	ZEPHYR Z5H	
EF-103	NEW WASHROOMS GROUND & SECOND FLOORS	900	0.5	1000	1/4	–	120/1/60	PENN BARRY	DOMEX DX11B	

NOTE:
1. DIVISION 15 SHALL SUPPLY STARTER AND DIVISION 16 SHALL INSTALL STARTERS AND DIVISION 16 SHALL SUPPLY & INSTALL DISCONNECT SWITCHES.

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LEGEND

- A — FLUORESCENT OR LED LIGHT FIXTURE – LETTER DENOTES TYPE
- D — INCANDESCENT, LED, FLUORESCENT OR HID CEILING FIXTURE – LETTER DENOTES TYPE
- NL — INCANDESCENT, LED, FLUORESCENT OR HID CEILING FIXTURE ON 24/7 NIGHT LIGHT CIRCUIT FED FROM GENERATOR POWER. ALSO TO OPERATE AS EMERGENCY LIGHT FIXTURE.
- LIGHT STANDARD
- C — INCANDESCENT, FLUORESCENT, LED OR HID WALL FIXTURE – LETTER DENOTES TYPE
- EMERGENCY LIGHTING TYPE 1 (SINGLE HEAD)& TYPE 2, (DOUBLE HEADS), LED, 24V, 7W PER HEAD. BAGHELLI# 8TWR-MR16-LED-7W/HEAD-24V OR READY-LITE
- WP WP — EMERGENCY LIGHTING TYPE 1 (SINGLE HEAD)& TYPE 2, (DOUBLE HEADS), LED, 24V, 7W PER HEAD, BAGHELLI# SEA SERIES-MR16-LED-7W/HEAD-WEATHERPROOF OR READY-LITE
- EMERGENCY LIGHTING BATTERY UNIT, 24V, 720W (BAGHELLI#NOVA-NV-24-720W OR READY-LITE), SUITABLE FOR 120V INPUT VOLTAGE UNLESS NOTED OTHERWISE.
- EXIT LIGHT FIXTURE WALL OR CEILING MOUNTED, PICTOGRAM TYPE – SHADED AREA DENOTES FACE
- STANDARD 15A 120V 1P DUPLEX RECEPTACLE UNLESS NOTED OTHERWISE.
- STANDARD DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER.
- G.F.I DUPLEX RECEPTACLE.
- G.F.I DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER.
- STANDARD 15A 120V 1P QUAD RECEPTACLE
- 15A QUAD. RECEPTACLE WITH SEPARATE NEUTRAL AND GROUND WIRE PER CIRCUIT. 'TR' DENOTES TAMPER RESISTANT.
- 15A STANDARD DUPLEX RECEPTACLE WITH SEPARATE NEUTRAL AND GROUND WIRE PER CIRCUIT.
- C — CEILING MOUNTED DUPLEX RECEPTACLE
- T — 15A/20A T-SLOT RECEPTACLE ON 20A CIRCUIT.
- RR — 120V, 15A CEILING MOUNTED EXTENSION CORD REEL C/W DUPLEX RECEPTACLE AND OUTLET BOX (HUBBELL# HBL4512R + HBL5252GY) C/W SUPPORTING SYSTEM. CO-ORDINATE ON SITE FOR EXACT LOCATION/ MORE INFORMATION AND PROCEED ACCORDINGLY.
- 3-POLE, 250V RECEPTACLE NEMA L6-20P FOR WHEEL BALANCER
- 3-POLE, 250V RECEPTACLE I6-30P FOR TYRE CHANGER & BRAKE LATHE
- 3-POLE, 250V OUTLET NEMA L6-20P FOR AUTOMOBILE EQUIPMENT
- 3-POLE, 250V RECEPTACLE 14-20R FOR UPS RACK
- 3-POLE, 250V RECEPTACLE 14-30R FOR DRYER
- 3-POLE, 250V RECEPTACLE 14-50R FOR RANGE/EV CHARGING
- 3-POLE, 250V RECEPTACLE 6-50R FOR MACHINES
- 600V, 30A,3P RECEPTACLE FOR HIGH PRESSURE WASH PUMPS

- SPECIAL OUTLET AS NOTED
- $ — SINGLE POLE LINE VOLTAGE LIGHT SWITCH UNLESS NOTED OTHERWISE.
- $K — KEY OPERATED SWITCH
- $3 — THREE WAY LINE VOLTAGE LIGHT SWITCH
- $4 — FOUR WAY LIGHT SWITCH
- $D — LINE VOLTAGE DIMMER SWITCH COMPATIBLE WITH RESPECTIVE LIGHT FIXTURES
- $ — 1-BUTTON LOW VOLTAGE DLM TYPE LIGHT SWITCH (TYP.) UNLESS NOTED OTHERWISE.
- $4 — 4-BUTTON LOW VOLTAGE DLM TYPE LIGHT SWITCH (TYP.)
- $D — DIGITAL DIMMER SWITCH COMPATIBLE WITH RESPECTIVE LIGHT FIXTURES

- (T) — ELECTRIC HEATING UNIT, NO. DENOTES TYPE
- DOOR OPERATOR PUSH BUTTON UNLESS NOTED OTHERWISE
- REX — REQUEST TO EXIT DEVICE
- EXISTING HEATER
- PANELBOARD
- EF-3 — MOTOR STARTER. LETTER F DENOTES FLUSH MTD, P= PILOT LIGHT, S=SURFACE MTD. EF-3 = EQUIPMENT CONTROLLED BY STARTER
- WP — DISCONNECT SWITCH – WP DENOTES WEATHERPROOF
- COMBINATION MOTOR STARTER AND DISCONNECT
- MOTOR OUTLET AS NOTED
- MOTOR & DISCONNECT SWITCH TO SUIT
- 1 — RECESSED P.A. SPEAKER CEILING MOUNTED. REFER SCHEMATIC DIAGRAMS FOR MORE INFORMATION.
- 2 — RECESSED P.A. SPEAKER RECESSED, WALL MOUNTED. REFER SCHEMATIC DIAGRAMS FOR MORE INFORMATION.
- 3 — SURFACE MOUNTED P.A. SPEAKER. REFER SCHEMATIC DIAGRAMS FOR MORE INFORMATION.
- 4 — EXTERIOR TYPE P.A. SPEAKER, WALL MOUNTED. REFER SCHEMATIC DIAGRAMS FOR MORE INFORMATION.
- MIC — MICROPHONE OUTLET
- OS1 — WATT STOPPER LMDX-100 OCCUPANCY/VACANCY SENSOR, DUAL TECH WALL CORNER MOUNT C/W ROOM CONTROLLERS AS REQUIRED. LIGHTING CONTROL TO BE MANUAL-ON, AUTO-OFF.
- OS2 — WATT STOPPER DW-100-120 DUAL TECHNOLOGY WALLSWITCH SENSOR LINE VOLTAGE, AUTO-ON, AUTO-OFF.
- OS3 — WATT STOPPER LMUC-100 OCCUPANCY SENSOR, ULTRA SONIC CEILING MOUNT C/W ROOM CONTROLLERS AS REQUIRED.
- OS4 — WALL MOUNTED DUAL TECHNOLOGY TWO RELAY LINE VOLTAGE OCCUPANCY SENSOR. WATT STOPPER DW-200-120. MANUAL-ON, AUTO-OFF
- OS5 — WATT STOPPER LMDC-100 OCCUPANCY/VACANCY SENSOR, DUAL TECH CEILING MOUNT, 360 DEGREES C/W ROOM CONTROLLERS AS REQUIRED. LIGHTING CONTROL TO BE MANUAL-ON, AUTO-OFF.
- OS6 — WATT STOPPER LMDC-100 OCCUPANCY/VACANCY SENSOR, DUAL TECH CEILING MOUNT, 360 DEGREES C/W ROOM CONTROLLERS AS REQUIRED. LIGHTING CONTROL TO BE AUTO-ON, AUTO-OFF.
- DLS — WATT STOPPER LMLS-500 OPEN LOOP DAYLIGHT SENSOR.

- CLOCK (12" DIA, SEMI FLUSH, 120V)
- AV — CEILING MOUNTED A/V OUTLET FOR PROJECTOR
- VGA MONITOR OUTLET C/W 41 mmC. TO CEILING MOUNTED AV OUTLET.
- CABLE TV OUTLET C/W 41MM CONDUIT UPTO SERVER ROOM
- F — RECESSED FLOOR BOX C/W COVER (COVER TO SUIT TYPE OF FLOOR FINISH; VERIFY ON SITE FOR THE FLOOR FINISH) AND DEVICES AS PER LAYOUT DWGS. WIREMOLD RFB-SS SERIES, FINISH TO ARCHITECT SELECTION.

LEGEND

- P, F — FLUSH FLOOR MOUNTED FLOORBOX C/W COVER (TO SUIT FLOOR, VERIFY ON SITE FOR THE FLOOR FINISH PRIOR TO ORDERING), WIREMOLD, FIRE RATED, POKE THROUGH, EVOLUTION TYPE, 6AT SERIES C/W DEVICES AS INDICATED ON FLOOR PLANS & COVER TO SUIT TYPES OF FLOORS. THE FLOOR BOX SHALL BE FED FROM CEILING SPACES OF FLOOR BELOW VIA FIRE RATED CONDUITS/SLEEVES REFER ARCHITECTURAL DRAWINGS FOR TYPE OF FLOORS AND PROCEED ACCORDINGLY. COVER FINISH OF ALL FLOOR BOXES TO BE AS PER ARCHITECT SELECTION.
- EMERGENCY PUSH BUTTON (CAMDEN 5/8" MUSHROOM, STAINLESS STEEL FACEPLATE, PUSH/PULL, 'PRESS FOR ASSISTANCE' : CM-450R/12) OF CALL FOR ASSISTANCE SYSTEM (CALL FOR ASSISTANCE SYSTEM SHALL BE CAMDEN# CX-WEC10). THE EMERGENCY PUSH BUTTON SHALL BE MOUNTED ON A SINGLE GANG BOX. REFER FLOOR PLAN DWGS. FOR MORE INFORMATION.
- SINGLE GANG LED ANNUNCIATOR C/W SOUNDER, 'ASSISTANCE REQUESTED' (CAMDEN: CM-AF501SO) OF CALL FOR ASSISTANCE SYSTEM (CALL FOR ASSISTANCE SYSTEM SHALL BE CAMDEN# CX-WEC10). REFER FLOOR PLAN DWGS. FOR MORE INFORMATION.
- S — SINGLE GANG DOME LIGHT WITH SOUNDER. 'ASSISTANCE REQUIRED' (CAMDEN: CM-AF140SO) OF CALL FOR ASSISTANCE SYSTEM (CALL FOR ASSISTANCE SYSTEM SHALL BE CAMDEN# CX-WEC10). REFER FLOOR PLAN DWGS. FOR MORE INFORMATION.
- WG — FIRE ALARM MANUAL STATION C/W PLASTIC COVER WITH LOCAL HORN – LETTERS WG DENOTES C/W WIREGUARD
- 2 — AUTOMATIC FIRE DETECTOR RATE OF RISE 135 DEG. F. UNLESS NOTED OTHERWISE – NUMBER DENOTES ZONE, LETTER G DENOTES GUARD
- 190 — AUTOMATIC FIRE DETECTOR – FIXED TEMPERATURE AS NOTED FIRE ALARM HORN. 'S' DENOTES C/W STROBE LIGHT, WG – WIRE GUARD
- PHOTO ELECTRIC SMOKE DETECTOR
- F=== — FIRE ALARM DUCT TYPE SMOKE DETECTOR
- E.O.L — END-OF-LINE RESISTOR
- S — FIRE ALARM HORN. 'S' DENOTES C/W STROBE LIGHT.
- S — FIRE ALARM STROBE.
- TELEPHONE OUTLET C/W 21mm EMT CONDUIT TO ACCESSIBLE CEILING SPACE IN NEAREST CORRIDOR AT SECOND FLOOR.
- 2 — TELEPHONE/DATA OUTLET C/W 21mm EMT CONDUIT TO ACCESSIBLE CEILING SPACE IN NEAREST CORRIDOR AT SECOND FLOOR. NUMBER DENOTES NUMBER OF DROPS.
- 2 — DATA OUTLET C/W 21mm EMT CONDUIT TO ACCESSIBLE CEILING SPACE IN NEAREST CORRIDOR AT SECOND FLOOR. NUMBER DENOTES NUMBER OF DROPS.
- WAP — CEILING MOUNTED WIRELESS ACCESS POINT CONSISTING OF A DATA DROP C/W 27MM CONDUIT TO ACCESSIBLE CEILING SPACE IN NEAREST CORRIDOR AT SECOND FLOOR
- ES — DOOR ELECTRIC STRIKE
- KO — KEY OVERRIDE SWITCH TO OVERRIDE ELECTRIC STRIKE
- KP — SECURITY KEY PAD C/W 16MM CONDUIT SECURITY PANEL IN I.T. ROOM.
- CR — CARD READER C/W 16MM CONDUIT TO DOOR ACCESS PANEL VIA A JUNCTION BOX IN NEAREST ACCESSIBLE CEILING SPACE
- CCTV — CCTV CAMERA C/W 27mm CONDUIT TO ACCESSIBLE CEILING SPACE IN NEAREST CORRIDOR AT SECOND FLOOR
- CCTV — CCTV MONITOR C/W 27mm CONDUIT UPTO UPTO DVR PANEL/CCTV RACK
- M — SECURITY SYSTEM- MOTION SENSOR, WALL MOUNTED C/W 27MM CONDUIT TO SECURITY PANEL VIA A JUNCTION BOX IN NEAREST ACCESSIBLE CEILING SPACE.
- DH — DOOR HOLD OPEN DEVICE C/W CONDUIT AND WIRING
- DC — SECURITY SYSTEM DOOR/OVERHEAD CONTACT C/W 16MM CONDUIT UPTO SECURITY PANEL VIA A JUNCTION BOX IN ACCESSIBLE CEILING SPACE.
- RDC — SECURITY SYSTEM ROOF HATCH DOOR CONTACT C/W 27MM CONDUIT UPTO SECURITY PANEL VIA A JUNCTION BOX IN ACCESSIBLE CEILING SPACE.
- OHD — SECURITY SYSTEM OVERHEAD DOOR CONTACT C/W 27MM CONDUIT UPTO SECURITY PANEL VIA A JUNCTION BOX IN ACCESSIBLE CEILING SPACE.
- PB — PUSH BUTTON FOR DOOR BELL
- DB — DOOR BELL
- AB — ARMING BUTTON C/W 27MM CONDUIT UPTO CABLE TRAY IN NEAREST CORRIDOR
- SECURITY SYSTEM BUZZER C/W 27MM CONDUIT UPTO CABLE TRAY IN NEAREST CORRIDOR
- PH — PHOTOCELL
- T — THERMOSTAT
- ACK — ACKNOWLEDGE BUTTON-FIRE ALERT SYSTEM.
- COU — COUNTDOWN CLOCK-FIRE ALERT SYSTEM.
- EPB — MAINTAINED TWIST RELEASE RED COLORED MUSHROOM KEYLESS TYPE EMERGENCY PUSH BUTTON FOR SHUT DOWN OF POWER FOR GAS SOLENOID VALVE IN CASE OF EMERGENCY. PROVIDE SUITABLE LABEL ON THE PUSH BUTTON.
- J — WALL MOUNTED J-HOOK IN CEILING
- 53 MM(2") CONDUIT SLEEVE THRU WALL ABOVE CEILING
- SC — SPEED CONTROLLER OF CEILING FAN

HWT	DENOTES DOMESTIC HOT WATER TANK
RH	DENOTES RANGE HOOD
RG	DENOTES RANGE
DW	DENOTES DISHWASHER
MW	DENOTES MICROWAVE
MD	DENOTES MOTORIZED DAMPER
PT	DENOTES HEAT PIPE TRACING
WG	DENOTES WIRE GUARD
FACP	DENOTES FIRE ALARM CONTROL PANEL
DO	DENOTES DOOR OPERATOR
FGE	DENOTES FRIDGE
FZR	DENOTES FREEZER
EFC	DENOTES POWER FOR ELECTRONIC FAUCET/PLUMBING FIXTURES
F.A.A.P.	DENOTES LED TYPE OF FIRE ALARM ANNUNCIATOR PANEL C/W PASSIVE GRAPHICS
ATS	DENOTES AUTOMATIC TRANSFER SWITCH
H.D.	DENOTES HEAT DETECTOR
S.D.	DENOTES SMOKE DETECTOR
P.S.	DENOTES PULL STATION
CUH	DENOTES CABINET UNIT HEATER
UH	DENOTES UNIT HEATER
WSH	DENOTES WASHER
DR	DENOTES DRYER
WP	DENOTES WEATHER PROOF.
VVT	DENOTES VARIABLE VOLUME TEMPERATURE.
HD	DENOTES HAND DRYER
CUH	DENOTES CABINET UNIT HEATER
A/V	DENOTES AUDIO/VISUAL SYSTEM
VC	DENOTES LOCAL VOLUME CONTROL OF P.A. SPEAKERS
M&V	DENOTES METERING & VERIFICATION SYSTEM
O/H DOOR	DENOTES OVERHEAD DOOR
CF-1	DENOTES CEILING FAN (TYP.)

LEGEND (CONTD.)

TRF.	DENOTES TRANSFORMER
FC-1	DENOTES FAN COIL (TYP.)
FSA	DENOTES FIRE STATION ALERT SYSTEM
LVMSP	DENOTES LV MASTER SWITCH PANEL
1A-1	DENOTES EQUIPMENT FED FROM PANEL '1A' AND BREAKER #1
1A-2.1	DENOTES EQUIPMENT FED FROM PANEL '1A' AND BREAKER #2 AND CONTROLLED BY SWITCH #1
1A-3.R1	DENOTES EQUIPMENT FED FROM PANEL '1A' AND BREAKER #3 AND CONTROLLED VIA RELAY-R1.
1A-5/7.R2(2P)	DENOTES EQUIPMENT FED FROM PANEL '1A' AND 2-POLE BREAKER #5/7 AND CONTROLLED VIA 2-POLE RELAY-R2.

- (#100) — DETAIL 1 ON DRAWING E101
- NOTE PERTAINING TO SPECIFIC ITEM OR AREA

NOTES FOR LEGEND:

1. THE WEATHERPROOF RECEPTACLES SHALL BE PROVIDED WITH COVER PLATES SUITABLE FOR WET LOCATIONS WHETHER OR NOT A PLUG IS INSERTED INTO THE RECEPTACLE (IN-USE COVER PLATE) AND MARKED # EXTRA DUTY# AS PER RULE 26-7022) OF OESC.
2. 'T' INDICATED BESIDE SYMBOL OF A DUPLEX RECEPTACLE DENOTES THAT THE RECEPTACLE SHALL BE T-SLOT ON 20A CCT.
3. 'C' INDICATED BESIDE SYMBOL OF A DEVICE DENOTES THAT THE DEVICE SHALL BE CEILING MOUNTED.
4. 'TR' INDICATED BESIDE SYMBOL OF A DUPLEX RECEPTACLE DENOTES THAT THE RECEPTACLE SHALL BE TAMPER RESISTANT TYPE OF RECEPTACLE.

GENERAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL REFER TO ARCHITECTURAL & MECHANICAL DRAWINGS FOR ALL SCOPE OF WORK OF ELECTRICAL CONTRACTOR WHICH ARE RELATED TO OTHER TRADES.
2. PROVIDE EACH ITEM MENTIONED OR INDICATED OF QUALITY AND SUBJECT TO QUALIFICATIONS NOTED; PERFORM ACCORDING TO CONDITIONS STATED EACH OPERATIONS STATED, EACH OPERATION PRESCRIBED; AND PROVIDE THEREFORE ALL LABOR, MATERIAL, EQUIPMENT, INCIDENTALS AND SERVICES REQUIRED TO COMPLETE THE INSTALLATION.
3. EXAMINE THE SITE, EXISTING EQUIPMENT AND THE LOCAL CONDITIONS AFFECTING THE WORK UNDER THIS CONTRACT. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY FOR ANY OBVIOUS CONSIDERATIONS OVERLOOKED.
4. SCHEDULE AND COORDINATE ALL WORK WITH OTHER TRADES.
5. CONTRACTOR SHALL BALANCE CIRCUIT LOADS AS CLOSELY AS POSSIBLE.
6. REFER TO MECHANICAL DRAWINGS AND COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION OF EQUIPMENT & DEVICES PRIOR TO ROUGH IN.
7. ALL ELECTRICAL INSTALLATIONS SHALL BE RECESSED/CONCEALED INSTALLATIONS WHEREVER POSSIBLE; OTHERWISE PROVIDE WIREMOLD STEEL SURFACE MOUNTED RACEWAY C/W SURFACE MOUNTED OUTLETS.
8. PROVIDE FIRE ALARM VERIFICATION REPORT & CERTIFICATE FOR THE COMPLETE FIRE ALARM SYSTEM AS REQUIRED BY AUTHORITIES.
9. CONTRACTOR SHALL PERFORM VOLTAGE DROP CALCULATIONS FOR ALL BRANCH CIRCUITS (LIGHTING AS WELL AS POWER) AND SHALL MAINTAIN VOLTAGE DROP WITHIN PERMISSIBLE LIMITS AS PER OESC REQUIREMENTS AND PROVIDE PROPER WIRE SIZES ACCORDINGLY PRIOR TO COMMENCING OF ROUGH-IN INSTALLATION. THE VOLTAGE DROP CALCULATIONS SHALL BE BASED ON MAXIMUM CIRCUIT AMPACITY.
10. IN CASE OF NON-ACCESSIBLE CEILING, ALL WIRING UPTO ELECTRICAL DEVICES SHALL BE DONE IN CONDUITS TO SUIT APPLICATION TO FACILITATE MAINTENANCE.
11. ELECTRICAL CONTRACTOR SHALL MAKE SUITABLE ARRANGEMENTS TO MAKE ALL THE ELECTRICAL DEVICES AS ACCESSIBLE TO FACILITATE MAINTENANCE. NO ELECTRICAL DEVICE SHALL BE INSTALLED IN SUCH A WAY THAT IT IS UN-ACCESSIBLE AT ANY STAGE FOR MAINTENANCE. CO-ORDINATE ON SITE AND PROCEED ACCORDINGLY.
12. ROOM CONTROLLERS OF LMRC-200 SERIES FOR LIGHTING CONTROL HAVE CONNECTIONS AT ITS BACK. ACCORDINGLY, THIS TYPE OF ROOM CONTROLLERS ARE REQUIRED TO BE MOUNTED ON A BACKBOX. THE DEPTH OF THIS BACKBOX IS REQUIRED TO BE 2.5" DEEP. THEREFORE THE DEPTH OF THE RECESSED BACKBOXES (FOR MOUNTING ROOM CONTROLLERS) WHEREVER APPLICABLE SHALL BE SELECTED TO SUIT APPLICATION.
13. PROVIDE LABELING OF ELECTRICAL POWER OUTLETS AND RECEPTACLES THROUGHOUT THE ENTIRE BUILDING TO PROVIDE IDENTIFICATION OF ELECTRICAL CIRCUITS. THE LABEL SHALL INDICATE 'NAME OF PANEL & CCT.#' FED TO THE OUTLET/RECEPTACLE.
14. PROVIDE CONDUITS AND BACK BOXES FOR LIGHTING CONTROL DEVICES TO SUIT APPLICATIONS AND AS PER MANUFACTURER'S RECOMMENDATIONS.
15. ALL LIGHTING CONTROL WIRING IN CASE OF CAT CABLING SYSTEM, SHALL BE PROVIDED IN CONDUITS EXCEPT FOR T-BAR CEILINGS APPLICATIONS WHERE FT6 CABLES (PLENUM RATED) SHALL BE PROVIDED.
16. ALL EMPTY CONDUITS SHALL BE PROVIDED C/W PULL WIRES.
17. PROVIDE SINGLE HEAD J-HOOKS OF 2" DIA. SUSPENDED FROM SLAB IN THE CEILING SPACE OF ALL ROOMS & BOTH SIDES OF CORRIDORS UNDER SCOPE OF WORK. PROVIDE J-HOOKS EVERY 2 FEET AND SUSPENDED BELOW ANY PIPING, MECHANICAL DUCTS ETC. NO RUN OF LOOSE CABLE FROM CONDUIT STAB UP SHALL EXCEED 10 FEET TO FIRST J-HOOK. PROVIDE QUANTITY OF J-HOOKS TO SUIT FOR FULL COVERAGE THROUGHOUT COMPLETE FLOOR AREAS UNDER SCOPE OF WORK.
18. ALL RECEPTACLES FED FROM EMERGENCY POWER GENERATOR (RECEPTACLES FED FROM PANELS WHICH ARE FED FROM GENERATOR POWER) SHALL BE RED IN COLOR.
19. PROVIDE #10 AWG WIRING FOR ALL EXTERIOR LIGHTING CIRCUITS.
20. ALL ELECTRICAL INSTALLATIONS SHALL BE RECESSED/CONCEALED INSTALLATIONS WHEREVER POSSIBLE; OTHERWISE PROVIDE WIREMOLD STEEL SURFACE MOUNTED RACEWAY C/W SURFACE MOUNTED OUTLETS. CO-ORDINATE WITH CONSULTANTS PRIOR TO IN STALLATION.
21. IDENTIFY THE SCOPE OF WORK FOR REMOVAL OF THE CEILING TILES TO GENERAL CONTRACTOR FOR PRICING PURPOSE. DURING TENDER PERIOD, ELECTRICAL CONTRACTOR SHALL CO-ORDINATE AND INFORM THE GENERAL CONTRACTOR FOR THE REMOVAL OF EXISTING CEILING AND FLOORS FOR THE SAKE OF EXTENDING/REMOVING ELECTRICAL SERVICES FROM THE EXISTING BUILDING AND FOR ALL THE RENNOVATION/UPGRADATION WORK REQUIRED IN THE EXISTING BUILDING.
22. WHEREVER NEW BREAKERS/DISCONNECT SWITCHES ARE REQUIRED TO BE ADDED IN EXISTING SWITCHBOARDS/DISTRIBUTION PANELS/PANELS AS INDICATED ON THE DRAWINGS, ELECTRICAL CONTRACTOR SHALL MODIFY, RETROFIT AND RE-CONFIGURE EXISTING RESPECTIVE SWITCHBOARD/ DISTRIBUTION PANEL/PANEL IN ORDER TO ALLOW FOR THE INSTALLATION OF THE NEW REQUIRED/INDICATED CIRCUIT BREAKERS/DISCONNECT SWITCHES WITHIN THE EXISTING ELECTRICAL PANEL. CONTRACTOR SHALL VERIFY ON SITE FOR THE SCOPE AND EXTENT OF WORK AND SHALL CO-ORDINATE WITH PANEL MANUFACTURER FOR MORE DETAILS AND THEN PROCEED ACCORDINGLY. CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS (INCLUDING BUT NOT LIMITED TO: CUSTOM MADE PARTS, BUS ASSEMBLY, BRACKETS HARDWARE ETC.). LABOR ETC. FOR FULLY OPERATIONAL SYSTEM. THE NEW BREAKERS/DISCONNECT SWITCHES TO BE ADDED SHALL BE FROM THE SAME MANUFACTURER AS EXISTING. KA RATING OF THE NEW BREAKERS/DISCONNECT SWITCHES SHALL MATCH EXISTING OR NEXT HIGHER AVAILABLE VALUE.
23. ALL THE TRANSFORMERS SHOWN ON THE DRAWINGS SHALL HAVE COPPER WINDINGS WITH CLASS OF INSULATION AS CLASS-B (80 DEGREES CELCIUS).
24. RECEPTACLE FOR MICROWAVE NEED NOT BE A GFI TYPE IN CASE THE MICROWAVE IS TO BE INSTALLED IN DEDICATED MILLWORK FOR THE MICROWAVE.

NOTE: THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL SITE DIMENSIONS AND FOR NOTIFYING THE ARCHITECT OF ANY SITE CONDITIONS AND SITE MEASUREMENTS THAT ARE NOT CONSISTENT WITH THE DRAWINGS.

22-237

no.	issue	date
1.	SCHEMATIC DRAWINGS	SEP.16'22

PROJECT NORTH / TRUE NORTH

project

ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

LEGEND & DETAILS

drawing scale	drawn by	checked by
N.T.S.	CV	RH

ward99 project number

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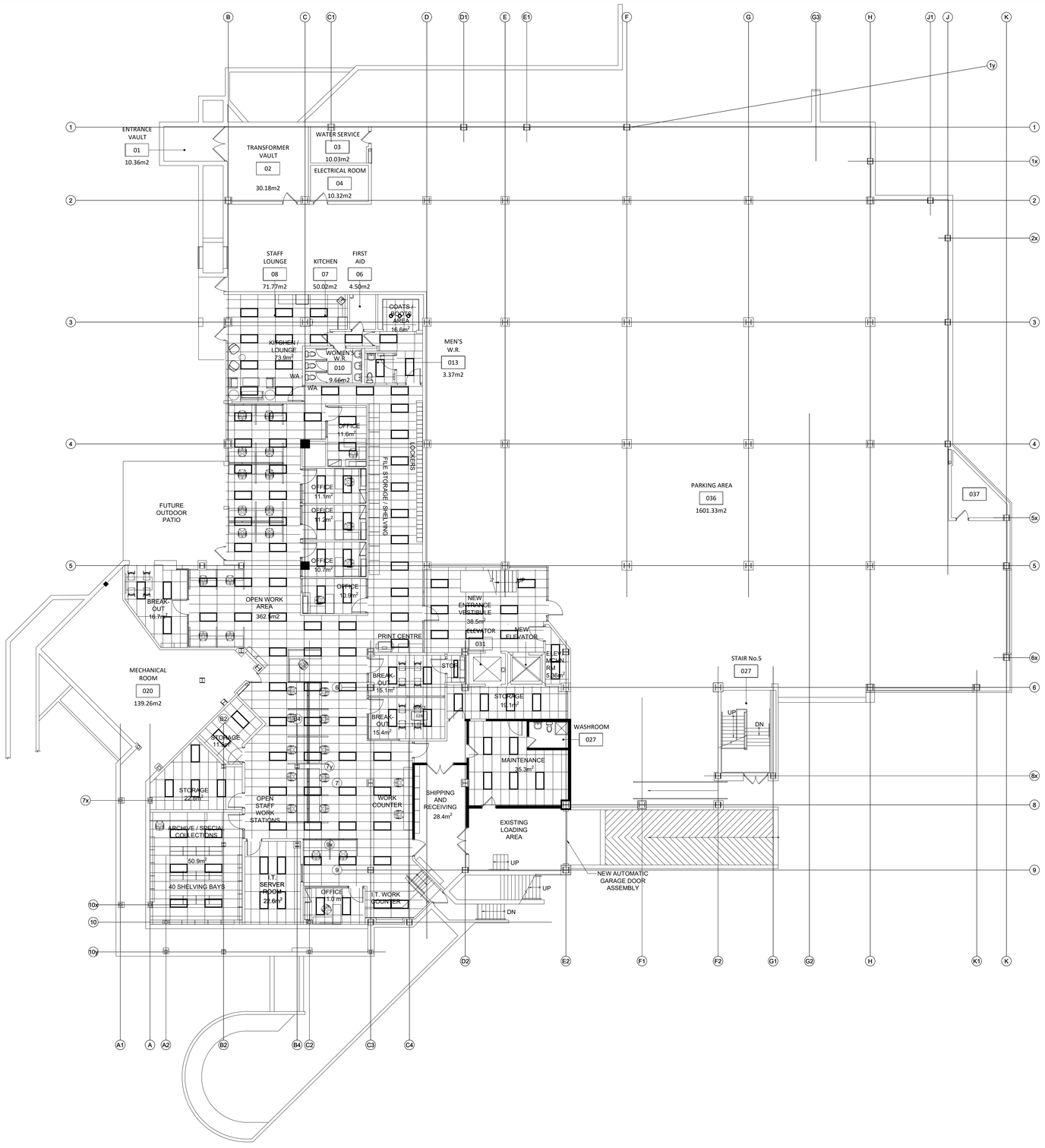
drawing no.

E1.0



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22~237

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1.	SCHEMATIC DRAWINGS	SEP.16'22

project

ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

LIGHTING LAYOUT-BASEMENT LEVEL

drawing scale	drawn by	checked by
1:150	CV	RH

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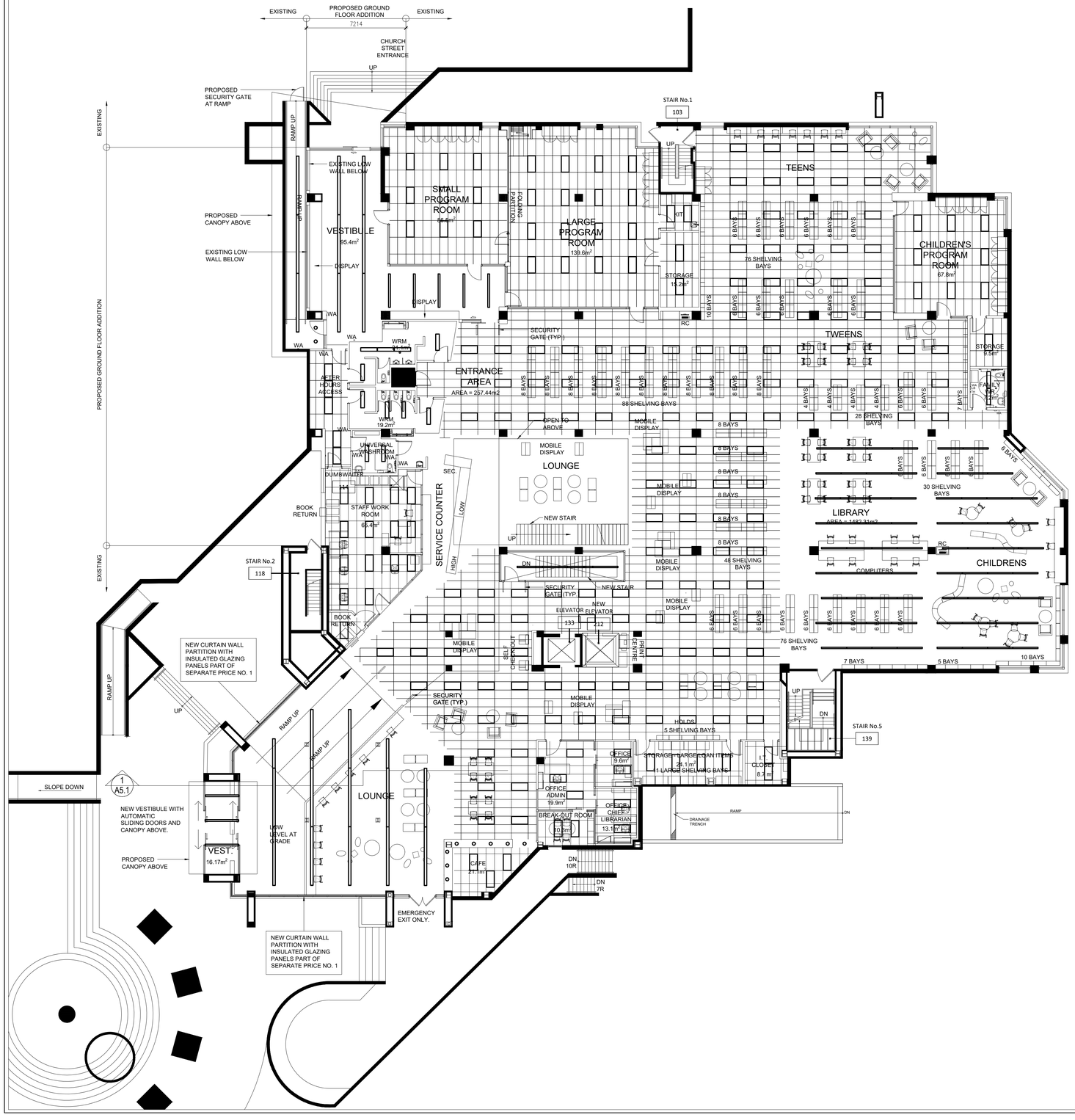
drawing no.

E2.0



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22–237

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project

ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

LIGHTING LAYOUT-GROUND FLOOR

drawing scale	drawn by	checked by
1:150	CV	RH

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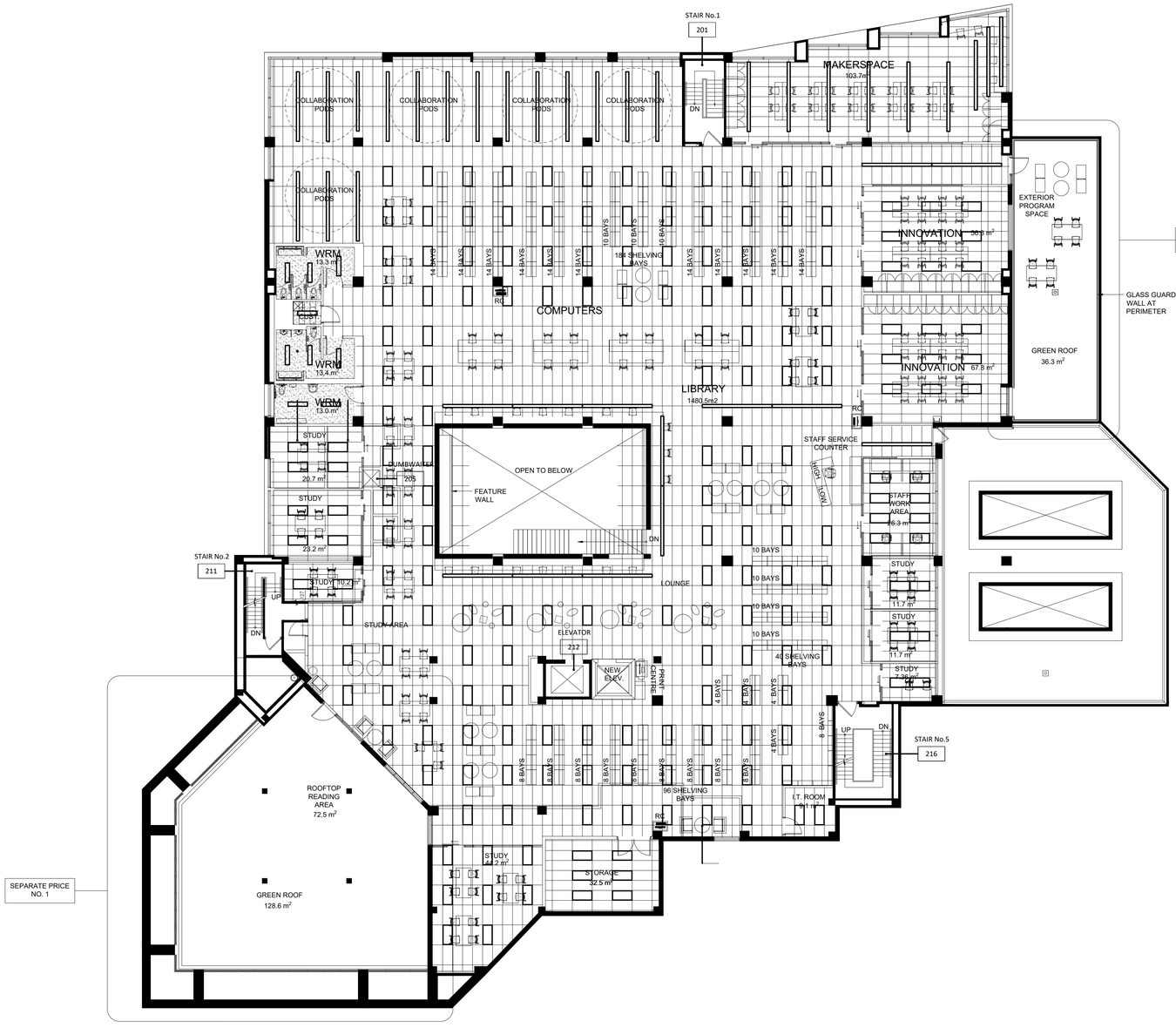

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22–237

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1.	SCHEMATIC DRAWINGS	SEP.16'22

GRAPHIC SCALE
PROJECT NORTH

project

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INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

LIGHTING LAYOUT-SECOND FLOOR

drawing scale	drawn by	checked by
1:150	CV	RH

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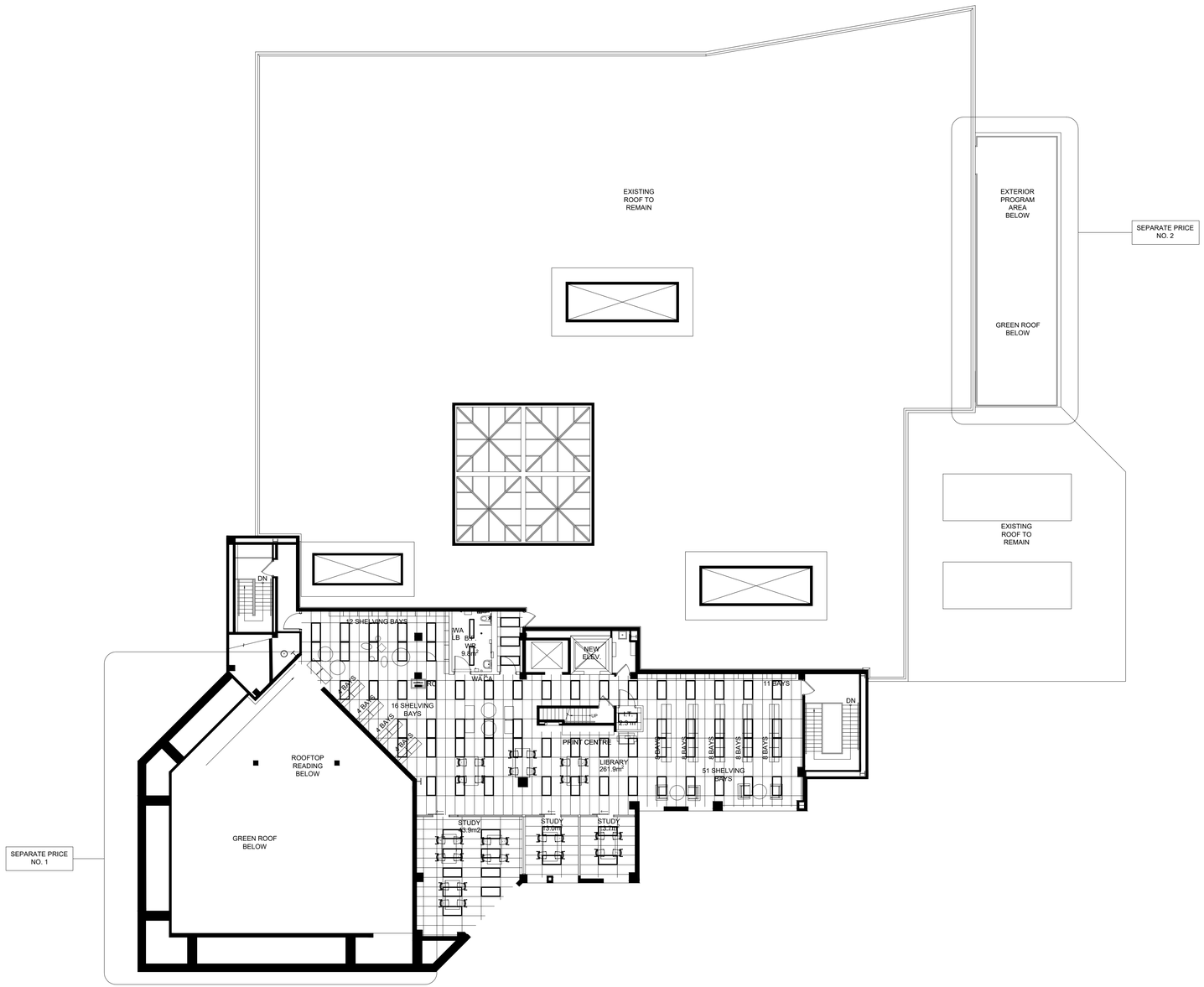

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22~237

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PROJECT NORTH
TRUE NORTH

project

ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

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drawing

LIGHTING LAYOUT-THIRD FLOOR

drawing scale	drawn by	checked by
1:150	CV	RH

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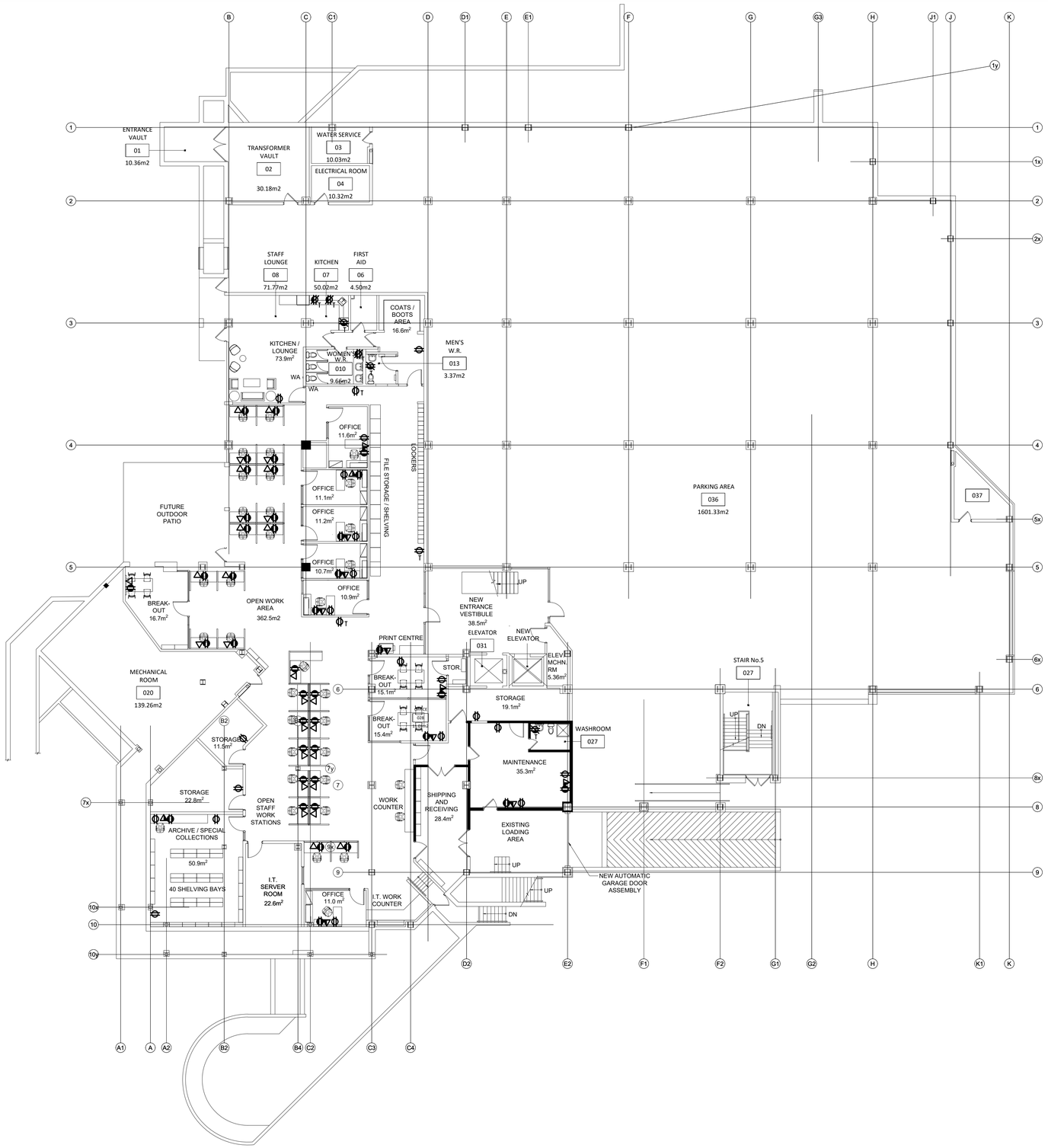
E2.3



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project

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INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

POWER & SYSTEMS LAYOUT-BASEMENT LEVEL

drawing scale	drawn by	checked by
1:150	CV	RH

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drawing no.

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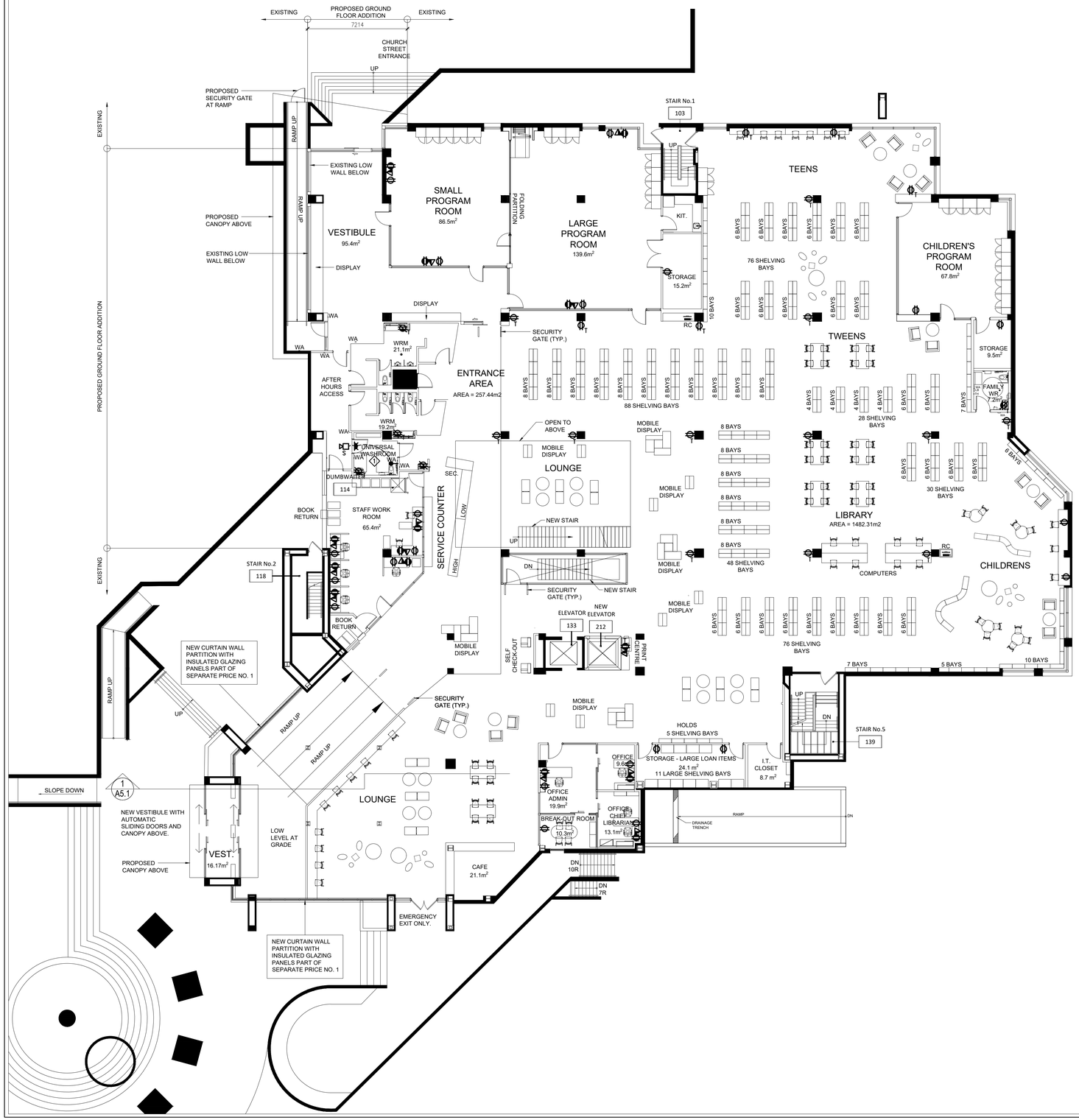

DRAWING NOTES:

1. PROVIDE CALL FOR ASSISTANCE SYSTEM IN WASHROOM WHICH SHALL BE CAMDEN# CX-WCC10 CONSISTING OF:
   1 NO. MUSHROOM PUSH BUTTON, STAINLESS STEEL, PUSH/PULL, "PRESS FOR EMERGENCY ASSISTANCE", CAMDEN# CM-4SOR/12. THE PUSH BUTTON SHALL BE MOUNTED ON A SINGLE GANG BACKBOX.
   1 NO. SINGLE GANG LED ANNUNCIATOR C/W SOUNDER, "ASSISTANCE REQUESTED", CAMDEN# CM-AF501SO. THE SINGLE GANG LED ANNUNCIATOR C/W SOUNDER SHALL BE MOUNTED INSIDE THE B.F. WASHROOM.
   1 NO. SINGLE GANG DOME LIGHT WITH SOUNDER, "ASSISTANCE REQUESTED", CAMDEN# CM-AF140SO. TO BE MOUNTED OUTSIDE THE B.F. WASHROOM.
   1 NO. ENGLISH, SOLID WHITE SIGN (152MMX270MM, IN THE EVENT OF AN EMERGENCY, PUSH EMERGENCY BUTTON AND AUDIBLE AND VISUAL SIGNAL WILL ACTIVATE), CAMDEN# CM-SE21A. THIS SIGN SHALL BE MOUNTED ABOVE THE EMERGENCY PUSH BUTTON OF CALL FOR ASSISTANCE SYSTEM.
   1 NO. POWER SUPPLY, 24VAC C/W 40VA STANDARD MOUNT TRANSFORMER AND AC/DC RECTIFIER (CAMDEN# CX-TRK24-50). THE POWER SUPPLY SHALL BE LOCATED IN NEAREST ACCESSIBLE CEILING SPACE.
   REFER LEGEND FOR MORE INFORMATION.
   PROVIDE ALL MATERIAL, LABOR, CONDUITS AND WIRING FOR FULLY OPERATIONAL SYSTEM AS PER LATEST OBC REQUIREMENTS.

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22-237

no.	issue	date
1.	SCHEMATIC DRAWINGS	SEP.16'22

project

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INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

POWER & SYSTEMS LAYOUT-GROUND FLOOR

drawing scale	drawn by	checked by
1:150	CV	RH

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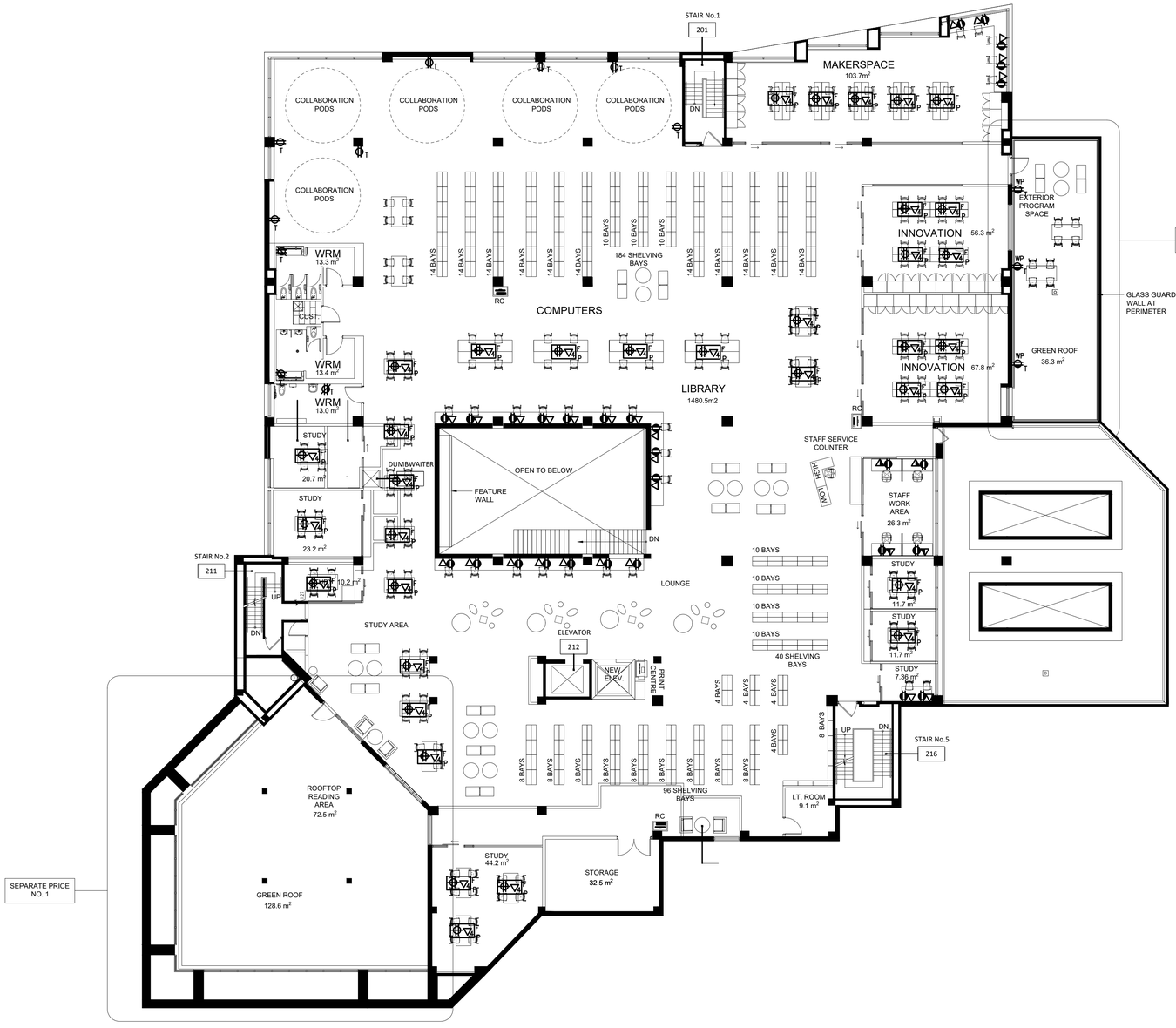

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22–237

no.	issue	date
1.	SCHEMATIC DRAWINGS	SEP.16'22

SCHEMATIC DRAWINGS PROJECT NORTH

project

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INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

POWER & SYSTEMS LAYOUT-SECOND FLOOR

drawing scale	drawn by	checked by
1:150	CV	RH

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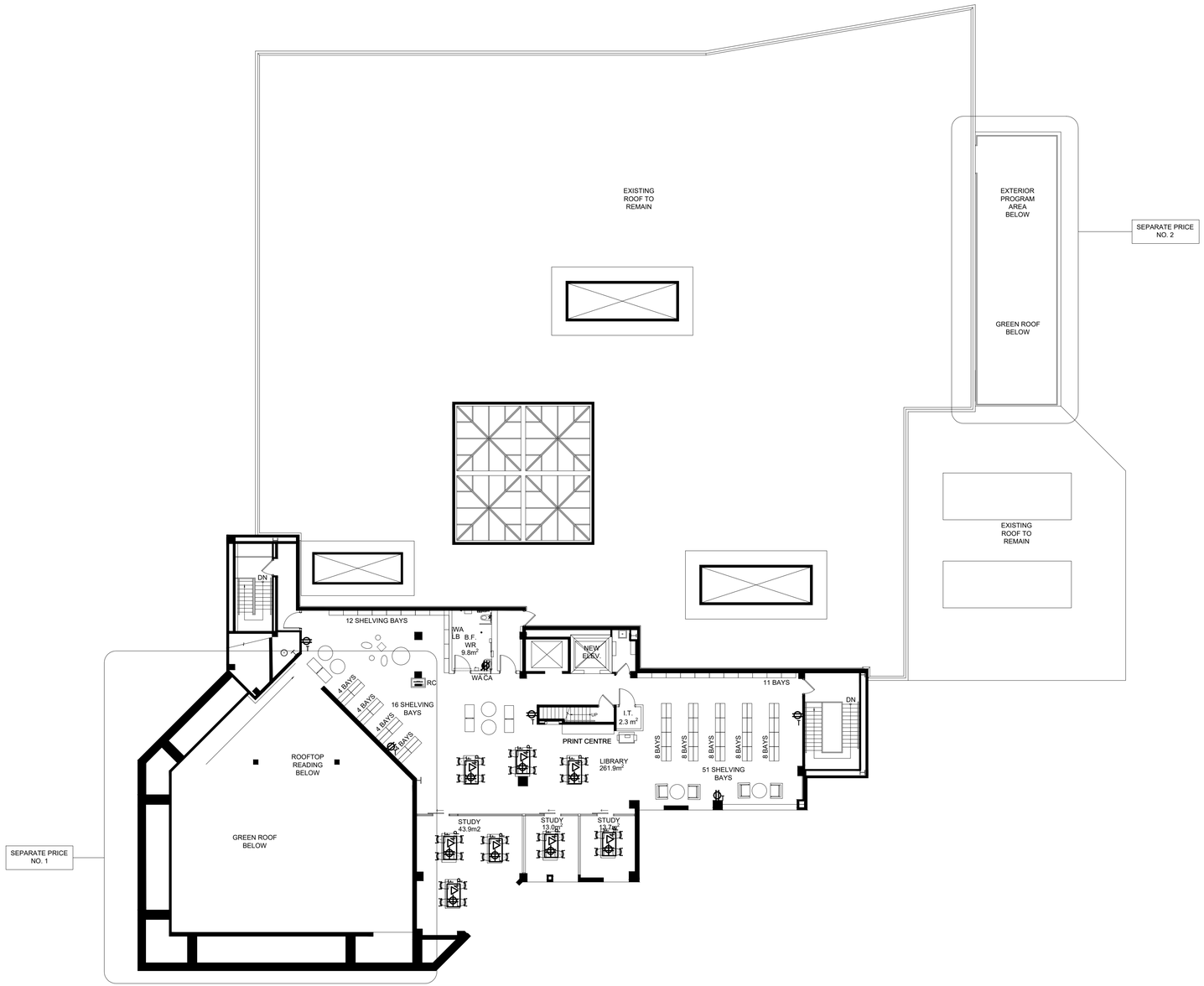
E3.2



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22~237

no.	issue	date
1.	SCHEMATIC DRAWINGS	SEP.16'22

PROJECT NORTH
SCALE: 1/8" = 1'-0"

project

ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH
INTERIOR RENOVATION

54 CHURCH ST, ST. CATHARINES, ON L2R 7K2

drawing

POWER & SYSTEMS LAYOUT-THIRD FLOOR

drawing scale	drawn by	checked by
1:150	CV	RH

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drawing no.

E3.3

ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH RENOVATION

PHASE ONE CONCEPTUAL DESIGN

APPENDIX D - CONCEPTUAL RENDERINGS

ward99 architects

ward99 architects inc.
7500 Highway 27, Unit 27B,
Vaughan, Ontario. L4H 0J2
416 613 5880
www.ward99architects.com

ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH RENOVATION

PHASE ONE CONCEPTUAL DESIGN

NORTH EXTERIOR VIEW TO NEW ENTRANCE FROM CHURCH STREET

SC PL

ward99 architects

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ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH RENOVATION

PHASE ONE CONCEPTUAL DESIGN

NORTH EXTERIOR BUILDING VIEW

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NORTH-WEST VIEW TO MAIN ENTRANCE

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PHASE ONE CONCEPTUAL DESIGN

EXTERIOR VIEW OF NEW ROOFTOP READING AREA

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ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH RENOVATION

PHASE ONE CONCEPTUAL DESIGN

INTERIOR VIEW OF CHILDREN'S AREA

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ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH RENOVATION

PHASE ONE CONCEPTUAL DESIGN

INTERIOR VIEW OF GROUND FLOOR LOUNGE TOWARDS NEW SERVICE COUNTER

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ST. CATHARINES PUBLIC LIBRARY CENTRAL BRANCH RENOVATION

PHASE ONE CONCEPTUAL DESIGN

INTERIOR VIEW OF SECOND FLOOR LOUNGE TOWARDS NEW INNOVATION ROOMS

SCPL

2023 Projects Building Future Year Budgets

Sch	Project #	Project Name	Gross Cost
B	P22-063	Parnell Road Reconstruction - Utility Relocate	200,000
H	P22-063	Parnell Road Reconstruction - Culvert	1,767,500
K	RNxx-LL	Region - Niagara Street (RR48) Reconstruction	1,193,000
K	RNxx-MLL	Region RR87 Main Street, Lock Street & Lakeport Road	2,350,000
Q	PCI17-02	Customer Relationship Management	300,000
			5,810,500

2023 Projects recommended for 30 year debt

Sch	Project #	Project Name	Gross Cost	Debt Funding
Sanitary Sewer Collection System				
E	P18-062	Lake Street Underground Improvements	221,000	122,000
Water Distribution System (Watermains)				
G	P23-102	Adel / Donalda / Dundalk / Regent / Rainbow	1,610,000	789,000
G	P23-105	Mohawk/Scott/Village Green	1,335,000	580,000
G	P23-106	Jasmine/Josephine	680,000	241,269
G	P23-107	Carriage / Grove	1,044,000	574,000
G	P23-100	Welland Avenue	1,860,000	1,023,000
Regional				
K	RNxx-MLL	Region RR87 Main Street, Lock Street & Lakeport Road	2,350,000	763,612
Buildings & Facilities				
M	TBD23-26	Central Branch renovation (Phase 1)	4,850,000	1,659,500
			13,950,000	**5,752,381**