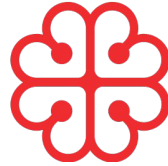


December 1st, 2023



Building a Community Centre in Montreal-Nord

Final Project
INSE 6230 Total Quality Project Management

Team 14

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Overview

25 Project Management Objectives

1. Project selection
2. Business case
3. Stakeholders
4. Key project information
5. Objectives and deliverables
6. Project team
7. Kick-off Meeting
8. Scope
9. Work Breakdown Structure (WBS)
10. Project schedule
11. Time and resources estimation
12. Cost estimation plan
13. Risks and mitigation
14. Probability impact matrix
15. Change management plan
16. Task execution
17. Quality assurance
18. Tracking project Progress
19. Project performance
20. Project changes
21. Quality control plan
22. Monitor risks
23. Final acceptance
24. Lessons learned
25. Project resources release

1 - Project Selection

Cost to build community centre: \$75 million

Approximate annual income*: \$3,207,426

Discounted Payback Period = 25.4 \approx 26 years

NPV after 26 years = \$1,924,892.41

ROI after 26 years = 2.57%

Assumptions:

- Community centre cost is as budgeted
- Discount rate = current bank rate in Canada = 5.25%
- Profit based on 37% of community participation

* +5% income/year

Weighted Decision Matrix

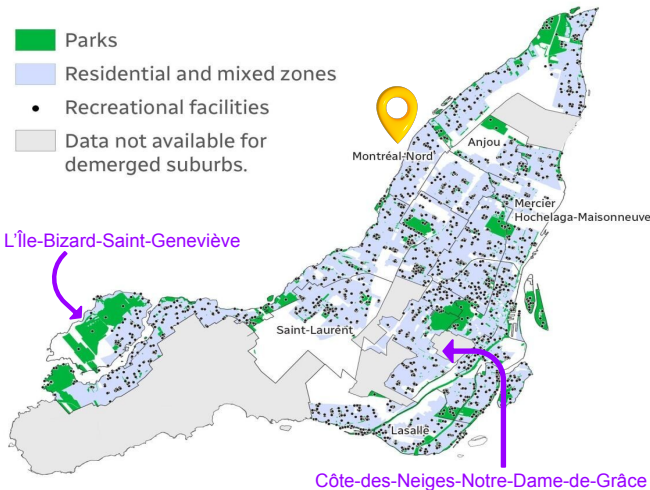
Criteria	Weight	Option 1	Option 2	Option 3
Cost	30%	4	6	8
Location	25%	9	2	5
Community impact	35%	9	4	6
Sources of income	10%	9	7	4
Total Weighted Score		7.5	4.4	6.15

Option 1- Build community centre **Ratings: 1 (unacceptable) to 10 (ideal)**

Option 2- Renovate existing centre

Option 3- Create community initiatives

2- Business Case



Source: CBC NEWS, 2021 – City of Montreal

Example: the affluent borough of L'Île-Bizard-Saint-Geneviève compared to the poorer Côte-des-Neiges-Notre-Dame-de-Grâce, 53 to 13.2 facilities per 10,000 residents, respectively.

Background

- Montreal-Nord is one of the poorest and most densely populated out of the 19 boroughs in Montreal.
- Youth is vulnerable to varying issues:
 - Health issues, criminal activity and dropping out of school.

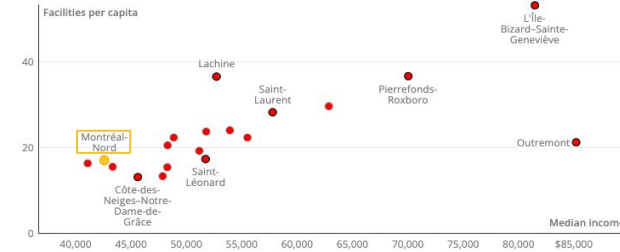
A community centre can help curb these issues.

- Currently in Montreal-Nord, community centres are too far, over packed or both.
- In Montreal, richer boroughs enjoy not only more recreational facilities, but parks too.

Business Objective

Build a community centre to aid all people in the community, especially the youth.

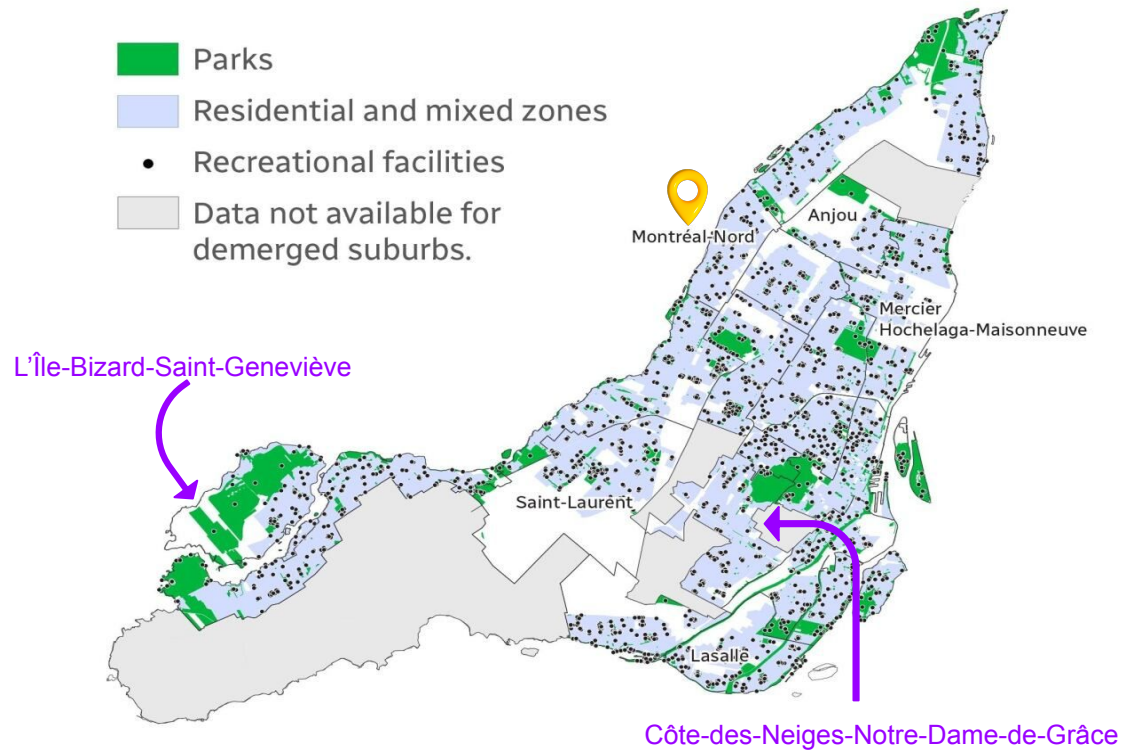
Vertical: Number of recreation facilities per 10,000 people
Horizontal: Median household income



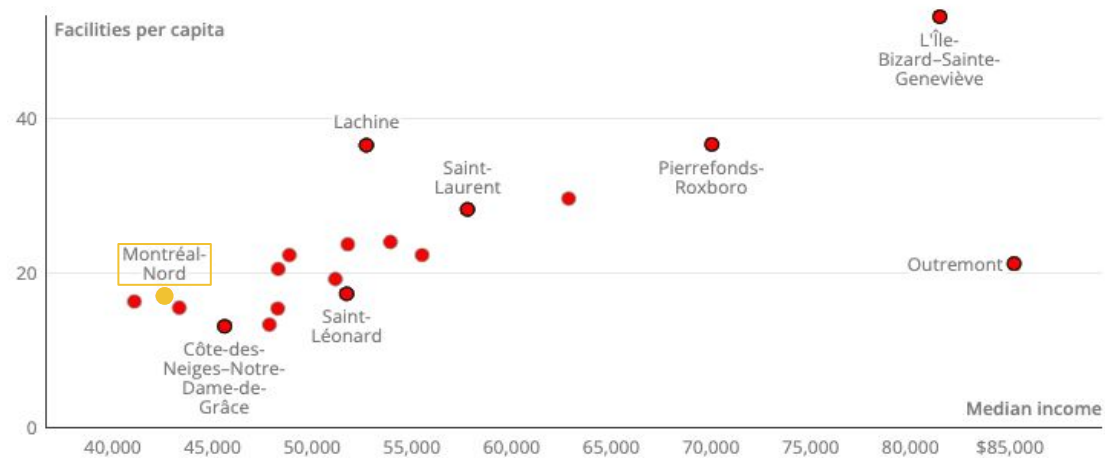
Source: CBC NEWS, 2021 – 2016 census, Statistics Canada

Opportunity Statement

A community centre is an investment in today's youth and in the future of the community and city. This initiative can create a lasting impact on residents; promoting a stronger and more connected community for generations to come. Plus, it has, on average, an expected useful life in Canada of 56 years.



Vertical: Number of recreation facilities per 10,000 people
Horizontal: Median household income



2- Business Case

Assumptions

- Sufficient resources
- Stable economic state
- 5.25% interest rate

Constraints

- Budget
- Time
- Land
- Resources
- Changes in regulations

Preliminary Project Requirements

1. Assess needs
2. Define objectives
3. Site selection
4. Zoning regulations and building permits
5. Budget estimation
6. Funding

Schedule Estimate

Start date: November 20th, 2023

End date: June 13th, 2024

Analysis of Options and Recommendation

1. Build new community centre
2. Renovate existing centres
3. Community engagement initiatives

Per the weighted decision matrix, option 1 is recommended.

Budget Estimate

\$75 million CAD

Financial Analysis

NPV= \$1,924,892.41 , ROI = 2.57%

Discounted payback period: 26 years

Potential Risks

1. Funding issues
2. Community opposition
3. Design issues
4. Construction delays
5. Supplier issues
6. Technology/equipment issues
7. Scope creep
8. Low utilization of centre

3 - Stakeholder Register

Stakeholder	Internal/External	Project Role
 Government of Canada	External	Funding partner
 Government of Quebec	External	Funding partner
 City of Montreal	External	Funding partner
Montreal-Nord borough council	Internal	Organizer, overseer
Montreal-Nord residents	External	Needs assessment, fundraisers and donations
Construction companies	Internal	Advisors, infrastructure
Utility providers	External	Advisors, infrastructure
Engineers, Architects, Interior Designers	Internal	Advisors, designers
Instructors, teachers, coordinators	External	Employees
Social workers and counselors	External	Employees
Local businesses	External	Employment, funding

4&5 - Project Charter

Project Title: Building a Community Centre in Montreal-Nord

Project Overview

Objective: Build a community centre in Montreal-Nord to serve as a hub for social, educational, and recreational activities.

Key deliverables: Completed community centre with listed facilities and features

Project Scope

IN: Design and build all required and agreed upon facilities and infrastructure.

OUT: private facilities, large scale facilities, maintenance contracts

Key Stakeholders

- Government of Quebec
- City of Montreal
- Montreal-Nord borough council
- Montreal-Nord residents

Project Milestones



November 20th, 2023

1

Project Charter and Funding Secured

2

Project Planning Complete

3

Site Preparation Complete

4

Foundation Complete

5

Structure Complete

6

Interior & Exterior Finishes Complete

7

Operational Systems Installed

8

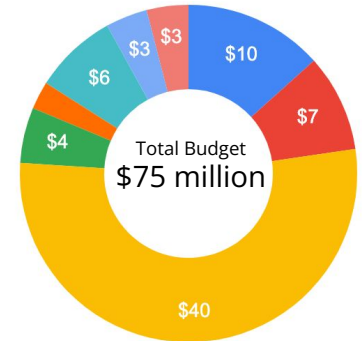
Final Inspection and Handover



October 17th, 2024

Project Budget

Majority of funding will come from federal and provincial grants. The rest will come from private donors.



• Land purchase • Design and Architecture • Construction
• Contingency (10% of construction) • Permits • Landscaping
• Control and Monitor • Final Inspection & Closeout

6 - Project Team

1. Project Manager	Overall project management and leadership
2. Project Coordinator	Assist the project manager in day-to-day operations
3. Construction Manager	Oversee all construction work
4. Architectural and Civil Engineering Team	Developing the architectural design
5. Mechanical, Electrical and Plumbing (MEP) Manager	Overseeing the MEP aspects of the project
6. MEP Engineering Team	Designing the HVAC systems, electrical wiring, and plumbing installations
7. IT and Technology Specialist Team	Implementing technology infrastructure in the facility
8. Interior Design Team	Developing interior design concepts that align with the budget and goals of the project
9. Quality Control Inspector	Conduct regular inspections to ensure the project conforms to quality standards

7 - Kick-off Meeting

Agenda Item	Duration [minutes]
1. Welcome and Introductions	10
2. Project Overview	10
3. Project Scope and Deliverables	20
4. Roles and Responsibilities	20
5. Project Timeline	15
6. Communication Plan	10
7. Risk Management	10
8. Q&A Session	20
9. Next Steps and Closing	10

8 - Scope Definition

Project Deliverables

1. Multipurpose Courts
2. Fitness Center
3. Senior Citizens' Area
4. Kids' Play Area
5. Restaurant
6. Cafeteria
7. Learning Center
8. Multipurpose Hall
9. Outdoor Spaces
10. Technology Infrastructure

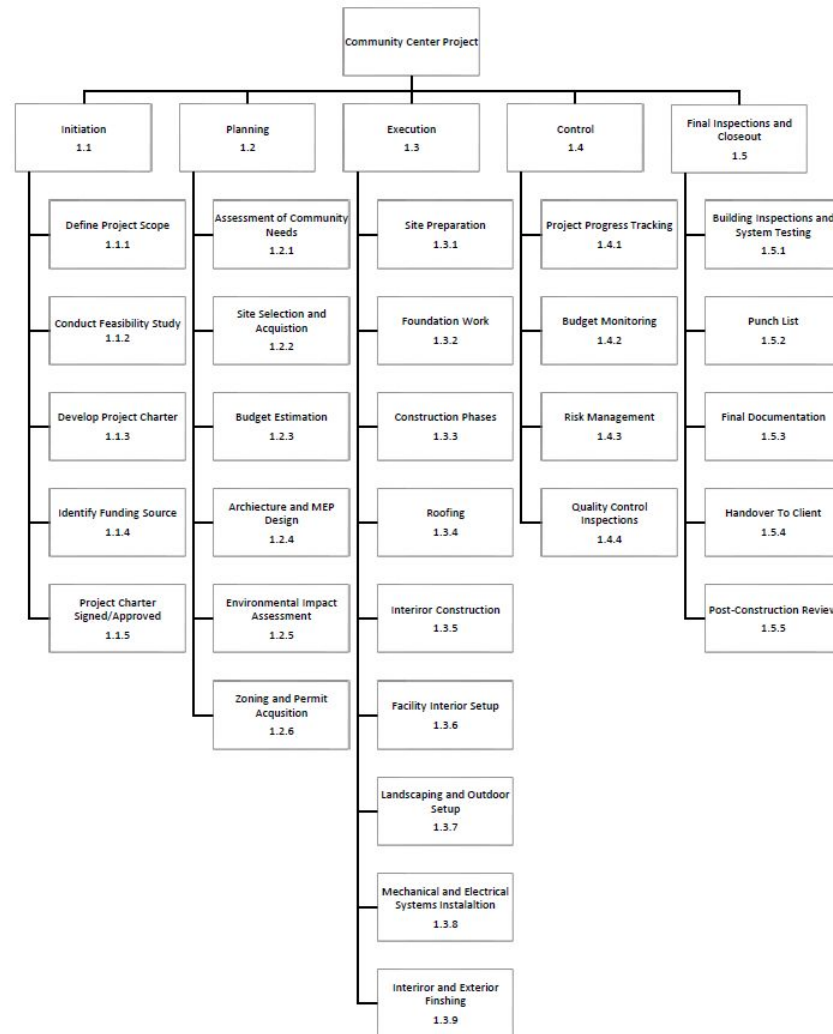
9 - Work Breakdown Structure

1. Project Initiation
1.1 Define Project Scope
1.2 Conduct Feasibility Study
1.3 Develop Project Charter
1.4 Identify Funding Source
2. Project Planning
2.1 Assessment of Community Needs
2.2 Site Selection and Acquisition
2.3 Budget Estimation
2.4 Grant Application and Approval
2.5 Architectural Design
2.6 Engineering Design
2.7 Environmental Impact Assessment
2.8 Zoning And Permit Acquisition
3. Site Preparation
3.1 Clearing and Demolition
3.2 Grading and Excavation
3.3 Utility Connections
4. Foundation Work
4.1 Excavate Foundation Trenches
4.2 Pour Foundation Footings
4.3 Install Foundation Walls
5. Construction Phases
5.1 Erect Structural Steel
5.2 Install Concrete Slabs
5.3 Construct Exterior Walls
5.4 Install Flooring

6. Roofing
6.1 Install Roof Trusses
6.2 Roof Sheathing
6.3 Roof Covering
7. Interior Construction
7.1 Framing Interior Walls
7.2 Install Windows and Doors
8. Facility Interior Setup
8.1 Multipurpose Courts Setup
8.2 Fitness Center Equipment Installation
8.3 Senior Citizens' Area Setup
8.4 Kids' Play Area Setup
8.5 Restaurant Interior Setup
8.6 Cafeteria Setup
8.7 Learning Center Setup
8.8 Multipurpose Hall Interior Setup
8.9 Technology Infrastructure Setup
9. Landscaping And Outdoor Setup
9.1 Landscaping And Greenery Setup
9.2 Outdoor Play Area Setup
9.3 Community Garden Setup
9.4 Pathways And Seating Areas
9.5 Siding Installation
9.6 Exterior Painting
10. Mechanical And Electrical Systems
10.1 HVAC System Installation
10.2 Electrical Wiring
10.3 Plumbing Installation

11. Interior Finishes
11.1 Drywall Installation
11.2 Flooring Installation
11.3 Interior Painting
11.4 Furniture Installation
11.5 Public Art Installations
11.6 Safety And Security Systems Installation
11.7 Signage Installation
12. Exterior Finishes
12.1 Siding Installation
12.2 Exterior Painting
12.3 Landscaping
12.4 Parking Lot Finalization
13. Control And Monitoring Phase
13.1 Project Progress Tracking
13.2 Budget Monitoring
13.3 Quality Control Inspections
13.4 Risk Management
13.5 Issue Resolution
13.6 Stakeholder Communication
14. Final Inspections and Testing
14.1 Building Inspections
14.2 System Testing
14.3 Punch List
15. Project Closeout
15.1 Final Documentation
15.2 Handover To Client
15.3 Post-Construction Review

9 - WBS



10 - Project Schedule

Milestone identification

1. Project Charter and Funding Secured	5. Structural Completion
2. Completion of Project Planning	6. Interior and Exterior Finishes Completed
3. Site Preparation Completed	7. Operational Systems Installed
4. Foundation Completed	8. Final Inspections and Handover

10 - Project Schedule

Precedence Relationships

Examples:

Erect Structural Steel & Install Concrete Slabs : SS (Start to Start)

The erection of structural steel might need to be coordinated with the installation of concrete slabs to ensure structural stability.

HVAC System Installation & Electrical Wiring : SS (Start to Start)

The installation of the HVAC system and electrical wiring might need to occur concurrently or at least be coordinated within the same time frame for effective integration of systems.

11 - Resources Estimation

Resource Requirements:

1. Project Initiation

Project managers, business analysts, financial analysts...

2. Project Planning

Community researchers, real estate consultants...

3. Site Preparation

Demolition equipment, excavation, and utility installation...

4. Foundation Work

Concrete, formwork materials, concrete blocks...

5. Construction Phases

Steel, concrete, wall materials, flooring materials, Cranes...

6. Roofing

Roof trusses, sheathing materials, roof covering materials...

7. Interior Construction

Framing materials, windows, doors, Carpenters, installation labor...

8. Facility Interior Setup

Installation labor, specialist consultants...

9. Landscaping And Outdoor Setup

Landscaping equipment, Plants, Landscapers...

10. Mechanical And Electrical Systems

HVAC systems, Electrical materials, Installation technicians...

11. Interior Finishes

Drywall, flooring materials, signage, Interior designers, painters...

12. Exterior Finishes

Siding materials, exterior paint, Labor for installation and finishing...

13. Control And Monitoring Phase

Project management software, risk management tools...

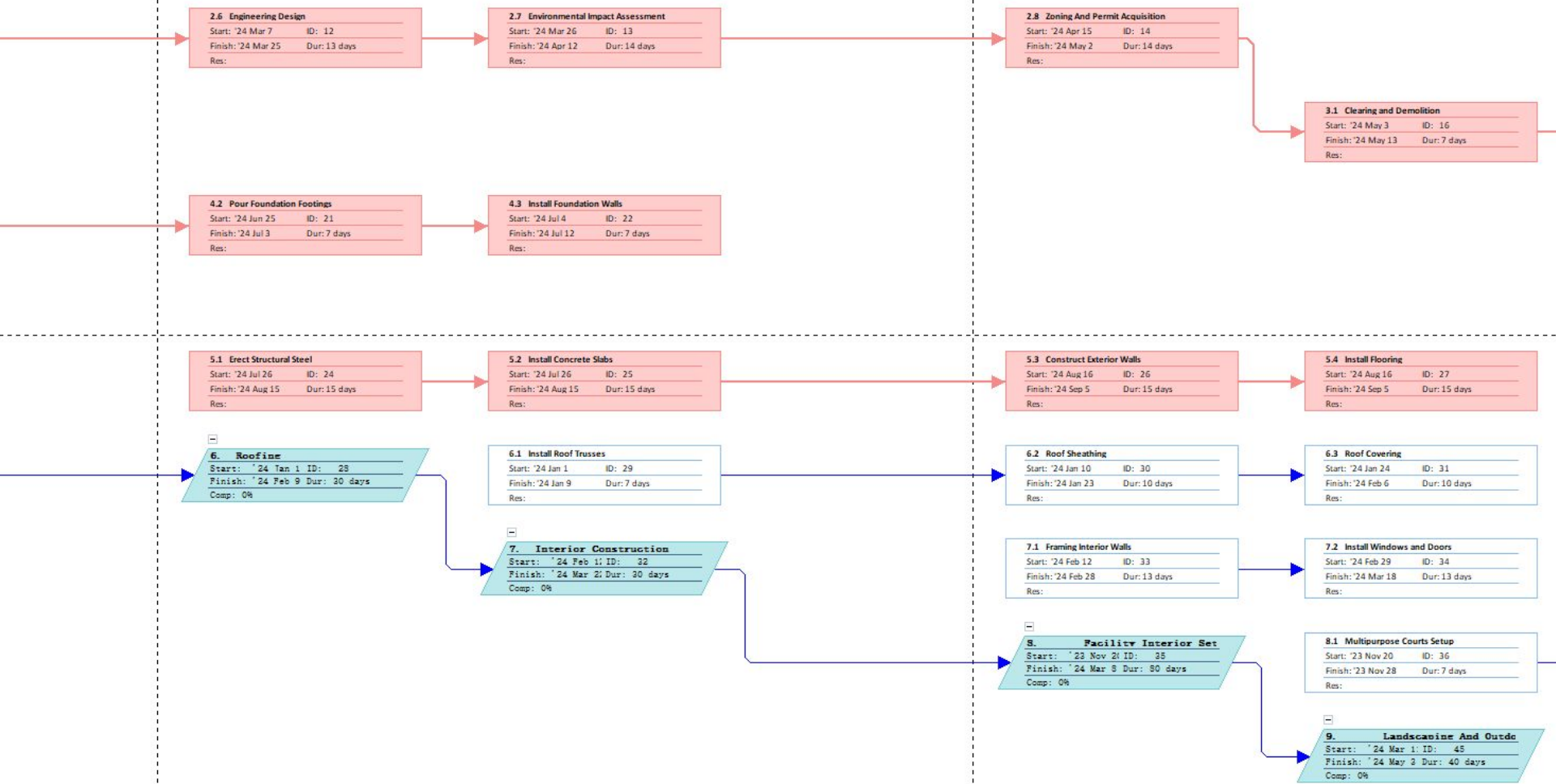
14. Final Inspections and Testing

Testing equipment, Building inspectors, labor for adjustments...

15. Project Closeout

Administrative staff, project managers, legal advisors...

11 - Time Estimation



12 - Cost Estimation Plan

Total Budget: \$75 million

Cost Estimation: **Bottom-up estimates**

1. Project Initiation (budget = \$3.75M)

- 1.1 Define Project Scope: \$0.75M
- 1.2 Conduct Feasibility Study: \$1M
- 1.3 Develop Project Charter: \$0.75M
- 1.4 Identify Funding Source: \$1.25M

2. Project Planning (budget = \$7.5M)

- 2.1 to 2.8 : Each subtask allocated around \$0.9375M

3. Site Preparation (budget = \$5.25M)

- 3.1 Clearing and Demolition: \$1.75M
- 3.2 Grading and Excavation: \$1.75M
- 3.3 Utility Connections: \$1.75M

4. Foundation Work (budget = \$6M)

- 4.1 Excavate Foundation Trenches: \$2M
- 4.2 Pour Foundation Footings: \$2M
- 4.3 Install Foundation Walls: \$2M

5. Construction Phases (budget = \$11.25M)

- 5.1 to 5.4 : Each subtask allocated around \$2.8125M

6. Roofing (budget = \$3.75M)

- 6.1 Install Roof Trusses: \$1.25M
- 6.2 Roof Sheathing: \$1.25M
- 6.3 Roof Covering: \$1.25M

7. Interior Construction (budget = \$3.75M)

- 7.1 Framing Interior Walls: \$1.875M
- 7.2 Install Windows and Doors: \$1.875M

8. Facility Interior Setup (budget = \$6M)

- 8.1 to 8.9: Each subtask allocated around \$0.6667M

9. Landscaping And Outdoor Setup (budget = \$4.5M)

- 9.1 to 9.6 : Each subtask allocated around \$0.75M

10. Mechanical And Electrical Systems (budget = \$7.5M)

- 10.1 HVAC System Installation: \$2.5M
- 10.2 Electrical Wiring: \$2.5M
- 10.3 Plumbing Installation: \$2.5M

11. Interior Finishes (budget = \$3M)

- 11.1 to 11.7 : Each subtask allocated around \$0.4286M

12. Exterior Finishes (budget = \$3M)

- 12.1 to 12.4 : Each subtask allocated around \$0.75M

13. Control And Monitoring Phase (budget = \$6M)

- 13.1 to 13.6 : Each subtask allocated around \$1M

14. Final Inspections and Testing (budget = \$2.25M)

- 14.1 to 14.3 Each subtask allocated around \$0.75M

15. Project Closeout (budget = \$1.5M)

- 15.1 to 15.3 : Each subtask allocated around \$0.5M

13 - Risk Identification and Mitigation

Risk ID	Risk	Likelihood	Impact	Mitigation
R1	Funding Shortfall	Moderate	High	Regularly communicate with the funding source and explore alternative funding options.
R2	Regulatory Approval Delays	Low	Moderate	Initiate the approval process early and have a contingency plan for potential delays.
R3	Community Opposition	Low	High	Implement a robust community engagement plan.
R4	Weather and Environmental Conditions	Moderate	Moderate	Monitor weather forecasts and plan construction activities accordingly.
R5	Supply Chain Disruptions	Low	High	Diversify suppliers and maintain buffer stock for critical materials.

13 - Risk Identification and Mitigation

Risk ID	Risk	Likelihood	Impact	Mitigation
R6	Construction Contractor Issues	Moderate	High	Conduct thorough contractor evaluations, have a clear contract with performance milestones, and monitor contractor progress closely.
R7	Design Changes	Low	Moderate	Establish a robust change management process, clearly communicate design expectations, and involve key stakeholders in design decisions.
R8	Safety Incidents	Low	High	Implement strict safety protocols, conduct regular safety training, and have emergency response plans in place.
R9	Technology Implementation Challenges	Moderate	Moderate	Engage technology specialists early in the project, conduct thorough testing, and have contingency plans for technology-related issues.
R10	Market Fluctuations	Moderate	Low	Monitor market trends, lock in prices where possible, and include contingency allowances for market-related changes.

14 - Probability Impact Matrix

Likelihood	High			
	Moderate		R4 R9	R1 R6
	Low	R10	R2 R7	R3 R5 R8
		Low	Moderate	High
		Impact		

15 - Quality Metrics

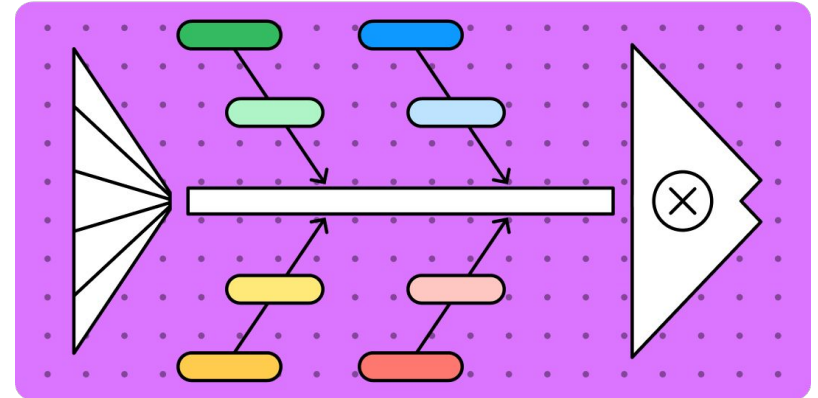
Quality Metric	Target
1. Safety Performance	<ul style="list-style-type: none">• Zero incidents
2. Construction Progress / Timely Project Completion	<ul style="list-style-type: none">• Project to be completed on time
3. Material Quality Control	<ul style="list-style-type: none">• All materials meet desired quality standards
4. Compliance with Regulations	<ul style="list-style-type: none">• Zero violations
5. Design Conformation	<ul style="list-style-type: none">• Project is executed according to plan• Corrective action is taken for any design flaws
6. Stakeholder Satisfaction	<ul style="list-style-type: none">• Achieve high stakeholder satisfaction
7. Budget Adherence	<ul style="list-style-type: none">• Meeting budget requirements• Variance does not exceed 5%

15 - Change Management Plan

- All changes must be submitted through a change request form.
- The request should include:
 1. Description of the change
 2. The impact on scope, schedule and budget.
 3. The need for the change.
 4. Identification of the affected stakeholders and finally and the proposed action plan.
- The change request must be evaluated by the Change Control Board to determine whether it is needed or not.

15 - Fishbone Diagram

- Used to determine root causes of poor quality
- Brainstorming sessions to list possible causes
- Benefits include visual representation and encouraging collaboration



16 - Task Execution

- Project will be performed according to the Work Breakdown Structure and Gantt Chart.
- The status of each activity will be updated regularly, and any delays must be communicated and corrected.
- The project budget will be monitored, and the status will be determined by calculating the earned value and actual cost against the planned value.
- Scope changes will also be monitored and documented.
- Safety performance will be regularly monitored and additional safety will be provided training if necessary.
- Updates on the identified risks will be issued regularly.

17 - Quality Checklist

→ Project Scope
→ Feasibility Study
→ Project Charter
→ Budget Estimation
→ Grant Application and Approval
→ Architectural Design
→ Engineering Design
→ Environmental Impact Assessment
→ Safety Protocols
→ Construction Progress

→ Material Quality Control
→ Regulatory Compliance
→ Quality Inspections
→ System Testing
→ Documentation
→ Handover to Client
→ Post-Construction Review
→ Lessons Learned Implementation
→ Process Improvement Initiatives

17 - Quality Audits

Objectives:

1. Assessing Compliance

- Ensuring the project is within scope, and is adhering to the approved plans, specifications and desired quality standards.
- Taking corrective action if necessary

2. Documentation Review

- Ensuring that all documents are up to date, and that they include all required plans, permits and inspection reports.

18 - Tracking Project Progress

- Milestone Report

- Milestone reports will be created after achieving all major milestones as listed on the Gantt Chart.
- The report will discuss the progress of the project up to that time.
- The report will also discuss any changes to the scope, and will give an update on the timeline and budget, and indicate whether the project is moving according to the plan or not.

19 - Project Performance

Monitoring and controlling processes

Measuring Project Performance:

Earned Value Method (EVM) and Earned Value Projection are used in different phases of the project to monitor processes.

EVM assesses project performance by integrating:

- Actual Cost (AC)
- Planned Value(PV)
- Earned Value (EV)

Other metrics include:

- Cost Performance Index (CPI)
- Schedule Performance Index (SPI)
- Estimate at Completion (EAC)
- Estimate to Complete (ETC)

19 - Project Performance

Planned Value:

PV = % of work planned to be completed x BAC

PV after 2 Weeks

Project is schedule = 290 days

2 weeks = 5% of planned work

- Project duration: 290 days
- Project budget (BAC): \$ 75 Million
- Elapsed time: 14 days
- % complete (planned): 5%

PV = % complete (planned) x BAC

$PV = 5\% \times 75,000,000$

$PV = \$3,750,000$

Actual Cost = \$3,750,000 (for 2 weeks)
(How much was actually spent in 2 weeks)

Earned Value = % complete (actual) x BAC

$EV = 5\% \times 75,000,000 = \$3,750,000$

Schedule variance (SV) = EV - PV

$SV = 3,750,000 - 3,750,000 = 0$

Schedule Performance Index (SPI) = EV/PV

$SPI = 3,750,000 / 3,750,000 = 1$

∴ The Project is on Schedule

Cost Variance (CV) = EV - AC

$CV = 3,750,000 - 3,750,000 = 0$

Cost Performance Index (CPI) = EV/AC

$CPI = 3,750,000 / 3,750,000 = 1$

∴ The project is on Budget

20 - Project Changes

Objective: Verify, manage and communicate changes to the project.

Change requests and actions taken:

Change	Action Taken
1. Supplier issue	Selecting one of the back-up suppliers
2. Activity took longer than expected	Adding more manpower temporarily to get project back on track

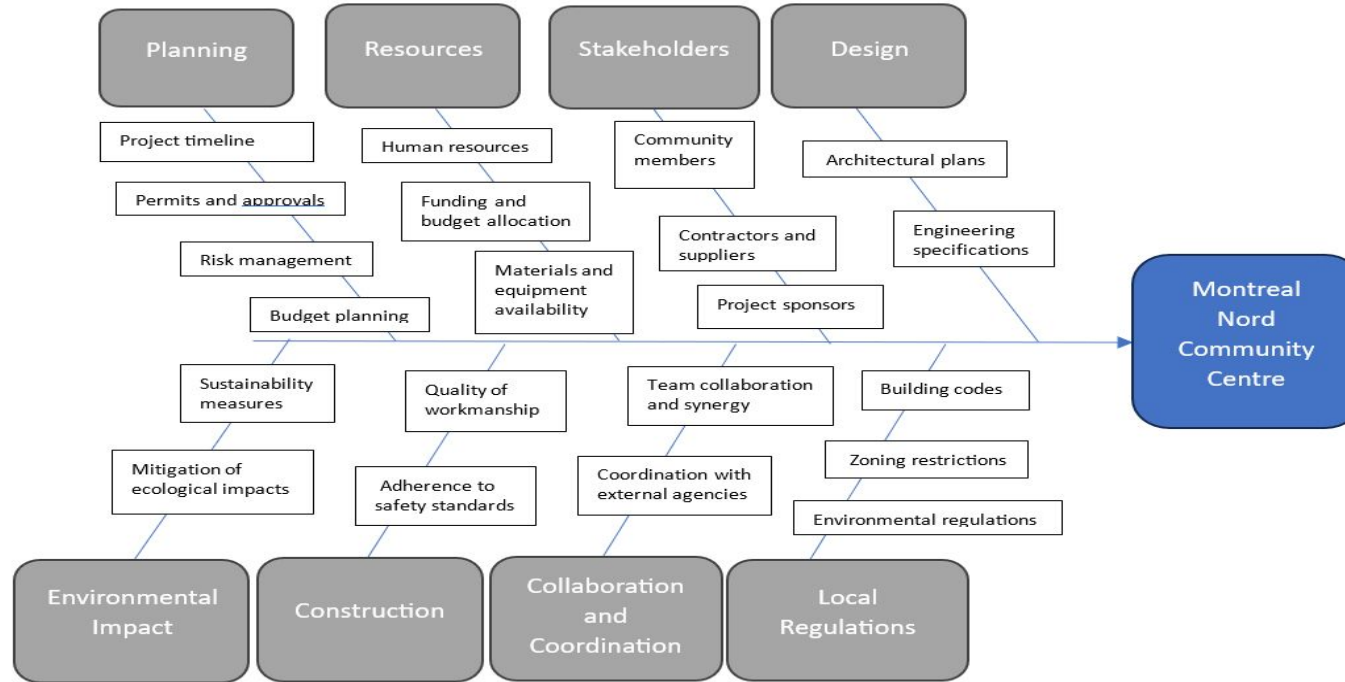
21 - Quality Control Plan

Fishbone Diagram: The Fishbone Diagram allows exploring each category, to uncover the main causes behind potential quality problems. This helps in fixing issues at their root and prevent them from happening.

Identification and Prioritization: Organize and prioritize potential problems into different categories. This helps in focusing on what matters most and ensures that efforts target the most crucial aspects of quality.

Continuous Improvement: Fishbone Diagram is adjusted and updated regularly. This helps in learning from past experiences to improve the quality control processes.

21 - Quality Control Plan



Fishbone Diagram

22 - Monitor Risks

Risk ID	Risk	Update
R1	Funding Shortfall	Regularly communicated with the funding source and explored alternative funding options.
R2	Regulatory Approval Delays	No approval delays
R3	Community Opposition	Actively listened to community concerns and made necessary changes suggested
R4	Weather and Environmental Conditions	Monitored weather forecasts and planned construction activities accordingly.
R5	Supply Chain Disruptions	One of the suppliers cancelled, but back-up suppliers were called.

22 - Monitor Risks

Risk ID	Risk	Update
R6	Construction Contractor Issues	No issues
R7	Design Changes	No design changes
R8	Safety Incidents	No safety incidents occurred.
R9	Technology Implementation Challenges	No issues
R10	Market Fluctuations	The price of raw materials increased, so we had a budget increase that was communicated to the project sponsors.

23 - Final Acceptance and Administrative Closure

- Fill out the Project Closure Form along with the signatures of the project team members indicating the project has been completed.
- Project closure report goals are documented.
- The project closure report summary is provided.
- The schedule performance with control process and corrective actions to get back on track is indicated.
- The budget performance against the budget plan with the corrective actions taken to try to stay within budget is also documented.

24 - Lessons Learned

- Collaboration enhances problem-solving and creativity.
- Early identification of risks minimizes their impact on the project timeline and budget.
- Being adaptable ensures smooth navigation through surprises.
- Communication helps in avoiding misunderstandings and promotes transparency among the team members.
- Keeping track of the milestones helps in advancing the project as planned.
- Actively involving the local community in the project helps in addressing concerns and building positive relationships

25 - Project Resources Release

- Presentation of the project development covering the main objectives, the final project status and the lessons learned from it.
- Hand out the project deliverables with the customer acceptance form to indicate the project is finished and the responsible people indicating it.
- Indicate the project overall performance and what could have been done to improve it.

THANK YOU

References

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Appendix

Community Centre - Sources of Income (Annually)

Sources of income	Approximate Income
Membership	\$401,713
Programs/Workshops	\$1,404,000
Fitness centre membership	\$401,713
Facility rental	\$500,000
Donations	\$500,000
Total	\$3,207,426

Discounted Payback Period

Cost to build community centre: \$75 million

Approximate annual income: \$3,207,426

Discounted Payback Period = 25.4 \approx 26 years

NPV after 26 years = \$1,924,892.41

ROI after 26 years = 2.57%

ROI = $1,924,892.41 / 75,000,000 = 0.025665$

Year	Cash Flow	Net Cash Flow	Discounted Cash Flow	Net Discounted Cash Flow
0	\$-75,000,000.00	\$-75,000,000.00	\$-75,000,000.00	\$-75,000,000.00
1	\$3,207,426.00	\$-71,792,574.00	\$3,047,435.63	\$-71,952,564.37
2	\$3,367,797.30	\$-68,424,776.70	\$3,040,197.07	\$-68,912,367.31
3	\$3,536,187.17	\$-64,888,589.54	\$3,032,975.69	\$-65,879,391.61
4	\$3,712,996.52	\$-61,175,593.01	\$3,025,771.48	\$-62,853,620.13
5	\$3,898,646.35	\$-57,276,946.66	\$3,018,584.37	\$-59,835,035.76
6	\$4,093,578.67	\$-53,183,368.00	\$3,011,414.34	\$-56,823,621.43
7	\$4,298,257.60	\$-48,885,110.40	\$3,004,261.33	\$-53,819,360.09
8	\$4,513,170.48	\$-44,371,939.91	\$2,997,125.32	\$-50,822,234.77
9	\$4,738,829.00	\$-39,633,110.91	\$2,990,006.26	\$-47,832,228.51
10	\$4,975,770.45	\$-34,657,340.46	\$2,982,904.11	\$-44,849,324.41
11	\$5,224,558.98	\$-29,432,781.48	\$2,975,818.82	\$-41,873,505.59
12	\$5,485,786.93	\$-23,946,994.55	\$2,968,750.37	\$-38,904,755.22
13	\$5,760,076.27	\$-18,186,918.28	\$2,961,698.71	\$-35,943,056.51
14	\$6,048,080.09	\$-12,138,838.19	\$2,954,663.79	\$-32,988,392.72
15	\$6,350,484.09	\$-5,788,354.10	\$2,947,645.59	\$-30,040,747.13
16	\$6,668,008.29	\$879,654.19	\$2,940,644.05	\$-27,100,103.07
17	\$7,001,408.71	\$7,881,062.90	\$2,933,659.15	\$-24,166,443.92
18	\$7,351,479.14	\$15,232,542.04	\$2,926,690.84	\$-21,239,753.08
19	\$7,719,053.10	\$22,951,595.15	\$2,919,739.08	\$-18,320,014.00
20	\$8,105,005.76	\$31,056,600.90	\$2,912,803.83	\$-15,407,210.17
21	\$8,510,256.05	\$39,566,856.95	\$2,905,885.06	\$-12,501,325.11
22	\$8,935,768.85	\$48,502,625.80	\$2,898,982.72	\$-9,602,342.39
23	\$9,382,557.29	\$57,885,183.09	\$2,892,096.78	\$-6,710,245.61
24	\$9,851,685.15	\$67,736,868.24	\$2,885,227.19	\$-3,825,018.43
25	\$10,344,269.41	\$78,081,137.65	\$2,878,373.92	\$-946,644.51
26	\$10,861,482.88	\$88,942,620.54	\$2,871,536.92	\$1,924,892.41

Montreal Boroughs by Density

	Borough	Population	Area [km ²]	Density [per km ²]
1	Le Plateau–Mont-Royal	110,329	8.1	13,620.9
2	Rosemont–La Petite-Patrie	146,501	15.9	9,213.9
3	Villeray–Saint-Michel–Parc–Extension	144,814	16.5	8,776.6
4	Côte-des-Neiges–Notre-Dame-de-Grâce	173,729	21.4	8,118.2
5	Montréal-Nord	86,857	11.1	7,825.0
...
17	Lachine	46,971	17.7	2,653.7
18	Saint-Laurent	104,366	42.8	2,438.5
19	L'Île-Bizard–Saint-Geneviève	19,857	23.6	841.4

The Gantt chart illustrates the project schedule from August 2025 to July 2026. Key tasks include:

- Structural Work:** Erection of structural steel (Aug 15), installing concrete slabs (Sep 5), and exterior walls (Oct 5). This is followed by roof trusses (Feb 9), sheathing (Mar 23), and covering (Apr 6).
- Interior Construction:** Framing interior walls (Mar 22), installing windows and doors (Mar 28), and completing interior and exterior finishes (May 3).
- Systems and Finishes:** Setting up multipurpose courts (Nov 23), installing center equipment (Dec 7), setting up senior citizens' areas (Dec 18), kids' play areas (Dec 27), restaurant interiors (Jan 5), cafeteria setups (Jan 16), lounge centers (Jan 25), multipurpose hall interiors (Feb 5), technology infrastructure (Feb 14), landscaping and greenery (Mar 19), outdoor play areas (Mar 28), community gardens (Apr 4), pathways and seating (Apr 10), siding installation (Apr 17), and exterior painting (Apr 24).
- Operational and Safety Systems:** Installing operational systems (May 28), interior finishes (Jun 1), drywall (Jun 7), flooring (Jun 14), interior painting (Jun 19), furniture (Jul 3), public art (Jul 10), safety and security systems (Jul 17), signage (Jul 24), and exterior finishes (Jul 31).
- Project Management:** A control and monitoring phase (Aug 7) includes project progress tracking, budget monitoring, quality control inspections, risk management, issue resolution, and stakeholder communication.
- Finalization:** Building inspections (Aug 22), system testing (Aug 29), punch list completion (Sep 5), and final documentation (Sep 12).