



## University of Ottawa

Faculty of Engineering

GNG 1103

Deliverable E

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### Project Plan and Cost Estimate

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**Part 1:**

The design has been updated in response to client comments, incorporating modifications to the sketch and repositioning certain subsystems. The table below will provide specific information for each subsystem, while a link to the sketch design will be provided for our prototype design.

Autocad Link:

<https://web.autocad.com/acad/me/sid/shares/drawings/84da2ece-6b88-434a-99c7-21a049cbc3b8/editor>

Project	Updated part/prototype Design
Gardenier project building ( overall concept)	Overall shape been changed from a two-story building into 2 circular building attached to a main hall
Lab section	A lab area, still of the same design, contains a computer work bench for five people, a mobile table, cabinets, and two sinks with access to the outside common area.
Common area section	A common area includes a kitchen, two toilets, and a meeting room in the first half of the building
Offices Area	Located in separate buildings, offices are designed in a circular shape with a meeting table at the centre
Storage, Dryer and freezer Space	Place the freezer beside storage for easy access to the loading area, with a sanitizing machine in front of it. Additionally, there is a truck loading space between the storage area and the office
Outside lean on	Located at the back of the building for easy access to the storage and freezer
Outside activity area	Attached to a lab, located outside at the left corner beside the parking lot for vehicles.

**Part 2:****Bill of Materials**

Building construction and Utilities						
Item Name	Description	Units of Measures	Quantity	Unit Cost	Extended Cost	Links
Total Building base construction cost	Material: Concrete foundation, wood stability pillars Appearance: Two circular shapes with a connecting hallway	feet X feet	3400 - 3500	\$200 - \$300 per ft <sup>2</sup>	\$680 000 - \$1 050 000	<a href="https://buildit.ca/blog/breaking-down-the-cost-of-commercial-construction-per-square-foot/#:~:text=specific%20construction%20methods,-Price%20Analysis,2023%2C%20they%20may%20have%20changed.">https://buildit.ca/blog/breaking-down-the-cost-of-commercial-construction-per-square-foot/#:~:text=specific%20construction%20methods,-Price%20Analysis,2023%2C%20they%20may%20have%20changed.</a>
Exterior Walls	Material: Locally produced timber (oak/maple) Appearance: Paneling design, in a vertical fashion	feet X feet	~ 1380	\$7- \$14 per ft <sup>2</sup>	\$9660 - \$19320	<a href="https://modernize.com/siding/types/wood">https://modernize.com/siding/types/wood</a>
Roof	Material: Basic sheet with asphalt Appearance: Flat roof (industrial commercial style)	feet X feet	~3400-3500	\$11 - \$30 per ft <sup>2</sup>	\$37 400 - \$105 000	<a href="https://www.avenueroadroofing.com/how-much-does-a-flat-roof-replacement-cost/#:~:text=Larg%20Commercial%2F%20Industrial%20Flat%20Roofing,%2411%2D30%20per%20square%20ft">https://www.avenueroadroofing.com/how-much-does-a-flat-roof-replacement-cost/#:~:text=Larg%20Commercial%2F%20Industrial%20Flat%20Roofing,%2411%2D30%20per%20square%20ft</a>
Front Door	Material: Aluminum + Tempered glass Appearance: Double doors with metal frame, with accessibility feature. Tempered glass would provide sturdiness and allow natural light to shine throw. Dimensions: 72"x84"	feet X feet	1	\$1 549	\$1 549	<a href="https://www.cdfdistributors.com/commercial-double-storefront-doors/">https://www.cdfdistributors.com/commercial-double-storefront-doors/</a>
Accessible	Material: Metal	N/A	1	\$963	\$963	<a href="https://www.amazon.ca/Olideau">https://www.amazon.ca/Olideau</a>



		Measures		Cost	Cost	
Laboratory tops	<p>Material: Stainless steel</p> <p>Stainless steel is a non-porous material, which does not allow anything to penetrate it. It is created for labs where sterility is required, as it cannot grow fungus, bacteria, and mold. It is also chemical resistant and highly resistant to heat and can withstand temperatures up to 1,500°F. It will stand up to the cleaning required in sterile areas. Type 316 stainless steel should always be used where harsh cleaning solutions will be used.</p> <p>Appearance:</p> <p>Rectangular shape workplace with dimensions: 72*30*1 inches<sup>3</sup></p> <p>Material: Phenolic resin</p> <p>Phenolic resin should be considered for labs that do a moderate amount of work with chemicals. It is good for chlorine use and won't change colors. These counters are very lightweight yet highly durable and machinable in the field, and the material is corrosion- and chemical-resistant. It also has a high fungal, bacteria, and moisture resistance and holds up to impact. It can resist temperatures up to 350°F. It is available in multiple colors and patterns.</p>	72*30*1 in	1	\$7 per ft <sup>2</sup>	105\$	<p><a href="https://www.tenaquip.com/product/kleton-304-stainless-steel-wood-filled-workbench-tops-30-d-x-72-w-1-3-4-thick-fi272?gclid=Cj0KCQjwJKqBhCaARIsAN_yS_lr8T9uFJg8-FAAdYD0eKMyI6uu_vs5x295xNpnz2HxcZdHmBdOC5mUaArovEALw_wcB">https://www.tenaquip.com/product/kleton-304-stainless-steel-wood-filled-workbench-tops-30-d-x-72-w-1-3-4-thick-fi272?gclid=Cj0KCQjwJKqBhCaARIsAN_yS_lr8T9uFJg8-FAAdYD0eKMyI6uu_vs5x295xNpnz2HxcZdHmBdOC5mUaArovEALw_wcB</a></p> <p><a href="https://www.buildingsguide.com/metal-building-prices/#:~:text=Metal%20Building%20Prices%20%26%20Cost%20Guide%20for%202023&amp;text=Prefab%20Metal%20building%20kit%20packages,foundation%2C%20delivery%2C%20and%20construction.">https://www.buildingsguide.com/metal-building-prices/#:~:text=Metal%20Building%20Prices%20%26%20Cost%20Guide%20for%202023&amp;text=Prefab%20Metal%20building%20kit%20packages,foundation%2C%20delivery%2C%20and%20construction.</a></p>

<p>Computer Workbench</p>	<p>Material: Maple block (Locally)</p> <p>Also known as woodblock or butcher block, is a sturdy and long-lasting material. Over time woodblock tables will succumb to scratches and burns but will last for more than enough time to get your money's worth.</p> <p>We see this material most often as work surfaces for workshops. Whether it is a 3-D printing room, a robotics lab, a manufacturing plant, a distribution center, or a warehouse, workbenches for industrial applications are a great fit for maple blocks.</p> <p>Appearance: Rounded workbench for 5 computer workspaces with dimensions: 96 x 48" inches</p>	<p>96 inch X 48 inch</p>	<p>1</p>	<p>\$25 per feet<sup>2</sup></p>	<p>800\$</p>	<p><a href="https://www.etsy.com/ca/market/maple_wood_blocks">https://www.etsy.com/ca/market/maple_wood_blocks</a></p>
<p>Sinks</p>	<p>Material: Stainless</p> <p>Stainless steel is often the most popular choice for its easy care, as a lot of chemical exposure can corrode and rust casework material over time.</p> <p>Dimensions: 39.3 X 23.6 X 31.4 inch<sup>3</sup></p>	<p>39.9*23.6* 31.4 in</p>	<p>2</p>	<p>\$7 per ft<sup>2</sup></p>	<p>119\$*2= 238\$</p>	<p><a href="https://www.buildingsguide.com/metal-building-prices/#:~:text=Metal%20Building%20Prices%20%26%20Cost%20Guide%20for%202023&amp;text=Prefab%20Metal%20building%20kit%20packages,foundation%2C%20delivery%2C%20and%20construction.">https://www.buildingsguide.com/metal-building-prices/#:~:text=Metal%20Building%20Prices%20%26%20Cost%20Guide%20for%202023&amp;text=Prefab%20Metal%20building%20kit%20packages,foundation%2C%20delivery%2C%20and%20construction.</a></p>
<p>Cabinet</p>	<p>Material: Steel and wood</p> <p>Steel is a very common cabinet material in today's labs. It has a powder coating, which is corrosion-, abrasion-, and chemical-resistant, and deters chipping, peeling, or</p>	<p>74*22*30 in</p>	<p>2</p>	<p>\$7 - \$14 per ft<sup>2</sup></p>	<p>197\$-395 \$ (multiply by 2 ) = 394\$-790 \$</p>	<p><a href="https://modernize.com/siding/types/wood">https://modernize.com/siding/types/wood</a></p>

	<p>cracking. It is heavy-duty and offers high fungal and moisture resistance as well as good resistance to chemicals. Applications span all kinds of labs, including industrial, academic, medical research, and R&amp;D. Laboratory tables should generally be made of painted steel for durability and mobility. Exposed steel should not be used in chemical exhaust fume hoods or acid cabinet interiors. Wood is the traditional method and tool for creating lab casework. It is attractive and offers warmth to the lab, with solids and veneers available in different wood varieties. New finishes resist wear and tear common in older wood cabinetry, though it does not offer the resistance of steel. Stained wood laboratory-grade door and drawer fronts are often used with steel cabinets. It is often the standard for academic labs, testing labs, and some technology and research labs.</p> <p>Dimensions: 74 x 22 x 30 inch<sup>3</sup></p>					
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Storage room						
Item Name	Description	Units of Measures	Quantity	Unit Cost	Extended Cost	Links
Shelves	Steel cabinets will have a	78*60.125*	1	7-14\$	149.9\$-	<a href="https://www.princessauto.com/en/s">https://www.princessauto.com/en/s</a>

	corrosion-resistant coating and oftentimes contain polyethylene liners. As an added benefit, some steel cabinets also meet the requirements of flammable storage cabinets.	24			455\$	<a href="https://www.globalindustrial.ca/product/PA0008452088">teel-wall-cabinet-and-pegboard/product/PA0008452088</a>
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Freezer area						
Item Name	Description	Units of Measures	Quantity	Unit Cost	Extended Cost	Links
<p>Selecting the right material for ultra-low temperature freezer racking is crucial for maintaining the integrity and longevity of your stored items. While both stainless steel and aluminum offer unique advantages, stainless steel emerges as the stronger contender due to its exceptional durability, resistance to corrosion, and ease of maintenance. However, for applications where cost is a significant consideration or when lower thermal conductivity is preferred, aluminum can still serve as a viable option.</p>						
Door	Material: Wood and steel / Aluminium Appearance: Heavy duty, chase doors, double panels. Dimensions: 4' x 7'	feet X feet	1	\$3,210.00	\$3,210.00	<a href="https://www.globalindustrial.ca/p/medium-duty-service-door-double-panel-beige-4ft-x-7ft-with-kickplate?ref=5">https://www.globalindustrial.ca/p/medium-duty-service-door-double-panel-beige-4ft-x-7ft-with-kickplate?ref=5</a>
Door handle	Push-type door handle	N/A	2	~\$30.00	~\$30.00	<a href="https://keydirect.ca/product/narrow-stile-push-pull-paddle-handle/">https://keydirect.ca/product/narrow-stile-push-pull-paddle-handle/</a>
Sanitizing unit	Anodized Aluminum framed Safety Glass Double Doors with Hydraulic Door Closers	85-11/16W x 72D x 95H in	1	—	—	<a href="https://www.cleanairproducts.com/low-profile-straight-through-air-showers/cap701lp-st#1">https://www.cleanairproducts.com/low-profile-straight-through-air-showers/cap701lp-st#1</a>
Freezing unit		Walk in cooler 8' x 20' <b>OR</b> Regular freezer 75" H X 71.5" W X 27" D	1		\$18 275 <b>OR</b> \$6,399	<a href="https://www.sinco.ca/products/8-x-20-walk-in-cooler-c-8x20?variant=40653214908459&amp;currency=CAD&amp;utm_medium=product_sync&amp;utm_source=google&amp;utm_content=sag_organic&amp;utm_campaign=sag_organic&amp;utm_campaign=gs-2020-07-31&amp;utm_source=google&amp;utm_medium=smart_campaign&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLMwnkUUI2Pw-BhBxeXhzVjxVm r8SxHuTk5Y5uiD_YugMgpG9dqzOpgRoCGGEOAvD_BwE">https://www.sinco.ca/products/8-x-20-walk-in-cooler-c-8x20?variant=40653214908459&amp;currency=CAD&amp;utm_medium=product_sync&amp;utm_source=google&amp;utm_content=sag_organic&amp;utm_campaign=sag_organic&amp;utm_campaign=gs-2020-07-31&amp;utm_source=google&amp;utm_medium=smart_campaign&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLMwnkUUI2Pw-BhBxeXhzVjxVm r8SxHuTk5Y5uiD_YugMgpG9dqzOpgRoCGGEOAvD_BwE</a> <b>OR</b> <a href="https://www.wayfair.ca/restaurant-">https://www.wayfair.ca/restaurant-</a>



						<a href="https://www.appliances-equipment.com/pdp/cooler-depot-46-cuft-reach-in-freezer-ckle1471.html">appliances-equipment/pdp/cooler-depot-46-cuft-reach-in-freezer-ckle1471.html</a>
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Dryer room

Item Name	Description	Units of Measures	Quantity	Unit Cost	Extended Cost	Links
Tray and hanging method	<p>Anti-static ABS (acrylonitrile-butadiene-styrene) thermoplastic (same as LEGO)</p> <p>Resistant against chemicals like thinned acid, alkaline, oils, fat and aliphatic hydrocarbons</p> <p>Food Safe</p> <p>Very strong</p> <p>Easily stackable with exact precision and simplicity</p> <p>Easy cleanable</p> <p>100% recyclable</p> <p>Maximum service temperature 77°C (171°F)</p>	600x400x60 mm (23.5 x 15.5 x 2.4")	As much As needed 12-36	59-129 \$	708\$	<a href="https://cantopia.eu/the-best-cannabis-drying-method/">https://cantopia.eu/the-best-cannabis-drying-method/</a>
Dehumidifier	A machine to maintain low humidity in the room and prevent spoiling of naturally dried samples and allowing to dry them right in the room	N/A	1	~ \$1000 - \$3000	~ \$1000 - \$3000	<p><a href="https://www.condair.co.uk/commercial-and-industrial-dehumidifiers/condair-dc-lt-low-temperature-condensing-dehumidifier">https://www.condair.co.uk/commercial-and-industrial-dehumidifiers/condair-dc-lt-low-temperature-condensing-dehumidifier</a></p> <p><b>OR</b></p> <p><a href="https://www.climatedry.co.uk/product/pro-dh1200-desiccant-dehumidifier/">https://www.climatedry.co.uk/product/pro-dh1200-desiccant-dehumidifier/</a></p>

## Office (X 14)

Item Name	Description	Units of Measures	Quantity	Unit Cost	Extended Cost	Links
Office table	Material: Locally produced timber (oak/maple) Appearance: Simple, 'standard'-form office table for one person to work on. A hole in a tabletop to accommodate wires	in X in X in	1	\$124.98 - \$269.99	\$124.98 - \$269.99	<a href="https://www.homedepot.com/p/TECHNI-MOBILI-51-25-in-Rectangular-Wenge-3-Drawer-Computer-Desk-with-Built-In-Storage-RTA-8404-WN/302158869">https://www.homedepot.com/p/TECHNI-MOBILI-51-25-in-Rectangular-Wenge-3-Drawer-Computer-Desk-with-Built-In-Storage-RTA-8404-WN/302158869</a>  <a href="https://www.staples.ca/products/1925649-en-whalen-manning-desk-warm-walnut-spca-mmpd">https://www.staples.ca/products/1925649-en-whalen-manning-desk-warm-walnut-spca-mmpd</a>
Office chair	Material: Local timber + natural material (leather, cotton or linen) Appearance: Traditional office chair with a wooden base instead of plastic. The chair seat out of natural material which is more comfortable to the touch and brings a cozy atmosphere to the workspace.	N/A	1	\$194.99 - \$359.00	\$194.99 - \$359.00	<a href="https://www.wayfair.ca/furniture/pdp/mercury-row-sigler-task-chair-golv1633.html?piid=22494612">https://www.wayfair.ca/furniture/pdp/mercury-row-sigler-task-chair-golv1633.html?piid=22494612</a>  <a href="https://www.homedepot.com/p/Home-Decorators-Collection-Callaway-Wingback-Upholstered-Office-Chair-in-Charcoal-Gray-121-2/319424227">https://www.homedepot.com/p/Home-Decorators-Collection-Callaway-Wingback-Upholstered-Office-Chair-in-Charcoal-Gray-121-2/319424227</a>
Computer workspace	<ul style="list-style-type: none"> <li>• Monitor (24 inch for office work);</li> <li>• Keyboard,</li> <li>• Mouse;</li> <li>• Computer block</li> </ul>	N/A	1	\$139.99 \$104.99 \$29.99 \$859.00	\$139.99 \$104.99 \$29.99 \$859.00	<a href="https://www.dell.com/en-ca/shop/dell-24-monitor-se2422h/apd/210-ayxt/monitors-monitor-accessories">https://www.dell.com/en-ca/shop/dell-24-monitor-se2422h/apd/210-ayxt/monitors-monitor-accessories</a>  <a href="https://www.dell.com/en-ca/shop/dell-multi-device-wireless-keyboard-kb700/apd/580-akmm/pc-accessories?gacd=9683519-3039-5761040-266312346-0&amp;dgc=st&amp;SA360CID=71700000110509324&amp;&amp;gad_source=1&amp;gclid=CjwKCAjwkY2qBhBDEiwAoQXK5bFGKLQWDAndd1bKNt_cFMI3mGEKExqIeuMXatILiZfb2bX2tpSsJRoCfxwQAvD_BwE&amp;gclid=aw.ds">https://www.dell.com/en-ca/shop/dell-multi-device-wireless-keyboard-kb700/apd/580-akmm/pc-accessories?gacd=9683519-3039-5761040-266312346-0&amp;dgc=st&amp;SA360CID=71700000110509324&amp;&amp;gad_source=1&amp;gclid=CjwKCAjwkY2qBhBDEiwAoQXK5bFGKLQWDAndd1bKNt_cFMI3mGEKExqIeuMXatILiZfb2bX2tpSsJRoCfxwQAvD_BwE&amp;gclid=aw.ds</a>

						<a href="https://www.dell.com/en-ca/shop/b-lack-wireless-mouse-wm126/apd/570-aalk/pc-accessories">https://www.dell.com/en-ca/shop/b-lack-wireless-mouse-wm126/apd/570-aalk/pc-accessories</a>  <a href="https://www.asus.com/ca-en/displays-desktops/mini-pcs/pn-series/mini-pc-pn63-s1/techspec/">https://www.asus.com/ca-en/displays-desktops/mini-pcs/pn-series/mini-pc-pn63-s1/techspec/</a>
Shelf	Material: Wood	in X in	3	\$17.98	\$53.94	<a href="https://www.homedepot.com/p/Rubbermaid-Organic-Ash-Laminated-Wood-Shelf-12-in-D-x-72-in-L-2110654/311222543">https://www.homedepot.com/p/Rubbermaid-Organic-Ash-Laminated-Wood-Shelf-12-in-D-x-72-in-L-2110654/311222543</a>
Cabinet	Material: Wood Appearance: Simple cabinet for documents and office supplies, which fits under the table.	in X in X in	1	Included with the table - \$307.00	\$0.00 - \$307.00	<a href="https://www.rona.ca/en/product/wisome-wood-kenner-reclaimed-wood-and-white-office-cabinet-18316-330858132">https://www.rona.ca/en/product/wisome-wood-kenner-reclaimed-wood-and-white-office-cabinet-18316-330858132</a>
Window	Material: Glass, PVH Appearance: Casement, double pane window	in X in	1	\$879.00	\$879.00	<a href="https://www.homedepot.ca/product/farley-windows-60-inch-x-48-inch-casement-fixed-rh-with-integrated-1-bm-white-window-with-vertex-3-and-energy-star/1001655550">https://www.homedepot.ca/product/farley-windows-60-inch-x-48-inch-casement-fixed-rh-with-integrated-1-bm-white-window-with-vertex-3-and-energy-star/1001655550</a>
Paint (walls + ceiling)	Latex-based paint with flat paint finishing	feet X feet	Area	\$0.0495 per ft <sup>2</sup>	Will change with building proportions	<a href="https://www.homedepot.com/p/KILZ-2-ALL-PURPOSE-5-Gal-White-Interior-Exterior-Multi-Surface-Primer-Sealer-and-Stain-Blocker-20000/100116594">https://www.homedepot.com/p/KILZ-2-ALL-PURPOSE-5-Gal-White-Interior-Exterior-Multi-Surface-Primer-Sealer-and-Stain-Blocker-20000/100116594</a>
Flooring	Laminate flooring is easy to maintain and clean. It is an eco-friendly and relatively cheap option	feet X feet	~200	\$1.49 - \$3.59	\$298 - \$718	<a href="https://www.homedepot.com/p/TrafficMaster-Milo-Valley-Hickory-8-mm-T-x-8-03-in-W-Water-Resistant-Laminate-Wood-Flooring-21-3-sqft-case-360831-2K620/325682103">https://www.homedepot.com/p/TrafficMaster-Milo-Valley-Hickory-8-mm-T-x-8-03-in-W-Water-Resistant-Laminate-Wood-Flooring-21-3-sqft-case-360831-2K620/325682103</a>  <a href="https://www.homedepot.com/p/Pergo-Defense-Antique-Linen-Hickory-14-mm-T-x-6-1-in-W-Waterproof">https://www.homedepot.com/p/Pergo-Defense-Antique-Linen-Hickory-14-mm-T-x-6-1-in-W-Waterproof</a>

						<a href="#">f-Laminate-Wood-Flooring-16-1-sqft-case-LF001082/320733284</a>
Door	Material: Tempered glass office door	in X in X in	1	~\$700 - \$1000	~\$700 - \$1000	<a href="https://specialtyproducthardware.com/commercial-glass-partitions?cmp_id=10761755652&amp;adg_id=105627361109&amp;kwd=glass%20office%20walls&amp;device=c&amp;gad_source=1&amp;gclid=CjwKCAjwkY2qBhBDEiwAoQXK5arPcdW815FF4vkBACzVey5m9KGxwC8t_GByq42MDLWvC73o8j2JKhoCOuwQAvD_BwE">https://specialtyproducthardware.com/commercial-glass-partitions?cmp_id=10761755652&amp;adg_id=105627361109&amp;kwd=glass%20office%20walls&amp;device=c&amp;gad_source=1&amp;gclid=CjwKCAjwkY2qBhBDEiwAoQXK5arPcdW815FF4vkBACzVey5m9KGxwC8t_GByq42MDLWvC73o8j2JKhoCOuwQAvD_BwE</a>  <a href="https://www.glassexperts.com/en/products/manufacture-pricing.html#:~:text=Glass%20panels%20thickness%20%26%20pricing%3A&amp;text=12mm%20tempered%20regular%20(%2424,ft.)">https://www.glassexperts.com/en/products/manufacture-pricing.html#:~:text=Glass%20panels%20thickness%20%26%20pricing%3A&amp;text=12mm%20tempered%20regular%20(%2424,ft.)</a>
Wall (* Wall that faces the boardroom)	Material: Tempered Glass	feet X feet	?	~\$24 - \$34	Will change with building proportions	<a href="https://www.glassexperts.com/en/products/manufacture-pricing.html#:~:text=Glass%20panels%20thickness%20%26%20pricing%3A&amp;text=12mm%20tempered%20regular%20(%2424,ft.)">https://www.glassexperts.com/en/products/manufacture-pricing.html#:~:text=Glass%20panels%20thickness%20%26%20pricing%3A&amp;text=12mm%20tempered%20regular%20(%2424,ft.)</a>

Board room						
Item Name	Description	Units of Measures	Quantity	Unit Cost	Extended Cost	Links
Conference table	Material: Locally produced timber Appearance: Conference table for 16 seating spaces. Rectangular shape.	in X in X in	1	\$2,243.00	\$2,243.00	<a href="https://www.uline.ca/Product/Detail/H-10278/Office-Tables/Metro-Conference-Table-Standard-192-x-48">https://www.uline.ca/Product/Detail/H-10278/Office-Tables/Metro-Conference-Table-Standard-192-x-48</a>
Office Chair	Material: Local timber + natural material (leather or cotton) Appearance: Traditional office chair with a	N/A	16	\$194.99 - \$359.00	\$3119.84 - \$5744.00	<a href="https://www.wayfair.ca/furniture/pdp/mercury-row-sigler-task-chair-golv1633.html?piid=22494612">https://www.wayfair.ca/furniture/pdp/mercury-row-sigler-task-chair-golv1633.html?piid=22494612</a>  <a href="https://www.homedepot.com/p/Ho">https://www.homedepot.com/p/Ho</a>

	wooden base. The chair seat is made out of natural material, which is more comfortable to the touch and brings a cozy atmosphere to the workspace.					<a href="https://www.amazon.ca/Decorators-Collection-Callaway-Wingback-Upholstered-Office-Chair-in-Charcoal-Gray-121-2/319424227">me-Decorators-Collection-Callaway-Wingback-Upholstered-Office-Chair-in-Charcoal-Gray-121-2/319424227</a>
Whiteboard	Whiteboard, suitable for drawings by markers and large enough to project presentations	in X in	1	\$389.99	\$389.99	<a href="https://www.amazon.ca/Rolling-Whiteboard-Magnetic-Reversible-Standing/dp/B09C86CYV9/ref=sr_1_1_sspa?hvadid=605137227480&amp;hvdev=c&amp;hvlocphy=9000668&amp;hvnetw=g&amp;hvqmt=e&amp;hvrnd=1860836258929007475&amp;hvtargid=kwd-5542373980&amp;hydacr=23371_13547765&amp;keywords=standing%2Bwhiteboard&amp;qid=1698933302&amp;s=office&amp;sr=1-1-spons&amp;sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&amp;th=1">https://www.amazon.ca/Rolling-Whiteboard-Magnetic-Reversible-Standing/dp/B09C86CYV9/ref=sr_1_1_sspa?hvadid=605137227480&amp;hvdev=c&amp;hvlocphy=9000668&amp;hvnetw=g&amp;hvqmt=e&amp;hvrnd=1860836258929007475&amp;hvtargid=kwd-5542373980&amp;hydacr=23371_13547765&amp;keywords=standing%2Bwhiteboard&amp;qid=1698933302&amp;s=office&amp;sr=1-1-spons&amp;sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&amp;th=1</a>
Projector	Mini-projector with HDMI-type port. Could be utilized both for presentations and social gatherings.	N/A	1	\$89.99	\$89.99	<a href="https://www.amazon.ca/Projector-CLOKOWE-Upgraded-Portable-Compatible/dp/B0BX43WG5M/ref=sr_1_1_sspa?crd=1ANOJPS9CCCEP&amp;keywords=mini%2Bprojector&amp;qid=1698933659&amp;s=electronics&amp;sprefix=mini%2Bp%2Celectrionics%2C140&amp;sr=1-1-spons&amp;sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&amp;th=1">https://www.amazon.ca/Projector-CLOKOWE-Upgraded-Portable-Compatible/dp/B0BX43WG5M/ref=sr_1_1_sspa?crd=1ANOJPS9CCCEP&amp;keywords=mini%2Bprojector&amp;qid=1698933659&amp;s=electronics&amp;sprefix=mini%2Bp%2Celectrionics%2C140&amp;sr=1-1-spons&amp;sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&amp;th=1</a>
Flooring	Laminate flooring from local or Canada-sourced materials.	feet X feet	?	\$1.49 - \$3.59	Will change with building proportions	<a href="https://www.homedepot.com/p/TrafficMaster-Milo-Valley-Hickory-8-mm-T-x-8-03-in-W-Water-Resistant-Laminate-Wood-Flooring-21-3-sqft-case-360831-2K620/325682103">https://www.homedepot.com/p/TrafficMaster-Milo-Valley-Hickory-8-mm-T-x-8-03-in-W-Water-Resistant-Laminate-Wood-Flooring-21-3-sqft-case-360831-2K620/325682103</a>  <a href="https://www.homedepot.com/p/Pergo-Defense-Antique-Linen-Hickory-14-mm-T-x-6-1-in-W-Waterproof-Laminate-Wood-Flooring-16-1-sqft-case-LF001082/320733284">https://www.homedepot.com/p/Pergo-Defense-Antique-Linen-Hickory-14-mm-T-x-6-1-in-W-Waterproof-Laminate-Wood-Flooring-16-1-sqft-case-LF001082/320733284</a>
Paint (walls + ceiling)	Latex-based paint with flat paint finishing	in ^ 2	?	\$0.0495 per ft^2	Will change with building proportions	<a href="https://www.homedepot.com/p/KILZ-2-ALL-PURPOSE-5-Gal-White-Interior-Exterior-Multi-Surface-Primer-Sealer-and-Stain-Blocker-20000/100116594">https://www.homedepot.com/p/KILZ-2-ALL-PURPOSE-5-Gal-White-Interior-Exterior-Multi-Surface-Primer-Sealer-and-Stain-Blocker-20000/100116594</a>

Common area

Item Name	Description	Units of Measures	Quantity	Unit Cost	Extended Cost	Links
Flooring	Laminate flooring from local or Canada-sourced materials.	feet X feet	?	\$1.49 - \$3.59	Will change	<a href="https://www.homedepot.com/p/TrafficMaster-Milo-Valley-Hickory-8">https://www.homedepot.com/p/TrafficMaster-Milo-Valley-Hickory-8</a>

					with building proportions	<a href="#">-mm-T-x-8-03-in-W-Water-Resistant-Laminate-Wood-Flooring-21-3-sqft-case-360831-2K620/325682103</a>  <a href="https://www.homedepot.com/p/Pergo-Defense-Antique-Linen-Hickory-14-mm-T-x-6-1-in-W-Waterproof-Laminate-Wood-Flooring-16-1-sqft-case-LF001082/320733284">https://www.homedepot.com/p/Pergo-Defense-Antique-Linen-Hickory-14-mm-T-x-6-1-in-W-Waterproof-Laminate-Wood-Flooring-16-1-sqft-case-LF001082/320733284</a>
Couch	Grey double couch	in X in X in	1	\$700	\$700	<a href="#">Mercury Row® Perdue 81.5" Velvet Square Arm Convertible Sofa &amp; Reviews - Wayfair Canada</a>
Chair	Grey armchair	in X in X in	1	\$280	\$280	<a href="http://www.wayfair.ca/furniture/pdp/corrigan-studio-273-wide-armchair-c009195077.html?piid=1753119729">www.wayfair.ca/furniture/pdp/corrigan-studio-273-wide-armchair-c009195077.html?piid=1753119729</a>
Small coffee table	Grey wood and metal small coffee table	in X in X in	2	\$132	\$264	<a href="#">17 Stories 3 Legs Coffee Table with Storage &amp; Reviews - Wayfair Canada</a>
Table	Wood and metal table	in X in X in	2	\$1820	\$3640	<a href="#">Gus Modern Bracket Dining Table Oval - Wayfair Canada</a>
Mural paint kit	Kit of spray paints to paint the murals	Kits of 12	1	\$240	\$240	<a href="#">Montana BLACK 400ml Popular Colors Set of 12 Graffiti Street Art Mural Spray Paint, Spray Paint - Amazon Canada</a>

Kitchenette						
Item Name	Description	Units of Measures	Quantity	Unit Cost	Extended Cost	Links
Cabinetry	L-shaped kitchen surfaces and storage cabinets with garniture such as fridge, microwave, oven and shelves Dimensions of the kitchen tops at least 120x114 in <sup>2</sup>	inch X inch X inch	1	~ \$4,500 - \$8,000	~ \$4,500 - \$8,000	<a href="https://doitwhite.com/product/l-shaped-kitchen-10x10-white-hg/?srsltid=AfmBOoqO5yWwGNFMPI6APhXyRXgJhqDYgL4fIXVsGmfxDQvKwMB8vdF1XQ8">https://doitwhite.com/product/l-shaped-kitchen-10x10-white-hg/?srsltid=AfmBOoqO5yWwGNFMPI6APhXyRXgJhqDYgL4fIXVsGmfxDQvKwMB8vdF1XQ8</a>
Fume-hood	The cleaning garniture above the oven to clean out the bad smells	inch X inch X inch	1	\$370 - \$650	\$370 - \$650	<a href="https://www.bedbathandbeyond.ca/Home-Garden/Winflo-30-Convertible-Stainless-Steel-Wall-Mount-Range-Hood/16693239/product.html?option=27767998&amp;track=pspla&amp;cid=325038&amp;network=x&amp;matchtype=&amp;keyword=&amp;targetid=&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLM319VSfMVcPdYVkn_Sg4pvUJaFflmIsipZvkKzYT8WJbU-CLQiS4ORoCxEOQAvD_BwE">https://www.bedbathandbeyond.ca/Home-Garden/Winflo-30-Convertible-Stainless-Steel-Wall-Mount-Range-Hood/16693239/product.html?option=27767998&amp;track=pspla&amp;cid=325038&amp;network=x&amp;matchtype=&amp;keyword=&amp;targetid=&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLM319VSfMVcPdYVkn_Sg4pvUJaFflmIsipZvkKzYT8WJbU-CLQiS4ORoCxEOQAvD_BwE</a>
Flooring	The vinyl flooring with wood appearance for easy cleaning and extended usage.	feet X feet	?	\$2.5 per ft <sup>2</sup>	Will change with the	<a href="https://alexanian.com/product/TW0945?attribute_pa_vinyl-selected-style=phantom&amp;attribute_pa_siz">https://alexanian.com/product/TW0945?attribute_pa_vinyl-selected-style=phantom&amp;attribute_pa_siz</a>

					proportions of the building	<a href="https://www.amazon.ca/?ref=astore&amp;pf_rd_p=5mm-x7-x48&amp;utm_source=SEM&amp;utm_medium=paid&amp;utm_campaign=pmaxrugs&amp;gad=1&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLM2Od7qPuj95GNfjbVh7JUN_S9NOxRjwnZH6FWIOWoCdur-wSupuv1xoCykwQAvD_BwE">e=5mm-x7-x48&amp;utm_source=SEM&amp;utm_medium=paid&amp;utm_campaign=pmaxrugs&amp;gad=1&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLM2Od7qPuj95GNfjbVh7JUN_S9NOxRjwnZH6FWIOWoCdur-wSupuv1xoCykwQAvD_BwE</a>
Lighting	One main ceiling light source as a reflection of the spiritual circle in the indigenous culture and traditional architecture.	N/A	1	\$70 - \$170	\$70 - \$170	<a href="https://www.amazon.ca/Fivess-Lighting-2-Light-Entryway-Farmhouse/dp/B099PGY1S7/ref=asc_df_B099PGY1S7/?tag=googleshopc0c-20&amp;linkCode=df0&amp;hvadid=578938610390&amp;hvpos=&amp;hvnetw=g&amp;hvrnd=15177234128225779977&amp;hvpone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvlocint=&amp;hvlocphy=9000668&amp;hvtargid=pla-1714007137574&amp;th=1">https://www.amazon.ca/Fivess-Lighting-2-Light-Entryway-Farmhouse/dp/B099PGY1S7/ref=asc_df_B099PGY1S7/?tag=googleshopc0c-20&amp;linkCode=df0&amp;hvadid=578938610390&amp;hvpos=&amp;hvnetw=g&amp;hvrnd=15177234128225779977&amp;hvpone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvlocint=&amp;hvlocphy=9000668&amp;hvtargid=pla-1714007137574&amp;th=1</a>
Paint (Walls + Ceiling)	Oil-based paint with flat paint finishing. Have much more sturdiness against moisture and mould than latex-based oils	feet X feet	?	\$0.171 per ft <sup>2</sup>	Will change with the proportions of the building	<a href="https://www.rona.ca/en/product/rust-oleum-perma-white-mould-and-mildew-proof-interior-paint-37-l-white-z02712-1776035?viewStore=83708">https://www.rona.ca/en/product/rust-oleum-perma-white-mould-and-mildew-proof-interior-paint-37-l-white-z02712-1776035?viewStore=83708</a>
Window	The aluminum self closing window which can be easily installed and easily accessible to use in case of emergency	feet X feet	1	\$2,273.06	\$2,273.06	<a href="https://www.dkhardware.com/scdw4836sx0udu-standard-size-self-closing-deluxe-service-window-un-glazed-with-ssstep-sill-product-3235913.html?utm_source=google&amp;utm_medium=shopping&amp;utm_campaign=free_listings&amp;srsrtid=AfmBOopt9KvwL4GHuon6TIEgdxwcojOELzEAMymCDYs47HzKR2gYlyrs0">https://www.dkhardware.com/scdw4836sx0udu-standard-size-self-closing-deluxe-service-window-un-glazed-with-ssstep-sill-product-3235913.html?utm_source=google&amp;utm_medium=shopping&amp;utm_campaign=free_listings&amp;srsrtid=AfmBOopt9KvwL4GHuon6TIEgdxwcojOELzEAMymCDYs47HzKR2gYlyrs0</a>
Sink	Material: Stainless steel	inch X inch X inch	1	\$170 - \$400	\$170 - \$400	<a href="https://www.wayfair.ca/MEJE--29.5L-x-17.8-W-Dropin-Kitchen-Sink-with-Drain-Assembly-MJKB102D-L628-K~MJEB1043.html?re">https://www.wayfair.ca/MEJE--29.5L-x-17.8-W-Dropin-Kitchen-Sink-with-Drain-Assembly-MJKB102D-L628-K~MJEB1043.html?re</a>



						<a href="https://www.rona.ca/en/product/american-standard-reliant-48-l-white-porcelain-toilet-2-pieces-3332228s020-00535176?viewStore=83708&amp;cq_src=google_ads&amp;cq_cmp=19593070202&amp;cq_con=&amp;cq_term=&amp;cq_med=pla&amp;cq_plac=&amp;cq_net=x&amp;cq_pos=&amp;cq_plt=gp&amp;&amp;cmmmmc=paid_search--google--aw_pmax_generic_Bathroom--&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLM9_-2ZGRD59jn8yuOaQoO8sckGA5DBYSoBww6RpXxSi4PkhMGAw8sBoCdSQQAvD_BwE&amp;gclsrc=aw.ds">fid=GX620261773164-MJEB1043&amp;device=c&amp;ptid=2078900134253&amp;targetid=pla-2078900134253&amp;network=g&amp;ireid=244940849&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLM9_VOb8vKRT2unalRaN934SdpMzfQJv6MI3I_O853kVKQMB06mkrScBoCZSUQAvD_BwE</a>
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Washroom (X 4)						
Item Name	Description	Units of Measures	Quantity	Unit Cost	Extended Cost	Links
Toilet	American Standard Reliant 4.8-L White Porcelain Toilet	N/A	1	\$170	\$170	<a href="https://www.rona.ca/en/product/american-standard-reliant-48-l-white-porcelain-toilet-2-pieces-3332228s020-00535176?viewStore=83708&amp;cq_src=google_ads&amp;cq_cmp=19593070202&amp;cq_con=&amp;cq_term=&amp;cq_med=pla&amp;cq_plac=&amp;cq_net=x&amp;cq_pos=&amp;cq_plt=gp&amp;&amp;cmmmmc=paid_search--google--aw_pmax_generic_Bathroom--&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLM9_-2ZGRD59jn8yuOaQoO8sckGA5DBYSoBww6RpXxSi4PkhMGAw8sBoCdSQQAvD_BwE&amp;gclsrc=aw.ds">https://www.rona.ca/en/product/american-standard-reliant-48-l-white-porcelain-toilet-2-pieces-3332228s020-00535176?viewStore=83708&amp;cq_src=google_ads&amp;cq_cmp=19593070202&amp;cq_con=&amp;cq_term=&amp;cq_med=pla&amp;cq_plac=&amp;cq_net=x&amp;cq_pos=&amp;cq_plt=gp&amp;&amp;cmmmmc=paid_search--google--aw_pmax_generic_Bathroom--&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLM9_-2ZGRD59jn8yuOaQoO8sckGA5DBYSoBww6RpXxSi4PkhMGAw8sBoCdSQQAvD_BwE&amp;gclsrc=aw.ds</a>
Flooring	Ceramic tile	feet X feet	?	\$1.99 - \$11.99	Will change with proportions of the building	<a href="https://www.homedepot.com/p/Home-Decorators-Collection-Carrara-12-in-x-24-in-Polished-Porcelain-Stone-Look-Floor-and-Wall-Tile-16-sq-ft-Case-NHDCARR1224P/205138045">https://www.homedepot.com/p/Home-Decorators-Collection-Carrara-12-in-x-24-in-Polished-Porcelain-Stone-Look-Floor-and-Wall-Tile-16-sq-ft-Case-NHDCARR1224P/205138045</a> <a href="https://www.homedepot.com/p/Ivy-Hill-Tile-Montgomery-Ribbon-Maple-24-in-x-48-in-Matte-Porcelain-Floor-and-Wall-Tile-15-49-sq-ft-Case-EXT3RD101072/313982178">https://www.homedepot.com/p/Ivy-Hill-Tile-Montgomery-Ribbon-Maple-24-in-x-48-in-Matte-Porcelain-Floor-and-Wall-Tile-15-49-sq-ft-Case-EXT3RD101072/313982178</a>
Lighting	Ceiling flat light source	N/A	1	\$20	\$20	<a href="https://www.amazon.ca/Ceiling-Fixture-Profile-Stairwell-Basement/dp/B0B38BHWTY/ref=asc_df_B0B38BHWTY/?tag=googleshopc0c-20&amp;linkCode=df0&amp;hvadid=57">https://www.amazon.ca/Ceiling-Fixture-Profile-Stairwell-Basement/dp/B0B38BHWTY/ref=asc_df_B0B38BHWTY/?tag=googleshopc0c-20&amp;linkCode=df0&amp;hvadid=57</a>



						<a href="https://www.google.com/search?q=8883523846&amp;hvpos=&amp;hvnetw=g&amp;hvrnd=8768105799843480046&amp;hvpone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvlocint=&amp;hvlocphy=9000668&amp;hvtargid=pla-1727489309940&amp;th=1">8883523846&amp;hvpos=&amp;hvnetw=g &amp;hvrnd=8768105799843480046 &amp;hvpone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvlocint=&amp;hvlocphy=9000668&amp;hvtargid=pla-1727489309940&amp;th=1</a>
Door	Metal door for germ protection and in-built lock	N/A	1	~\$300	~\$300	<a href="https://www.google.com/search?q=door+for+bathroom+metal&amp;search_esv=578722268&amp;tbm=shop&amp;sxsrf=AM9HkKnrA5IzP_074Gbq4EsP04VO9Nha6Q:1698899221526&amp;source=lnms&amp;sa=X&amp;ved=2ahUKewjzvu7kvKSCAxVLRyKehW6uAtIQ_AUoAXoECAMQAw&amp;biw=1536&amp;bih=754&amp;dpr=1.25#spid=15993042540012202962">https://www.google.com/search?q=door+for+bathroom+metal&amp;search_esv=578722268&amp;tbm=shop&amp;sxsrf=AM9HkKnrA5IzP_074Gbq4EsP04VO9Nha6Q:1698899221526&amp;source=lnms&amp;sa=X&amp;ved=2ahUKewjzvu7kvKSCAxVLRyKehW6uAtIQ_AUoAXoECAMQAw&amp;biw=1536&amp;bih=754&amp;dpr=1.25#spid=15993042540012202962</a>
Sink	Standing sink	N/A	1	~\$300	~\$300	<a href="https://www.wayfair.ca/Swiss-Madison--Sublime-24-Rectangular-Pedestal-Bathroom-Sink-with-Overflow-SMPS306-L588-K~SWMD1024.html?refid=GPCCA446-SWMD1024">https://www.wayfair.ca/Swiss-Madison--Sublime-24-Rectangular-Pedestal-Bathroom-Sink-with-Overflow-SMPS306-L588-K~SWMD1024.html?refid=GPCCA446-SWMD1024</a>
Mirror	Rectangular metal wall mirror	N/A	1	~\$150	~\$150	<a href="https://www.wayfair.ca/Latitude-Run%C2%AE--Idina-Wall-Bathroom-Mirror-X117603397-L41-K~C006488439.html?refid=GX583854288655-C006488439_826118793_826118794&amp;device=c&amp;ptid=1430886000940&amp;targetid=pla-1430886000940&amp;network=g&amp;ireid=235714315&amp;PiID%5B%5D=826118793&amp;PiID%5B%5D=826118794&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLM4NbJRrsKkmjwFVAF6P7Dq6PxdBaGoF_jZeoHwjyoIFHI7McZBHBocNP4QAvD_BwE">https://www.wayfair.ca/Latitude-Run%C2%AE--Idina-Wall-Bathroom-Mirror-X117603397-L41-K~C006488439.html?refid=GX583854288655-C006488439_826118793_826118794&amp;device=c&amp;ptid=1430886000940&amp;targetid=pla-1430886000940&amp;network=g&amp;ireid=235714315&amp;PiID%5B%5D=826118793&amp;PiID%5B%5D=826118794&amp;gclid=CjwKCAjw7oeqBhBwEiwALyHLM4NbJRrsKkmjwFVAF6P7Dq6PxdBaGoF_jZeoHwjyoIFHI7McZBHBocNP4QAvD_BwE</a>

Garden						
Item Name	Description	Units of Measures	Quantity	Unit Cost	Extended Cost	Links
Outdoor benches	Material: Either going with a basic wood table bench, or a plastic non-rusting table with a bench Appearance: Simple, standard table made of wood with a size to fit two people comfortably or a table made of plastic which fits 4 people comfortably	in X in X in	4	\$287 - \$459	\$1148 - \$1836	<a href="https://www.uline.ca/Product/Detail/H-5164BR/Picnic-Tables/Folding-Picnic-Table-6-Brown?pricode=YE027&amp;gadtype=pla&amp;id=H-5164BR&amp;gclid=EAIaIQobChMI7e-Hks6mggMVxlNHAR1ZjwhiEAQYAYABEgJ43_D_BwE">https://www.uline.ca/Product/Detail/H-5164BR/Picnic-Tables/Folding-Picnic-Table-6-Brown?pricode=YE027&amp;gadtype=pla&amp;id=H-5164BR&amp;gclid=EAIaIQobChMI7e-Hks6mggMVxlNHAR1ZjwhiEAQYAYABEgJ43_D_BwE</a> <a href="https://www.uline.ca/Product/Detail/H-2999/Picnic-Tables/Economy-A-Frame-Wooden-Picnic-Table-6?pricode=YE052&amp;gadtype=pla&amp;id=H-2999&amp;gclid=EAIaIQobChMIo-Sjtc6mggMVxFdyCh1SOwUZEaQYASABEgKhyPD_BwE">https://www.uline.ca/Product/Detail/H-2999/Picnic-Tables/Economy-A-Frame-Wooden-Picnic-Table-6?pricode=YE052&amp;gadtype=pla&amp;id=H-2999&amp;gclid=EAIaIQobChMIo-Sjtc6mggMVxFdyCh1SOwUZEaQYASABEgKhyPD_BwE</a>
Garden plants	Material: A variety of trees and flowers and bushes chosen by the client, a potentially even coming from within the community this includes landscaping costs Appearance: A reflective area with different culturally significant plants and artworks	N/A	1	\$500 - \$5000	\$500 - \$5000	<a href="https://farrellslandscaping.com/how-much-does-commercial-landscaping-cost/#:~:text=Commercial%20landscaping%20costs%20can%20range,choices%2C%20and%20your%20overall%20design.">https://farrellslandscaping.com/how-much-does-commercial-landscaping-cost/#:~:text=Commercial%20landscaping%20costs%20can%20range,choices%2C%20and%20your%20overall%20design.</a>
Lean-to	A wood lean-to	feet X feet X feet	20-16-7 ft^3	\$20-50	\$6 400 - \$16 000	<a href="https://homeguide.com/costs/patio-roof-cost">https://homeguide.com/costs/patio-roof-cost</a>

### **Part 3:**

The proposed prototype will be an analytical prototype primarily focused on development through software and utilization of various applications for the purpose of testing our construction project.

One potential method for evaluating the prototype involves asking for feedback from various members, such as clients, colleagues, Teacher Assistants, or professors. This feedback would pertain to specific aspects of the design,

including dimensions, loads, materials, general construction, shape, and the extent to which it reflects indigenous cultural elements.

In addition to the above test, alternative equipment and applications could be employed in this prototype.

**List of equipment**

Item name	Description	Type	Prototype	Source	Cost
AutoCAD	To create a 3D model	Software	1,2,3	Online	\$0 (Provided by the University)
Inkscape	To create a 2D model	Software	1,2,3	Online	\$0 (Provided by the university)
Onshape	To create 3D model	Software	1,2,3	Online	\$0 (Student Account)
RSMean	Construction cost and Details	Website	1,2,3	Online	0\$(Student Account)

**Part 4:**

**Compliance of regulations, and Approval**

Risk: a failure to meet the regulations and standards set out by the government and other groups.

Contingency: To talk to a consultant or other online applications to ensure compliance at the design phase and construction.

**Prototype failure**

Risk: The prototype may not perform as expected and may not be as stable or close to design which could cause a rework and delay.

Contingency: Testing a lot before the actual construction and finishing of the prototype. To plan as much as possible looking at the what ifs.

**Budget overrun**

Risk: The design of the building may exceed the initially allocated budget.

Contingency: To make sure to periodically check the value of the design so as to not exceed the budget and if it is over the budget to make careful adjustments to the design to reduce costs.

**Sustainability and environment**

Risk: The building might not meet the environmental and sustainability requirements of the area or given by the client.

Contingency: We will have a good understanding of the given requirements we must follow and how to follow them, we will also periodically check to see if the requirements are met in the design.

### **Part 5:**

Teams will outline a prototyping test plan based on the template provided in “Lecture 11 – Prototyping Test Plan” to prepare to build the first prototype in the next deliverable.

**Communication:** A strong line of communication with the client to receive feedback and gain insight on the project and other environmental and property issues.

Verification of Building: Determining if the building design concept is feasible and identifying potential challenges while working in AutoCAD. As well as identifying other external factors such as testing environmental factors.

### **Stopping Criteria:**

Client feedback has been collected, and assessed. Modifications are made based on that feedback.

Key technical parts are completed and addressed such as building, electrical and plumbing codes.

Significant risks and uncertainties have been minimised.

### **Measure Fidelity:**

- Measuring stakeholder through feedback and surveys based on certain design elements (Medium to high focus)
- Measuring and testing constraints (High fidelity)
- Measuring functionality (Medium)
- Measuring risks in the building construction (Medium)

Updated Wrike:

<https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=1YdV71PTFpWyGuGNusrnfqUkreBYc0KI%7CIE2DSNZVHA2DELSTGIYA>