



ACCESS DESIGN STANDARDS 2016 COST IMPACT STUDY

Calgary, Alberta

Class 'D' (Level 5) Estimate

Prepared for:
The City of Calgary
Calgary Building Services
Planning & Development
The City of Calgary
(403) 826-9970

Prepared by:
ALTUS GROUP LIMITED
Suite 310, 2020-4th Street SW
Calgary, Alberta T2S 1W3
Phone: 403.508.7770
Fax: 403.228.1020

Issued: June 2, 2016
Job No. 13130.100381.000

Unpublished Work © 2016 Altus Group Limited



Street Smart. World Wise.

1.0 Estimate Overview

This Class 'D' (level 5) Estimate is intended to provide a realistic cost increase to a **new build project with an anticipated construction costs between \$10-12million**. The estimated cost reflects our opinion as to the fair market value for the construction of this proposed changes from the 2010 to the 2016 Access Design.

The estimated cost has been derived using generally accepted principles on method of measurement as per the Canadian Institute of Quantity Surveyors Elemental Cost Analysis. The rates used and developed for this estimated costs where applicable include labour and material, equipment, and subcontractor's overheads and profit. Pricing developed for this project is based upon our firms and indeed teams experience with similar projects, and/or quotes provided by subcontractors as noted within the estimate.

We have assumed that the project will be procured in a General Contractor approach under a CCDC standard form of contract. We have assumed a minimum of at least 3 major subtrade/supplier bids for structural steel trade category to establish competitive bidding and tender results. The estimated cost is a determination of fair market pricing and not a prediction of lowest bid in any trade category. Please note that should the above minimum bidding conditions not occur on this project, construction bids received may be higher than the estimated costs included within this report.

Design and Pricing Contingency - A general contingency of 15% is included in the estimate.

Escalation Allowance - Construction escalation has been excluded from the estimate.

Construction (Change Order) Contingency - Construction (change order) contingency has been excluded from the estimate.

Taxes - The estimate excludes the Goods and Services Tax (GST).

Soft / Project Cost Contingency - All soft / project cost has been excluded from this estimate, including but not limited to general expenses, design costs, miscellaneous, soft costs, contingencies and management reserve.

Estimate Classification - This class 'D' (level 5) estimate was prepared based on ongoing studies with an expected accuracy range of -50% to +100%, as per the City of Calgary Corporate Project Management Framework Estimation and Contingency Standard V1.2 document.

Altus Group Limited does not guarantee that tenders or actual construction costs will not vary from this estimate. Acute market conditions, proprietary and/or sole source specifications, or reduced competition among contractors will cause tenders to vary from reasonable estimates based on normal and abnormal competitive conditions.

CLASS 'D' (Level 5) ESTIMATE

Changes From 2010 to 2016 Access Design Cost Impacts



Access Design Standards Cost Impacts
 Calgary, AB
 City of Calgary
 Calgary Building Services Planning & Development

06/02/2016
 13130.100381.000

Description	Changes to Project Requirements & Constraint Notes	Amount	Units
Standard 1 - Accessible parking shall be located within 50m of barrier-free building entrances.	No change in construction materials or labour from 2010 requirements		1 Nil
Standard 9 - If oversized vehicles are required to drop off passengers in a parking garage, a minimum 3050 mm vertical clearance shall be provided.	Unit rate applied to parking area gross floor area only. Assumed underground parkade; all columns, shearwalls and walls below to be raised by 50mm.	\$10.00	m2
Standard 10 - If "Staff only" and "Visitor only" parking stalls are provided, barrier-free staff parking and/or barrier-free visitor parking stalls must be equally distributed in the development.	Allowance for barrier-free parking signs (assumed one (1) sign and one (1) painted symbol in parking spot)	\$550.00	Spot
Standard 12 - Passenger loading zones shall be provided where it is not feasible to position all of the barrier-free parking stalls within 50m of the barrier-free entrances.	3700mm x 9000mm loading zone c/w asphalt paving c/w base and concrete curbs	\$4,540.00	no.
Standard 13 - If provided, passenger loading zones shall be provided within 50m of main entrances of buildings and have a minimum width of 3700mm and a minimum length of 9000 mm.	Additional 5m2 of asphalt paving c/w base and concrete curbs	\$800.00	m2
Standard 16 - The International Symbol of Access shall be painted on the pavement of all barrier-free parking stalls, and the paint used shall have an anti-slip texture.	Paint spot with anti-slip paint with symbol	\$650.00	Spot
Standard 23 - Tree guy-wires shall be placed out of the path of travel.	No change in construction materials or labour from 2010 requirements		1 Nil
Standard 37 - A 1,500 mm x 1,500 mm level surface shall be maintained on the sidewalk behind the curb ramps.	1500x150mm concrete sidewalk c/w base	\$320.00	no.

Changes From 2010 to 2016 Access Design Cost Impacts



Access Design Standards Cost Impacts
 Calgary, AB
 City of Calgary
 Calgary Building Services Planning & Development

06/02/2016
 13130.100381.000

Description	Changes to Project Requirements & Constraint Notes	Amount	Units
Standard 43 - Where a ramp serves more than 100 occupants, ramps shall be 1600 mm wide between handrails.	No change in construction materials or labour from 2010 requirements		1 Nil
Standard 45 - Ramp slopes are required to be a maximum 1:20 (5%).	Unit rate applied to increase of ramp area. Ramp construction and railing included in unit rate.	\$840.00	m2
Standard 46 - If there is a change in elevation of more than 1.2 m, an elevator or lift shall be provided.	One chair lift added c/w associated structure, equipment & finishes	\$25,930.00	no.
Standard 55 - Horizontally oriented sign surfaces containing points of interest, warnings and other important information shall be 860 mm above the ground and tilted.	No change in construction materials or labour from 2010 requirements	\$0.00	no.
Standard 69 - Every entrance intended to be used by the public or by employees who could reasonably be expected to have disabilities shall be barrier free.	Increased single door width and automatic push button door opener	\$5,830.00	no.
Standard 71 - All barrier-free entrances shall be provided with power door operators.	Barrier free operator with 2 push button actuators	\$4,210.00	no.
Standard 73 - Power door operators shall be installed at 800 mm +/- 50 mm, above finished floor, measured to the centerline of the device.	No change in construction materials or labour from 2010 requirements	\$0.00	no.
Standard 74 - If an entrance has a power door operator, the location of the actuating devices for the power door operators shall conform to ABC 2014 A-3.8.3.3. (5).	Add "upside-down U". Tubular metal guards	\$650.00	no.

Changes From 2010 to 2016 Access Design Cost Impacts



Access Design Standards Cost Impacts
 Calgary, AB
 City of Calgary
 Calgary Building Services Planning & Development

06/02/2016
 13130.100381.000

Description	Changes to Project Requirements & Constraint Notes	Amount	Units
Standard 79 - A service animal relieving area shall be provided within 50m from at least one barrier-free entrance.	Assumed no change in site design, allowance for identification signage	\$650.00	no.
Standard 80 - The area dedicated to the relieving area shall be approximately 7.4 sq. meters (3 meter diameter circle).	Assumed no change in site design, no change in construction materials or labour from 2010 requirements		1 Nil
Standard 93 - All story and mezzanines must be reachable by a barrier-free path of travel.	Unit rate applied per elevator stop required.	\$29,170.00	Stop
Standard 109 - Call buttons shall be installed at 1000 mm +/- 50 mm above the finished floor.	No change in construction materials or labour from 2010 requirements	\$0.00	no.
Standard 114 - Elevators shall have a minimum inside car dimension of 1500 mm.	Unit rate applied per elevator stop required.	\$5,190.00	Stop
Standard 120 - All exits that can be reached by a person in a wheelchair shall provide a barrier-free path of travel to the exterior.	Unit rate applied per m2 increase in building size to accommodate larger corridors	\$2,590.00	m2
Standard 121 - Unless it is a residential suite, the area of refuge shall be identified by directional and identification signage and the international symbol of access for disabled persons.	Allowance for each refuge location	\$320.00	location
Standard 122 - Areas of refuge shall be identified on all publicly displayed floor evacuation plans and be included in evacuation procedure documents and the building's fire safety plan.	Allowance for signage	\$650.00	location
Standard 124 - Washrooms provided for public use shall provide a wall-mounted sharps disposal container 1000 mm + / - 50 mm above the finished floor and within 450 mm forward reach of a wheelchair user.	Unit rate applied per location required	\$190.00	location

Changes From 2010 to 2016 Access Design Cost Impacts



Access Design Standards Cost Impacts
 Calgary, AB
 City of Calgary
 Calgary Building Services Planning & Development

06/02/2016
 13130.100381.000

Description	Changes to Project Requirements & Constraint Notes	Amount	Units
Standard 128 - Doors leading into accessible washrooms shall be equipped with power door operators.	Barrier free operator with 2 push button actuators	\$4,210.00	no.
Standards 129 – 136 – Bathroom fixtures (toilet seat cover dispensers, soap dispensers, paper towel dispensers, waste receptacles) to be installed at 1000 mm +/- 50 mm	No change in construction materials or labour from 2010 requirements	\$0.00	no.
Standard 140 - Controls shall be installed 1000 mm +/- 50 mm above the floor.	No change in construction materials or labour from 2010 requirements	\$0.00	no.
Standard 145 - All products in a self-serve counter shall be within 450 mm of the edge of the counter and between 600 mm and 1000 mm above the floor.	No change in construction materials or labour from 2010 requirements		1 Nil
Standard 161 - An assistive listening system shall be installed at information counters.	Independent system. Unit rate applied per location required.	\$8,430.00	no.
Standard 163 - Where Infrared Systems are provided, signage shall also be provided that indicates the presence of the Infrared System in particular with the symbol for Assistive Listening Systems. Reference to the "T" switch shall also be made on the sign.	Unit rate applied per location required.	\$260.00	no.
Standard 164 - Where Induction Loop Systems are provided, signage shall also be provided that indicates the presence of the Induction Loop System in particular with the symbol for Assistive Listening Systems. Reference to the "T" switch shall also be made on the sign.	Unit rate applied per location required.	\$260.00	no.

Access Design Standards Cost Impacts
 Calgary, AB
 City of Calgary
 Calgary Building Services Planning & Development

06/02/2016
 13130.100381.000

Description	Changes to Project Requirements & Constraint Notes	Amount	Units
<p>Standard 167 - Washrooms, kitchens, stairwells, print / copy rooms and boardrooms that can be booked through the City's online booking system shall be provided with signage including door room names and numbers, and shall conform to ABC 2014 3.8.3.1.(5) with tactile character size conforming to CAN/CSA B6561-12.</p>	<p>Unit rate applied per location for signage.</p>	<p>\$130.00</p>	<p>no.</p>
<p>Standard 193 - At least one Universal Self-Contained change room shall be provided in all recreation facilities with public change rooms.</p>	<p>Assumed 10m2 in size, no plumbing required</p>	<p>\$36,310.00</p>	<p>location</p>
<p>Standard 194 - Self-contained universal change rooms shall conform to ABC 2014 Clauses 3.8.3.12. (1)(a), (b), (g) and (i).</p>	<p>Shower head, tap and drains</p>	<p>\$2,850.00</p>	<p>no.</p>
<p>Standard 195 - Self-contained universal change rooms shall have a shower conforming to ABC 2014 3.8.3.13. (1). <i>(new)</i></p>	<p>Shower head, tap and drains</p>	<p>\$2,850.00</p>	<p>no.</p>
<p>Standard 198 - If equipped with a water closet, the water closet shall conform to ABC 2014 3.8.3.12. (1)(c), (d), (e), (f) and (h).</p>	<p>Add barrier free change table, assumed no increase in building area</p>	<p>\$3,240.00</p>	<p>no.</p>
<p>Standard 200 - A grab bar conforming to 3.8.3.8.(2)(c), (d) and (e) shall be installed to serve the elevated changing platform.</p>	<p>Unit rate applied per location required.</p>	<p>\$450.00</p>	<p>no.</p>

Changes From 2010 to 2016 Access Design Cost Impacts



Access Design Standards Cost Impacts

Calgary, AB

City of Calgary

Calgary Building Services Planning & Development

06/02/2016

13130.100381.000

Description	Changes to Project Requirements & Constraint Notes	Amount	Units
<p>Standard 201 - The grab bar shall be L-shaped with 760 mm long horizontal and vertical components mounted with the horizontal component 630-690 mm above the floor and the vertical component 150 mm in front of the elevated changing platform.</p>	Unit rate applied per location required.	\$580.00	no.
<p>Standard 202 - Self-contained universal change rooms shall have a lift that is either a motorized ceiling mounted lift or a mobile lift that accesses the elevated changing platform, the shower, an open space not less than 2000 mm in diameter, and the water closet, if a water closet is provided.</p>	Allowed for ceiling mounted lift c/w 2m of support track	\$10,500.00	no.
<p>Standard 203 - If benches are installed, a section of an accessible bench shall be installed with seats that are minimum 1065 mm long, 450 mm – 500 mm high and 510 mm – 610 mm deep. The accessible bench shall be located adjacent to the accessible lower lockers.</p>	Bench 1100mm in length	\$970.00	no.
<p>Standard 204 - If equipped with lockers, lower lockers shall be provided and installed with latches that are easily operable with one hand and are within 400 mm – 1200 mm vertical reach of a wheelchair user.</p>	No change in construction materials or labour from 2010 requirements		1 Nil
<p>Standard 205 - A 1500 mm wide path shall be provided within each section of lockers and shall have a clear floor space of 1500mm turning radius directly in front of the lower lockers.</p>	Unit rate applied per m2 increase in building size to accommodate larger corridors	\$2,590.00	m2
<p>Standard 206 - A minimum 1100 mm wide barrier-free path of travel shall be provided throughout the change room.</p>	Unit rate applied per m2 increase in building size to accommodate larger corridors	\$2,590.00	m2

Changes From 2010 to 2016 Access Design Cost Impacts



Access Design Standards Cost Impacts
 Calgary, AB
 City of Calgary
 Calgary Building Services Planning & Development

06/02/2016
 13130.100381.000

Description	Changes to Project Requirements & Constraint Notes	Amount	Units
Standard 208 - All exercise equipment that could reasonably be used by a person in a wheelchair shall be accessible by a level, 1500 mm wide barrier-free path of travel and shall have a clear floor space that is not less than 920 mm x 1220 mm beside the equipment that requires a transfer.	Unit rate applied per m2 increase in building size to accommodate larger corridors	\$2,590.00	m2
Standard 210 - A zero depth / sloped entry or ramp with handrails shall be provided for entry into the swimming pool. Alternate means of pool entry may be deemed acceptable if demonstrated to be inclusive in daily practice.	Allowance for each ramp location c/w railings	\$12,970.00	location
Standard 214 - If a pool has a hot tub, a ramp shall be provided for entry into the hot tub.	Allowance for each ramp location c/w railings	\$12,970.00	location
Standard 216 - In ice rinks where the demand & usage of an amenity for the sport of sledge hockey is planned for; based on needs & preference studies, Standards 217 – 223 below shall be provided.	See below rates		
Standard 217 - Barrier free access to player's benches shall be provided in ice rinks.	Allowed for removable benches	\$780.00	m
Standard 218 - Player's benches and penalty boxes shall have clear Plexiglas in the lower part of the boards.	No change in construction materials or labour from 2010 requirements		1 Nil
Standard 219 - The player's benches must have two doors 910 mm wide each, leading onto the ice surface.	No change in construction materials or labour from 2010 requirements		1 Nil
Standard 220 - The player's bench areas shall be designed to have removable benches or shall have a minimum of 900 mm between the bench and surrounding boards or walls.	Allowance to change player's bench from fixed to removable bench	\$60.00	m

Changes From 2010 to 2016 Access Design Cost Impacts



Access Design Standards Cost Impacts
 Calgary, AB
 City of Calgary
 Calgary Building Services Planning & Development

06/02/2016
 13130.100381.000

Description	Changes to Project Requirements & Constraint Notes	Amount	Units
Standard 221 - A removable surface such as Plexiglas that can be placed between the change rooms and the ice surface, shall be provided.	Assumed 12mm thick clear Plexiglas sheets	\$650.00	m2
Standard 223 - A 1500 mm wide space shall be provided behind the player's bench in ice rinks.	Unit rate applied per m2 increase in building size to accommodate larger corridors	\$3,240.00	m2
Standard 224 - An accessible pathway shall connect all key elements of the golf course; such as from the parking lot to the clubhouse, to adjacent cart paths between tee boxes, fairways, putting greens, and driving range. The surface of the pathway shall be firm and stable.	Unit rate applied per m2 for asphalt pedestrian paving	\$70.00	m2
If there's curbing on the golf cart path for the purpose of preventing golf carts from entering certain portions of the fairway or to reduce erosion, openings of at least 1500 mm wide shall be provided at safe intervals.	No change in construction materials or labour from 2010 requirements		1 Nil
Refer to Section B 'Exterior Paths of Travel' for the minimum width requirements of the pathway.	Unit rate applied per m2 for asphalt pedestrian paving	\$100.00	m2
Standard 225 - An accessible pathway shall connect all elements of an athletic park; such as the parking, sports fields, baseball diamonds, running tracks, spectator areas and washrooms and: The surface of the pathway shall be firm and stable.	Unit rate applied per m2 for asphalt pedestrian paving	\$100.00	m2
Refer to Section B 'Exterior Paths of Travel' for the minimum width requirements of the pathway. (<i>new</i>)	Unit rate applied per m2 for asphalt pedestrian paving	\$100.00	m2
Standard 226 - The number of adaptable units to be provided shall be in accordance with the Alberta Building Code 2014 3.8.4.1. (<i>The number of units required to be built as adaptable has changed but only in concert with how the ABC 2014 also now requires that number to be calculated</i>)	Allowance to upgrade units to barrier free units	\$25,000 - \$50,000	unit

Access Design Standards Cost Impacts

Calgary, AB

City of Calgary

Calgary Building Services Planning & Development

06/02/2016

13130.100381.000

Description	Changes to Project Requirements & Constraint Notes	Amount	Units
Standard 235 - If provided, curb-less roll-in showers shall be 1220 mm deep and comply with ABC 2014 3.8.3.13. (1).	Change shower curb to curb-less design	\$260.00	no.
Standard 241 - Towel bars shall be installed not more than 1100 mm above the floor and must be within a clear reach of 450 mm from where a wheelchair can be positioned.	No change in construction materials or labour from 2010 requirements		1 Nil
Standard 242 - Hooks shall be installed in conformance with ABC 2014 3.8.3.8. (1)(e).	No change in construction materials or labour from 2010 requirements		1 Nil
Standard 247 - Space for a microwave shall be provided at counter height with knee space below or in a shelf located so that the microwave door will be between 400 mm - 860 mm above the finished floor.	Assumed wood veneered finished cabinets	\$1,620.00	no.
Standard 253 - A heat resistant shelf shall be installed under the oven. The shelf shall be the same width as the oven and pull out at least 250 mm.	Assumed wall oven and no upgrades to equipment and/or electrical requirements	\$1,100.00	no.
Standard 254 - A heat resistant shelf shall be installed under the microwave. The shelf shall be the same width as the microwave and pull out at least 250 mm.	Assumed no upgrades to microwave and/or electrical requirements	\$710.00	no.
Standard 258 - At least one hand dryer shall be installed at floor level.	Complete with associated electrical works (assumed hand dryer in washrooms)	\$1,940.00	no.
Standard 265 - Closets shall have a clear opening of minimum 850 mm, with a 1500 mm turning radius in front.	Increase door with opening	\$260.00	no.