

CLIMBING WALL SPECIFICATION

PART 1 GENERAL

1.01 SUMMARY

- A. This section includes the following:
 - 1. Custom Climbing Wall

- B. Related Sections:
 - 1. Section “Structural Steel”
 - 2. Section “Rough Carpentry”
 - 3. Finishes

1.02 PURPOSE OF SPECIFICATION

- A. The Owner is inviting qualified climbing wall manufacturers to submit tenders for the new climbing wall and climbing tower outlined in the RFP in accordance with the following specifications.

1.03 DESIGN REFERENCES

- B. CEN 12572– Standards for Artificial Climbing Structures
- C. CWIG Guidelines
- D. National Building Code of Canada 2005 or equivalent local building code
- E. Latest Canadian Handbook of Steel Construction or equivalent
- F. Latest Canadian Concrete Design Standard or approved equivalent
- G. Latest Canadian Timber Design Code or approved equivalent

1.04 CLIMBING WALL SYSTEM DESCRIPTION

- A. Articulated artificial climbing wall designed to climb like real rock. The climbing wall shall consist of top rope and lead climbing.
- B. The climbing wall may be constructed using wood, structural steel, concrete, and epoxy resin materials where possible. Materials and labour used for constructing the wall should be such that they can be sourced and provided locally.
- C. Climbing wall panels should be designed to provide a design average of no less than 43 t-nuts per square metre – if using a plywood sheathed wall.

- D. Structural drawings of the climbing wall support system are to be included and stamped & sealed by a Professional Engineer registered in the country of origin.
- E. This project includes an indoor climbing wall and bouldering area.

1.05 CLIMBING WALL MANUFACTURER'S QUALITY ASSURANCE

- A. Climbing Wall manufacturer shall have a minimum of 10 years experience working in the design and manufacturing of climbing walls. The wall designer and the structural engineer shall also have 10 years of experience designing climbing wall structures.
- B. The conceptual design and operations training shall be managed by an experienced climber holding certifications equal to both Association of Canadian Mountain Guides (ACMG) Level 3 Climbing Gym Instructors and ACMG Rock Guide, with a minimum of 10 years experience designing climbing walls and operations training.

1.06 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of the Contract and General Conditions.
- B. Fabricator/ Installer/ Engineer shall submit qualifications noted above to verify experience. Include a list of representative projects with pictures.
- C. If the installer is not part of the manufacturer's firm, then the installer shall have a minimum of five years experience with the manufacturer's materials or be supervised by manufacturer's representative.
- D. The climbing wall manufacturer shall submit complete stamped and sealed engineering drawings Issued For Construction.
- E. Submit samples of the proposed climbing surface with texturizer and matting system.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect products during transit, delivery, storage, and handling to prevent damage, soiling, and deterioration.
- B. Protect climbing wall finish and edges in accordance with manufacturer's recommendations.
- C. Store climbing wall components in accordance with manufacturer's recommendations.

1.08 WARRANTY

- A. Climbing Wall manufacturer shall warrant to the original purchaser for two years from the date of completion that its products are free from defects in materials and workmanship.

1.09 COORDINATION

- A. Coordinate installation of climbing wall to the primary support structure.
- B. The Owner shall have direct contact with the Climbing Wall manufacturer in the design phase of the climbing wall to achieve specific programmatic requirements set forth by the Owner.
- C. The installer shall coordinate the installation of the climbing wall with the General Contractor of the new building or the staff of the local facility to ensure operations of the facility is not compromised.

1.10 PROJECT CONDITIONS – OWNER SUPPLIED

- A. Where the climbing wall is indoors, building shall be enclosed and capable of maintaining a minimum temperature of 15 degrees Celsius.
- B. Climbing Wall shall be supplied with a light source by the General Contractor or the Owner for the duration of the climbing wall installation. Lighting will be of sufficient quantity and brightness to perform detailed work.
- C. General Contractor or the Owner will provide multiple power outlets at various locations around climbing wall area for the operation of power tools.
- D. General Contractor or the Owners will allow access to the facility in an unencumbered manner to permit the climbing wall materials to be brought onto the site.

PART 2 – PRODUCTS

2.01 CLIMBING WALL MANUFACTURER

- A. High Performance Climbing Walls, Suite 56 – 1959 Purcell Way, North Vancouver, BC, V7J 3H4, Canada, (604) 789-6241, fax: (604) 924-6886; or others as approved by Owner.

2.02 CLIMBING WALL ENVIRONMENT

- A. Climbing Wall shall be installed and attached to the base building structure. It may also be free standing if deemed to be the more economical solution.
- B. If attached to the existing structure, the Climbing Wall's engineer shall conduct design checks to ensure the existing building is capable of supporting the climbing wall loads.

2.03 CLIMBING WALL APPEARANCE

- A. The climbing wall shall have the appearance of panelized smooth surface rock using multicoloured bolt-on holds. Alternatively real rock appearance or composite pre-fabricated panel system may be proposed if the budget permits.
- B. The climbing wall shall be finished on all exposed sides to ensure public access to the back framing is not possible.

2.04 CLIMBING WALL FEATURES

- A. The indoor wall shall be approximately _____ wide and _____ high.
- B. The climbing wall may include the following elements:
 - vertical faces, slabs, and overhangs
 - small roofs
 - overhanging terrain for all lead climbing
 - cracks
 - rappel ledges and anchors
 - arches
 - removable handholds to enable frequent changes in route setting
- C. The climbing wall fall protection system shall be a combination of Association of Canadian Mountain Guides (ACMG) Certified Rock Guide and CGI Level 3 standard (or equivalent) approved lead, top-rope, rappel and rescue systems, – as requested in the RFP.
- D. Allowance for Auto Belay systems will be provided for in the design – should these be desired.
- E. Provide top rope anchors spaced no farther than 1500mm apart.
- F. Provide lead anchors on a 1000mm x 1000mm grid pattern.
- G. Provide a grid system of t-nuts capable of accepting large holds and bolt-on macro features, some of which may be up to 1 metre in diameter.
- H. Provide a spacing for said t-nuts of no less than on average 43 t-nuts per square metre – if using a plywood sheathed wall.
- I. Provide sufficient ground anchors to provide anchorage of the belayers for all ropes and for use during routesetting procedures. No more than two belayers are to be attached to one ground anchor at any one time.
- J. The climbing wall design may include such features as prows, overhangs, small roofs, dihedrals, vertical, bouldering walls, cracks, and most importantly shall be

designed such that the holds can be removed and re-set on a regular time schedule.

2.05 CLIMBING WALL STRUCTURAL SYSTEM

- A. Manufacturer shall be responsible for the structural and safety design including installation of the climbing wall.
- B. Manufacturer shall be responsible for verifying that the existing building is capable of safely supporting the climbing wall loads. The manufacturer shall design upgrading of the existing building if necessary.
- C. Manufacturer shall verify the materials used in construction and installation of both the indoor and outdoor components will not be affected by regional environmental conditions present – the information of which is to be supplied by the Owner.
- D. All top rope anchors, lead anchors, ground anchors shall be designed in accordance with the climbing wall guidelines. All supporting structure shall also be designed appropriately to resist these applied loads.
- E. The climbing wall shall not be designed for additional elements such as rappel ledges, zip lines, etc unless specifically noted in the RFP.

2.06 CLIMBING WALL TO INCLUDE:

- A. The climbing wall shall include the following items and shall be clearly identified within the tender documents:
 - climbing wall framing including all support framing
 - architectural design of the climbing wall and tower
 - engineering of the climbing wall and tower with stamped and sealed drawings
 - upgrade design for the existing structure if required
 - texturized surface
 - top rope anchors, lead anchors, ground anchors
 - all bolts, hangers quickdraws, etc required to rig the system
 - floor matting
 - sufficient handholds for one route per rope
 - rope for all top rope anchors
 - initial route setting
 - staff training

PART 3 – EXECUTION

3.01 PRE-INSTALLATION INSPECTION

- A. Confirm existing framing and conduct structural assessment as required.
- B. Verify that all surfaces are ready to receive work and are within specified tolerances
- C. Beginning of installation means installer accepts conditions of existing surfaces.
- D. Verify that layout of materials or equipment will not interfere with installed climbing wall.

3.02 INSTALLATION

- A. Erection of the climbing wall system shall be in accordance with manufacturer's recommendations and shall include the back framing, climbing wall surface, top and lead anchors, ground anchors, texturizer, climbing holds, ropes, and matting system.
- B. Erection shall be accomplished by a fully trained, factory-authorized erector in accordance with Section 1.4.
- C. Complete wall shall comply with specific tolerances and shop drawing tolerances.

3.03 CLEAN-UP

- A. Clean up of debris from installation of climbing walls. Ensure all surfaces in the work area are cleaned prior to turning the climbing wall over to the Client.
- B. Dispose of all construction material in accordance with local environmental requirements.
- C. Ensure all back walls, floors, etc are cleaned from texturizer overspray if thusly applied.

3.04 INSPECTION

- A. The completed climbing wall shall undergo a full complete final inspection by a duly trained representative of the manufacturer and shall be certified by the manufacturer that the finished product has been manufactured and erected in accordance with the manufacturer's approved installation drawings and these contract documents. This includes inspections by the design engineer to ensure the structural system has been installed in general accordance with the contract documents.
- B. The completed climbing wall shall undergo a full and complete inspection by the Owner or Owners' representative at the completion of climbing wall installation.

3.05 PROTECTION

- A. Protect climbing wall from damage during erection.
- B. General Contractor to provide final protection in a manner acceptable to the Owner or Owners representative that insures the climbing wall will be without damage or deterioration at time of substantial completion should the climbing wall be installed in a new building and completed prior to the building being handed over for occupancy.

3.06 ROUTE SETTING

- A. The manufacturer shall provide initial route-setting for the climbing wall and tower. Provide one route per rope.
- B. Initial route-setting shall be overseen by personnel holding certifications equal to both Association of Canadian Mountain Guides (ACMG) Level 3 Climbing Gym Instructors and ACMG Rock Guide, or equivalent.

3.07 TRAINING AND RISK MANAGEMENT DOCUMENTATION

- A. The manufacturer shall provide risk management procedures in the form of a procedures manual designed specifically for the facility.
- B. The manufacturer shall provide on site training for the Owner's personnel on risk management operations and maintenance.
- C. All training shall be managed by personnel holding certifications equivalent to both Association of Canadian Mountain Guides (ACMG) Level 3 Climbing Gym Instructors and ACMG Rock Guide.
- D. The manufacture shall provide training that ensures subsequent route-setting of the facility is done to ACMG rigging and safety standards for climbing gyms, or equivalent.

END OF SECTION