

**Richmond/Knob Hill Skate Shack -- Specifications and Requirements**  
**January 2, 2011**

1. Envelope

- (a) Building dimensions:
  - (i) Length -- 40ft
  - (ii) Width -- 24ft
  - (iii) Area -- 960sqft
  - (iv) Height -- 19.5ft (at peak, est.)
  
- (b) Rough room dimensions:
  - (i) Garage -- 23ft x 13.5ft x 9ft high
  - (ii) Flex room -- 23ft x 17.5ft x 9ft high
  - (iii) CA Filing/Storage room -- 7.5ft x 6.5ft x 9ft high
  - (iv) Mechanical room -- 7.5ft x 4.5ft x 9ft high
  - (v) Accessible washroom -- 7.5ft x 6.5ft x 9ft high
  - (vi) Entry hall -- 7.5ft x 4.5ft x 9ft high
  - (vii) Attic storage areas (separated by firewall):
    - (A) Over garage -- 13.5ft x 17ft x 7ft high (at peak)
    - (B) Over remainder -- 25ft x 17ft x 7ft high (at peak)
  
- (c) Foundation:
  - (i) Minimum depth -- 4ft
  - (ii) Either formed concrete with rigid foam insulation or Titanwall structural insulated panels (whichever is more cost-effective) on concrete strip footings
  
- (d) Floors:
  - (i) Main:
    - (A) Concrete slab over gravel over insulation
    - (B) Minimum slab thickness -- 5in
    - (C) Unperforated weeping tile in gravel layer for solar heating of slab
    - (D) Floor drains in garage, washroom and mechanical room
    - (E) Finish:
      - (1) Garage -- none
      - (2) Remainder -- clear non-slip sealer
  - (ii) Attic:
    - (A) Plywood subfloor over I-beam joists
    - (B) Finish -- none
  
- (e) Walls:
  - (i) Exterior and firewall -- Titanwall structural insulated panels -- 6in thick
  - (ii) Interior -- Titanwall board over 2x4 framing (24" on centre)
  - (iii) Finishes:
    - (A) Exterior:
      - (1) Acrylic stucco -- colour: \_\_\_\_\_
      - (2) Smartboard trim -- colour: \_\_\_\_\_
    - (B) Interior finish:
      - (1) Garage and attic -- none
      - (2) Remainder -- paint (semi-gloss) -- colour: \_\_\_\_\_

- (f) Roof:
- (i) 6:12 pitch with peak offset 6ft north of centre
  - (ii) Titanwall structural insulated panels – 10in thick
  - (iii) Metal roofing panels over 3/4in strapping – colour: Black
  - (iv) Overhangs:
    - (A) East side – 12ft, to cover half of patio
      - (1) East end of overhang supported by two wide columns faced with cultured stone and timberframe-style beams with natural wood finish
    - (B) South side – 3ft, to cover sidewalk
      - (1) Overhang supported by natural wood angle braces
    - (C) North and west sides – 2ft
  - (v) Exterior trim:
    - (A) Metal fascia, soffit, eavestroughing and downspouts – colour: \_\_\_\_\_
    - (B) Diverters on all downspouts to allow water to be directed to rain barrels or plant roots
  - (vi) Interior (ceiling) finishes:
    - (A) Garage and attic – none
    - (B) Remainder -- paint (semi-gloss) – colour: White
- (g) Doors:
- (i) Exterior:
    - (A) Insulated metal entry doors – colour: \_\_\_\_\_
    - (B) Insulated metal 8ft x 8ft overhead doors with Lexan windows and openers – colour: \_\_\_\_\_
    - (C) Metal door trim – colour: \_\_\_\_\_
  - (ii) Interior:
    - (A) Metal doors – colour: \_\_\_\_\_
    - (B) Metal door trim – colour: \_\_\_\_\_
    - (C) Fire-rated door in attic
- (h) Windows:
- (i) Transom-style Lexan windows (4 sealed, 2 casement)
  - (ii) Metal window trim – colour: \_\_\_\_\_

2. Landscaping:

- (a) Hard:
- (i) Patio:
    - (A) 27ft long x 24ft wide, spanning space between shack and hall (sloped to drain away from both buildings)
    - (B) Eco-walk recycled rubber tiles
    - (C) Outdoor gas fireplace on west wall of shack:
      - (1) 8ft x 1ft cultured stone enclosure to roof canopy
      - (2) 2ft deep raised hearth, to act as bench
      - (3) metal grate/screen to prevent burns and deter vandalism
    - (D) Cultured stone trim on columns supporting roof overhang
    - (E) 12ft x 4ft flat bench, permanently affixed 4ft away from fireplace hearth

- (ii) Sidewalk:
    - (A) 3ft wide along south side of shack, sloped to drain away from building with curb cuts for both overhead doors
    - (B) Eco-walk recycled rubber tiles
  - (iii) Fence/noise/wind barrier – 6.5ft high x 27ft long along north edge of patio **(optional – if budget permits)**
  - (iv) Lockable fuel storage locker – affixed to exterior wall at SW corner of building
- (b) Soft:
- (i) Grading:
    - (A) To slope away from building on all sides
    - (B) On south side to channel meltwater from hockey rink west towards catch basin
  - (ii) Rain barrels and root watering system **(optional – if budget permits)**
  - (iii) Existing tree along north side to be trimmed as required but otherwise retained, if at all possible
  - (iv) New plants **(optional – if budget permits)**:
    - (A) Prickly shrubs along west and north walls to deter graffiti
    - (B) 2 small fruit trees and ornamental shrubs in patio beds
    - (C) Large deciduous tree(s) off SW corner to shade building in summer
3. Heating System:
- (a) Primary system:
    - (i) Thermostatically-controlled system that circulates solar heated air collected from roof peak through network of earth tubes below concrete slab floor
  - (b) Secondary system:
    - (i) **[To be determined – options include electric heaters, infrared heaters, hot water heaters, etc.]**
4. Ventilation System:
- (a) **[To be determined – would like system to include heat recovery and earth tube pre-heating/cooling, if feasible and cost-effective]**
5. Plumbing:
- (a) Exterior:
    - (i) 2in water line on south side for rink flooding (shut off valve in garage)
    - (ii) Standard hose faucet on south side for garden use (shut off valve in garage)
    - (iii) Natural gas BBQ connection to left of fireplace (shut off valve in mech. room)
    - (iv) Solar hot water panels on south-facing side of roof overhang **(optional – if budget permits)**
  - (b) Mechanical room:
    - (i) High capacity tankless hot water heater
    - (ii) 80gal insulated storage tank for solar-heated water **(optional – if budget permits)**
    - (iii) Floor drain

- (c) Washroom:
  - (i) Lo-flo motion-activated toilet
  - (ii) Lo-flo motion-activated faucet on sink
  - (iii) Floor drain
- (d) Flex room -- sink
- (e) Garage
  - (i) Utility sink
  - (ii) Standard hot/cold hose faucet, to fill water tank on ice resurfacers
  - (iii) Floor drain

6. Electrical:

- (a) Power:
  - (i) Outlets throughout at roughly 6ft intervals
  - (ii) 220v outlet in garage
- (b) Exterior lighting:
  - (i) 4 darkness-activated pot lights along the south side
  - (ii) 2 darkness-activated lights on the east side
  - (iii) Darkness- and motion-activated lights:
    - (A) under eaves at SW, NW and NE corners, to provide security lighting along west and north sides
    - (B) under patio canopy, to provide additional security lighting on patio (need switch inside main entry door to allow these lights to be turned either off or always on when patio area is in use during evening)
- (c) Interior lighting:
  - (i) Main entry, washroom and flex room:
    - (A) **[To be determined]**
    - (B) under cupboard lights above sink counter
  - (ii) CA storage room:
    - (A) standard ceiling fixtures with CFC bulbs
    - (B) under cupboard lights above work counter
  - (iii) Garage, attic and mechanical room – standard ceiling fixtures with CFC bulbs
- (d) Additional wiring:
  - (i) Telephone/internet:
    - (A) CA storage room, for phone and wireless internet router on work counter
      - (1) Will wireless signals travel well through Titanwall?
    - (B) Flex room, for wall mounted phone next to door to CA storage room
    - (C) Garage, for wall mounted phone near entry door
  - (ii) Security system:
    - (A) For door sensors and interior motion detectors in main entry, flex room and garage
    - (B) For exterior security cameras under eaves at all 4 corners
  - (iii) Cable?