11. ARCHITECTURAL - TECHNICAL

11.1 REGULATIONS

11.1.1 CODES AND STANDARDS

1. National Building Code of Canada (NBCC)
2. NFPA-101 Life Safety Code
3. Building Accessibility Act
4. Other legislated codes, and standards, that will affect the design of the project

11.1.2 AUTHORITIES HAVING JURISDICTION

1. Office of the Fire Commissioner
2. Service NL
3. Department of Environment & Conservation
4. Child, Youth & Family Services
5. Workplace Health, Safety and Compensation Commission
6. Municipality

11.2 FACILITY PLANNING

11.2.1 NET AREA

1. Includes the area measured from the interior walls including the interior face of surface of the exterior walls and is expressed as net square meters (NSM).

11.2.2 BUILDING GROSS AREA MEASUREMENT

1. The Building Gross is defined as the area, within the outside walls, as computed by measuring from the outside of the finished exterior walls, and is expressed as building gross square meters (BGSM).

2. Measure in square meters from outside to outside of walls at floor level for the area of each floor without any deductions for openings which occur within the floor area, except as noted later.
3. Where auditorium, swimming pool, gymnasium, foyers, etc., extend through two or more floors, include them by using the largest area at one level only.
4. Include the following areas in computing the gross area:
    a. crawl spaces with concrete floors
    b. future basement areas where the concrete slab only is required for structural completion
    c. floor areas which are structurally completed and where the finishing work will be executed at a later date
    d. tunnels, trenches, etc., which have a roof or slab over 2.0 metres or more from the floor
    e. rooms below grade or sidewalk (e.g. transformer rooms)
    f. true area of columns and other projections beyond the face of exterior walls, providing they extend vertically for the full floor height
    g. dormers, bay windows, etc., providing they extend vertically for the full floor height
    h. penthouses
    i. elevator machine floors within penthouses
    j. connecting links or walkways providing they are enclosed
    k. finished rooms in roofs and attics
    l. attached or isolated garages above and/or below ground level
    m. fully enclosed exterior staircases and fire escapes
    n. fully enclosed porches
    o. public lobbies
    p. elevators
    q. telephone and communications closets
    r. mechanical and electrical rooms
    s. elevator and mechanical shafts
    t. building service areas
5. Exclude the following area in computing the gross area:

a. crawl spaces which do not have concrete floors
b. tunnels, trenches, etc., with less than 2.0 m head room
c. exterior balconies
d. canopies
e. projections beyond the exterior wall face which do not extend vertically for a full floor height
f. fanhousings, etc.
g. areaways
h. unenclosed connecting links
i. covered walkways
j. unfinished roof and attic areas
k. carports
l. unenclosed exterior staircases and fire escapes
m. isolated chimneys and that portion of chimneys above the roof line
n. interior open court yards, light wells, etc
o. unenclosed porches
p. exterior steps and landings
q. exterior paving, patios and terraces
r. unenclosed areas which are roofed over
s. enclosed areas which are not roofed over
t. roof overhangs and cornices

6. If certain conditions warrant the inclusion of some of these items, list them separately from the gross area.

11.2.3 Department Gross Area

1. Includes the area measured from the interior face of the exterior wall to the centre of the demising wall for all adjacent departments including the gross area within and is expressed as Department gross square metres (DGSM).

11.2.4 Space Audit

1. The space audit is a check of the program gross and net areas.

2. The audit will be completed at the end of each design submission.
3. Any changes agreed to by the Project Team will be recorded.
4. Changes, which have not been agreed, will be corrected by the Consultant.

11.2.5 Net to Gross Ratio

1. The Department Net Gross to Building Gross Ratio for the building shall be between 1:1.20 and 1.30, where 1 represents the sum of net gross area for the building. This figure may vary depending on building classification.
2. The Net to Department Gross Ratio, for a department shall be between 1:10 to 1:15. This may vary depending on building classification.
3. Increase in an approved area, unless agreed, will not be allowed even, when the allowable gross building has not been met.
4. Gross area ratios will be decided at the program stage.

11.2.6 Flexibility

1. Government activities change periodically. It must be possible to accommodate these changes without undue disruption.
2. Design flexibility for immediate and future use of the space.
3. Pay particular attention to the location and arrangement of entrances, core areas, permanent corridors, elevator shafts and other fixed facilities.
4. In most Government facilities the open office concept is considered standard practice. Develop a building grid with column spacing and fenestration and service runs suited to flexible interior space requirements.
5. Locate plumbing and duct shafts to maximize consolidation of service space.

11.2.7 Appropriate Spaces

1. Every function shall be provided with the appropriate amount of space for the function of the work to be performed within that space.
2. Government maintains office space standards to accommodate office staff and their furniture requirements.

3. Space not covered by the standards and the facility program shall be adequately provided for using the NBCC, and NFPA-101 Life Safety Code.

11.2.8 Circulation

1. The space required to get from one work area to another.
2. Circulation space as a spatial program item is described as a building factor between the net programmed and ancillary areas for the building.

11.2.9 Circulation Routes

1. Circulation routes shall be simple, practical, and as short as possible.
2. The width of corridors shall be sufficient for the purpose required and designed to meet NBCC and NFPA-101 Life Safety Code for exiting, handicap accessibility, and movement of furniture and equipment.
3. Circulation routes need to pay attention to access to exits, as opposed to exits.
4. Circulation routes need to pay attention to public corridors versus corridors used by the public.

11.2.10 Vertical Circulation

1. Provide vertical circulation with sufficient width in the stairwells.
2. Provide elevators in buildings with more than two stories, including basements that need to be accessible by the occupants in their daily routine. Handicap lifts may be used in buildings not more than two stories.
3. Elevators are required to facilitate the movement of patients in a health care facility regardless of the number of stories.
4. Plan elevators and exit stairs for evacuation of the occupants in case of emergency.
5. Elevators and lifts are not required for access to mechanical or electrical rooms.

11.2.11 Horizontal Circulation

1. Plan horizontal circulation in individual rooms or suites to maximize the usable space.
2. The space within doorways and glazed units shall be planned to give the best use of the floor and walls for furniture and fittings.

11.2.12 ENTRANCES AND EXITS

1. Provide entrances and exits to the requirements of the NBCC and NFPA -101 Life Safety Code sufficient to handle the occupant load, and accessibility requirements.
2. Provide entrances to suit the function and not the aesthetics. Major access points shall be visible, accessible, and identifiable as the major access point without the need of signs.
3. Provide entrances (and exits used as entrances) with vestibules, and with adequate protection from the wind, rain, snow and ice.
4. Provide heat for all vestibules.

11.2.13 BARRIER FREE DESIGN

1. Design all buildings and sites with barrier free access in mind, except as permitted by law, using the Buildings Accessibility Act and applicable CSA documents.
2. Where possible eliminate doors to public washrooms off corridors

11.2.14 SUSTAINABLE DEVELOPMENT

1. Provincial government buildings are bound by the Build Better Buildings (BBB) Policy. The BBB policy provides a framework on inclusion/exclusion and how it is implemented. The BBB policy can be found at the following link:
    a. http://www.nr.gov.nl.ca/nr/publications/energy/betterbuildingspolicy.pdf
2. The Design Manager will give direction in consultation with the Client group as to the specific application of the BBB policy for each individual project.
3. Select materials that are cost-effective over the life of the product.
4. Consider in material selection the embedded hazards with its incorporation into the facility and future disposal.
5. Promote the use of materials that are recyclable at the end of their life.
6. Consider materials manufactured with recycled material.
7. Consider relocation of client provided material and incorporate salvaged materials into the project where practical.
8. All materials selected must meet the intent of LEED® pre-requisites and credits being pursued.

11.2.15 Environmental Health

1. Concerns about the impact of the built environment on the occupants are increasing. In designing a healthy building a holistic approach to the occupants' health shall be taken.
2. Consider background factors including: light, noise and color in the building design.
3. Incorporate good design practice for ergonomics as outlined in CSA -Z412-00 "Guideline on Office Ergonomics".
4. All materials selected must meet the intent of LEED® pre-requisites and credits being pursued.

11.3 Building Envelope

11.3.1 Flat Roofs

1. Generally, flat roofs shall be sloped to drains with a minimum of 2 % slope.
2. The slope shall be incorporated into the structure wherever possible. Otherwise use sloped insulation incorporating the following guidelines with:
    a. a minimum RSI of 1.3 thickness at any point opening to be 50 mm
    b. minimum butt thickness to be 50 mm
    c. minimum thickness at any opening to be 50 mm
3. RSI to be averaged over the whole roof
4. Insulation to be mechanically fastened to Factory Mutual Standard for the field of the roof. Final "Issued For Construction" fastening patterns shall be supplied with the insulation layment pattern. Fastening patterns shall be stamped by a design professional registered in the Province of Newfoundland and Labrador.
5. RSI to be averaged over the whole roof (minimum average RSI of 4)
6. The preferred roofing membrane is two-ply modified bitumen.

11.3.2 Sloped Roofs

1. Where sloped roofs are incorporated into the design, the roof shall be a minimum 4:12 slope. The method of insulation and finish covering may vary depending on the occupancy of the room below.
2. The preferred covering is asphalt shingles over ice and water shield.

3. The roof is to be designed to shelter exits and entrances from snowfall and rain water runoff.
4. Rain gutters are to be provided.
5. Where snow slide is a problem, the roof shall incorporate snow/ice guard fencing.
6. Sloped roofs are to incorporate eave protection. Extended 1200 mm up the rood measured from the inside face of the exterior wall.
7. Eaves are to be fire-stopped in order to protect the attic space from the spread of fire. Soffits should not be vented above and 300 mm beyond unprotected opening in building façade.
8. Facias are to be covered with prefinished metal flashing. Flashings are to be minimum of two bent sections where facias are over 150 mm in depth.
9. Sloped roofs are to be ventilated in accordance with NBCC and ridge venting is to be incorporated into the venting system.

11.3.3 Roof Repair - Replacement

1. The TW maintains a database record of all roofs in a roofing management program (Microroofer).
2. Any inspections or investigations carried out to determine the condition of a roof shall be recorded in the Microroofer format.
3. Data sheets and sample roofing reports are available upon request.
4. Completed data sheets, inspection reports, AutoCad drawings, and photos of roof conditions are to be submitted on CD Rom to TW for incorporation into the database.
5. Procedures for repairs and replacement and materials to be used for roofing projects are to follow the latest edition of the NL Master Specification Guide for Public Funded Buildings.
6. Flat roofing systems are not to be covered over by a replacement roof system consisting of a truss system unless the original roof covering is removed.
7. Provide details for roofs incorporating:
    a. vapor barrier continuity
    b. insulation thickness and slope
    c. securement of wood blocking and cants, with size of fasteners and depth of penetration
    d. continuation of roofing membranes
    e. built-up curbs at roof penetrations

f. membranes flashings at roof drains, vents, curbs, etc.

8. Provide calculations for wind uplift requirements in accordance with Factory Mutual. Provide calculations of fasteners per square meter for field, perimeter and corner areas with details of fastener pattern for each.
9. Where repairs are determined as the appropriate option, the repair technology will depend on the existing roof. If the repair program requires a large segment to be replaced, subdivide the roof area section, and then carry out a replacement on this roof area only.

11.3.4 SKYLIGHTS

1. Skylights are to be doubled shelled pre-molded plastic.
2. Doubled glazed sloped wall skylights are an acceptable alternate.
3. Skylights shall have internal condensation drains, connected to the internal roof drains.
4. Skylights are to be mounted on pre-moulded insulated curbs, with the skylight mounted a minimum 1000 mm above the top of the insulated roof, except otherwise recommended by wind-snow specialists.
5. Skylights should not be positioned on the roof areas, which are subject to the accumulation of snowdrifts

11.3.5 THERMAL INSULATION

1. The building envelope shall be wrapped with continuous insulation from the footing to the roof with interruptions as necessary for windows, doors and service entrances. Also refer to Model Energy Code for Buildings.
2. The thermal resistance of the roof shall be RSI-7 for attic type roofs and average RSI-4 for flat type roofs, for exterior walls RSI-3.5 including developed basements or in accordance with the National Energy Code of Canada.
3. The below grade insulation must be sloped away at 2% grade from the foundation wall when shallow footings are being used. The purpose of this technique is to deflect frost penetration and shed water coming into contact with the insulation. The foundation insulation must be supported on fill that will be unaffected by frost heaving.
4. At exposed exterior wall areas, the insulation shall be protected against damage to 200 mm below finish grade.

5. Fiberglass batt insulation should be used in stud walls in combination with rigid batt insulation on the exterior sheathing. Refer to NBCC for further information.

11.3.6 Air Barriers

1. The function of the air barrier is to eliminate air leakage from inside the building to the outside and vice versa. It is an important feature of the envelope performance, above and below grade.
2. Clearly identify and detail the barrier on all drawing details. Pay particular attention to:
    a. Roof wall interface
    b. Window-wall interface
    c. Wall-door interface
    d. Wall-foundation interface
    e. Wall or roofs
    f. All openings
3. The air barrier, unlike the vapor barrier, occurs at various locations in the assembly. The barrier must be properly tied to the air barriers of the different elements of the envelope. Where materials differ in the various elements of the building envelope, ensure continuity of the air barrier and compatibility of the materials used.
4. The barrier must be structurally supported and virtually impermeable to the passage of air.
5. The barrier must be durable.
6. It is desirable to place the barrier on the warm side of the insulation.
7. Where the air and vapor barrier is the same material, then the material must meet the structural and design requirements of both barriers.

11.3.7 Vapor Barriers

1. The function of the vapor barrier is to eliminate moisture leakage from inside the building to the outside and vice versa. It is an important function of the envelope detail, above and below grade.
2. Clearly identify and detail the barrier on all drawing details. Pay particular attention to:
    a. Roof wall interface
    b. Window-wall interface

c. Wall-door interface
d. Wall-foundation interface
e. Wall or roofs
f. All openings

3. The barrier is to be structurally supported.
4. The barrier is to be positioned on the warm side of the wall.
5. The vapor barrier is to be continuous and be connected with the barrier for the other elements that make up the building envelope.

11.3.8 Rain Screen Walls

1. Exterior wall cladding shall follow the rain screen principle that is recognizing that the exterior face is the first line of defense against rain and wind. Knowing that water will penetrate the first line of defense, it must be shown that the water has an efficient entry exit out of the wall assembly before it can do any damage. This principle points out the importance of a good air barrier or sheathing membrane behind the cladding and an air path that will let the water out to the exterior.
2. Air chambers in masonry veneer exterior walls shall not be less than 25 mm to ensure water that enters the assembly will not bridge the chamber.
3. The assembly is to provide a drainage route to the exterior, allowing in air and water out. All external vents should be at the same level, but must be above all obstructions in the wall assembly. Flashings that bridge the chamber are to provide positive drainage to the exterior and shall have a sloped bottom to the exterior.
4. The design of air chambers is to include the concept of compartmentalization. Compartment height should not exceed 6m. Compartments shall not exceed a width of 6.0 m, and a width of 1.2 m at building corners.

11.3.9 Wood Cladding

1. Wood siding is to be finished on all sides. The preference is for a factory finish, with a factory finish on all architectural accessories such as corner boards, trims etc.
2. The application of wood has to incorporate the rain screen principle with a minimum air chamber of 19 mm.

11.3.10 VINYL CLADDING

1. Attention must be given to the use of proper accessories, trims and starter strips. Wood trims are acceptable with vinyl siding, and should be prefinished on all sides.
2. Vinyl siding is not acceptable in cold climates such as Labrador where vinyl becomes brittle.

11.3.11 METAL CLADDING

1. It is important to pay particular attention to the detailing of all trims and flashings.
2. The application of metal siding has to incorporate the rain screen principle with a minimum air chamber of 25 mm, where horizontal flute or flat metal sidings are proposed. When vertical fluted sidings are used, air circulation is achieved on the back of 50% of the siding and therefore additional air space is not required. This type of siding should not be connected in direct contact with the air barrier.

11.3.12 MASONRY VENEER CLADDING

1. Masonry veneers include brick, concrete block and stone.
2. Special attention should be given to the air barrier details, and the securement of the cavity insulation to ensure the cavity is kept clear.
3. Masonry walls also require provision of movement both in vertical and horizontal direction. Masonry expansion and construction joints are to be clear of mortar, and sealed with sealant supported with a backer rod.
4. Masonry cladding shall incorporate weep holes to allow moisture to exit the cavity. Weep holes shall be free and clear of mortar and debris.
5. Flashings at the parapet of all masonry veneer walls shall be supported on 19 mm blocking and extend 100 mm below the upper most masonry unit. Vertical joints shall not be more than 9.0 m apart. All fastening of flashings shall be by concealed fasteners.
6. Details must show:
    a. Stainless steel masonry ties
    b. Enough information for the Contractor to easily build the system

11.3.13 SEALANTS

1. Sealants are not to be used as the first line of defense for preventing water entry.

2. If the caulked joint is too shallow or too narrow, the sealant may fail. Joints should not be less than 6.0 mm or more than 13 mm wide. The depth of the joint should not be less than half the width.
3. Sealants should not adhere to more than two sides. For a deep joint, a backer rod is to be used, which also acts as a bond breaker.
4. Backer rods are to be between 25-50% larger in diameter than the joint width. Use open-cell polyurethane or closed-cell polyethylene backer rods.
5. The sealant should be tooled to give a concave surface.
6. When selecting a sealant, select one that is compatible with adjacent materials. Do not paint the sealant.
7. Use high performance silicone sealants where possible.
8. Detail each typical joint such as expansion joint, or construction joint.

11.3.14 EXTERIOR WALL FRAMING

1. The inclusion of the material in a particular assembly must be compatible with the other assembly members and be cost effective.
2. The required asset life, the location of the project, the construction schedule, and the project budget are factors to be considered when making the design decision.

11.3.15 CURTAIN WALLS

1. The three main components of a curtain wall are glazing units, spandrel panel and frame.
2. Both glazing and spandrel panel units can be constructed to design RSI value with a limiting factor of the thickness of insulation being dependent on the frame thickness. Where preferred RSI values cannot be achieved within the frame thickness, a secondary wall may be constructed.
3. To achieve adequate thermal performance, the performance of the frame is critical. Thermally broken frames are essential.
4. To maintain a low air flow, and maintain energy efficiency and eliminate drafts and internal under section problems, particular attention to detailing joints is important. Joint sealing should be done with EPDM gaskets.

5. To ensure no air flow through the spandrel panel area, the panel should be provided with a factory installed metal back pan sealed to the interim frame member, and act as an air-vapor barrier.
6. A properly designed frame will incorporate the rain screen principle, allowing water that gets behind the main frame to drain out. Caulking should not be depended on as a line of defense for water penetration.
7. All fasteners and brackets should be corrosion resistant.
8. Allowances must be made to allow for movement that results from expansion and contraction as well as from building structure.
9. Joints between the curtain wall and adjacent components of the envelope such as the roof are important to detail.
10. Continuity of the insulation and the air vapor barrier over the envelope are important.

11.3.16 EXTERIOR DOORS

1. Exterior doors can be classified into three sections:
    a. entrance doors
    b. exits and service entrances
    c. overhead doors
2. Design entrances doors for public entry to a building to meet the "Building Accessibility Act" and its Regulations.
3. Entrances should be easily recognized from the approach to the building and from the parking area.
4. Entrances should be screened from the prevailing winds, protecting the public entering and leaving, and protecting the integrity of the entry from the elements. Design the entry to shed snow and rain away from the path of travel.
5. Design for security.
6. The entrance forms a major architectural part of a building. Acceptable systems are:
    a. extruded aluminum framing, with tempered insulating glass frame, glazing colors may vary
    b. hollow metal insulated door with tempered insulating glass in both top and bottom sections, thermally broken, exterior insulated metal door frames

7. Design the vestibule to avoid any hidden corners.
8. Design exits for the evacuation of a building. Exits should not be designed for other purposes.
9. As points of evacuation, exits should lead directly away from the building, be easily accessible, highly visible and well lighted.
10. Exit doors should be hollow metal insulated units in thermally broken, hollow metal, insulated frames.
11. Design doors used for staff or service entrance with:
    a. wire glass in upper half of door only
    b. heavy duty commercial grade hardware
12. Overhead doors are not to be designed as exit doors.
13. Overhead doors shall be designed to be electrically powered with manual override.
14. Where possible there should be an air curtain in front of the overhead door opening, providing pressurization to the space.
15. Design the sill detail of the overhead door to avoid any sticking due to freezing.

11.3.17 WINDOWS

1. With the exception of temporary structures or rented facilities, wood windows are not acceptable.
2. Fiberglass, metal, and vinyl windows are acceptable frame materials. All windows must have CCMC designation and be tested for CSA-A440-M90AAMA/WDMA/CSA 101/I.S.2/A440-08.
3. The province has several distinct climatic conditions that affect CSA- A440. All windows shall be designed for the particular climatic condition,
4. The design of all windows should allow for a top opening vent, with a maximum clear opening of 200 mm. The windows are to be located minimum 400 mm from the ceiling.
5. The minimum width of any operable window unit is 600 mm, maximum width is 900 mm allowable by TW.
6. The maximum height of sill above the floor is 750 mm in areas occupied by children under the age of eight (8) and in areas specially designed for persons in wheelchairs. The sill height for all other applications shall be 900 mm, except where privacy is a requirement.

7. No windows are allowed within the restricted pathway of an exit as determined by the NFPA-101 – Life Safety Code, unless protected accordingly.

11.3.18 Building Form

1. Heat loss or gain is proportional to the total surface exposed to the outside environment. Economic building forms retain heat energy by having a low surface-to-volume ratio. Perimeter-to-area ratio are also an indication of economic form, with the lower the ratio, the greater the energy savings.

11.3.19 Snow Drifting

1. Where feasible model testing shall be conducted to determine orientation of the building on site and the placement of entrance, exits and windows in an effort to mitigate snow drifting impacts.
2. Where testing is not possible, the following is suggested as a minimum guideline:
    a. Where the building is rectangular, align the long axis parallel to the prevailing winter wind.
    b. Where the building is square, align the diagonal axis parallel to the prevailing winter wind.
    c. Where deep snow exists consider elevating building above ground to allow air flow beneath the structure. If the building is rectangular align the short axis parallel to the prevailing winter wind. Shape the ground below the structure so that air flow accelerates most at the edge of the building.
3. Streamline the slope of the building keeping the roof profile low, or align the ridge parallel to the prevailing winter winds.
4. Place the plane of the entrance ways and exits parallel to the prevailing winter winds.

11.4 Architectural Interior Finishes

11.4.1 Wall Coverings

1. Wall coverings are an option in highly visible areas such as public waiting areas where appearance is important.

2. Vinyl wall coverings are quite acceptable for use in the senior executive offices and executive level meeting rooms.
3. Where movable walls are the prime interior partition construction, vinyl wall coverings are the preferred finish.

11.4.2 Ceramic Wall Tiles

1. Use ceramic tiles where maintenance is a concern, and where it is shown that the advantages outweigh the disadvantages.
2. Use ceramic tiles in commercial kitchens, and public washrooms as a wainscoting.
3. Ceramic tile should be full height in showers and around tubs. Reconstituted marble panels may be used as an alternate in these areas.
4. Use ceramic tile around urinals and around janitor sinks.
5. In wet or moist areas, use a water-resistant substrate.
6. Grout should not be white.

11.4.3 Paints

1. The use of latex paints is standard.
2. Oil base paints are restricted to areas where surfaces require constant cleaning and ceramic tile cannot be used.
3. Special coatings are restricted to areas that require highly resistant finishes and are to be applied to very stable substrate such as concrete block or plywood.
4. Stain selected for wood finishes should be selected with the long term facility maintenance in mind.

11.4.4 Other Wall Finishes

1. In areas where appearance is not important, concrete block or cast in place concrete may be used.
2. Request approval of the Deign Manager before incorporating special finishes.

11.4.5 Carpets

1. Durability, appearance, and cost are factors affecting carpet selection.

2. Provide level loop carpet product for all general areas. Plain colour carpets should not be used.

11.4.6 Ceramic Floor Tiles

1. Use ceramic tile flooring in areas that remain wet for several hours at a time, such as washrooms, shower rooms, and vestibules.
2. Durability, cost, and appearance are factors affecting the selection.
3. Specialty products should be selected for special areas, which require nonslip surfaces.

11.4.7 Quarry Tiles

1. Use quarry tile flooring in areas that remain wet for several hours at a time, such as washrooms, shower rooms, vestibules and commercial kitchens as an alternative to ceramic tile.
2. Durability, cost and appearance are factors affecting the selection.

11.4.8 Vinyl Composite Tiles

1. Do not use vinyl tiles in areas where exposure to cold or prolonged wetness will cause problems.
2. Vinyl tile should not be used in areas where daily maintenance is a concern. Sheet flooring products are more suitable.
3. Sheet flooring is to be used in health center corridors, and patient areas.
4. When choosing color, plain colors should be avoided.
5. Durability, cost and appearance are factors affecting the selection.

11.4.9 Resilient Sheet Tile Flooring

1. Resilient sheet flooring may be used in areas that remain wet for several hours at a time. (e.g. washrooms, shower rooms, and vestibules)
2. Resilient sheet flooring should be used in areas that require constant cleaning such as high traffic areas, health care centers and school corridors.
3. Avoid solid colors and patterns. Select tiles with marbleized patterns.

4. Durability, cost and appearance are factors affecting the selection.

11.4.10 Rubber Flooring

1. Rubber flooring is expensive, and certain types are difficult to maintain.
2. Rubber flooring may be a better choice for limited applications, such as wet areas, stair threads, landings and heavy traffic areas.
3. Durability, cost and appearance are factors affecting the selection.

11.4.11 Linoleum

1. Linoleum flooring may be used where there is high traffic in areas that require constant maintenance e.g. health care facilities, elevator cabs. Initial cost may be a concern.
2. Avoid solid colors and patterns.
3. Durability, cost and appearance are factors affecting the selection.

11.4.12 Vinyl Base

1. Use vinyl base with all flooring products except where the base is integral with the flooring material. (e.g. ceramic tile)
2. Rubber base is an acceptable alternative to vinyl.
3. Durability, cost and appearance are factors affecting the selection.

11.4.13 Natural Stone

1. Natural stone flooring may be used in areas of high traffic and in public areas which the designer may emphasize such as main corridors, lobbies and vestibules.
2. Use natural stone tile base with all natural stone flooring, except where the function of the space does not require the base to be an integral part of the floor. Vinyl base would be acceptable in this instance.
3. Durability, cost and appearance are factors affecting the selection.

11.4.14 Sport Flooring

1. Gym and multi-purpose rooms often serve different functions and floors are rarely protected from a variety of footwear.

2. Multipurpose rooms are defined for the purpose of the section as rooms that have space activity to facilitate a physical education program, but cannot accommodate basketball, volleyball or badminton due to height and floor size restrictions.
3. Game lines are specified for color and width in accordance with International and National Sport Standards.
4. Background colors in general and colors in other areas are to be coordinated with Client.

11.4.15 Gypsum Board Ceiling Finishes

1. Painted ceilings may have textured finish in public areas or where acoustic treatment is desirable.
2. The use of gypsum board ceilings is recommended in the following areas:
    a. vestibules
    b. areas that require secure storage
    c. areas that require fire ratings
    d. areas in a high moisture area

11.4.16 Acoustical Tile Ceilings

1. Finished ceilings in normal work areas are to be exposed suspended T-bar construction and acoustic tile.
2. Lay-in tiles, 610 x 610 mm or 610 x 1219 mm, with square edges are acceptable.

11.4.17 Finish Schedule

1. The following is a guide for interior finishes in the normal workplace environment:

ROOMS	CEILING	WALLS	FLOORS
Main Lobby	Acoustic Tile	Paint Vinyl Wall Coverings	Linoleum Resilient Sheet Flooring Carpet Natural Stone Ceramic Tile
Corridors	Acoustic Tile	Paint	Linoleum Resilient Sheet Flooring Carpet
Exit Stairs	Gypsum Bd. Painted	Paint	Rubber Thread and Nosing
Vestibules	Gypsum Bd. Painted	Paint Vinyl Wall Coverings	Quarry Tile Resilient Sheet Flooring
Office and Support areas	Gypsum Bd. Painted Acoustic Tile	Paint	Vinyl Tile Carpet Resilient Sheet Flooring
Washrooms	Paint	Paint Ceramic Tile Dado	Resilient Sheet Flooring Ceramic Tile Vinyl Tile
Storage	Paint	Paint	Vinyl Tile Paint
Stairs other than exit	Paint	Paint Vinyl Wall Coverings	Vinyl Tile Granite
Meeting	Paint Acoustic Tile	Paint Vinyl Wall Coverings	Carpet

11.4.18 INTERIOR DOORS

1. In general, interior doors are to be commercial/industrial grade with the finish to be project specific.
2. Veneers may be paint grade generally.
3. Standard stain grade doors shall be birch veneer, book matched.

11.4.19 FIREWALLS

1. Fire walls, separations, partitions shall be permanently identified as per international Building Code 703.7.

11.5 INTERIOR DESIGN

11.5.1 FIT-UP LAYOUTS

1. Develop office layouts using Departmental space guidelines to achieve the best use of the space.

11.5.2 COLOR SCHEMES

1. The Consultant may use an interior designer, or interior decorator to develop the color scheme. This work is considered as part of the standard basic services.
2. A written copy of the as-built colour schedule shall be included in the commissioning manual.

11.5.3 SYSTEMS FURNITURE

1. Systems furniture consisting of panels and components has been accepted as an alternative to free standing furniture.
2. The NL Master Specification Guide for Public Funded Buildings contains a section for systems furniture.

11.5.4 OFFICE FURNISHINGS

1. Clients may supply some of the office furnishings. Unlike systems furniture TW does not have fixed specifications for all levels of furnishings. The allocation for private office furniture is left up to the client department.
2. The furniture required for any complex should be tendered separately from the building structure.
3. Items not on standing offer shall be tendered with an appropriate specification, stating the material quality, performance standards and other information.
4. It is not acceptable to list a single manufacturer's product in the specification.
5. Similar items should be grouped when tendering, i.e. chairs, tables or office suites, where a desk, side table, and credenza must match. Some groups may be subdivided, e.g. desk chairs, lounge chairs.

11.5.5 Window Treatments

1. Window treatments may be required for all exterior glazing where sun shading and privacy are required. Clerestory windows are not required to have window treatments.
2. When selecting exterior window treatments, both the interior and exterior appearance should be considered. The exterior appearance should be compatible and present a unified design.
3. Where draperies may be hung, liners should be used.
4. Where feasible, select one product for exterior window treatment, throughout the project.

11.5.6 Planters and Plants

1. Planters may be used in open areas as space dividers where a degree of privacy and enclosure is required.
2. Artificial plants materials are to be inherently flame retardant.
3. Provide information on the type and number of planters and plants for consideration at the design development stage, and updated at the contract documents stage.
4. A two (2) year renewable maintenance agreement may be included at the time of tender. The maintenance agreement is to run from the end of the warranty period.

11.5.7 Artwork

1. Artwork may be provided to Government buildings under the Government Art Procurement program.

11.5.8 Barrier Free Design

1. The Building Accessibility Act applies to more than wheelchair challenged persons.
2. Where the Consultant finds conflict between the “Building Accessibility Act” and the NBCC the Act will govern, except where directed as part of the facility functional program, or by the Design Manager.
3. The Consultant will be responsible for any applications to the regulatory authority for the “Building Accessibility Act”.
4. Attention should be paid to clearances. Typical clearances should be detailed on the drawings.

5. Attention is required for handrails, provide details on the drawings.
6. The Accessibilities Act applies to more than wheelchair dependent persons. The requirements of the Act should be generally covered at the Concept Stage, discussing critical design issues and presenting equipment catalogue cuts.