Building Standards Advisory

Promoting construction of safe, healthy, habitable buildings

Professional Design

Question

Do buildings need to be designed by professional designers?

Answer

That depends on what the building is used for and its size.

Regulations under *The Uniform Building and Accessibility Standards Act* (the UBAS Act) require an owner to have a licensed architect or professional engineer (professional designer) complete the design or design review of:

- the building and all building systems, if the building is within the scope of Part 3[1] of the National Building Code (NBC).
- the structure of the building, if the structure is within the scope of Part 4 of the NBC.

Buildings within the scope of Part 9, must be designed by a competent person acceptable to the local authority (municipality). However, when the structural requirements of a Part 9 building exceed the prescriptive requirements provided in Part 9 or they cannot be designed with accepted good practice, they must be designed in accordance with Part 4.

Background

The NBC classifies buildings by major occupancy (what they are used for), and by size and height. NBC Division A, Subsection 1.3.3 details how different provisions of the NBC apply to buildings, as follows:

- Parts 1, 7, and 8 of NBC Division B apply to all buildings
- Parts 3, 4, 5, and 6 of NBC Division B apply as follows:
  - Post-disaster buildings
  - Major occupancies classified as
    - Group A, assembly occupancies
    - Group B, care, detention and treatment occupancies
    - Group F, Division 1, high-hazard industrial occupancies

Compliance with *The Uniform Building and Accessibility Standards Act*, regulations and the National Building Code of Canada 2010 is addressed in this advisory. Words in italics, other than Act titles, are defined in the NBC 2010.

[1] All references to Part 3 include Parts 4, 5, and 6 of NBC Division B.

- Buildings exceeding 600 m^2 in building area or exceeding 3 storeys in building height used for major occupancies classified as:
  - Group C, residential occupancies
  - Group D, business and personal services occupancies
  - Group E, mercantile occupancies
  - Group F, Division 2, medium-hazard industrial occupancies
  - Group F, Division 3, low-hazard industrial occupancies
- Part 9 of Division B applies to buildings 3 storeys or less in building height or 600 m^2 or less in building area used for major occupancies classified as:
  - Group C, residential occupancies
  - Group D, business and personal services occupancies
  - Group E, mercantile occupancies
  - Group F, Division 2, medium-hazard industrial occupancy
  - Group F, Division 3, low-hazard industrial occupancy

Parts of the National Building Code, Division B

Part 1 – General
Part 2 – Reserved
Part 3 – Fire Protection, Occupant Safety and Accessibility
Part 4 – Structural Design
Part 5 – Environmental Separation
Part 6 – Heating, Ventilating
Part 7 – Plumbing Services[2]
Part 8 – Safety Measures at Construction and Demolition Sites
Part 9 – Housing and Small Buildings

Occupancy Definitions

Assembly occupancy (Group A) means the *occupancy* or the use of a *building*, or part thereof, by a gathering of persons for civic, political, travel, religious, social, educational, recreational or like purposes, or for the consumption of food or drink.

- Division 1 - A*ssembly occupancies* intended for the production and viewing of the performing arts
- Division 2 – *Assembly occupancies* not elsewhere classified in Group A
- Division 3 – *Assembly occupancies* of the arena type
- Division 4 – *Assembly occupancies* in which the occupants are gathered in the open air

Care occupancy (Group B, Division 3) means the *occupancy* or use of a *building* or part thereof where *care* is provided to residents. (See Note A-1.4.1.2.(1).)

Detention occupancy (Group B, Division 1) means the *occupancy* by persons who are restrained from or are incapable of evacuating to a safe location without the assistance of another person because of security measures not under their control.

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[2] NBC Division B, Article 7.1.2.1 references the National Plumbing Code (NPC). In Saskatchewan the NPC is adopted by the Ministry of Health as the standard for Plumbing Services.

High-hazard industrial occupancy (Group F, Division 1) means an *industrial occupancy* containing sufficient quantities of highly *combustible* and flammable or explosive materials which, because of their inherent characteristics, constitute a special fire hazard.

Low-hazard industrial occupancy (Group F, Division 3) means an *industrial occupancy* in which the *combustible* content is not more than 50 kg/m^2 or 1 200 MJ/m^2 of *floor area*.

Medium-hazard industrial occupancy (Group F, Division 2) means an *industrial occupancy* in which the *combustible* content is more than 50 kg/m^2 or 1 200 MJ/m^2 of *floor area* and not classified as a *high-hazard industrial occupancy*.

Mercantile occupancy (Group E) means the *occupancy* or use of a *building* or part thereof for the displaying or selling of retail goods, wares or merchandise.

Residential occupancy means the *occupancy* or use of a *building* or part thereof by persons for whom sleeping accommodation is provided but who are not harboured for the purpose of receiving *care* or *treatment* and are not involuntarily detained.

Treatment occupancy means the *occupancy* or use of a *building* or part thereof for the provision of *treatment*, and where overnight accommodation is available to facilitate the *treatment*. (See Note A-1.4.1.2.(1).)

Other Definitions

Building area means the greatest horizontal area of a *building* above *grade* within the outside surface of exterior walls or within the outside surface of exterior walls and the centre line of *firewalls*.

Building height (in *storeys*) means the number of *storeys* contained between the roof and the floor of the *first storey*.

Post-disaster building[3] means a *building* that is essential to the provision of services in the event of a disaster, and includes:

- hospitals,
- emergency treatment facilities and blood banks,
- telephone exchanges,
- power generating stations and electrical substations,
- control centres for air, land and marine transportation,
- public water treatment and storage facilities, and pumping stations,
- sewage treatment facilities and *buildings* having critical national defense functions, and
- *buildings* of the following types, unless exempted from this designation by the *authority having jurisdiction*
  - emergency response facilities,
  - fire, rescue and police stations and housing for vehicles, aircraft or boats used for such purposes, and
  - communications facilities, including radio and television stations.

[3] A local authority can exempt certain buildings as post disaster buildings (See NBC Division A, Sentence A-1.4.1.2.(1).

Storey means that portion of a *building* that is situated between the top of any floor and the top of the floor next above it, and if there is no floor above it, that portion between the top of such floor and the ceiling above it.

Other Questions

Who is qualified to be a professional designer?
For purposes of applying the NBC, the UBAS Act qualifies a professional designer as a licensed architect or a professional engineer. To practice in Saskatchewan a professional designer must be registered or licensed in compliance with either *The Architects Act, 1996* or *The Engineering and Geoscience Professions Act.*

From *The Architects Act, 1996*
Licensed architect means any person granted a licence pursuant to this Act.

From *The Engineering and Geoscience Professions Act*
Professional engineer means an individual who is registered with the association as a professional engineer.

Do building projects need more than one professional designer?
Similar to doctors and lawyers, architects and engineers may provide general services or specialized designs.

Architects are trained to complete architectural designs and coordinate the designs of building systems. Engineers are trained to complete designs of specific elements such as structural, mechanical, or electrical systems. Small projects may be competently handled by either an architect or an engineer. More complex projects will require the combined efforts of a team to create a complete design. Building components which usually need to be addressed on large projects may include: architectural, foundation, structural, mechanical, fire protection, and electrical specialties.

Seldom is one professional designer qualified to complete all of these designs. Utilizing the services of a professional designer competent in design and application of the NBC could provide the building owner with a more economical, longer lasting, and safer building.

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