



## Advisory

July 10<sup>th</sup>, 2019

### Subject:

Permanent Hail Shelters - Building Code Requirements

### Background:

This advisory applies to Permanent Hail Shelter Structures which are not erected and removed seasonally and are intended for year-round use. The Authority Having Jurisdiction (AHJ) considers these structures comparable to an open-air parkade. Typically, the structures are used by vehicle dealerships to protect their inventory from hail damage in the event of a severe storm, however; with this type of structure the potential exists for a serious incident in the event of a high wind or a heavy snow fall event. The structures may consist of tubular steel arch trusses with a fabric covering. Pursuant to Article 3.2.2.2. of Division B of the Alberta Building Code, these shelters are classified as a “**Special and Unusual Structure**”. In accordance with Sentence 2.4.2.1.(9). of Division C of the Alberta Building Code, and due to the size and complexity of these structures as well as the special safety concerns involved, they shall require the involvement of a registered professional. All structural drawings and related documents shall be dated and shall bear the authorized professional seal and signature of the *designer* as required in Division C Sentence 2.4.2.2.(1). of the Alberta Building Code.

### Advisory

This advisory is not intended to address **Temporary Hail Shelter Structures**.

Article 1.4.1.2. of Division A - of the current Alberta Building Code states: *Building* means any structure used or intended for supporting or sheltering any use or *occupancy*. Therefore; Permanent Hail Shelter Structures are considered buildings under the Code, and as such a building permit is required. The building permit submission requirements are as follows:

#### **Architectural Plans:**

Site specific architectural drawings are required, the plans shall include but are not limited to the following:

- Site plans, including the location of all property lines
- Fire department access route to be indicated on the site plan.
- The location of proposed hail shelter building and any existing buildings on site.
- Floor plan of the proposed hail shelter building.
- Spatial separation analysis for all buildings on the site may be required, see details below.



Although a spatial separation analysis is required, a fabric roof covering, tested to CAN/ULC S109, on a non-combustible structure without any sidewall enclosures may be exempt from the prescriptive spatial separation requirements of the code. In this case it would need to be demonstrated that both the adjacent property and any existing buildings on the site are protected against fire spread in conformance with good fire protection engineering practice. A roof assembly consisting of a fabric covering may be consumed early in a fire and thereby reduce the risk of heat flux to adjacent buildings. One acceptable approach would be to demonstrate, based on heat flux calculations prepared by a fire protection engineer, that the heat flux to both the property lines(s) and to any adjacent building(s) on the site would not result in the spread of fire beyond the point of origin within the Permanent Hail Shelter Building.

#### **Structural Drawings:**

Site specific structural drawings, dated, sealed and signed by a registered professional are required, as a minimum they are expected to include the information required by Article 2.2.4.3. of Division C of the current Alberta Building Code.

#### **Geotechnical Report:**

The foundations for this type of structure cannot meet the requirements of a Part 3 building nor do they meet the requirements of a Part 9 building as prescribed in the Alberta Building Code, therefore; the proposed foundation system is to be based on a subsurface investigation prepared by a registered engineering professional qualified in this field of work. A geotechnical report dated, sealed and signed by a registered engineering professional is required and should provide site specific recommendations for the type of foundation system necessary to support the structure, based on the base connection details and the reaction forces stated on the structural drawings.

#### **Foundation Drawings:**

Site specific drawings, sealed by a registered engineering professional, will be required, and are expected to include as a minimum, the information required by Article 2.2.4.6. of Division C of the Alberta Building Code. The type of foundation proposed for use shall reflect the recommendations made in the geotechnical report.

#### **Roof Assemblies:**

A roof covering consisting of solid fabric or mesh shall comply with: **CAN/ULC S-109-14** Flame Tests of Flame-Resistant Fabrics and Films.

Chief Building Official  
Calgary Building Services  
Planning & Development