



TECHNOLOGICAL SKILLS CHALLENGES

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2025 DSBN REGIONAL 3D ARCHITECTURAL CAD SKILLS CHALLENGE SECONDARY LEVEL SCOPE

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PURPOSE OF THE CONTEST:

To challenge each competitor's knowledge and skills using Autodesk REVIT 3D Architectural design software. **This new DSBN Skills Challenge for 2025 is not currently offered at the provincial or national levels through Skills Ontario and Skills Canada!**

EVENT DETAILS

Date: Tuesday March 4, 2025

Time Allotted: 8:30 AM – 2:30 PM (6 Hours) (Lunch will be provided)

Location: West Niagara Secondary School Room LO15

ENTRY:

Students must register online at [2025 Skills Challenge Registration Form](#) with all the required information completed to be eligible to participate.

AGENDA:

8:00 AM - 8:30 AM	Sign-in at West Niagara Secondary School
9:00 AM - 9:15 AM	Orientation & Opening Remarks
9:15 AM - 11:00 AM	Preliminary Planning, REVIT Set-Up & 3D Modeling
11:00 AM - 11:30 AM	Lunch Break
11:30 AM - 2:30 PM	Project Completion & Submission of REVIT File and Final Renderings

ASSIGNMENT:

The competitors will be given an existing architectural floor plan and will be asked to 3D model a residential building using Autodesk REVIT software. Some specifications for the project will be provided and some components of the challenge will be left to the imagination of the competitors.

SUGGESTED TIME MANAGEMENT:

Software Skills	Time (Minutes)
Creating Levels, Wall Types Floor Plan(s) and Stairs	150
Creating Foundation Walls, Footings and Sill Plates	30
Adding Windows, Doors and Components	60
Creating Floors and Roof	30
Create Site Topography Elements	30
Create Building Sections, Camera Views and Walkthrough	15
Create, Download and Submit Renderings	45

SKILLS AND KNOWLEDGE TO BE TESTED:

- Residential construction knowledge including standard conventions in relation to typical residential construction materials, wall section details and terminology, and typical material properties including sizing and appearance.
- Blueprint reading and understanding project specifications.
- Architectural Aesthetics and “Curb Appeal”
- Autodesk REVIT skills including:
 - Creating Levels
 - Creating Custom Wall Types
 - Setting Temporary Dimension Locations
 - Creating Floor Plan(s) Using Custom Wall Types
 - Use of Underlays on Various Levels to Model Various Building Elements
 - Adding Foundation Walls, Sill Plate and Footings
 - Adding Windows, Doors and Other Components (i.e. Furniture, Cabinetry, Model-in-Place Items, etc.)
 - Creating Custom Floor Types and Generating Floor Systems
 - Creating Stairs (Stairs to be Ontario Building Code Compliant)
 - Creating Custom Roof Types and Generating a Roof
 - Creating Site Topography Elements (i.e. Grass, Soil, Driveways, Walkways, Trees, Plantings, etc.)
 - Creating Building Sections
 - Creating Camera Views
 - Creating a Walkthrough
 - Generating Final Renderings Using Autodesk “Render in Cloud” Feature. (Autodesk Education Student Account Required)

SAFETY REQUIREMENTS:

Teachers or another designate must supervise the student at the challenge site to ensure that safety is adhered to, and to maintain the integrity of the competition. Competitors are required to follow all industry safety standards during the competition.

EQUIPMENT, MATERIALS, TOOLS, AND SUPPLIES:

Tools and Equipment supplied by the Challenge Site:

- Hardware: West Niagara Secondary School, Design Lab (Room LO15)
- 20 Maximum workstations
- Software: Autodesk Revit 2022
- Ontario Building Code (OBC) Part 9: Stairs Section

Tools and Equipment supplied by the Competitor:

- Calculator
- Paper, Pencils/Pens to Sketch.
- Imperial Ruler or Tape Measure

CLOTHING REQUIREMENTS:

Casual business attire must be worn with DSBN Technology T-shirts.

JUDGING INSTRUCTION:

Competitors will be **identified by number only** and submissions will be judged by industry professionals.

JUDGING CRITERIA:

Judging criteria will be emailed to all registered students' teachers a few weeks prior to the challenge date.

TEACHER'S ROLE:

Teachers are expected to acquaint their student participants with all of the enclosed guidelines. Teachers may accompany their students or visit any time during the competition but may not assist the competitors during the challenge.

**** Each competitor will be given a number by their coordinator upon registration at the location and will be judged anonymously during the competition.**