



CONTEST DESCRIPTION

# **Architectural technology & design**

POST-SECONDARY

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## **1 THE ESSENTIAL SKILLS FOR CAREERS IN THE SKILLED TRADES AND TECHNOLOGY**

SCC is currently working with Employment and Social Development Canada (ESDC) in order to bring awareness to the importance of Essential Skills that are absolutely crucial for success in the workforce. Part of this ongoing initiative requires the integration and identification of Essential Skills in contest descriptions, projects, and project documents. The next phase and very important aspect of our Essential Skills (ES) initiative is to provide an ES report card to each competitor at the Skills Canada National Competition. The purpose of the ES report card is to inform the competitor about their current level of essential skills based on their competition scores. With this knowledge, the competitor will be made aware which essential skill may require improvement. Full implementation is expected in the next Skills Canada National Competition.

The following 9 skills have been identified and validated as key essential skills for the workplace in the legend below:

<sup>1</sup>Numeracy, <sup>2</sup>Oral Communication, <sup>3</sup>Working with Others, <sup>4</sup>Continuous Learning, <sup>5</sup>Reading Text, <sup>6</sup>Writing, <sup>7</sup>Thinking, <sup>8</sup>Document Use, <sup>9</sup>Digital

These essential skills have been identified in your Contest Description and if applicable, in your Project and all other supporting project documents.

## **2 CONTEST INTRODUCTION**

### **2.1 Description of the associated work role(s) or occupation(s).**

<http://skillscompetencescanada.com/en/careers/information-technology/architectural-technology-design/>

### **2.2 Duration of contest**

12 hours

### **2.3 Purpose of the Challenge**

To evaluate each competitor's ability to interpret project requirements and prepare a set of architectural working drawings using computer aided design software and to recognize outstanding competitors for excellence and professionalism in their field.

## 2.4 Skills and Knowledge to be tested

- Prior to the arriving at the competition, each competitor shall create a metric A1 size template with the title block containing the information provided in the example posted on the Skills/Compétences Canada website, and have this template accessible on their computer for use during the competition.
- The competitor will be challenged with design and drawing tasks applying the following key themes:
  - Architectural Principles
    - Space planning concepts and space relationships, accessibility design standards, and environmental sustainability design concepts<sup>7</sup>
  - Preparation of working drawings<sup>8</sup>
    - Proficiency in the use of computer aided design software<sup>9</sup>
- Building Codes
  - Interpret and apply the National Building Code of Canada<sup>5</sup>
  - All drawings **MUST** adhere to the National Building Code of Canada **ONLY**. Provincial or municipal amendments do **not** apply.<sup>8</sup>
  - Engineering Principles
    - Awareness of structural framing layouts
    - Awareness of building systems interface; integration of mechanical and electrical building systems
  - Constructability and Building Science
    - Building envelope design<sup>7</sup>
    - Proficiency in detailing<sup>7</sup>
    - Materials and methods of construction; and knowledge of construction assemblies<sup>7</sup>

*Essential Skills – <sup>5</sup>Reading Text, <sup>7</sup>Thinking (Problem Solving, Job task planning & organizing, critical thinking), <sup>8</sup>Document Use <sup>9</sup>Digital*

## 3 CONTEST DESCRIPTION

### 3.1 List of documents produced and timeline for when competitors have access to the documents.

DOCUMENT	DATE OF DISTRIBUTION VIA WEBSITE
Sample Title Block	November 2020

### 3.2 Tasks to be performed during the contest

- Building Code Analysis<sup>7</sup>
- Interpretation of project requirements for a structure incorporating concrete, steel, masonry and/or a curtain wall system<sup>8</sup>
- Preparation of Working Drawings<sup>8</sup>

- Competition Test will include floor plans, elevations, building cross sections, wall sections and construction details, etc.
- Use of BIM / CADD<sup>9</sup>
- Exporting drawings as a PDF
- Planning and design concepts<sup>8</sup>
- Detailing and sketching skills<sup>7</sup>

*Essential Skills - <sup>7</sup>Thinking (Significant use of Memory, Critical), <sup>8</sup>Document Use, <sup>9</sup>Digital*

## **4 EQUIPMENT, MATERIAL, CLOTHING**

### **4.1 Equipment and material provided by Skills/Compétences Canada**

- Laser printer and/or plotter
- Table and chair
- 120VAC power supply

### **4.2 Equipment and material provided by the competitor**

- Competitors are required to supply their own computer and peripherals (e.g. monitor, mouse, keyboard, cables, etc.).
- Competitors may use either a desktop or laptop computer. No more than two monitors may be used.
- Other than operating software, no files are permitted on the desktop or laptop.
- Competitors may use any BIM/CADD software they are proficient with to prepare their drawings. Software must be able to function without the need for a connection to the internet.
- Skills Canada volunteers will not provide technical assistance for competitor hardware or software.
- No internet access will be provided or permitted during competition
- Competitors preferred software must be capable of printing or exporting to a PDF file, using installed PDF creation software (ie. Adobe PDF writer) Competitors are to ensure PDF creation software is installed and tested prior to competition time. Refer below to contest specific rules.
- If competitors are bringing a computer supplied by their school (instead of their own personal computer), their user account must have administrator-level access for the duration of the competition in the event that specific system folders or files need to be accessed to permit the install of software or driver updates or access settings to troubleshoot issues.
- Latest edition of the National Building Code of Canada. No other technical references will be permitted during the competition.
- Scales (metric and imperial)

- Calculator (competitors may not use their smartphone calculator during the competition, however they may access a calculator application on their computer if necessary).
- Pencil
- Paper
- **Empty** USB storage device
- Software reference manuals, textbooks and electronic data (e.g. CD or diskette) are not permitted

#### 4.3 Required clothing provided by the competitor.

- N/A

## 5 SAFETY REQUIREMENTS

### 5.1 Safety workshop

Upon arrival at the Skill area, Competitors will participate in a Safety workshop and they will be expected to work and maintain a safe working area during the competition. Any Competitor breaking any health, safety and environmental rules, may be required to undertake a second safety workshop, this will not affect the Competitor's competition time.

### 5.2 List of required personal protective equipment (PPE) provided by Skills/Compétences Canada

- N/A

### 5.3 List of required personal protective equipment (PPE) provided by the competitor.

- N/A

## 6 ASSESSMENT

### 6.1 Point breakdown

POINT BREAKDOWN	/100
Day 1 - Working Drawing(s)	50
Day 2 - Working Drawing(s)	50

## 7 CONTEST SPECIFIC RULES

Contest specific rules cannot contradict or take priority over the Competition Rules. They do provide specific details and clarity in areas that may vary from contest to contest. Any additional contest rules will be reviewed during competitor orientation.



TOPIC/TASK	CONTEST SPECIFIC RULE
Use of Resource Materials	<ul style="list-style-type: none"> <li>The only resource permitted is the National Building Code of Canada. <u>Failure to comply with this rule will result in disqualification.</u></li> </ul>
Use of technology - Internet	<ul style="list-style-type: none"> <li>There will be no access to the Internet during the competition. Failure to comply with this rule will result in disqualification.</li> </ul>
Use of technology – Mobile phones and music	<ul style="list-style-type: none"> <li>MP3 players or cell phones on airplane mode are permitted during the competition to listen to music provided the competitor wears headphones or earbuds.</li> <li>During the competition, competitors are <b><u>not</u></b> permitted to use their cell phones for calling, texting or accessing the internet. <b><u>Failure to comply with this rule will result in disqualification.</u></b></li> </ul>
Hardware & Software	<ul style="list-style-type: none"> <li>Computers must remain onsite from Orientation to the conclusion of the competition.</li> <li>No electronic drawing files are permitted to be brought into the competition. The competitor is required to ensure that their computer only contains software application files. <b><u>Failure to comply with this rule will result in disqualification.</u></b></li> <li>Only default software libraries, families, blocks, and components are permitted to use during the competition.</li> <li>NTC Members will verify compliance during Orientation.</li> <li>All software must be installed and operational prior to the beginning of competition. <b><u>Failure to comply with this rule will result in disqualification.</u></b></li> </ul>
Malfunction of Software/Hardware	<ul style="list-style-type: none"> <li>Technical support for software will <b><u>not</u></b> be provided during the competition. Competitors are assumed to be knowledgeable in their chosen software and should have full working knowledge of its capabilities.</li> <li>If your hardware/software malfunctions you will be provided the equivalent down time to complete the competition up to a maximum of 60 minutes per day. Subject to NTC discretion.</li> </ul>

## 8 ADDITIONAL INFORMATION

### 8.1 Interpreter

If a competitor requires the help of an interpreter once onsite during the competition, the Skills/Compétences Canada Provincial/Territorial offices must advise Skills/Compétences Canada National Secretariat a minimum of 1 month prior to the competition or this service might not be guaranteed.

### 8.2 Ties

- Tiebreaker #1: In the event of a tie, the competitor with the highest score in the Construction Detailing Component of the test will be declared the winner.
- Tiebreaker #2: If a tie still exists at this point, the competitor with the highest score in the Floor Plan(s) Component of the test will be declared the winner.
- Tiebreaker #3: If a tie still exists at this point, the competitor with the highest score in the Elevation(s) Component of the test will be declared a winner.

### 8.3 Competition rules

Refer to the [competition rules](#) of the Skills Canada National Competition which can be found on the Skills/Compétences Canada website.

## 9 NATIONAL TECHNICAL COMMITTEE MEMBERS

Member Organization	Name
Ontario - Chair	Joel Foster
Saskatchewan – Co-Chair	Andrea Clayton
Alberta	Peter Kelly
British Columbia	Wes Macaulay
Manitoba	Scott Fraser
Prince Edward Island	Bruceyene M-Collins
Quebec	Sylvie Faber
Nova Scotia	Jeff Nash
Newfoundland and Labrador	Mike Foley

Contact the Skills/Compétences Canada national secretariat for any questions or concerns: Nathalie Maisonneuve ([nathaliem@skillscanada.com](mailto:nathaliem@skillscanada.com)).