Project Name:	Global Sustainable - Efficient home - LOSS	**Start Date:**	2022-04-01
Project Number:	2215	**Completion Date:**	2022-11-30

Project Details:

Scientific or Technological Objectives:

Measurement	Current Performance	Objective	Has results?
Energuide efficiency rating (%)	80	90	Yes

The following example is based on the Tax Court of Canada judgement 6398316 CANADA INC operating as Global Sustainable, and HER MAJESTY THE QUEEN, Mar. 4, 2021.

1] determinations pertain to the Appellant's 2012 and 2013 taxation years... These claimed expenditures were incurred in connection with a construction project carried on by the Appellant during those two years. The construction was of a house, in southern Ontario, intended to be uniquely energy efficient while staying within the price range of a "regular home".

Evidence:

8] At the opening of the hearing, Appellant's counsel stated that his client's total of claimed SR&ED expenditures for the 2012 taxation year had now been reduced by $3,485.65 to the amount of $139,631.67; and likewise the 2013 taxation year total had now been reduced by $34,032.69 to the amount of $61,752.60.

9] The corporate Appellant called one witness – Mr. Cory Smith (CS). At all material times CS was the Appellant's president. Neither party called any expert evidence and the Respondent called no witnesses. CS

10] CS testified that he has experience in house construction and has earned various training certifications relating to house construction. They include a 2008 certificate from Sir Sanford Fleming College marking completion of a six month study program in "sustainable building design and construction".

Field of Science/Technology:

Civil Engineering (2.01.01)

Project Details:

Intended Results:	Improve existing processes
Work locations:	Commercial Facility
Key Employees:	Cory Smith (re. Global) (Home building - College certificate (2008) / President)
Evidence types:	Samples, prototypes, scrap or other artefacts; Photographs and videos

Scientific or Technological Advancement:

Uncertainty #1: Technological uncertainty

12] As a first step, the Appellant engaged a company knowledgeable in passive house design to render formal, computer software generated design plans for the small house.

13]These design plans were generated in full consultation with CS and allowing for elements and concepts he wanted included. CS testified that the aspects of the project upon which the SR&ED claim was based were various natural force interactions such as thermal mass, thermal bridging, passive cross-ventilation, passive heating and cooling, and air sealing.

Thermal mass is the ability to absorb and store heat energy – here in the building's concrete footings. In winter, warmer daytime temperature warmth would be released throughout the colder night.

Thermal bridging is the movement of heat across an object more conducive to that than surrounding materials. For example, warm air can relatively readily migrate though wood framing from indoors to outdoors, resulting in heat energy loss.

Passive ventilation is manipulating air movement within the building environment entirely or mostly absent the use of active

ventilation sources, such as a furnace.

Passive cross-ventilation, a term coined by CS, refers he said to an even, passive distribution of hot air and cold air.

26] In oral submissions, Appellant's counsel addressed these two steps. He submitted,

The hypothesis is I can build a house that doesn't need a furnace, at a price point that's similar to a regular home.

That's the hypothesis and the technical [sic: technological] uncertainty is the cost. [

The most significant underlying key variables are:

effects of natural force interactions (unresolved)

Technology or Knowledge Base Level:

Activity #1-1: House construction (Fiscal Year 2022)

Methods of experimentation:

A prototype house was built. A base design was purcahsed and then various decisions were made on levels of insulation and modifications of this base design.

Results:

- Energuide efficiency rating: 91 % (110% of goal)

24] The home as built received an "Energuide" efficiency rating of 91 out of 100. The Energuide document (Ex. A-17) provides inter alia that the "typical rating" for a "New house built to minimum building code standards" would be "65 to 70".

It provides that the typical rating for its top category, being a "Highly energy-efficient house", would be "80 or more".

Conclusion:

Judge's comments:

27] Thus the Appellant's position is not that there was any technological issue vis-à-vis the various aspects of construction referred to in CS's testimony in constructing this energy efficient home. And I would agree with that.

None of these various aspects, including extra insulation of the footings and foundation, walls and attic, extra taping of gaps and seams, and as well development of the modified ground loop as a cheaper and less energy efficient geothermal system, were described by CS as reflecting new technological knowledge. That is, none of these various aspects that CS testified to reflected development of technological knowledge new to the home construction industry.

28] Furthermore the Appellant presented no expert evidence as to the state of technological knowledge within this industry, that might suggest that the Appellant had broken new technological ground in constructing this energy efficient house.

No supposedly new knowledge was identified by CS, let alone by an expert witness, as having been sought or developed in the construction of this house.

COST AS A BASIS FOR ADVANCEMENT:

30] Conceptually there is no technological aspect implicit in the notion of an item costing or priced at 'x' rather than 'y' dollars. Of course one might envisage that the cost (or price) of an item could be reduced in the event of some particular technological advancement.

But the relevant question for SR&ED purposes would remain – what is that contemplated technological advancement itself, that could lead to the achieving the commercial objective of lowered pricing, comparable to that of standard code constructed housing.

Documentation:

- Offline Documents: docs