



Green 2.0

Interactive, energy-efficient building design optimized for how people live

Over the last decade, public interest in sustainability has triggered a surge in green building construction. However, building designs with energy-efficient spaces and less resource-intensive materials do not automatically make for people-friendly environments. Unless a green space is an enjoyable one, it is often neither fully accepted nor properly used. Ensuring buildings are friendly for both people and the environment requires two-way communication, social engagement, and personalization in the green building process.

Interactive building design

Enter Green 2.0, an interactive, web-based Research Software Platform that makes “social inclusion” an important component of building design and operation. With it, end-users and other stakeholders can be intimately involved in the design process, commenting on specific features and seeing the impacts of their suggested modifications. For instance, the platform immediately shows stakeholders how the changing of the position of a window will impact energy consumption. Equally important, the platform captures people’s reactions and preferences and feeds that knowledge back to the green building design community.

The project, best described as a combination of Building Information Modeling (BIM) and crowdsourcing, lays the groundwork for researchers from diverse backgrounds to create a broad range of tools that engage users and harness their collective innovation in green building design and operation. It overlays a smart, social, and green framework on top of the most common industry-accepted tools, enabling designers to create green designs, see the reaction of potential users, and then build buildings that are both

Green 2.0 is an interactive online platform that makes “social inclusion” an important component of building design and operation.

environmentally and people-friendly. Equally important, Green 2.0 maintains a historic web of building decisions and user commentary that preserves architectural knowledge and innovation for generations to come.

Commercialization effort

Creating Green 2.0 took the combined effort of three universities – University of Toronto, University of British Columbia, and Carleton University.

The end result is that Canadian homes and buildings will be more energy efficient by allowing designers to educate themselves on the preferences of the people who will live and use their buildings, and by allowing these same people to be engaged in the decision-making process that will directly impact their lives.

Cycle of software reuse

In addition to the Green 2.0 Platform itself, reusable Software Services used within it have been made available to other researchers via the CANARIE Research Software Registry. These include social analytics and Building Information Modeling (BIM) technical analysis that can be reused by researchers in other disciplines.

Technical Details

Platform: Green 2.0

Description	Green 2.0 is a platform for fostering collaboration on green building models.
Creator(s)	Carleton University
Collaborator(s)	University of British Columbia, Carleton University
Research Subject	Civil Engineering
Managed Versionⁱ	Yes
Self-deployed Versionⁱⁱ	No
Cloud Support	Yes
Host OS	N/A
Licence	RESTful API licenced with the Creative Commons Attribution-NonCommercial 4.0 International License
URL	canarie.ca/software/greenbuildings

Contributed Services:

	RESTful access to Green 2.0 platform
Description	The Green 2.0 platform has a number of RESTful interfaces available for programmatic access of the platform.
Interfaces	Interfaces exist to provide access to each of these aspects of the Green 2.0 system. <ul style="list-style-type: none">• BIM BPM Processes (canarie.ca/software/green2processes)• BIM Project Comments (canarie.ca/software/green2comments)• BIM Project Discussion Network (canarie.ca/software/green2network)• BIM Project IFC Elements (canarie.ca/software/green2elements)• BIM Projects (canarie.ca/software/green2projects)• BIM Users (canarie.ca/software/green2users)
Category	Data Storage and Retrieval
Research Subject	Civil Engineering
Managed Versionⁱ	Yes
Self-deployed Versionⁱⁱ	No
Cloud Support	N/A
Host OS	N/A
Licence	Creative Commons Attribution-NonCommercial 4.0 International License

Funding for the development of Green 2.0 was provided through CANARIE's Research Software Program.

ⁱ Managed version: Creators host a live instance of the software on their infrastructure, available for use by others

ⁱⁱ Self-deployed version: Users host a private instance of the software on their own infrastructure