



Canmore, Alberta



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Executive Summary

Impact Report for the Bow Valley Sustainable Building
Summit Webinar Series



Hosted by the Biosphere Institute of the Bow Valley, the **Bow Valley Sustainable Building Summit** invited local members of the development, construction and architectural design communities from the town of Canmore, Alberta to attend a series of online webinars related to sustainable building solutions. The purpose of the webinar series was to increase knowledge about sustainable building options, and to lead to participants taking action to implement specific sustainable solutions in their own business.

This research consisted of **post-webinar surveys** to measure perceived changes in participants' interest, knowledge, and barriers. All webinar attendees were invited to complete an **online survey** immediately after the webinar via a link.

*In total, there were 9 webinars
with 250 attendees and 182
post-webinar surveys
completed.*



01 Webinar Series



Webinar Series Schedule

As all in-person events had to be cancelled for the majority of the year due to COVID-19, the Biosphere Institute of the Bow Valley adapted and created the Sustainable Building Summit Webinar Series. This consisted of 9 webinars between August-October, 2020.

Webinar attendees were asked a series of questions to identify how interested and knowledgeable they felt about general and specific topics, as well as their perception of common barriers to taking action.

Non-parametric statistics were conducted to determine significant differences between measures. Significance is determined at a $p \leq 0.05$ value throughout the report.

Webinar 1: UniverCity - Sustainable Development

Date: August 12, 2020
Attendance: 23
Online views: 47

Webinar 2: Passive House Design

Date: August 19, 2020
Attendance: 25
Online views: 25

Webinar 3: Green Building

Date: August 26, 2020
Attendance: 29
Online views: 32

Webinar 4: Sustainability in the Built Environment

Date: September 2, 2020
Attendance: 52
Online views: 28

Webinar 5: High Performance Buildings

Date: September 9, 2020
Attendance: 20
Online views: 12

Webinar 6: BC Step Code Case Study

Date: September 16, 2020
Attendance: 22
Online views: 9

Webinar 7: Geothermal and GeoExchange

Date: September 23, 2020
Attendance: 23
Online views: 23

Webinar 8: Solar Energy Solutions

Date: September 30, 2020
Attendance: 20
Online views: 17

Webinar 9: Designing for Climate Change - An Architect's Responsibility

Date: October 7, 2020
Attendance: 36
Online views: 50

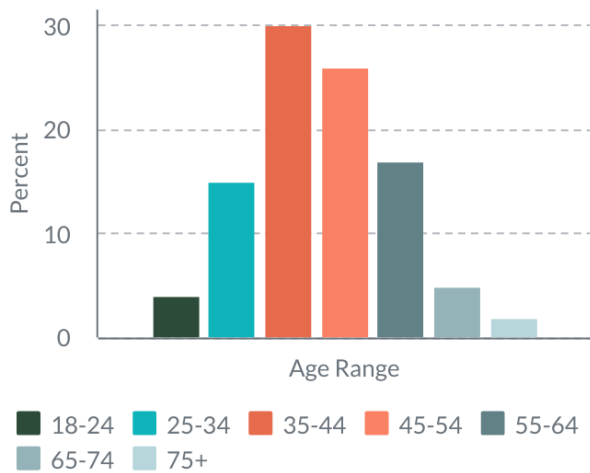




Participant Demographics



The average age range of the webinar survey participants was 35-44.



Participants were primarily working as paid employees (51%) or were self-employed (25%). The average reported household income was \$97,068 - \$150,472.



The majority of all participants were highly educated, with approximately 35% having obtained a Bachelor's degree and an additional 34% having obtained a Master's degree as well.

How did you hear about the webinars?



The demographic data were evenly distributed across age categories, sex, income, and employment, indicating that the webinars attracted a diverse audience.

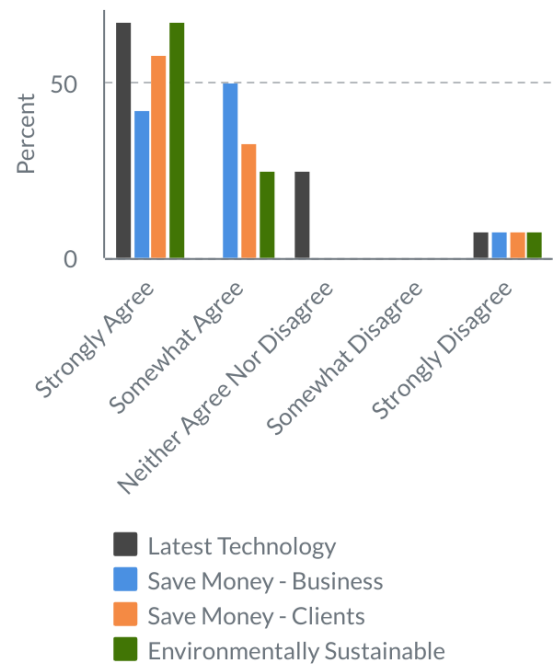


#1

Webinar 1: Building Sustainable Communities



Motivations



Interest and Knowledge

Attendees in this webinar indicated that their **interest in the topic had not changed**. There was a slight increase in their knowledge about identifying what a sustainable master-planned community is and a **significant difference in 3 of the 5 learning objectives**.

Significant
0.05

Objective	Result
Objective 1* Identify what a sustainable master-planned community is	✗
Objective 2 Identify comparable sales / lease rates in model communities	✓
Objective 3 Identify at least one best-fit strategy for delivering a cost-effective development	✓
Objective 4* List two long-term benefits of sustainable communities	✗
Objective 5 Describe how projects, bylaws and guidelines can be flexible to ensure adaptability	✓

*The pre-webinar measures of knowledge were already high for these items, suggesting that a ceiling effect (when pre-measures are already very high) accounted for the fact that there were no significant differences.

Attendees were motivated by cost savings both for their businesses and their clients, as well as interest in using the latest technology and becoming environmentally sustainable.

Barriers

60% of participants reported that their perception of barriers had **decreased** as a result of the webinar.



Before the webinar the primary barrier was that **action was too expensive**.

After the webinar the main barrier was that **action was too inconvenient or difficult**.

#2

Webinar 2: Passive House Design



Interest and Knowledge

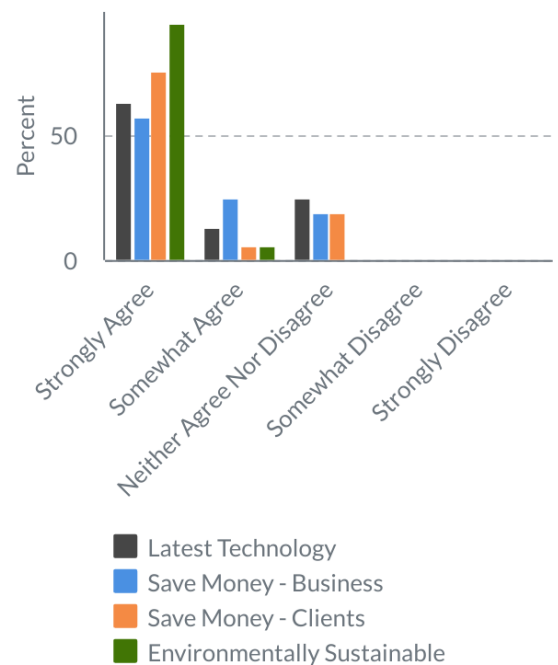
Attendees in this webinar indicated that their **interest in passive house building standards had changed significantly**. There was a significant increase in attendees' knowledge about all main topics in general and there was a **significant improvement in 3 of 5 learning objectives**.

Significant
0.05

Objective 1 Identify what passive housing is	✓
Objective 2 Understand what embodied carbon or materials are	✓
Objective 3* Identify at least one benefit of high performance buildings	✗
Objective 4 List passive house building standards	✓
Objective 5* Identify at least two benefits of passive house building and renovations	✗

*The pre-webinar measures of knowledge were already high for these items, suggesting that a ceiling effect (when pre-measures are already very high) accounted for the fact that there were no significant differences.

Motivations



Attendees were **motivated predominantly by becoming more environmentally sustainable**. However, all items scored highly in terms of motivations, including: cost savings both for their businesses and their clients, and interest in using the latest technology.

Barriers

80% of participants reported that their perception of barriers had **decreased** as a result of the webinar.



Before the webinar the primary barrier was that **action was too expensive and uncertainty of where to begin**.

After the webinar both of these barriers were notably reduced.

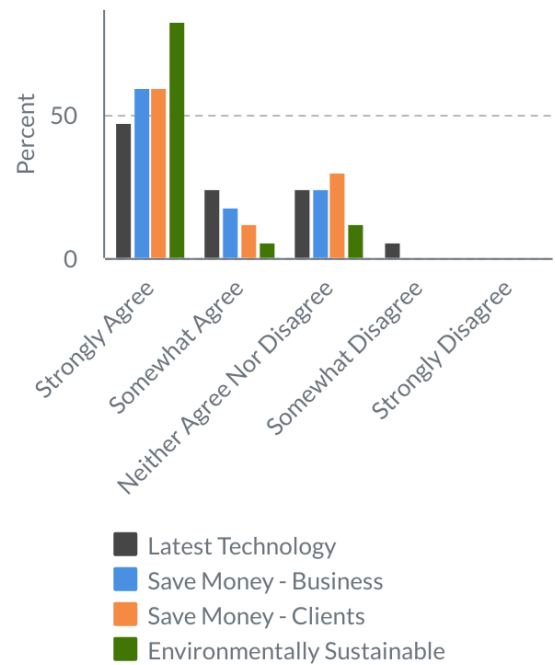


#3

Webinar 3: Green Building



Motivations



Interest and Knowledge

Attendees in this webinar indicated that their **interest in the topic had not changed**. There was a significant increase in attendees' knowledge about **all main topics in general**. The most notable improvement was in understanding building codes.

There was a **significant difference for 2 of the 5 learning objectives**.

Significant
0.05

Objective	Result
Objective 1* Identify what green building is	✗
Objective 2 Understand benefits of different green building programs	✓
Objective 3 Understand limits of building code minimum construction, and why better practices are needed	✓
Objective 4* List at least one benefit of better construction on health, comfort, and energy savings	✗
Objective 5 Recognize the greenhouse gas (GHG) contribution of construction and operation of homes	✗

*The pre-webinar measures of knowledge were already high for these items, suggesting that a ceiling effect (when pre-measures are already very high) accounted for the fact that there were no significant differences.

Attendees were **motivated predominantly by becoming more environmentally sustainable**. However, all items scored highly in terms of motivations, including: cost savings both for their businesses and their clients, and interest in using the latest technology.

Barriers

53% of participants reported that their perception of barriers had **decreased** as a result of the webinar.



Before the webinar the primary barrier was **uncertainty of where to begin**.
After the webinar the main barrier was that action was **too expensive**.

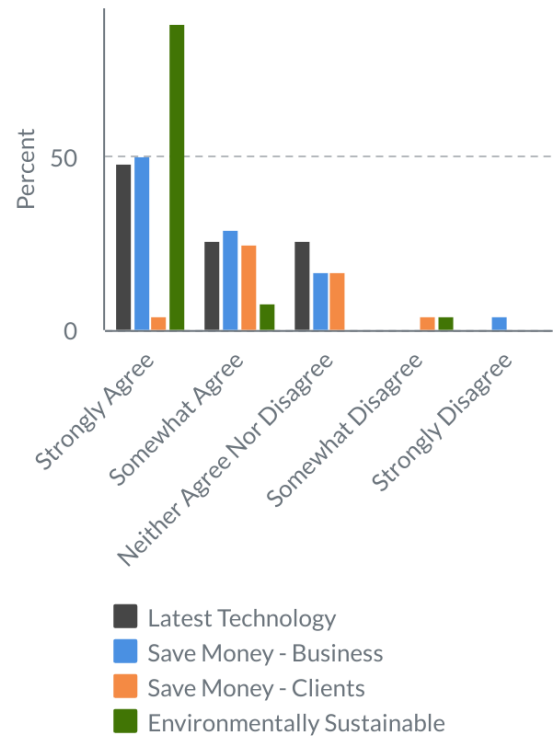


#4

Webinar 4: Sustainability and the Built Environment



Motivations



Interest and Knowledge

Attendees in this webinar indicated that their **interest in all topics had changed significantly**. There was a significant increase in attendees' knowledge about **all main topics in general** and a **significant difference for all 5 learning objectives**.

This indicates a significant improvement in learning and comprehension of attendees.

Significant
0.05

Objective 1

Define at least two different types of "net zero"



Objective 2

List at least two strategies to achieve net-zero



Objective 3

Describe what net-zero is in Alberta



Objective 4

Understand the impact of climate change on building performance



Objective 5

Explain the overlap between high performance and "well" building



Attendees were motivated **predominantly** by becoming more **environmentally sustainable**.

Barriers

75% of participants reported that their perception of barriers had **decreased** as a result of the webinar.



Before the webinar the primary barrier was that **action was too expensive**.

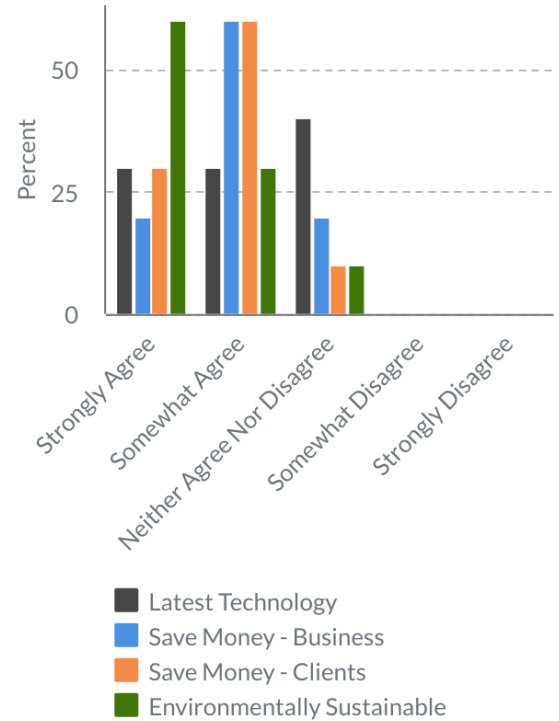
After the webinar the main barrier was that action was **too expensive and some concern that business partners would not support the action**.

#5

Webinar 5: High Performance Buildings



Motivations



Interest and Knowledge

Attendees in this webinar indicated that their **interest in the topic had not changed**. There was a slight increase in their knowledge about identifying pitfalls in building high performance buildings. In addition, there was a **significant difference in 3 of the 5 learning objectives**.

Significant
0.05

- Objective 1*** ✗
 Identify at least two cost effective solutions for designing and constructing leading edge high performance buildings.
- Objective 2** ✓
 Compare project costs of conventional code-minimum and LEED market construction costs.
- Objective 3** ✓
 Describe at least one pitfall in design, tender, and construction of high performance building.
- Objective 4*** ✗
 Understand that the building industry is changing rapidly in relation to code and zoning requirements.
- Objective 5** ✓
 To discuss the timeliness of high performance buildings and how delivery of leading edge one-off buildings is critical to understanding and delivering higher volumes of effective durable buildings.

*The pre-webinar measures of knowledge were already high for these items, suggesting that a ceiling effect (when pre-measures are already very high) accounted for the fact that there were no significant differences.

Attendees were **motivated primarily by becoming more environmentally sustainable**. Two secondary motivations were cost savings both for their businesses and clients.

Barriers

78% of participants reported that their perception of barriers had **decreased** as a result of the webinar.



Before the webinar the primary barrier was that **action was too expensive**.

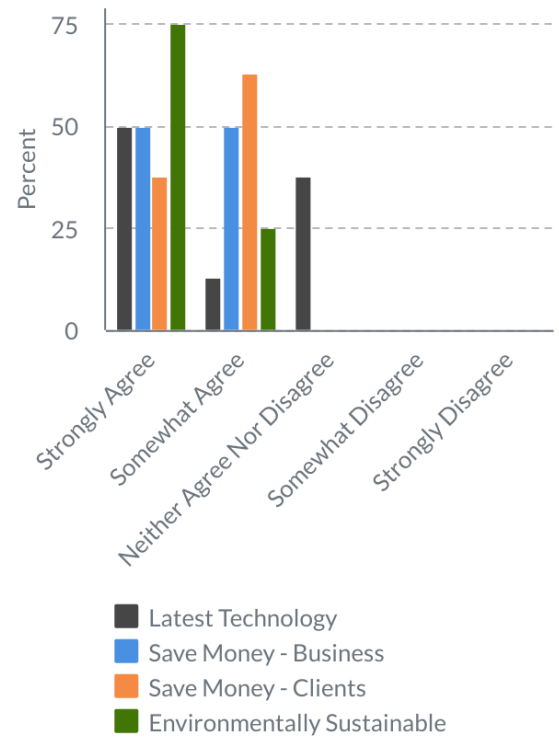
After the webinar the main barrier was that action was **too expensive and concern that business partners would not support their actions**.

#6

Webinar 6: BC Step Code Case Study



Motivations



Interest and Knowledge

Attendees in this webinar indicated that their **interest in the topic had not changed**. There was a slight increase in their knowledge across topics, but this increase was not significant. However, there was a **significant difference in 4 of the 5 learning objectives**.

This suggests that attendees found the applied aspect of learning about the Case Study effective in improving their technical knowledge (e.g. specific next steps).

Significant
0.05

Objective 1*

Identify what the BC Energy Step Code is



Objective 2

List the 6 critical strategies for attaining the upper steps of the Step Code



Objective 3

List the 4 critical processes for attaining the upper steps of the Step Code



Objective 4

Understand why the BC Energy Step Code is relevant in Alberta (or in any other jurisdiction)



Objective 5

Identify where to find technical and process related resources



*The pre-webinar measures of knowledge were already high for these items, suggesting that a ceiling effect (when pre-measures are already very high) accounted for the fact that there were no significant differences.

Attendees were motivated **by the idea of becoming more environmentally sustainable**. A secondary motivation was cost savings for clients.

Barriers

72% of participants reported that their perception of barriers had **decreased** as a result of the webinar.



Before the webinar the primary barrier was that **action was too expensive**.

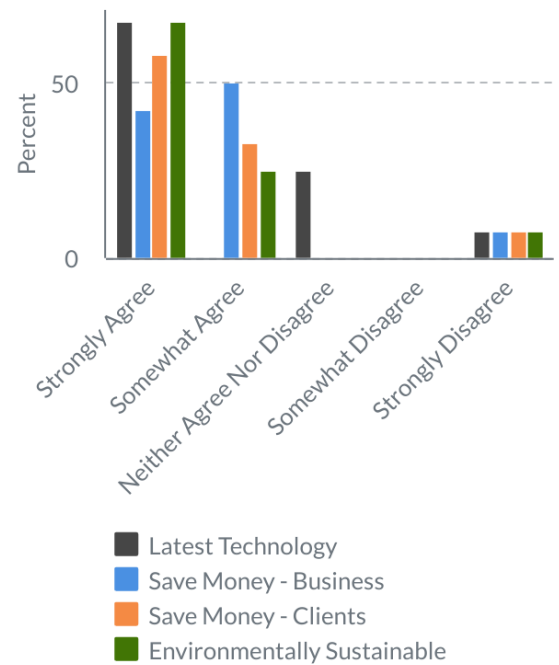
After the webinar the main barrier was that action was **too expensive and concern that actions would be too inconvenient or difficult**.

#7

Webinar 7: Geothermal and GeoExchange



Motivations



Interest and Knowledge

Attendees in this webinar indicated that their **interest in all topics had increased**, and these increases were significant. There was a significant increase in attendees' knowledge about **all main topics in general** and a **significant difference for all 5 learning objectives**.

These findings indicate that attendees learned a significant amount in general but also specific details that will be important in taking future action.

Given the decrease in barriers as well, these findings indicate that this **speaker was particularly effective**.

Significant
0.05

Objective 1

Recognize the basic components that enable a GeoExchange system (geothermal system) to function



Objective 2

Identify the efficiency, energy value and cost attached to a GeoExchange system



Objective 3

Describe how a GeoExchange system reduces CO2 emissions and can contribute to achieving net zero homes



Objective 4

Determine when it is appropriate to use a geothermal system to heat and/or cool a home



Objective 5

List at least two benefits of using GeoExchange in your building



Attendees were **motivated by cost savings both for their businesses and their clients**, as well as interest in using the latest technology and becoming environmentally sustainable.

Barriers

87% of participants reported that their perception of barriers had **decreased** as a result of the webinar.



Before the webinar the primary barrier was that **action was too expensive**.

After the webinar this barrier and all others were notably reduced.

#8

Webinar 8: Solar Energy



Interest and Knowledge

Attendees in this webinar indicated that their **interest in the topic had not changed significantly**. There was a significant increase in attendees' knowledge about **all main topics in general** and **a significant difference for 3 of 4 learning objectives**.

When we compare these findings with the results about barriers, we can conclude that while attendees learned a great deal, solar energy solutions are still seen as too difficult and expensive by many.

Significant
0.05

Objective 1

Understand solar energy globally versus solar energy in Canada



Objective 2*

Recognize that site generated solar energy is beneficial for businesses, developers, and homeowners



Objective 3

Describe how solar energy works with other energy efficient technologies to improve the overall value of buildings



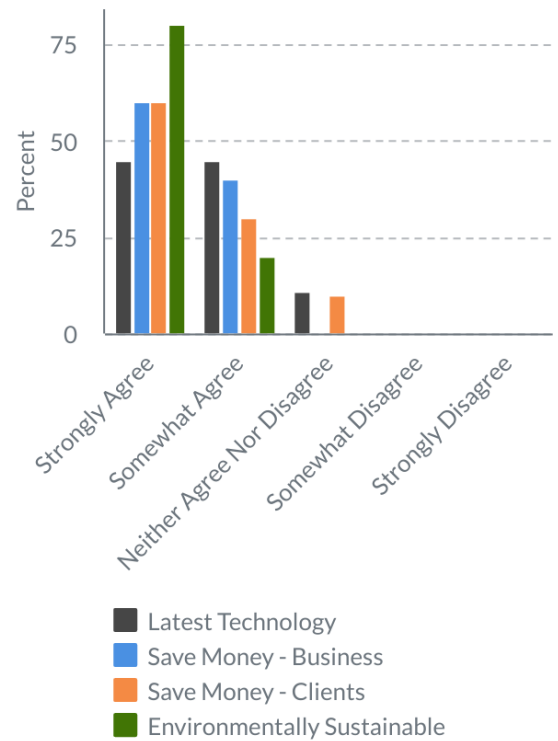
Objective 4

List at least two benefits of solar energy



*The pre-webinar measures of knowledge were already high for these items, suggesting that a ceiling effect (when pre-measures are already very high) accounted for the fact that there were no significant differences.

Motivations



Attendees were motivated **predominantly by the idea of becoming environmentally sustainable**. However, all items scored highly in terms of motivations, including: cost savings both for their businesses and their clients, and interest in using the latest technology.

Barriers

50% of participants reported that their perception of barriers had **decreased** as a result of the webinar.



Before the webinar the primary barrier was that **action was too expensive**.

After the webinar the main barrier was that **action was too inconvenient or difficult**.

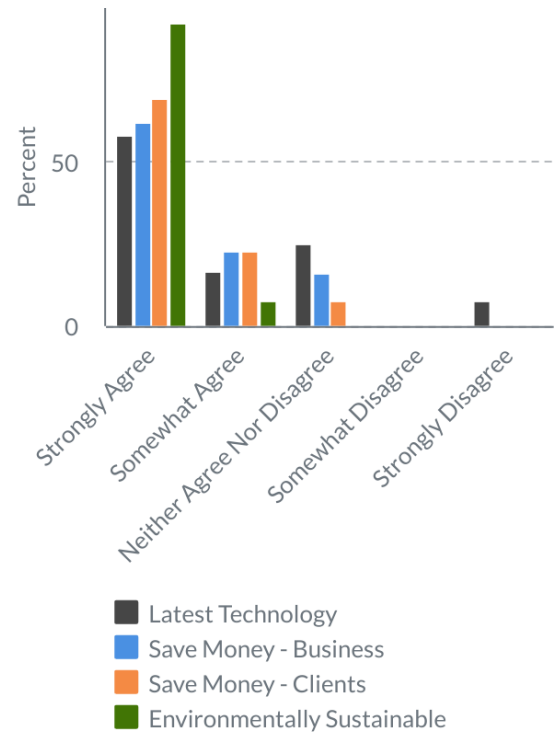


#9

Webinar 9: Designing for Climate Change



Motivations



Interest and Knowledge

Attendees in this webinar indicated that their **interest in all topics had changed significantly**. There was a significant increase in attendees' knowledge about **all main topics in general and a significant difference for 3 learning objectives**.

Significant
0.05

Objective 1

List the 5 main climate change related issues that most severely affect the AEC industry in Canada



Objective 2*

Understand current global and local leadership in action



Objective 3

Identify at least two points of the RAIC's resolution on Climate Change passed in 2019



Objective 4

Describe the 4 best practice actions that an architectural professional can take to contribute to fight climate change



*The pre-webinar measures of knowledge were already high for these items, suggesting that a ceiling effect (when pre-measures are already very high) accounted for the fact that there were no significant differences.

Attendees were motivated by cost savings both for their businesses and their clients, as well as interest in using the latest technology and becoming environmentally sustainable.

Barriers

46% of participants reported that their perception of barriers had **decreased** as a result of the webinar.



Before the webinar the primary barriers were that **actions were perceived as too expensive and attendees were unsure if their actions will make a difference.**

After the webinar the main barriers were all notably reduced, especially the uncertainty if actions will make a difference.



What would be the other most valuable experiences we could facilitate?



- More workshops
- Hard copy summaries of all the companies and their main points
- 2.0 series of workshops that build on further knowledge
- Produce short, high-quality videos to reach more people



Impact and Quotations



Open-ended responses:

"I appreciate the work of the Biosphere. Bringing in knowledgeable and professional presentations creates opportunities for discussion, pro and con, regarding the topics. Bringing alternative points of view will help create informed decisions."

"Thanks for the great work. The experts you brought in were very good"