

## Sample form, not for offline completion.

Visit <https://awards.buildingsmart.org> to enter.



# Student Research using openBIM

Research excellence using openBIM led by students.

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## Entry Details

Satisfying the following core requirements is necessary to advance to the judging round. Entries that do not meet these minimum core requirements will not be considered in the judging round.

1. Entries must demonstrate with evidence the deployment of one or more buildingSMART tools or standards.
2. Entries must be delivered in International English; the jury will not be able to assess content written in a language other than International English.
3. One submission = one project.
4. One project can submit for multiple awards if they meet the criteria. When submitting a project for multiple awards, it is expected that each submission be tailored to each category scope.
5. There is no limit to the number of submissions a proponent can submit.
6. Past submissions that did not win an award in previous seasons are able to resubmit to any new season. Past award winners are not eligible for resubmission in the same category but may submit to other categories.
7. It is a requirement for applicants to submit IFC model files and/or any other technical file formats as evidence of the claims of the submission.

**Please note:** - The Submission Title will be used to refer to your submission throughout the process.

For examples of previous project titles, please visit the buildingSMART.org website:

[<https://www.buildingsmart.org/awards/bsi-awards-2022/>]

Submission Title

Dear Submitter,

We want to ensure your submission efforts are focused and the mission is clear.

Need help?

Contact your chapter representative for help with understanding the submission requirements or language translation support.

Alternatively, you can contact the Awards Program Manager at [awards@buildingsmart.org](mailto:awards@buildingsmart.org).

If you are having technical issues with the platform, you can contact [websupport@buildingsmart.org](mailto:websupport@buildingsmart.org).

Good luck!

By checking this box I understand and acknowledge that this awards program is  to assess information about openBIM, and that openBIM is not only about the use of solutions.

openBIM is about setting up an environment where every party in a team can work in the optimal way ("how they prefer") without putting limitations on others.

It is about freedom to take control over your data and workflows, while keeping that freedom for others as well. Full use of open standards is not mandatory for this mission.

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## Entry Overview

Use this section to provide a high-level overview of the scope of work.

*Keep in Mind:* openBIM is not only about the use of solutions. openBIM is about setting up an environment where every party in a team can work in the optimal way ("how they prefer") without putting limitations on others. It is about freedom to take control over your data and workflows, while keeping that freedom for others as well. Full use of open standards is not mandatory for this mission.

*Note:* Use the Attachments section to upload attachments, such as images, screenshots, documents, and videos.

Website (optional)

If the entry has a website or webpage, you can link to it here.

Location

100 words

Address Country This should be where the project is located OR the company or institution and faculty where the research was conducted or technology solution was developed.

Submitting Party and Stakeholder Logos (compiled into one .ppt/pptx file for upload)



Provide all stakeholder logos. Include any additional logos relevant to the entry. Identify all contributors to the project/research/product. You are encouraged to credit all members that contributed to this submission. Ensure to spell names correctly and get titles correct. You may also use this space to credit any contributing organizations. Email addresses or contact information is not required.

Entry Description

1000 words

TIP: You can write in Word and copy/paste to this field when ready. Describe the entry to the jury. Introduce the context, scope and objectives. What was achieved? How was openBIM relevant? Are there any innovative advancements? What makes this entry competitive within this awards competition? Where relevant, include construction or facility type, size and scope of project, budget/cost or investment value, link to any larger programs of work or development efforts, etc.

What stage of completion is the entry content representing?

Ex: Design Development, Substantial Completion, Beta Testing Stage, Initial Development

Upload a 2 minute video to show the scope of the entry.



This does not need to be professionally made. We are asking for a video created specifically for this entry. It should introduce the jury and any public viewers to the scope of the work captured in this submission.

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## openBIM Research

Respond to the research methodology and results achieved as they pertain to openBIM. It is important to see the dependence on, use or exploitation of openBIM to solve the research program.

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*Note:* Use the Attachments Tab to upload additional materials that support the submission, such as images, screenshots, documents, and videos.

Problem Statement

1000 words

What is the problem that the research is trying to solve? Describe the research challenges or questions in trying to solve the problem.

Previous efforts and limitations

1000 words

Were there any previous efforts to solve the problem? What are the limitations of the previous studies?

Research method

1000 words

How did the team solve the problem or find the answer to the problem?

Findings/Validation

1000 words

What were the outcomes? How could the team tell that the proposed method was effective in solving the problem?

Conclusion/Contributions/Limitations

1000 words

What are the contribution and limitations of the proposed method? What is the novel contribution? Why is it better than the existing solutions? How are they related to openBIM?

### Example Use (optional)



Attach one or more example uses of your solution in a real-world project.

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## openBIM Evidence

This section should provide evidence to support the claims. Refer to the following site for reference:

[bSI Technical Site](#)

[bSI Certified Software List](#)

### Software Ecosystem Map



What tools and information exchanges were used? How were the tools connected? Provide a visual diagram of all the BIM software and openBIM information exchanges between the various project stakeholders or user groups. Be explicit about openBIM elements. We want to see the openBIM data exchanges, formats and applications, related to the outcomes. What APIs did you use? (Ex: BCF, Documents API, bSDD API, property exchange API, other)

### Process Maps



Use this field to upload process map views (as a single file upload) that shows where and how openBIM was used between the various parties exchanging digital information. Include any description text you feel is important to describe the processes demonstrated. Ensure the jury can easily understand and read the content (ex: Does it have a title? Is it well labelled? Is it a logical sequence? etc.).

### openBIM Data Metrics Summary



For example: How many revisions, how many objects inside IFC, how many BCF topics/issues, how many IFC aspect files during coordination, etc. This summary should give a general idea of scope and scale of use or impact of openBIM.

### Additional openBIM Supporting Evidence (optional)



Use this field to provide additional supporting evidence to better your submission. May include written materials, process maps, visual graphics, photos, screenshots, images, etc. Submit as a single document in .pdf format.

### Lessons Learned (optional)

1000 words

Describe what was learned through this project experience about openBIM and open environments for data exchange. If you were to apply what you learned to your next project, what would that be? You can also include recommendations for what buildingSMART should consider providing to the industry in the form of reference resources, technical standards or tools.

### "We were able to identify where we need openBIM to develop further." (optional)

250 words

Identify where you could have used more development of openBIM to bring greater benefit to the project.

Upload .ifc file(s) to an online viewer and provide the URL for viewing HERE [copy/paste URL]:

Refer to the Submission Guidelines for more information about free IFC Viewer platform choices. \*NOTE: For restrictions around access to viewing these files, send a message to [awards@buildingsmart.org](mailto:awards@buildingsmart.org).

Share any instructions for accessing the .ifc or other technical files for review. (optional)

Include any log in requirements or access restrictions.

Use the bSI Validation Service to check IFC files against the specification (and bSDD). Create a free account at:

<http://validate.buildingsmart.org>

Send an email to [awards@buildingsmart.org](mailto:awards@buildingsmart.org) to request a free Box folder to upload the same IFC files for use by the Technical Team to run through the bSI Validation Service. These IFC files will not be available to the jury or the public; only the technical team.

Attach results from the bSI Validation Service. (optional)



PDF format The Technical Team will provide this service. However, submitters are encouraged to try it out themselves in parallel. The Validation Service is in Beta version. For technical issues or feedback, email [validate@buildingsmart.org](mailto:validate@buildingsmart.org).

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## Sustainability

Completion of this section remains optional, as not all submissions will have sustainability criteria or outcomes as part of the scope of work. Those that do have sustainability elements to demonstrate, have the opportunity here to highlight them in this section. Completion of this section results in the **potential to win an award** or special mention that commends innovative advancements or excellence in sustainability using openBIM.

What were the sustainable outcomes achieved? (optional)

500 words

For example: -Carbon emissions decrease (lower embodied carbon and/or lower energy usage) -Better decisions through applying a holistic view on sustainability (supported by i.e. lifecycle assessments) -Better working conditions (i.e., Increased safety in construction) -Better climate change resilience of the built asset/built environment -Enhanced biodiversity/greening of the built environment -Increased well-being of the built asset's occupants or users (i.e. measured by feedback/testimonies or increased asset value) -Generation and usage of renewable energy -Increase of reuse and lifespan of materials and building elements -Automation of, or better connection to, sustainability assessments or reporting systems -Reduced (potable) water consumption

Describe in detail how openBIM was used to achieve the sustainable outcomes. (optional)

500 words

Include the benefits, highlights and achievements of using openBIM. Describe how the research, solution or project used openBIM to contribute to the sustainability outcomes.

### Level of Impact (optional)

- Return-On-Investment Realised
- Greenhouse Gas Emissions Savings
- Reduced Lifecycle Costs
- Reduced Environmental Costs
- Increased Monetary Value of the Built Asset
- Increased Longevity in Service Life of Built Assets
- Higher Score on Rating System
- Obtained Sustainability Certificate
- Other

Indicate the level of impact of the sustainable outcomes achieved.

### Sustainability Metrics (optional)



Submit metrics to support the sustainable outcomes and levels of impact identified. Use a company or project template and infographics if desired to prepare this attachment document.

### Sustainability Requirements (optional)

250 words

Describe how sustainability requirements were defined for the project, operations, technology solution or research study. -How were these formulated? -Where were they written down? -Are they measurable? -How are they (to be) enforced?

### Sustainability Requirements Documentation (optional)



Attach the documentation that shows where or how the sustainability requirements have been captured.

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## Business Value

Business value or return-on-investment (ROI) can be defined in quantitative metrics and qualitative measures. Business value can achieve gains economically, environmentally, and socially. Business value can also show a decrease in risk, uncertainty, or waste. However you are able to demonstrate business value or ROI, be sure to identify how openBIM contributed to these desired business outcomes.

Provide stakeholder statements.

500 words

Provide a minimum of one (1) and a maximum of five (5) different stakeholder statements that exemplify the merits or business value of this scope of work. Consider client/owner, senior executive, director, technical or end user stakeholders that could support this requirement. Also consider how to identify business value from using openBIM.

For example, but not limited to: • Increased Revenue • Increased Profitability • Decreased Risk • Increased efficiency • Standing out from the competition • Positive Environmental or Social Impact • Improved organizational culture • Improved relationships between stakeholders • Improved employee attitude, skills, and maturity • Faster Time-to-market • Reduced waste • Shortened production processes • Usability, utility, and value of outputs • The satisfaction of users and clients • Return on Investment • Innovation opportunities

Provide an attachment that promotes the achievements in business value using openBIM on this scope of work. (optional)



This format can be promotional in nature, with a company or project template and logos.

Complete the bSI survey on Business Value from openBIM.

<https://bsicomunications.typeform.com/to/SoEJhpbx>

Attach survey results as PDF export.



Results can help contribute to the strength of your submission and judges' overall scoring.

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## Use Cases

You are invited to submit information regarding "Use Cases" to strengthen your submission and help inform ongoing buildingSMART activities around this important topic. Completion of this tab is optional. Entrants are encouraged to leverage the [bSI Use Case Management Tool](#) activity page.

Completion of this section results in the **potential to win an award** or special mention that commends innovative advancements or excellence in use case activities using openBIM.

BIM Uses were defined on the project (optional)

BIM Uses formed an integral part to how the project was delivered (optional)

Documentation on use case(s) as a single file upload (optional)



File formats accepted: .doc, .docx, .pdf, .ppt, .pptx, .xls, .xlsx You may need to consolidate various documentation into one file format. This file may also include live links.

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## Attachments

Additional material shall be supplied as follows:

1. Ensure the written component of your entry be fully explained within the other tabs; only supporting documentation used as reference should be added here;
2. A **minimum of ten (10) images** should be uploaded with your entry that best represent the submission;
3. Formats accepted are as follows: .pdf; .ppt/pptx, .jpg/jpeg; .png, .mp3; .mp4;
4. Links and externally hosted videos are allowed as attachments.



Type of attachment (optional)

▼

- Video
- Presentation
- Interview
- Testimonial
- Image
- Article
- Technical Documentation
- Use Case Documentation

