

buildingSMART International (2022)

428-TECHNOLOGY Technology Solution using openBIM

Plans2BIM



GeJNaAxB

Entrant details

Role or Job Title on the Project | President of WiseBIM

Employer

| WiseBIM
| Paris, France

Employer Role | Technology or Software Development Company

Are you or your employer a member of buildingSMART? | Yes - Chapter Member

Entry details

Entry Details

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.

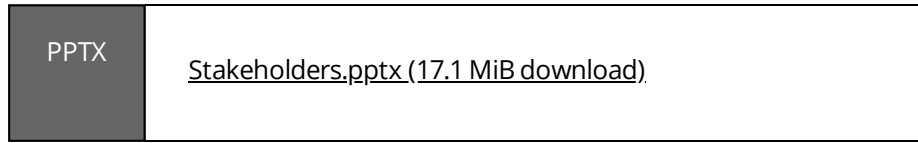
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Website | <https://plans2bim.com>

Location

53 bis rue de la Roquette, 75011 Paris, France

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



Entry Description

There is more than 240 billion square meters of existing buildings to be modeled worldwide, today's challenges speed up the need of innovation in the existing building sector. We developed an online cloud-based openBIM solution, Plans2BIM that allows its users to access a unique Artificial Intelligence technology in order to automatically transform their building 2D floor plans into 3D BIM database. The generated models are in openBIM IFC format that allows our users to extend maximum the benefit of BIM, to supports open workflow and collaboration between project members. The most importantly the results are 100% interoperable with different BIM software.

This solution is aimed for management, operation, maintenance, renovation (including thermal renovation), Smart Building and dismantling stages of building lifecycle. Plans2BIM targets engineering and architectural offices, construction companies, facility management firms and building owners, regardless their size.

Today the BIM in practice is very costly and time consuming, that's why we built this solution to directly address this problem and offer our clients an affordable tool that saves up to 50% of modeling time. Moreover, this solution relies on data that already exists and does not require 3D point cloud captures of buildings and on-site visits. We wanted to make BIM transition process as easy as possible for our clients through implementing openBIM standards and offer them the most convenient and efficient preliminary step on their BIM projects.

The entry in buildingSmart award is crucial for us. Most importantly it will bring our technology a global recognition, which will allow us to make these automatic transitions from 2D plans to BIM available for everyone around the world and revolutionize the use of openBIM on existing asset projects. We believe that through this openBIM award we can make it happen.

What stage of completion is the entry content representing?

Our project is in finalized but we are constantly working on further developments, we can say that it is in design development stage

Stakeholder Statements

« Plans2BIM is a very innovative tool that allows us to save up to 50% of modeling time »

- client, Philippe Durand – Deputy CEP of Parera Group (Engineering office)

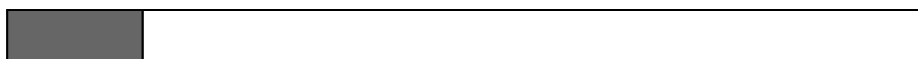
“Thanks to its technical solutions, WiseBIM makes BIM available to everyone, with reduced processing times and budgets. Plans2BIM is a wonderful project with great potential, accurate AI detection and consolidated data to best manage the BIM projects for the existing buildings. ”

- partner, Metabuilding project

« Very effective tool, I liked how easy it is to import 2D plan images, process them and export in openBIM format, very useful for our projects »

- client, Rosario Lopez Martinez Prospace BIM (Engineering office)

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



Technology Solution Description

Plans2BIM is an innovative Software as a Service (SaaS) developed by WiseBIM, a French deep tech startup. Plans2BIM is a brand new tool which allows our users to access to our Artificial Intelligence technology to convert any kind of 2D floorplans into digital BIM models, online, by themselves. Users can get the results in openBIM IFC format, as well as the metrics in CSV/XLSX files.

Moreover, Plans2BIM includes specific functionalities to manually check either/or modify the result:

- a viewer (2D & 3D) to help the user to analyze and validate the model before exporting it in IFC format.
- an editor tool, to modify the geometry or to add properties to all building elements
- assembly of floors, to assemble the different floor levels in a single IFC file

Plans2BIM is the only software able to provide such an automatic process to digitalize existing building into openBIM in a fast and simple way.

Our main customers are engineering offices, facility/property managers, construction companies and architects.

What underlying technology are you using for your solution?

WiseBIM designs and implements patented software technologies derived from Artificial Intelligence in the interpretation of 2D images for scanning and 3D modeling. Furthermore, WiseBIM uses Deep Learning technology in order to strengthen its algorithms.

How does it work:

1. The user connects to plans2bim.com via its web browser, uploads the architectural plans in PDF, PNG or JPEG format, into the platform's data management tool,
2. Then, he sets up the parameters that are necessary for the processing, such as scale and heights.
3. Then, thanks to our algorithms, the structural elements of the buildings are automatically recognized and incremented. These elements are walls, bulkheads, windows, doors, floor/ceiling slabs and spaces,
4. The user can check the result via integrated 3D viewer. If he is satisfied, he can directly export the file in IFC format or/and takeoffs in CSV/XLSX files. He can also make corrections or enrich the model thanks to the editing tool integrated in Plans2BIM to complete it,
5. The open BIM IFC file now created is interoperable and can be used in any compatible software.
6. Additional: If the user wants to assemble different floor levels, he can use the assembly tool that is situated at the building level from the project hierarchy. The user can select already generated floor plans and then export them together in a single IFC model or/and metrics in CSV/XLSX files.

openBIM methods used

- ✓ IFC 2x3
- ✓ IFC 4

Were there other open data standards used other than those listed above?

Yes we are using GBXML as well on our project Plans2BIM.

On the other hand, on our second solution Grid2BIM for infrastructure we use IFC, LandXML, DXF, SHP, CityGML

Similar or Comparable Solutions on the market today

The similar solutions are mostly BIM editor software such as Revit (Autodesk), Allplan (Nemetschek), Bentley.

Plans2BIM is different thanks to 3 main added values: it is accessible online, it is fast thanks to automatic AI detection and

last but not least, it comes along with a very simple model editor tool.

As a new entrant among BIM editors, WiseBIM does not intend to compete with them in a direct way but will be part of the ecosystem as an innovative and complementary brick to the existing tools offered by these editors.

In particular, Plans2BIM accelerates the modeling process, by automatically generating the openBIM model thanks to our algorithms and simple tools to edit the model online.

It is an only solution today on the market that generates interoperable openBIM output files from existing 2D images just in seconds. Plans2BIM is the first essential step for digitalization that would be then finalized and enriched, in most cases, with major BIM editors to get a complete BIM model.

What added value does your solution give?

Digitalizing existing buildings is slow and expensive.

The major interest of Plans2BIM is the reduction of modeling costs. Indeed, on the whole digitalization process, Plans2BIM currently makes it possible to reduce the time of modeling up to 50 %.

This allows our users to respond faster and cheaper to their customers.

Moreover, the BIM modelers only have to focus on the enrichment and the finishing of the models, which reinforces their added-value.

The remarkable performance reached by WiseBIM team is to appear simple although we combined high technologies for 3D modeling in SaaS using AI-based software solutions.

Plans2BIM was a long run research project which took 3 years of PhD and 5 years of development, even though many people needed this type of tool, it was complicated to provide, we can proudly say that WiseBIM succeeded in this mission.

For existing buildings, Plans2BIM will be an accelerator for their digitalization but, even more, a trigger to entrain some building owners to switch to BIM and, in particular, to openBIM!

Results In Practice

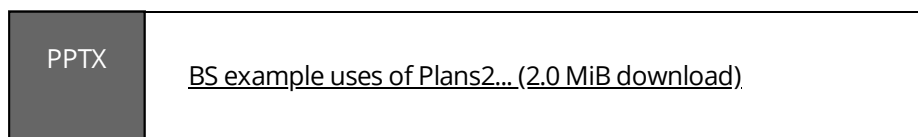
A Plans2BIM user tested our solution on a project to digitalize several social housing buildings. On one hand, he digitalized his plans with a regular BIM software. On the other hand, he used Plans2BIM and completed it with its usual BIM software. While it took 66 hours for the job done manually, with Plans2BIM included their process, it was reduced to only 32 hours!

"It seems magical, I always dreamed about such a tool!" Aude BRIAT, Architect

"Plans2BIM allows a saving of time up to 50 % on the modeling of our customers' building assets" Philippe Durand, Deputy CEO of Parera Group.

"I used Plans2BIM on renovation project for a residential building , where we only had a PDF file of the plans. It has saved us a considerable time, we will continue using this tool for our next renovation projects" Nathan LETOCQUART, Engineer in thermal engineering office

Example Use



What is the accessibility of your solution?

We have chosen to deploy the software online as a SaaS (Software as a Service) mainly for the following reasons:

- technically, for ease of updating, compatibility with different operating systems and to have access to our customers' data to feed our machine learning algorithms,
- commercially, in order to be able to quickly address many customers, especially internationally,

- financially, to have a subscription system that allows us to generate payments in advance.

Dear Members of the Jury, you are invited to create an account on <https://plans2bim.com> to test it. Moreover, we will be pleased to give you some credits (Bimcoins) in order to be able to export the IFC file. Just ask for it to tristan.garcia@wisebim.fr after your subscription on our site.

What are next steps and future developments of your solution?

We are constantly developing our solution. For example, we recently added an assembly module tool that allows the stacking of several floor models. Our ambition is to automatically recognize all the elements in order to add IFC objects, that compose architectural plans (roofs, lights, heaters, stairs, furniture, sanitary facilities,...).

What is potentially possible in the future?

Plans2BIM can also be used for virtual and augmented reality (3D not BIM), or to get the surface size only. Sometimes people are willing to use Plans2BIM (without any other BIM software) for simple projects.

At WiseBIM, we are able to create 3D from 2D, which means that we can also work with other kinds of 2D images and not only architectural plans...

Make the case for why your solution should win.

Due to global issues, such as a climate change, air pollution, scarce technological developments, majority of existing buildings today needs an urgent renovation to fulfill the new requirements. For example, more than 80% of existing buildings was built before energy-performance standards for buildings were introduced.

At WiseBIM we believe that these challenges will speed up the need of innovations and the integration of new technologies in the existing building sector. That's why we created Plans2BIM.

Plans2BIM enables modelers to quickly transform online their 2D plans into BIM with

- universal input
- fast recognition
- tools to assess the BIM quality
- collaborative platform
- standard openBIM output
- metrics in CSV/XLSX files

We believe this is a unique solution that is already available and is working successfully, as we have seen in various cases. This solution could be a key player for the AECO industry today and tomorrow and for the implementation of openBIM standards worldwide.

WiseBIM is always focused on finding innovative ways to improve the performance of buildings and infrastructure that exist today. We believe in our technology, in our solution and to win this award, it means that we will make available automatic transitions from 2D drawings into BIM for everyone and will be able to share our innovation with the entire openBIM software ecosystem.

WiseBIM is driven by the future, where AI can be leveraged, so that the digital transition of buildings can thrive sustainably. We provide BIM professionals with effective solutions to boost their productivity and to facilitate their daily life.

openBIM Evidence

Software Ecosystem Map

PPTX	Software ecosystem map.pp... (806 KiB download)
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Process Maps

PPTX	BS Process Maps.pptx (888 KiB download)
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openBIM Data Metrics Summary

XLSX	metrics.xlsx (9 KiB download)
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Additional openBIM Supporting Evidence

PDF	additional.pdf (712 KiB download)
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Lessons Learned

With our Plans2BIM solution, users get open interoperable BIM models that can be easily integrated into other BIM software. As mentioned earlier, our core competence is to transform non-structural data into structural data, which means that by implementing openBIM standards, we enable greater accessibility to this data for all stakeholders in the project, which of course leads to better results.

We also applied openBIM standards to our second software Grid2BIM, that automatically converts underground network plans into 3D compatible, interoperable and georeferenced models. We are proud to say that we will always continue to advance and spread openBIM through our solutions.

Upload .ifc file(s) or other technical files to support validation of the research results.


<https://service.usbim.com/link/62b02f7d17de4e7053f87361>


Use Cases

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

PPTX	use cases.pptx (2.2 MiB download)
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Log in to awards.buildingsmart.org to see complete entry attachments.


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Wisebim_logo_A... 92 KiB


Type of attachment Image
plans2bim_logo... 20 KiB

MP4

Type of attachment

Video

[Video Plans2BIM...](#) 240.1 MiB

MP4

Type of attachment

Video

[BIM4REN BWP V...](#) 178.0 MiB



Attachment name

Full video demonstration...

[https://wisebim.fr/static/...](https://wisebim.fr/static/)

Attachment name

Assembly of floors

<https://www.youtube.co...>

Attachment name

Generated result integrat...

<https://www.youtube.co...>



Attachment name

BIM4REN project-H2020 f...

<https://bim4ren.eu/>



Attachment name

Our Metabuilding project

<https://cercle-promodul.i...>

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<https://www.youtube.co...>

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interview with CEO Trista...

<https://www.youtube.co...>

