

Parametric BIM Models in ARCHICAD

The Grasshopper - ARCHICAD Live Connection

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Parametric modelling is a very trending topic in the Architecture Engineering and Construction industry. There is an ever-growing challenge in the industry about how it is possible to document freeform and very design-oriented projects (created in Rhinoceros) in BIM. The ultimate goal of architectural and design projects is to be able to realize the building based on the 2D documentation. Currently Rhinoceros and Grasshopper are the industry-leading algorithmic solutions in the AEC industry. To complement such workflows, GRAPHISOFT developed a live connection between Grasshopper and ARCHICAD in order to generate BIM models, directly from the Visual Programming Interface (Grasshopper) and bridge the gap between the freeform, conceptual- and the BIM worlds.

Keywords: *Parametric, BIM, ARCHICAD*

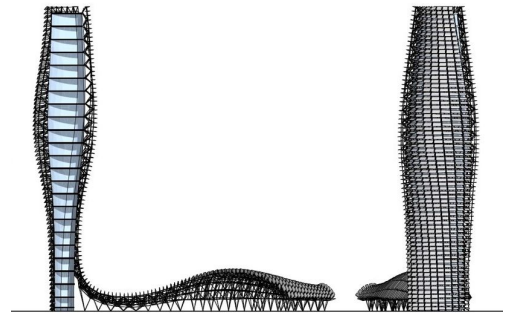
Figure 1
“Designing reality”
smart tower by
ArchiRadar

WORKSHOP TOPIC

It is recommended to apply to this workshop along with the “Introduction to Parametric Design” workshop as it is the second part of the introduction workshop.

Learn how to build parametric BIM models in ARCHICAD with the help of Rhino and Grasshopper on this half-day workshop! The goal of the training is to showcase how you can create parametric BIM models in ARCHICAD, directly from Grasshopper through a set of practical examples. A maximum of 20 participants is allowed who have to bring their own computers with the following software installed. Besides the connection between Grasshopper and ARCHICAD, the direct interoperability import/export options between Rhino and ARCHICAD are discussed.

The language of the workshop is English



BACKGROUND

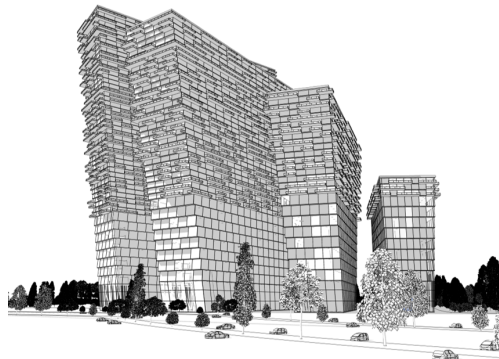
Participants need to have a basic understanding of Rhino and Grasshopper functionalities or other visual programming solutions. Basic ARCHICAD knowl-

edge is necessary (navigating in the project, basic element concepts, etc.)

SOFTWARE TO INSTALL

The following software have to be installed in order to take part in the workshop (Trial and Evaluation versions are accepted). Download links and help will be provided for the participants before the workshop

- ARCHICAD 21
- Rhinoceros 5 or 6
- Grasshopper
- Grasshopper - ARCHICAD Live connection



WORKSHOP SCHEDULE

- 13:00-13:30 - Introduction to Parametric BIM
- 13:30 - 14:30 - BIM element generation
- 14:30-14:45 - Coffee break
- 14:45-16:00 - Zoning and Structure
- 16:00 - 16:30 - Deconstruct, Q&A, wrap-up

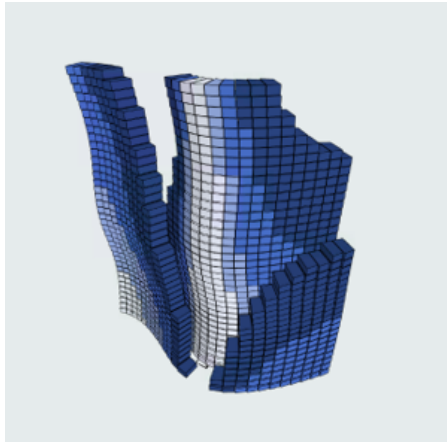


Figure 3
Early design phase
zoning with
ARCHICAD

SKILLS ACQUIRED BY PARTICIPANTS

Participants will learn the basics on how to create and document automatically updating Parametric BIM models with Grasshopper and ARCHICAD.

EXPECTED OUTCOMES

Attendees will have the basic skills and understanding to continue learning parametric design, not just for form finding and extraordinary geometries but for optimization, analysis and in general how to spare time during the design process and outsource repetitive design and documentation task to the computer with the help of Grasshopper. Participants will have the basic skills to improve their practices by designing and automating with algorithmic tools.

REFERENCES

- [1] <http://graphisoft.com/users/bim-case-studies/archiradar-case-study.html>
- [2] <http://graphisoft.com/downloads/addons/interoperability/rhino.html#live-connection-plugin>
- [3] <https://rhino3d.com>
- [4] <https://grasshopper3d.com>

Figure 2
Computer
generated
“Mixed-use towers”