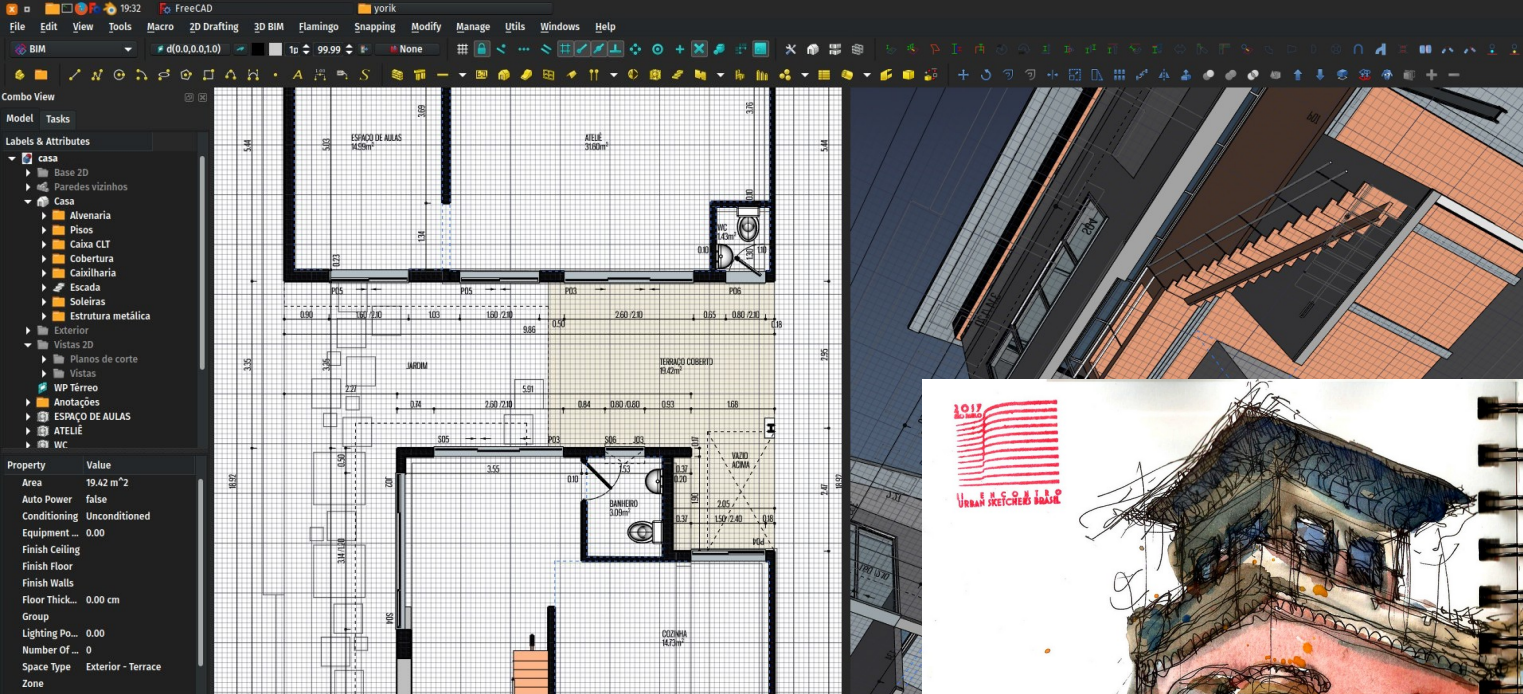




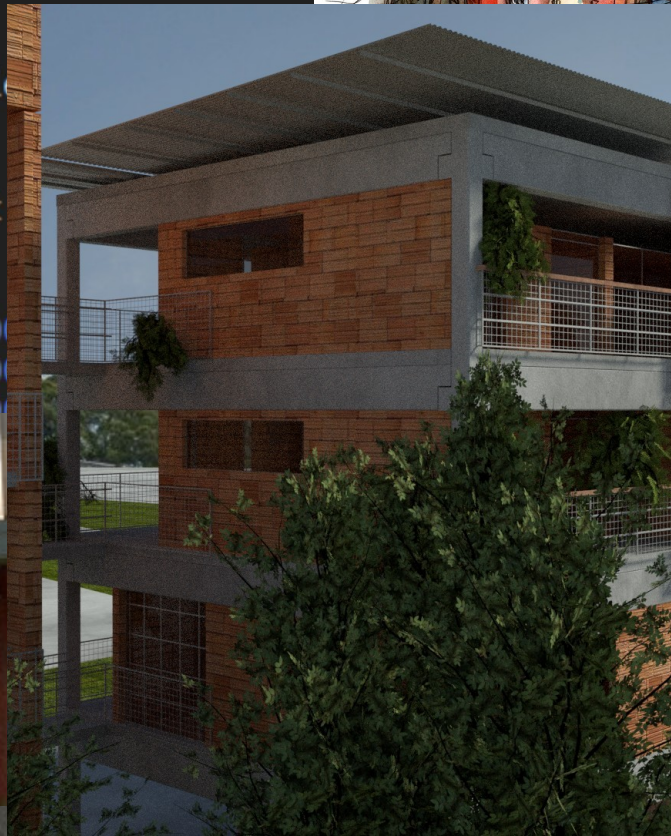
BIM e software livre

Yorik van Havre

FAU+D Mackenzie 2022



```
>>> FreeCAD.DraftWorkingPlane.alignToPointAndAxis(FreeCAD.Vec
>>> FreeCADGui.Snapper.setGrid()
>>>
>>> selection = FreeCADGui.Selection.getSel
>>>
>>> for obj in selection:
...     print obj.Label, " : ",obj.Height
...
Pilar de canto 30x30x1200 001 : 12000 mm
Pilar intermediário 30x30x1200 001 : 12000 mm
Pilar intermediário 30x30x1200 003 : 12000 mm
Pilar intermediário 30x30x1200 005 : 12000 mm
```



software livre

Software livre é geralmente gratuito.

Mas muito mais importante, licenças de software livre garantem liberdades aos Usuários e garantem que essas liberdades não possam ser removidas.

Exemplos de licenças livres conhecidas são: GPL, LGPL, MIT ou BSD.

4 liberdades fundamentais:

1. A liberdade de usar o software

Incondicionalmente: O uso não pode ser restrito por cadastros, pagamento, ou outros

2. A liberdade de estudar o código-fonte:

O código-fonte do software deve ser público (open-source). Possibilidade de auditar o software

4 liberdades fundamentais:

3. A liberdade de redistribuir o software:

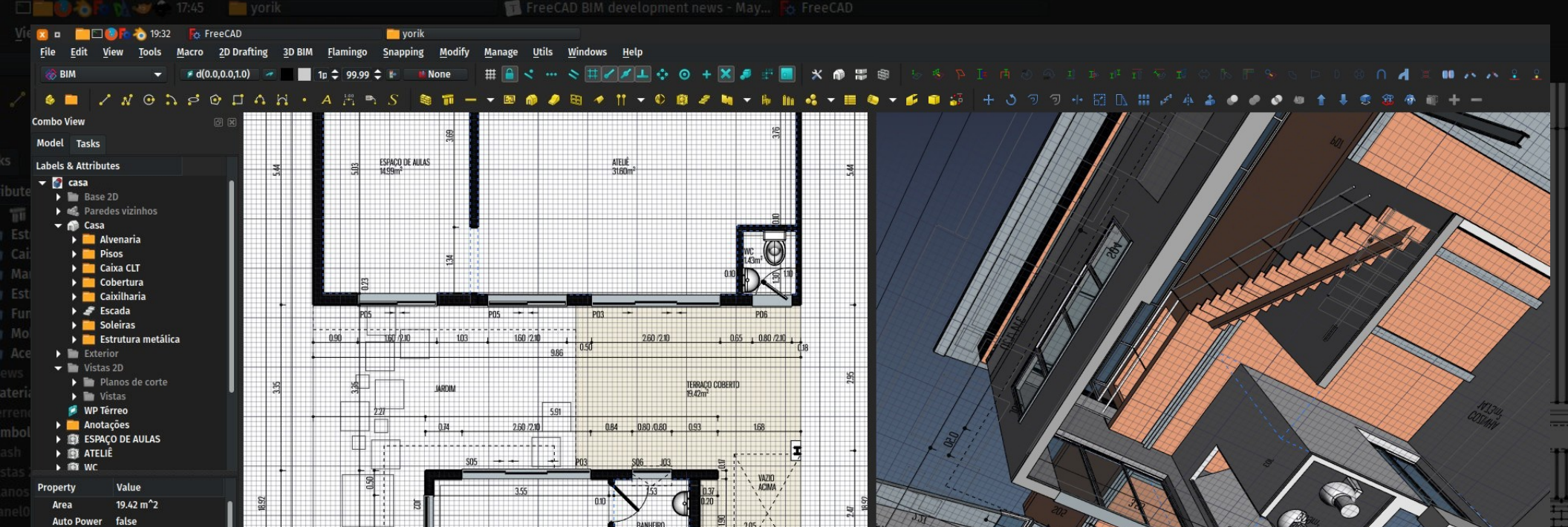
Usuários tem o direito legal de redistribuir o software, por exemplo para seus clientes.

Melhoramento da interoperabilidade.

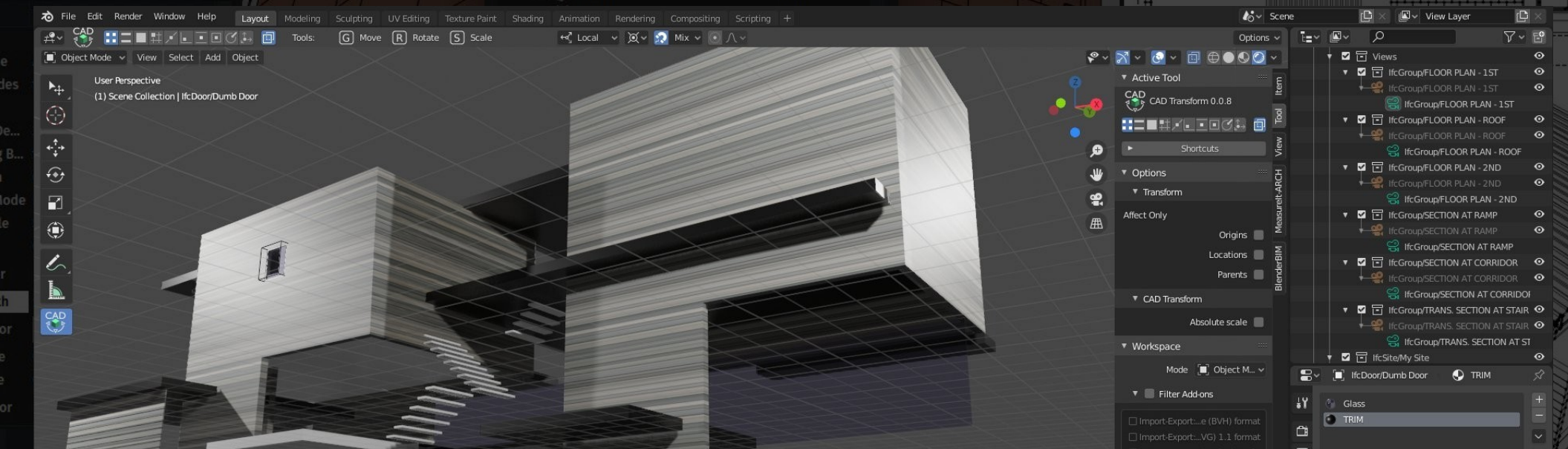
4. A liberdade de modificar o software e de publicar suas modificações. Dependendo da licença usada, deve ou não adotar a mesma Licença.

Geralmente:

- Software livre é gratuito
- Software livre é multi-plataforma (Windows, MacOS, Linux, Android...)
- Software livre é desenvolvido colaborativamente por usuários
- Software livre não força você a atualizar, a comprar máquinas mais potente, etc
- Formatos de arquivos são abertos
- Arquivos antigos (e as vezes até arquivos futuros!) continuam sendo suportados



FreeCAD



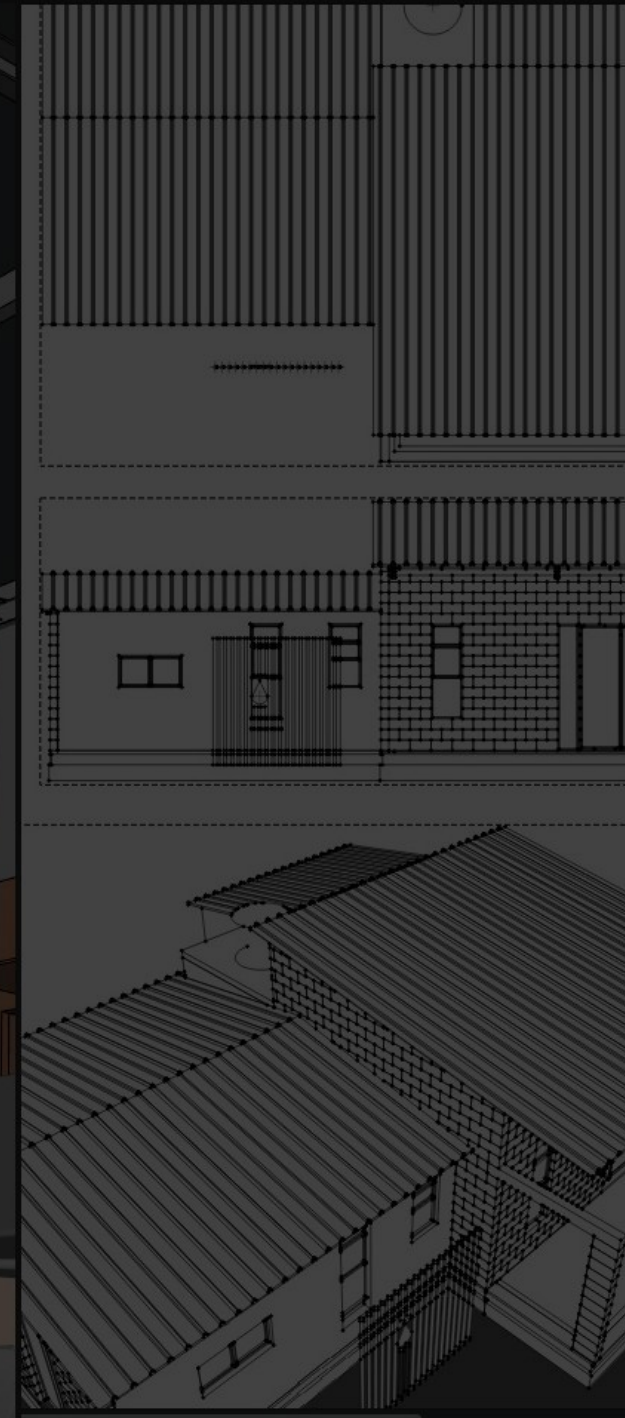
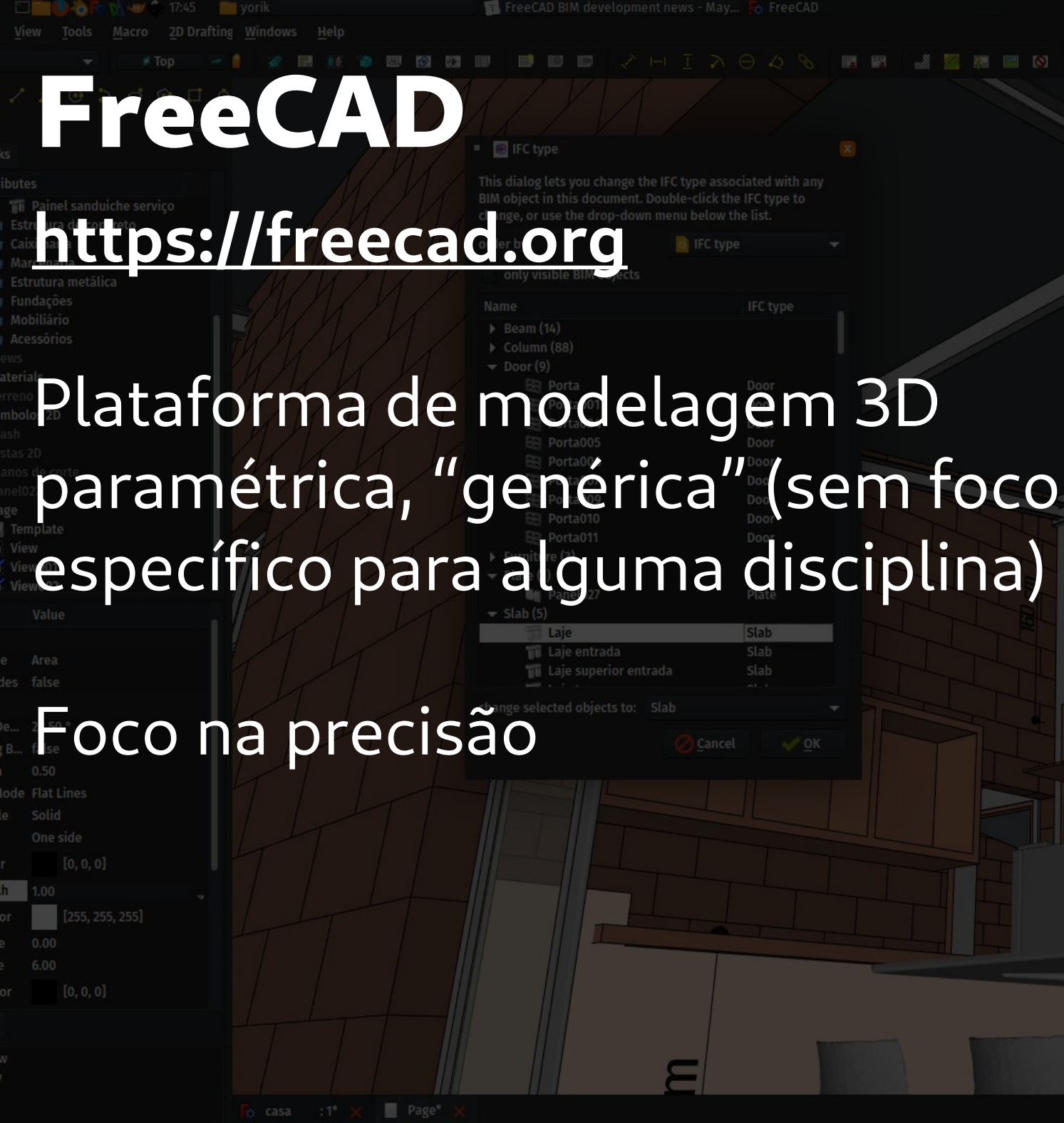
BlenderBIM

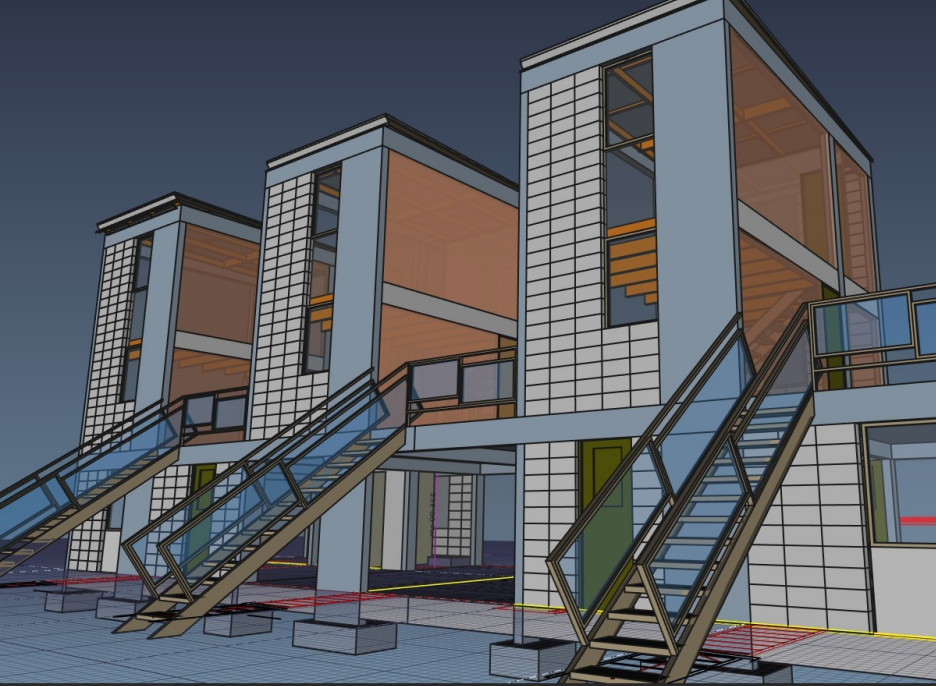
FreeCAD

<https://freecad.org>

Plataforma de modelagem 3D
paramétrica, “genérica” (sem foco
específico para alguma disciplina)

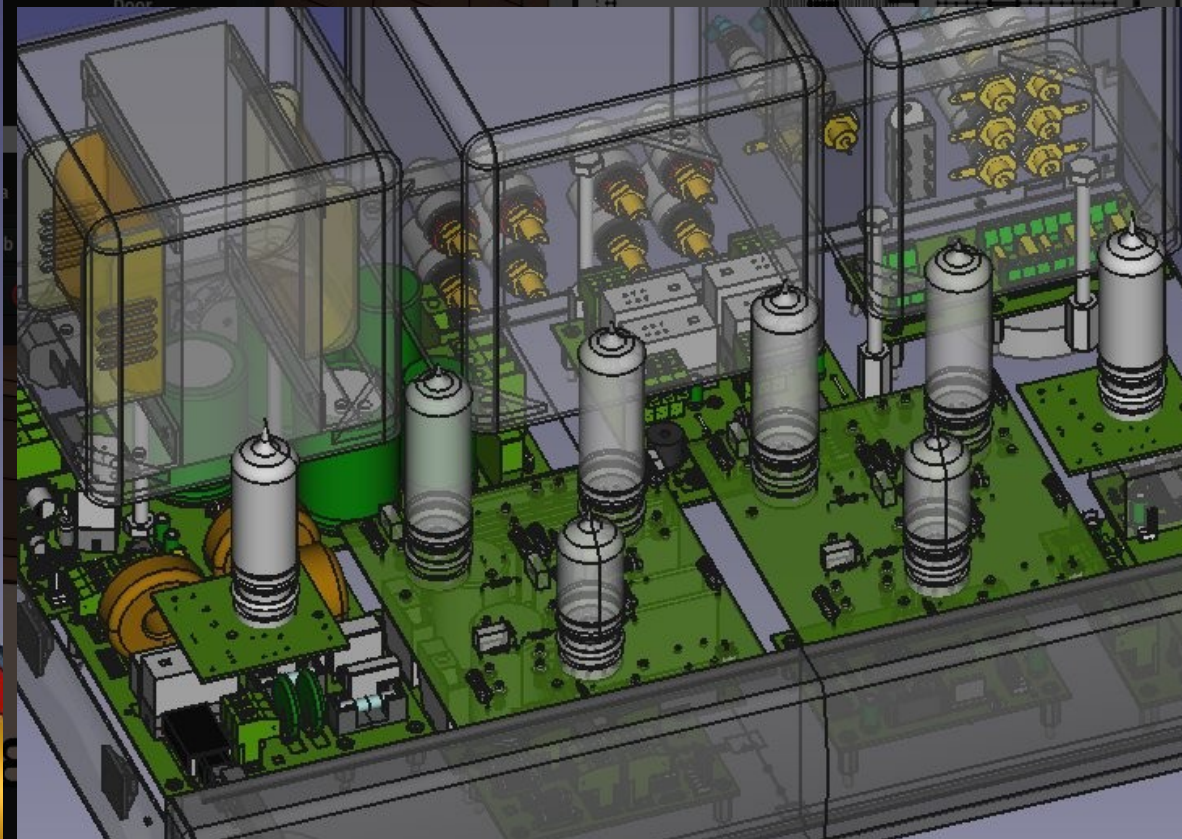
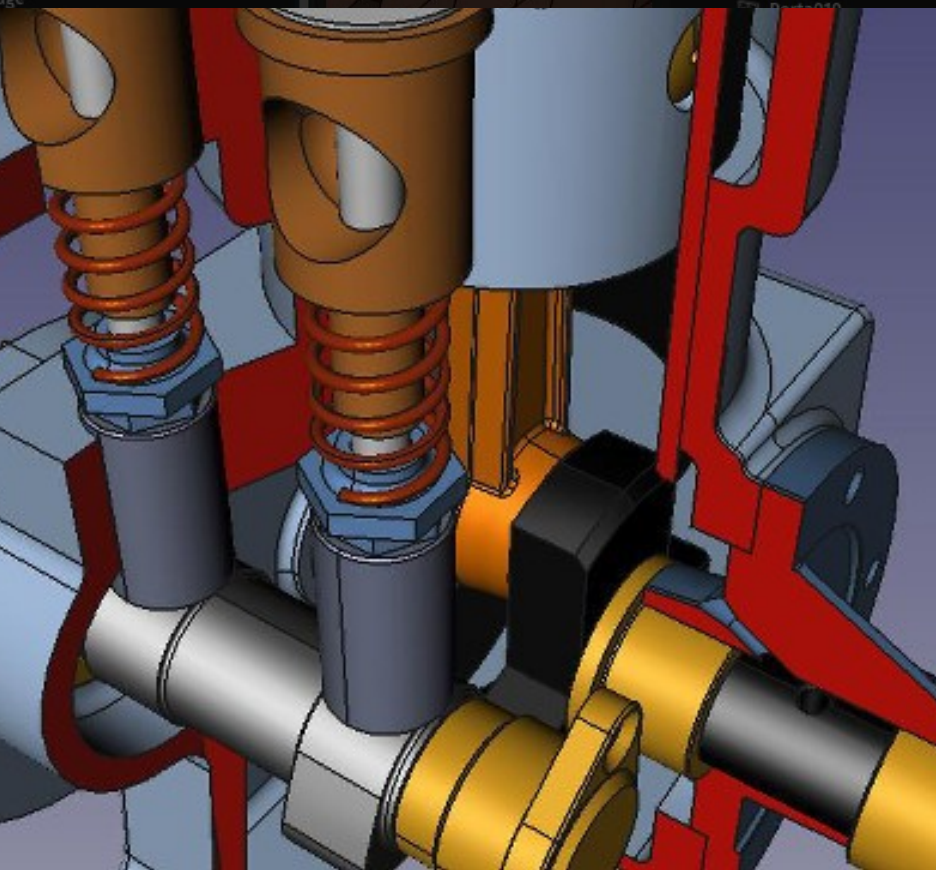
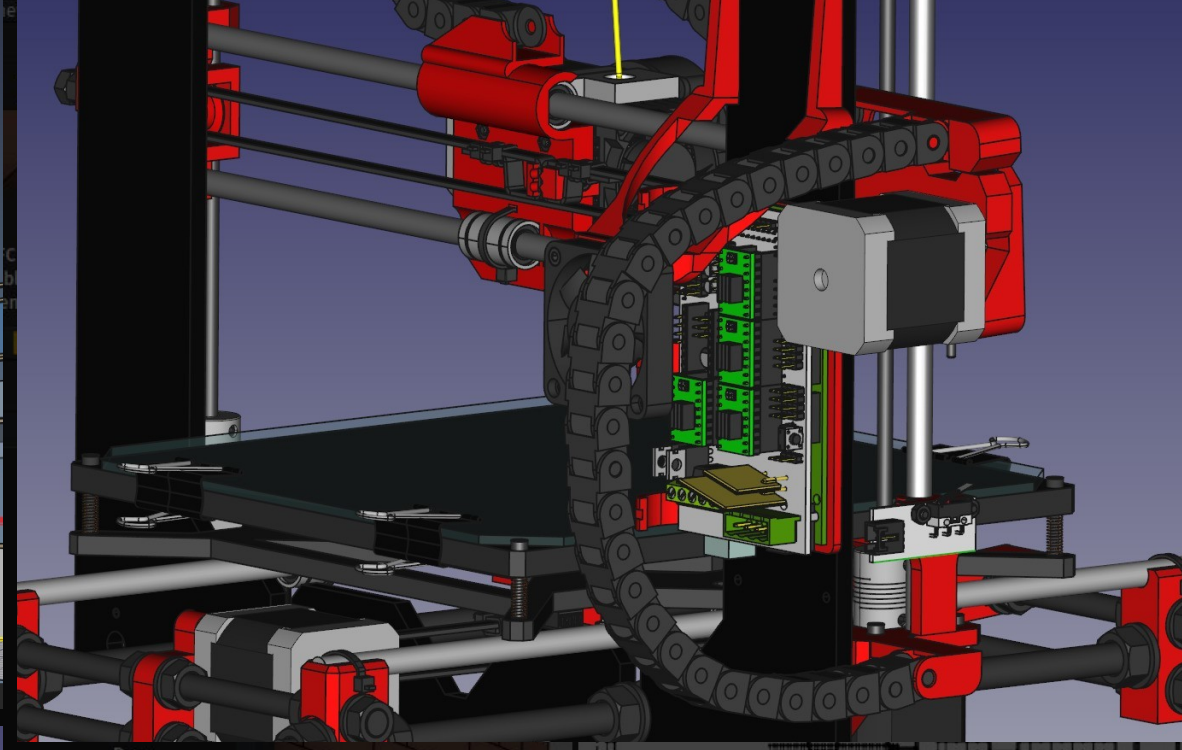
Foco na precisão

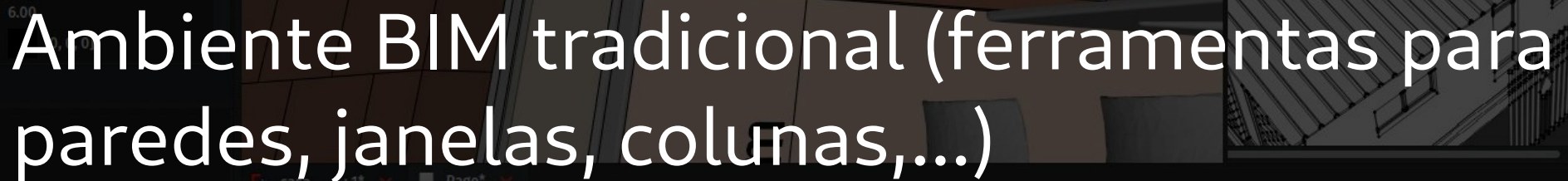


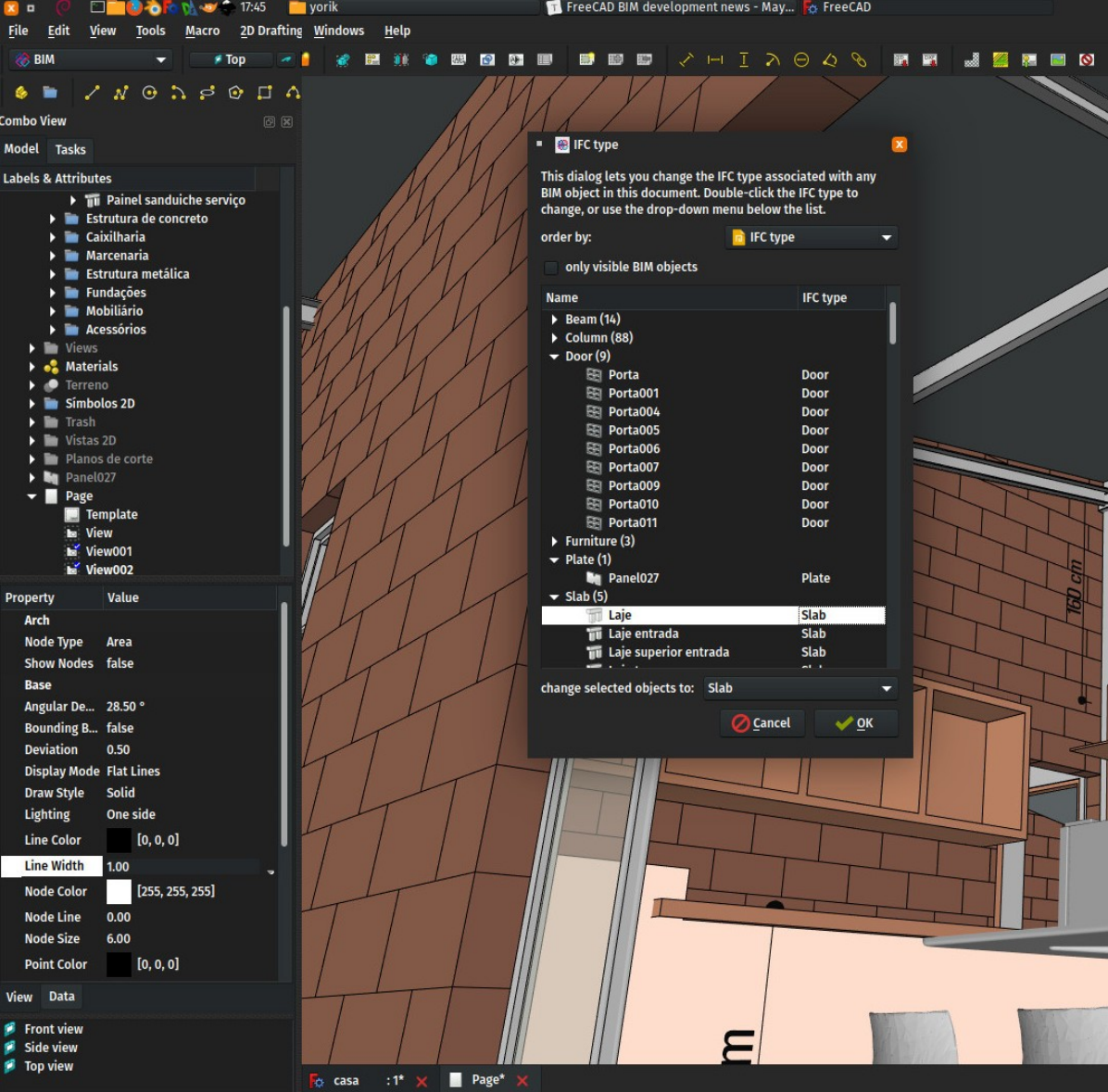


AL - QUINTA - MONROY - ARQ - 13 - 1

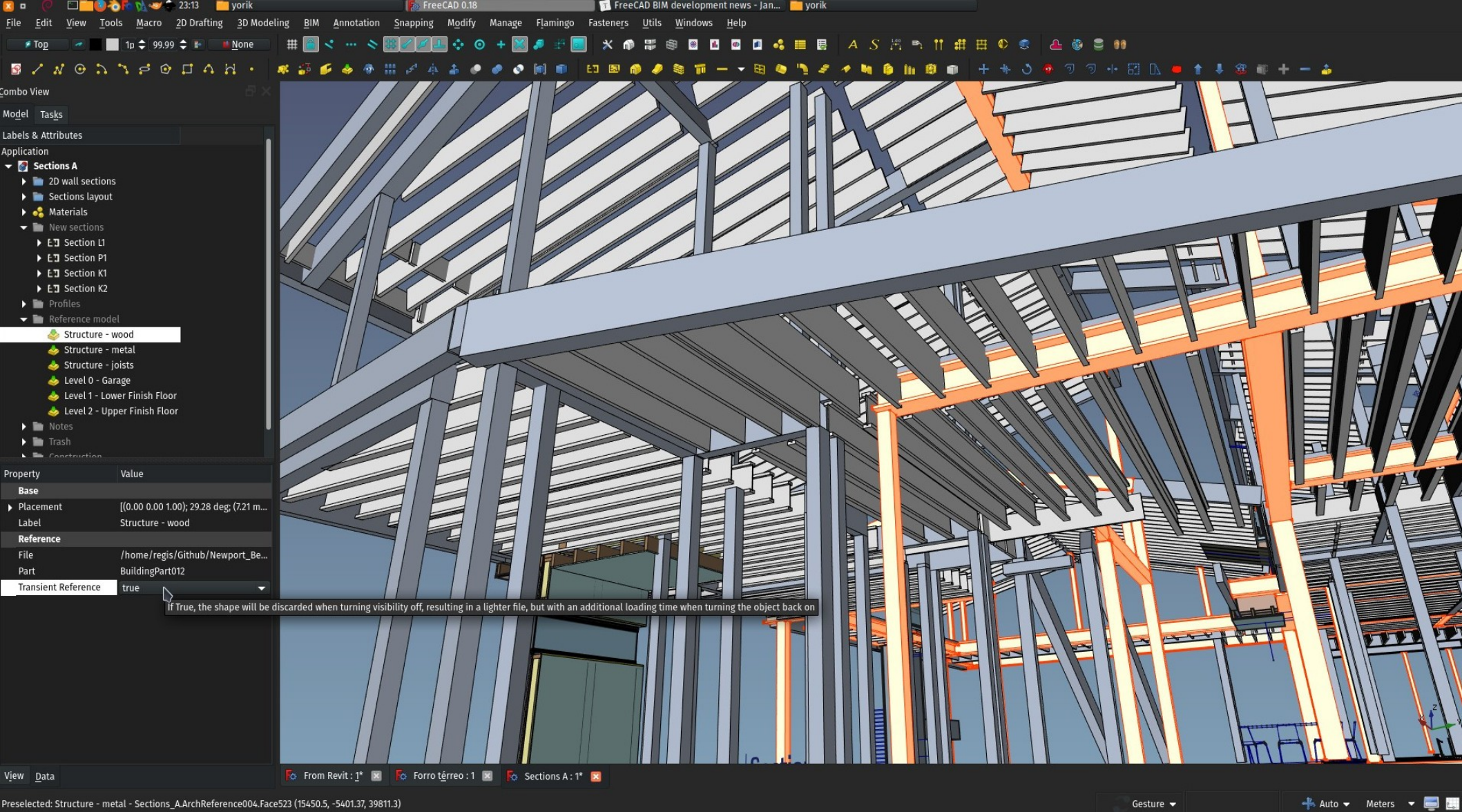
Page



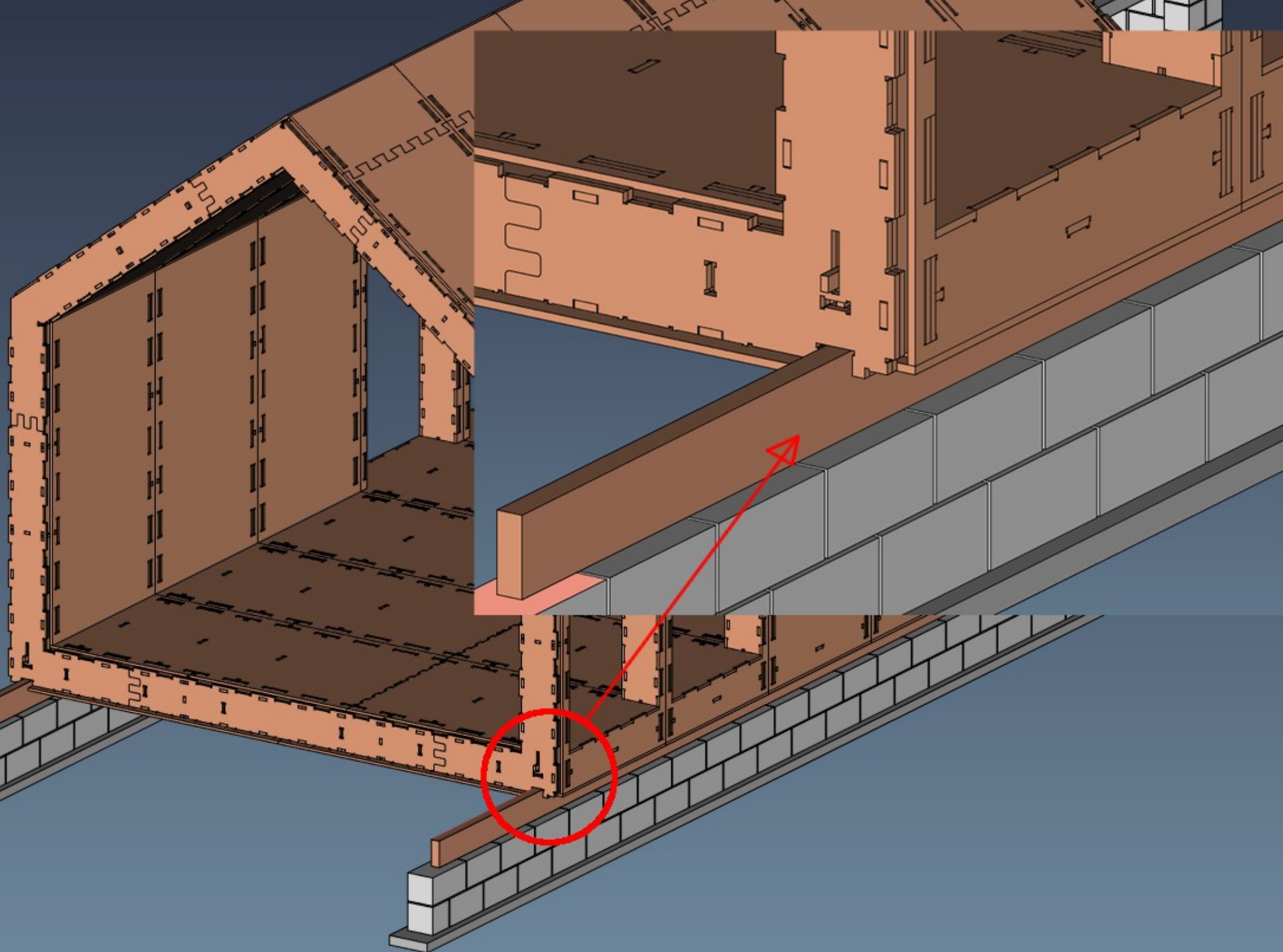




Produção de desenhos 2D e extração de dados do modelo

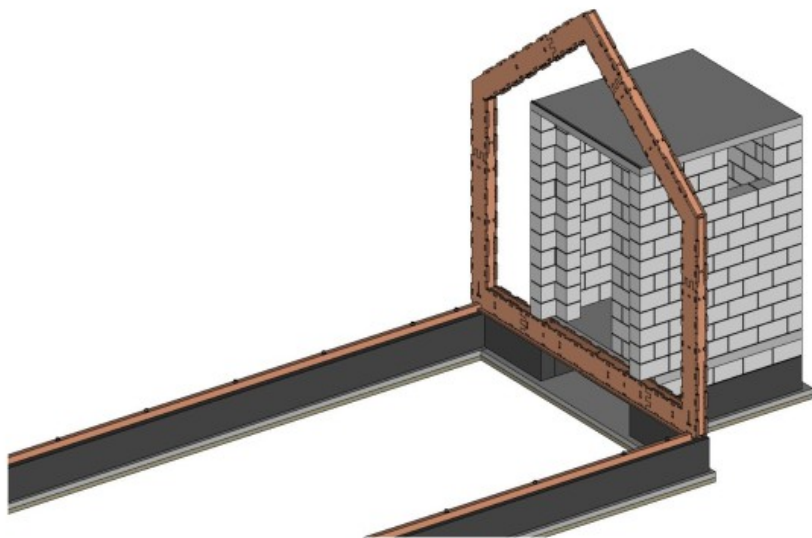


Alta compatibilidade com o formato IFC,
Modelagem com sólidos e NURBS

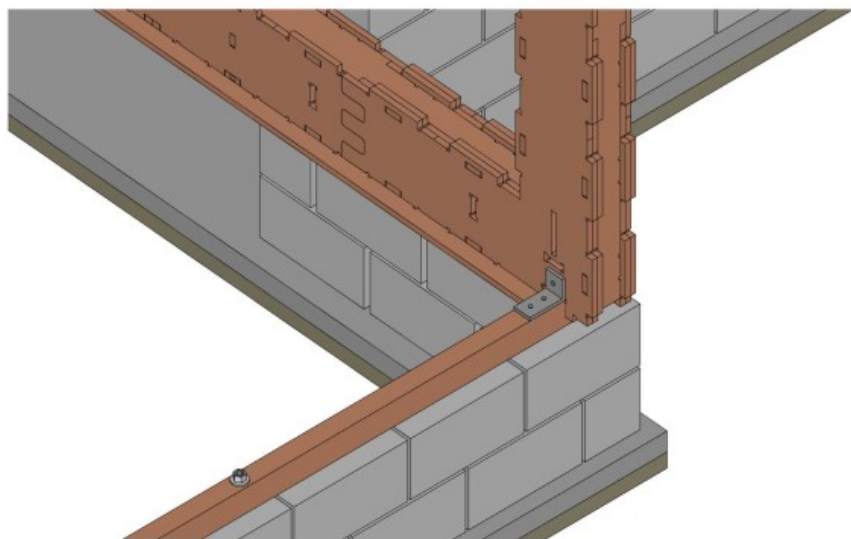


2.2. Colocação e fixação da estrutura

Uma vez os 8 elementos contruídos, podem ser colocados em cima da viga-guia, começando pelo primeiro, que está diretamente encostado na alvenaria:

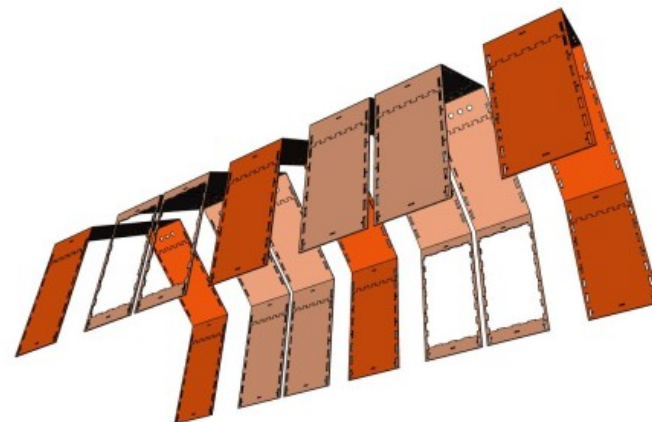


Cada elemento estrutural deve ser fixado às vigas-guia por cantoneiras metálicas parafusadas, usando duas cantoneiras de cada lado (4 por elemento):



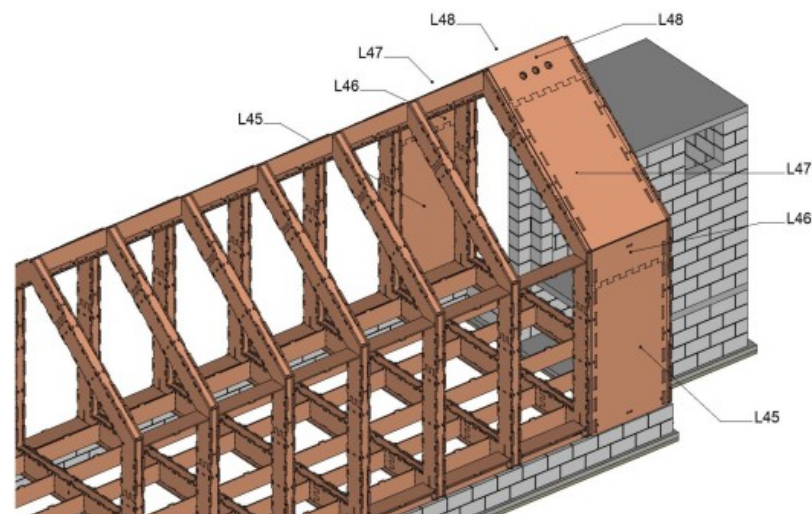
Em seguida são colocados 3 espaçadores superiores e 8 espaçadores inferiores:

- 2 módulos com janela do lado direito
- 1 módulo fechado (laranja)

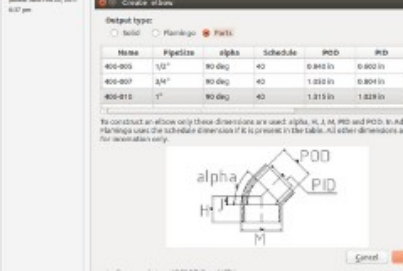
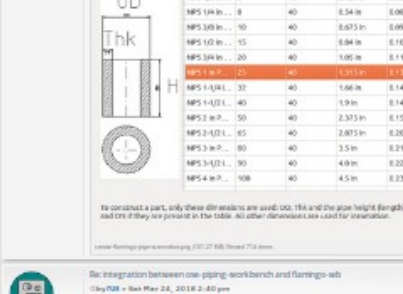
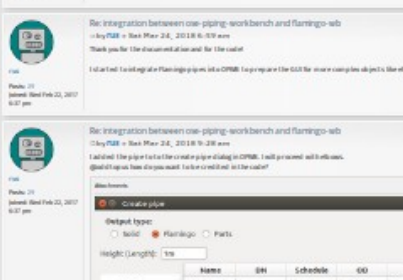
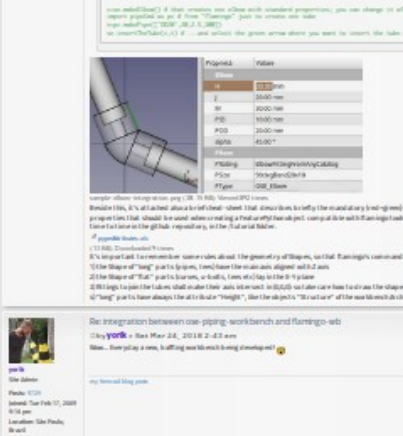
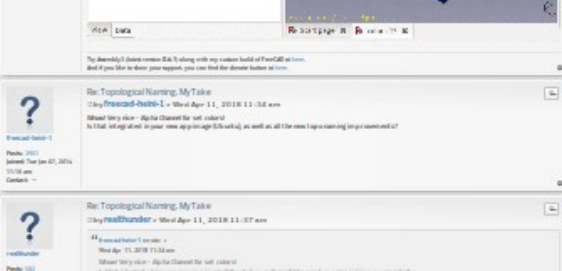
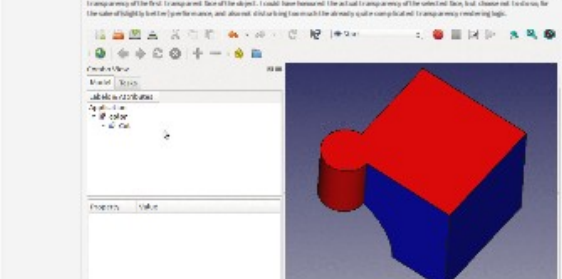
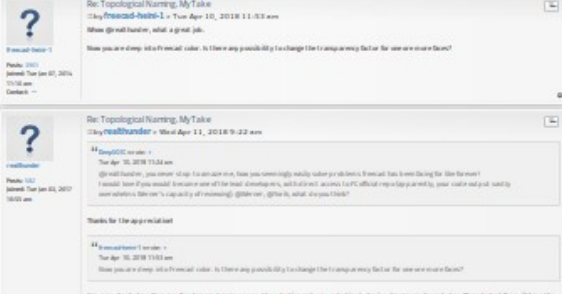
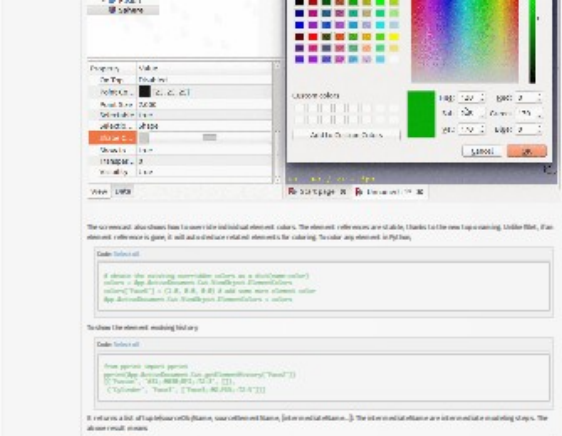
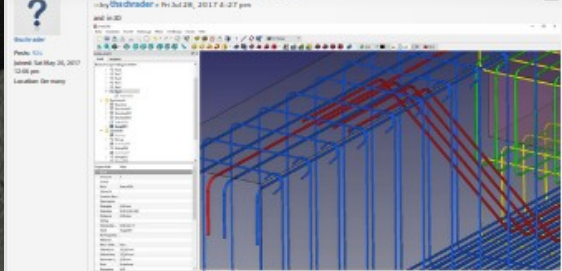
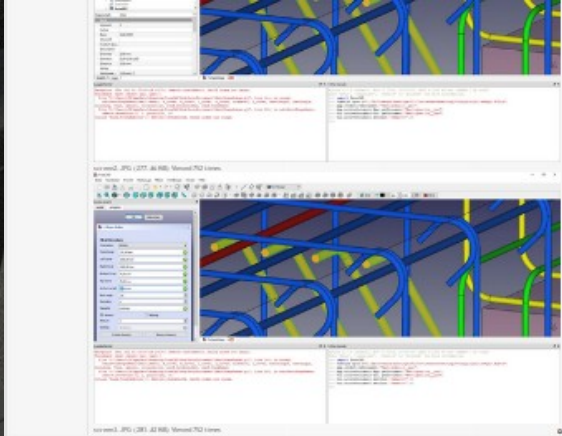
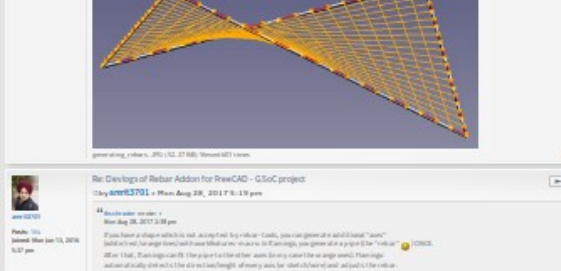
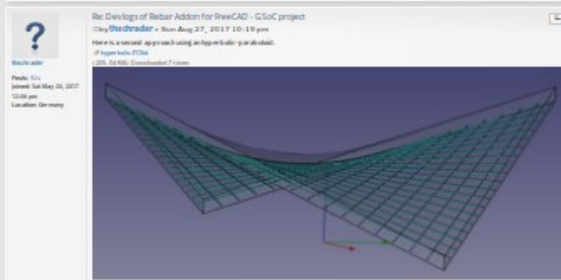
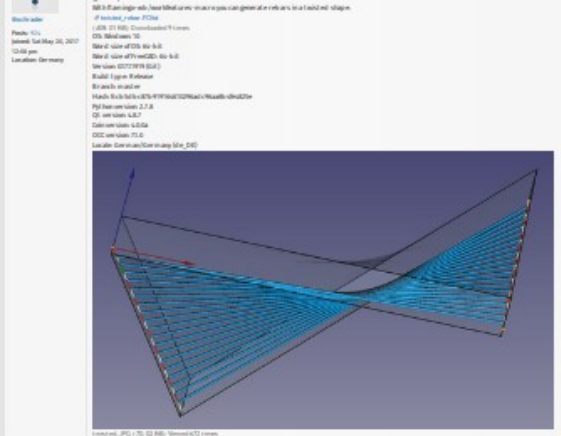


Todos os módulos são simétricos, o lado pode ser invertido na obra se desejar.

Os painéis exteriores são colocados primeiros:



Em seguida, os painéis do fundo do piso. Esses painéis devem idealmente ser envernizados ou pintados, ou ser feitos com compensado resistente a umidade, antes da montagem. Esses painéis são colocados por dentro, simplesmente apoiados em cima dos "skis":

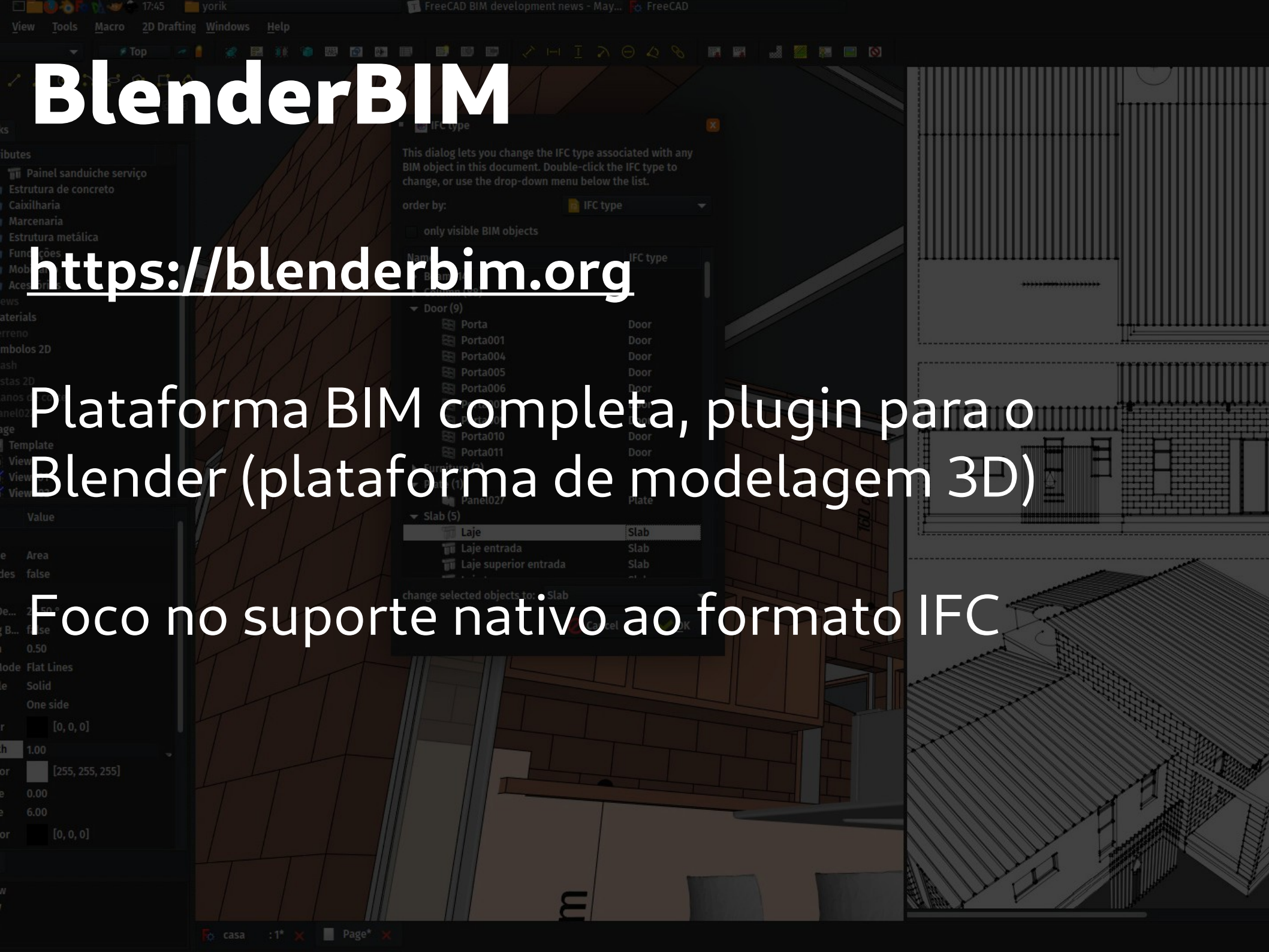


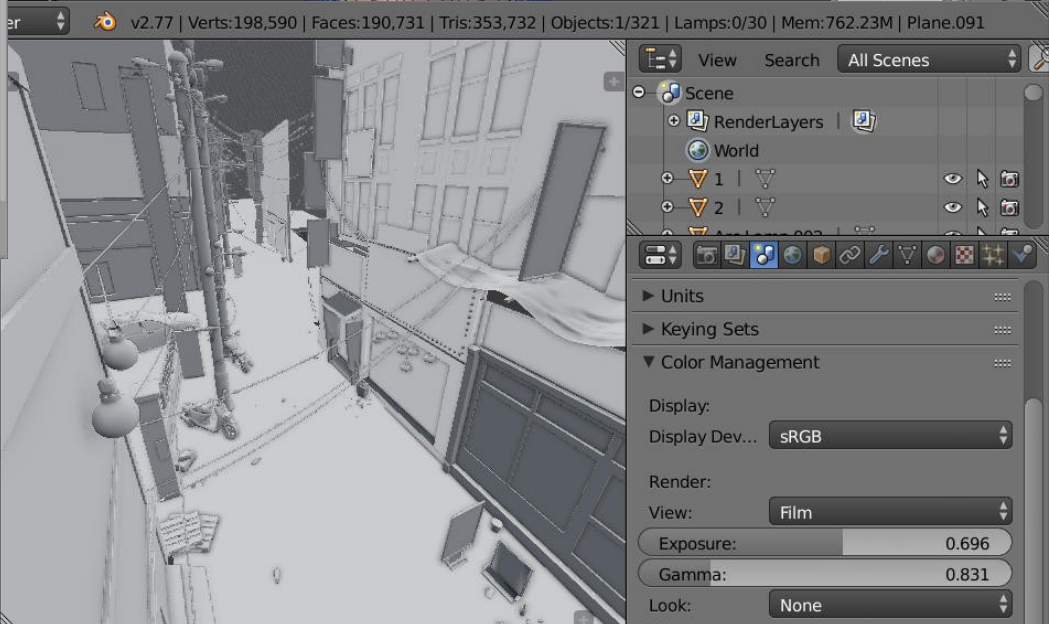
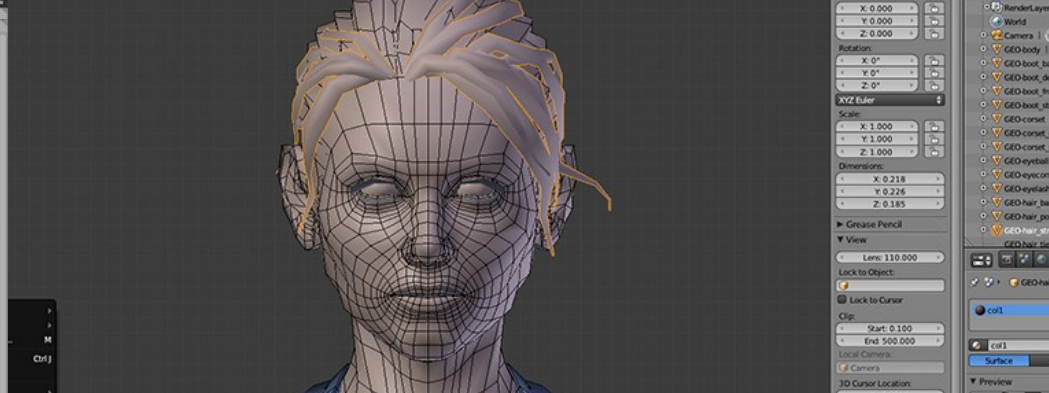
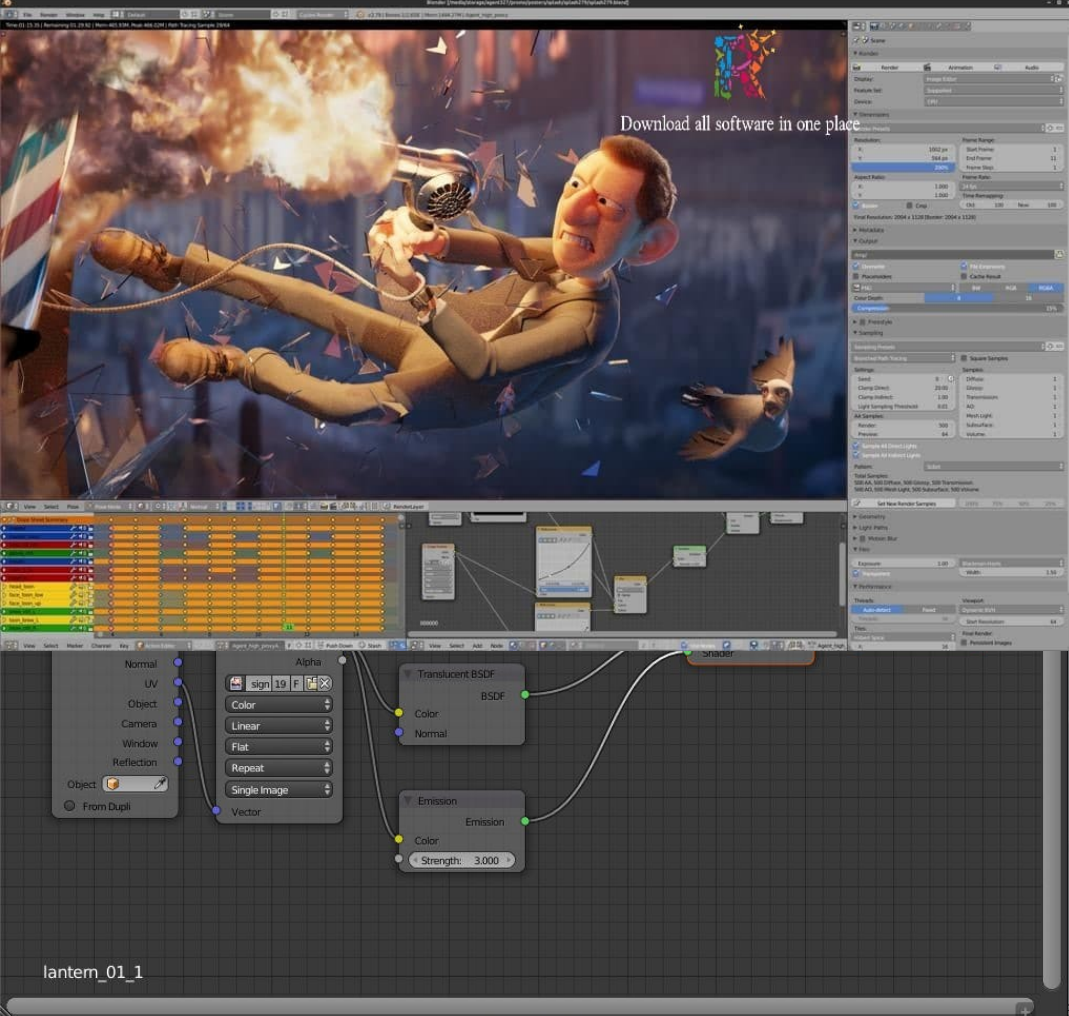
BlenderBIM

<https://blenderbim.org>

Plataforma BIM completa, plugin para o Blender (plataforma de modelagem 3D)

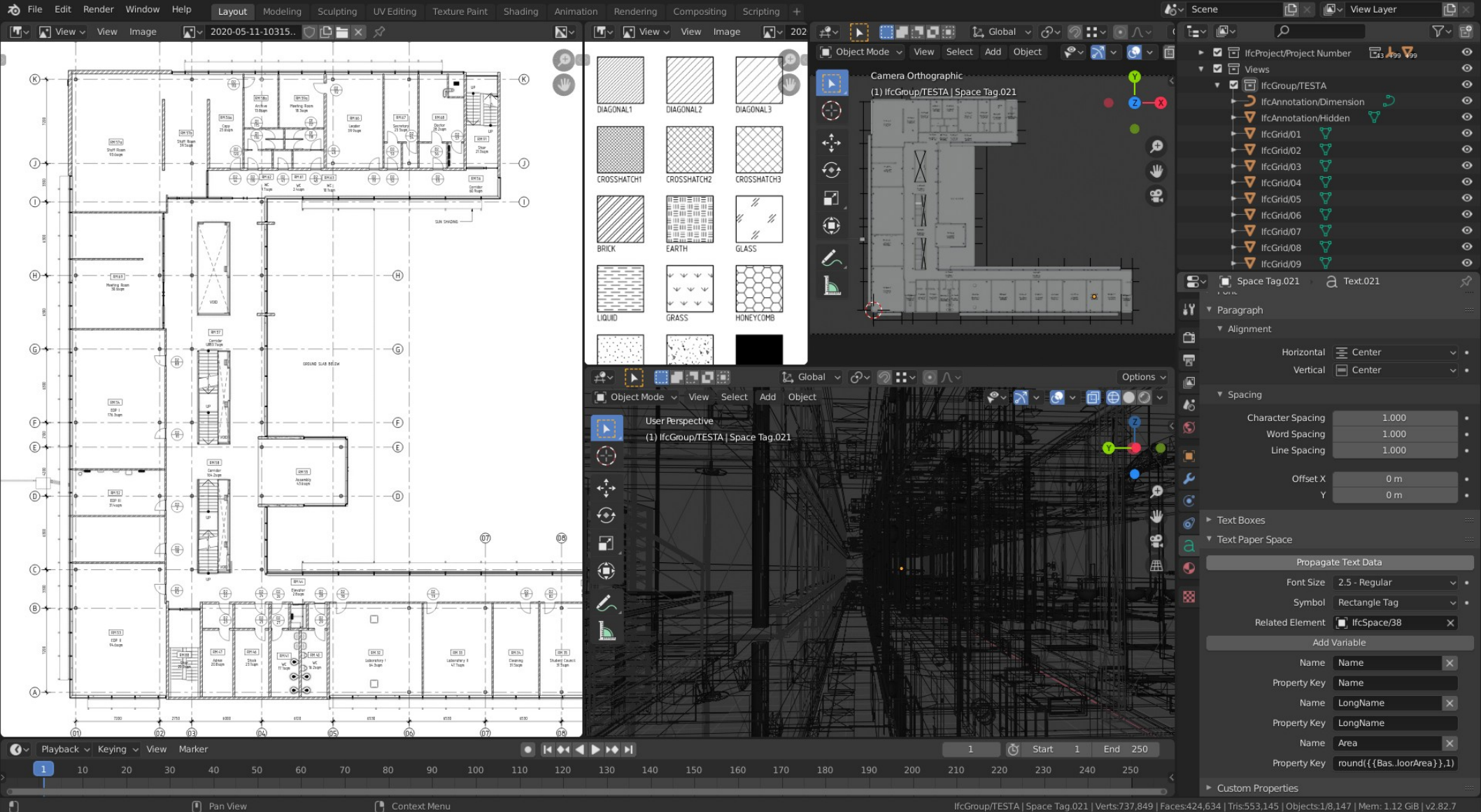
Foco no suporte nativo ao formato IFC



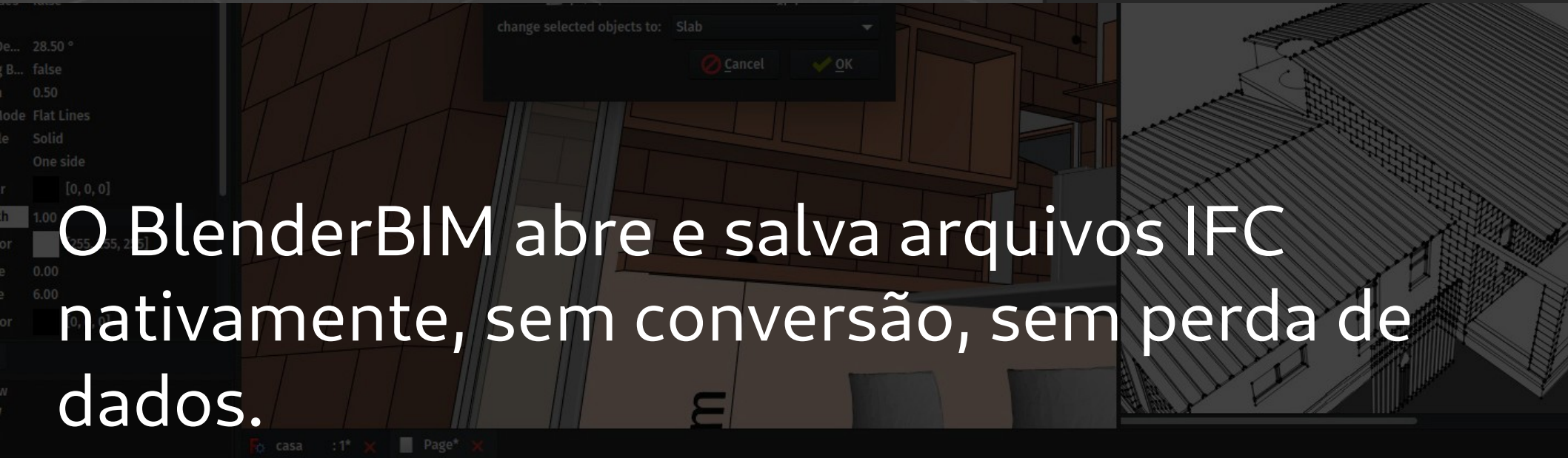
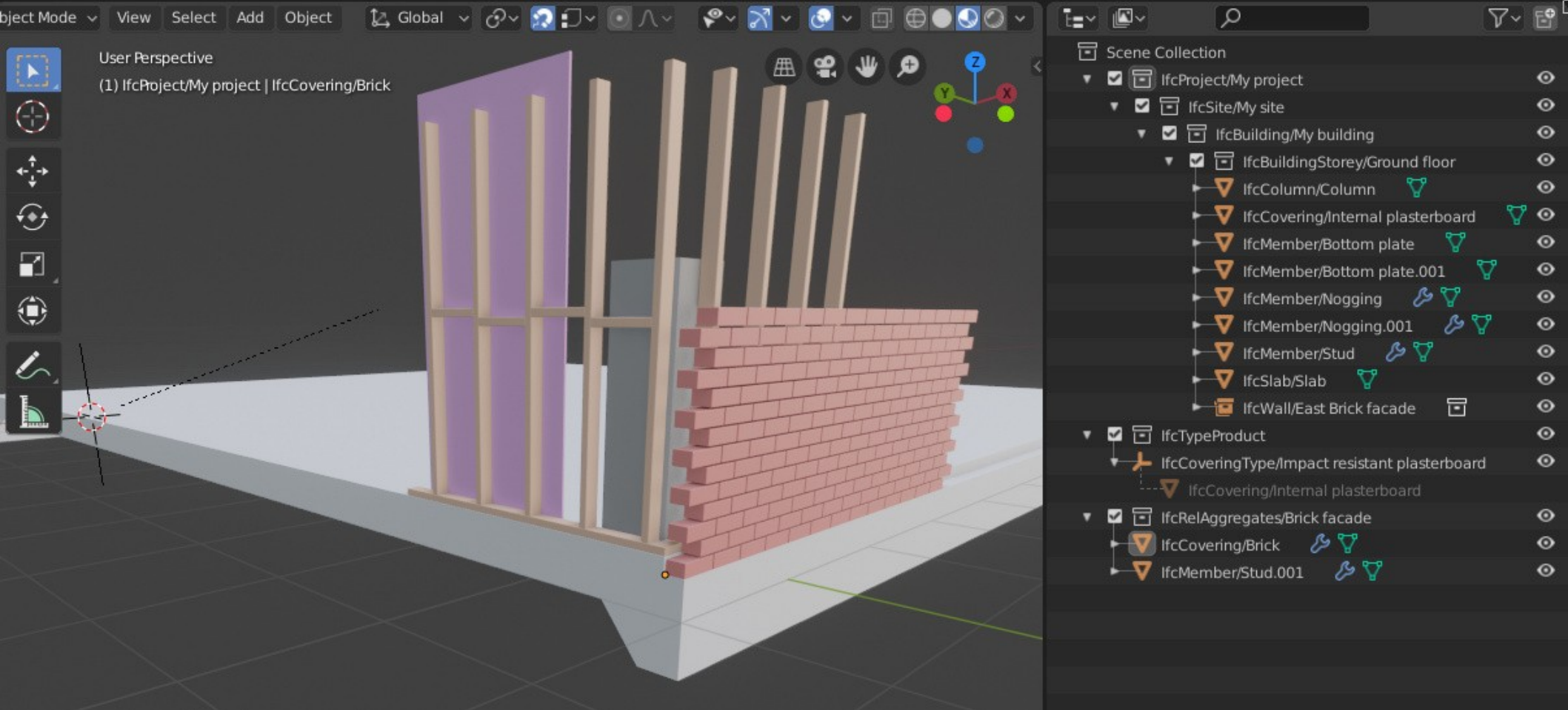




Modelagem usando as ferramentas do Blender



Produção de desenhos 2D automática, a partir de arquivos IFC



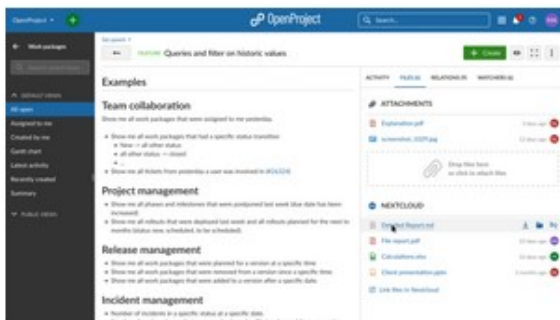


Technical drawing creation with Blender and Inkscape (Workshop)

September 15, 2022

When you start working with Blender to create architectural models, one of the last things you imagine is that it is possible to output technical drawings instead of a traditional...

[Read more »](#)

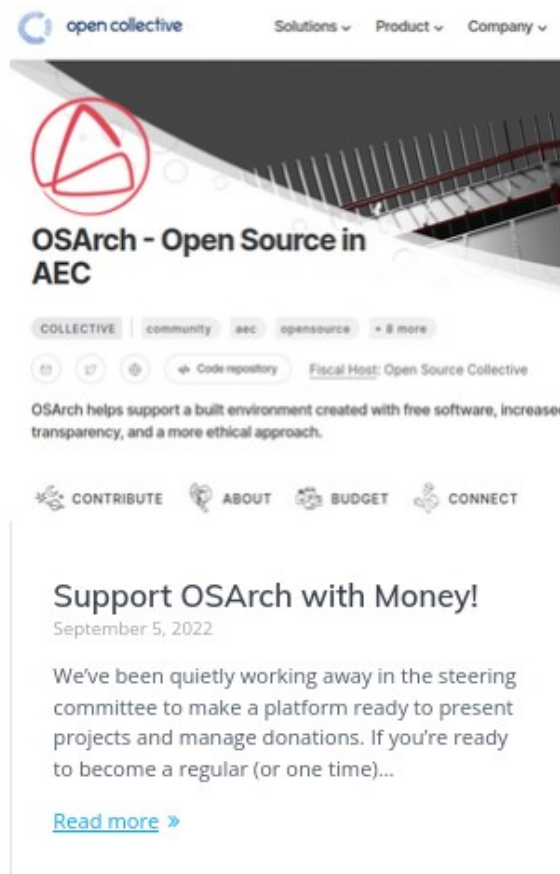


OpenProject 12.2.0 released with Nextcloud integration

September 2, 2022

OpenProject 12.2.0 has just been released, with the biggest feature being a new integration with Nextcloud. OpenProject is an open source GPLv3 licensed web-based project management platform, with over 2...

[Read more »](#)

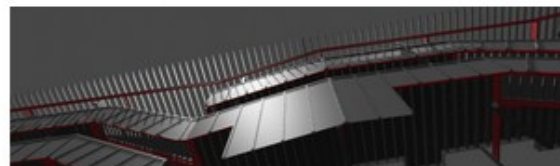


Support OSArch with Money!

September 5, 2022

We've been quietly working away in the steering committee to make a platform ready to present projects and manage donations. If you're ready to become a regular (or one time)...

[Read more »](#)

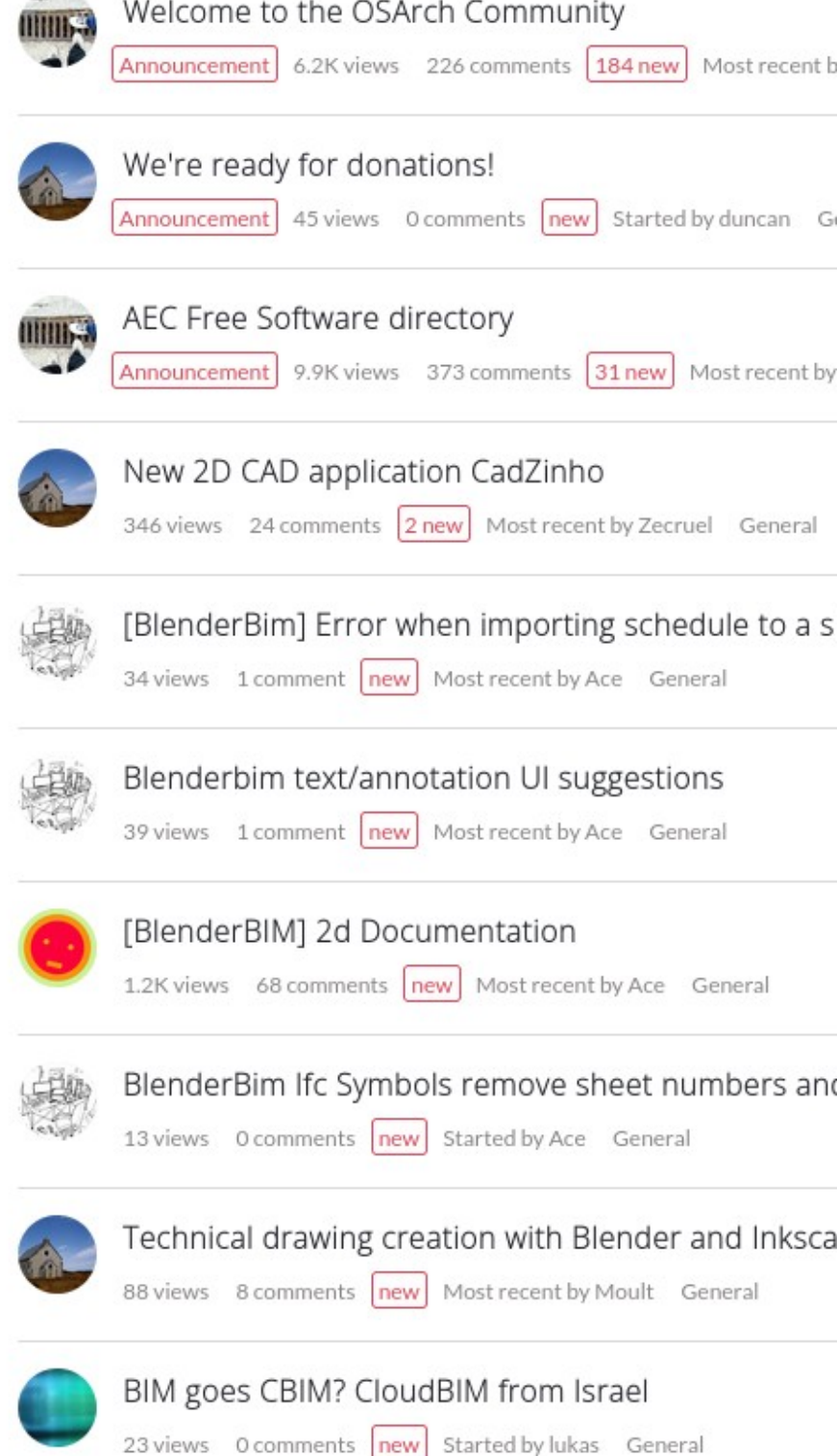


A 'Banner' for Using BlenderBIM in Production

August 9, 2022

OSArch has a new banner image! The image is courtesy of a collaboration between Ioannis Christovasilis of Aether Engineering and Ryan Schultz of OpeningDesign. These two companies are known for...

[Read more »](#)



Introduction [edit](#)

This page lists software published under a [Free/libre](#) or [Open Source](#) (FLOSS) software license. It lists many t as the reach of FLOSS is extensive and always growing. If you know of anything we're missing please [let us know](#) software projects have dedicated pages on this wiki, these are all listed on the [Category:Software](#) page.

We are not the only group trying to promote free/libre software for AEC. Here are some other software lists: [Ub](#) a distribution, forum and software list. If you want to help work towards [a new type of software directory](#) drop

General Purpose [edit](#)

If you're not familiar with Free & Open Source software useful for general use you can read our page on [Open sou](#)

Schematic design [edit](#)

Schematic design is defined as loose sketching, idea development, prototyping, and feasibility studies, without de

Logo	Name	Description
	Blender	Blender is the free and open source 3D creation suite. It supports the entirety o simulation, rendering, compositing and motion tracking, video editing and 2D ar
	First Draft	A real time, web-based whiteboarding and markup tool.
	Excalidraw	A real time, web-based whiteboarding and markup tool.
	FreeCAD	FreeCAD is an open-source parametric 3D modeler made primarily to design re allows you to easily modify your design by going back into your model history ar
	Homemaker add-on	The Homemaker is a Blender Add-on that tries to automate the tedious work of geometry where you want walls, floors and roofs, and the software figures-out t that building. The result is an industry-standard IFC (BIM) model, suitable for ta
	Krita	Krita is a professional free and open source painting program. It is made by artis everyone. It specialises in concept art, texture and matte painters, illustrations :
	Sweet Home 3d	Sweet Home 3D is a free interior design application that helps you draw the pla the results in 3D.

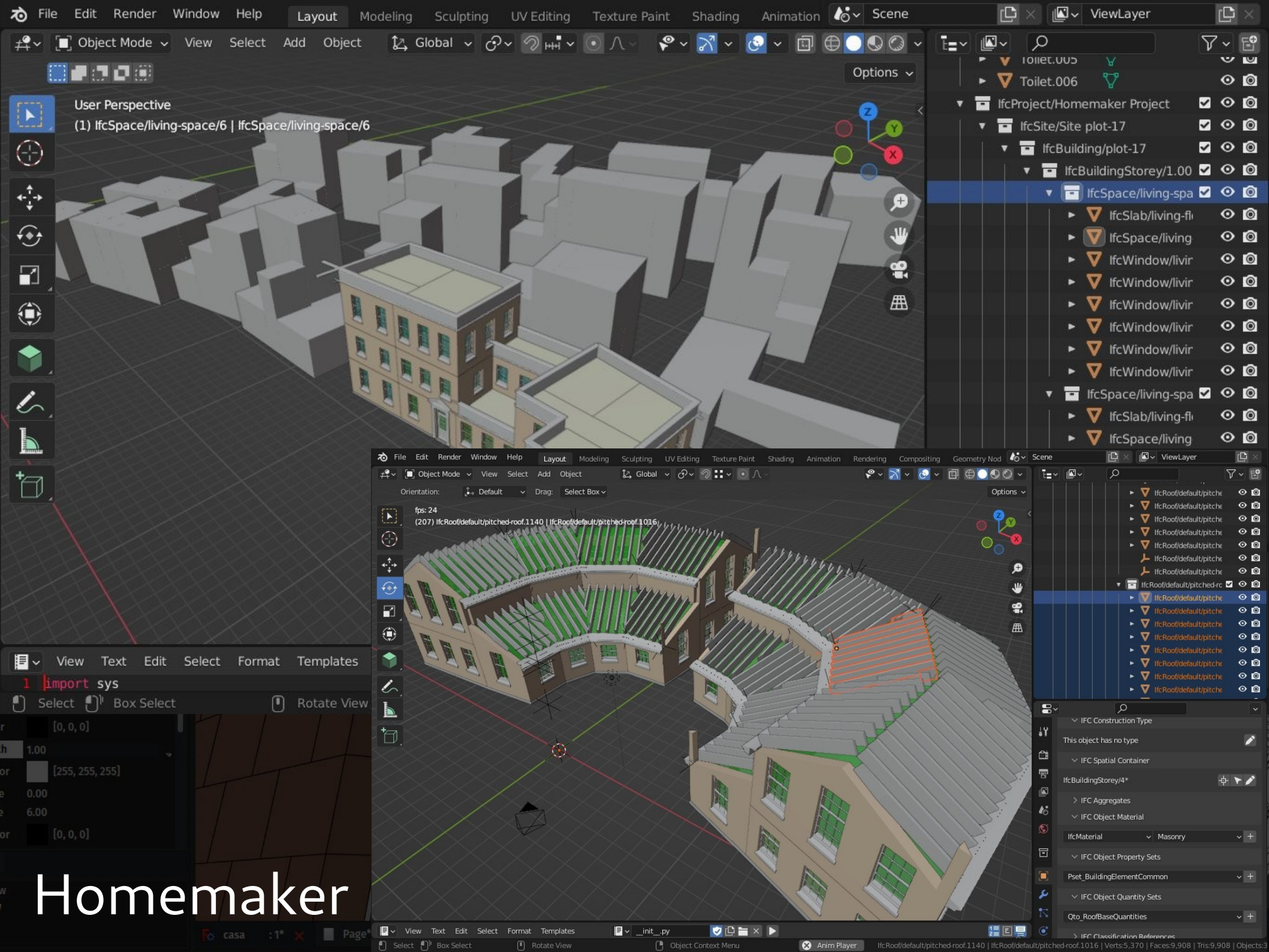
GIS [edit](#)

Geographic Information Systems are used to interrogate GIS-level data, overlay multiple data sets, and integrate with BIM

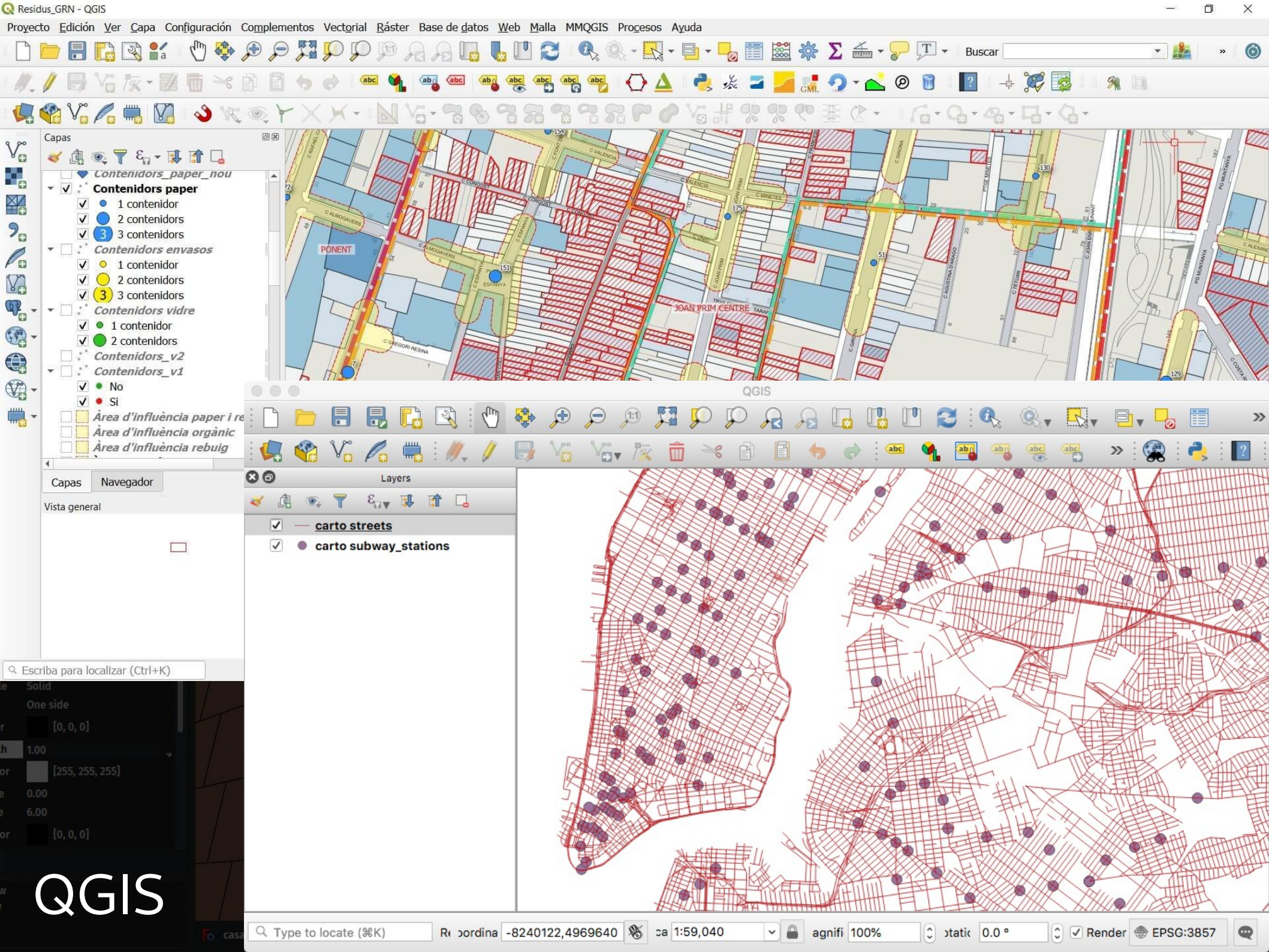
GIS [edit](#)

Geographic Information Systems are used to interrogate GIS-level data, overlay multiple data sets, and integrate with BIM <https://www.osgeo.org/>

Icon	Name	Description
	BlenderGIS	Blender Add-on . Make the bridge between Blender and geographic data
	depthmapX	depthmapX is an open-source and multi-platform spatial analysis software for sp buildings and small urban areas to whole cities or states. At each scale, the aim of spatial elements and connect them via relationship (for example, intervisibility, in perform a graph analysis of the resulting network. The objective of the analysis is or experiential significance.
	GRASS GIS	Geographic Resources Analysis Support System (GRASS) from the U.S. Army Corp Research Laboratory (USA/CERL)
	JOSM	JOSM is an extensible editor for OpenStreetMap (OSM) for Java 8+. It supports l and OSM data from local sources as well as from online sources and allows to edit relations) and their metadata tags.
	mago3D	mago3D seamlessly integrates AEC (Architecture, Engineering, Construction) and
	Open Orienteering	OpenOrienteering is a project developing a collection of tools which help with the organization of orienteering events.
	OpenStreetMap	OpenStreetMaps is a community built map of the world, powering map data about much more, on thousands of web sites, mobile apps, and hardware devices.
	QGIS	A Free and Open Source Geographic Information System to create, edit, visualise information.
	QField	An android and ios app that syncs your QGIS projects to a mobile device and allow entry. Also available for Windows desktop.
	SAGA	GIS System for Automated Geoscientific Analyses designed for the easy and effec algorithms.
	Raster Vision Building Detection	Code for running a Raster Vision experiment to train a model to detect buildings f Latin America. Part of the Open Urban Planning Toolbox developed by the Inter-A
	Urban Growth	Code to run a model that predicts urban growth using a spatially-explicit stochas produce replications of urban growth in a designated urban area and its surround



Homemaker



QGIS



Line weight: **By Layer**

Layer Manager

Used

X

X

X

X

Remove

Type:



NOTE: -THIS PARTITION
TO C.L.G. HEIGHT ONLY

CATALOGING

PLASTER PLENUM
ABOVE

CONFERENCE

RECEPTION

TYPICAL COL. DIMENSIONS
THIS FLOOR

SCIENCE & TECHNOLOGY
READING AREA

2" NET, LATH & PLASTER
FLOORING ON ALL FLOORS

Cadzinho

X= 0.0000000

$$Y = 0.000000$$

Relative

(2348.302024, 10 14.901722)

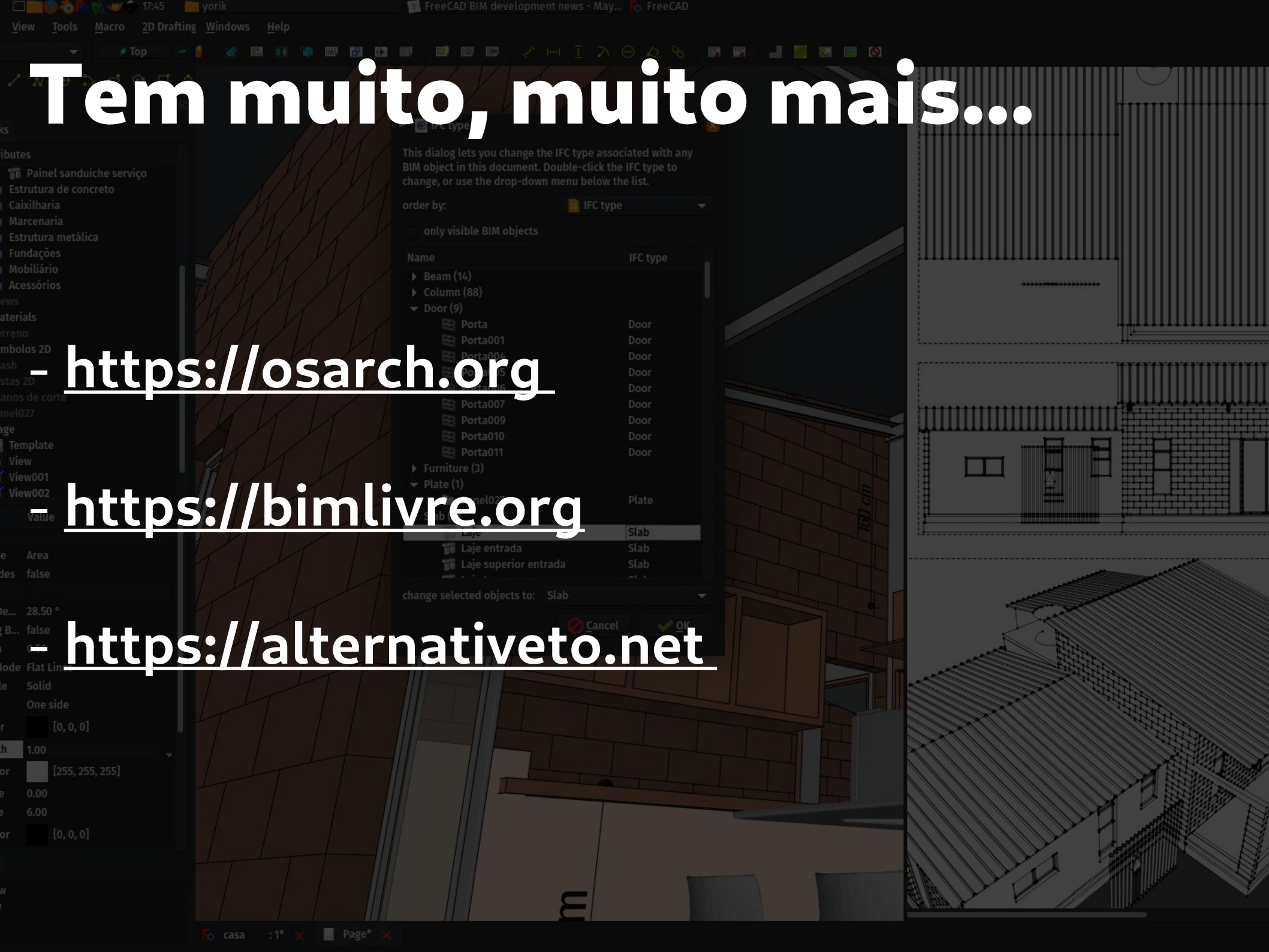
3 of 3

Tem muito, muito mais...

- <https://osarch.org>

- <https://bimlivre.org>

- <https://alternativeto.net>



Obrigado!

Yorik van Havre

<https://yorik.uncreated.net>

[@yorikvanhavre](mailto:yorikvanhavre@uncreated.net)

yorik@uncreated.net

(Estes slides amanhã no meu blog)

