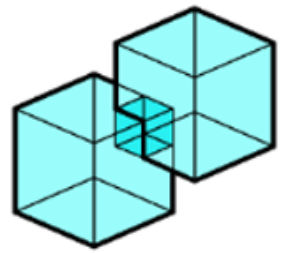
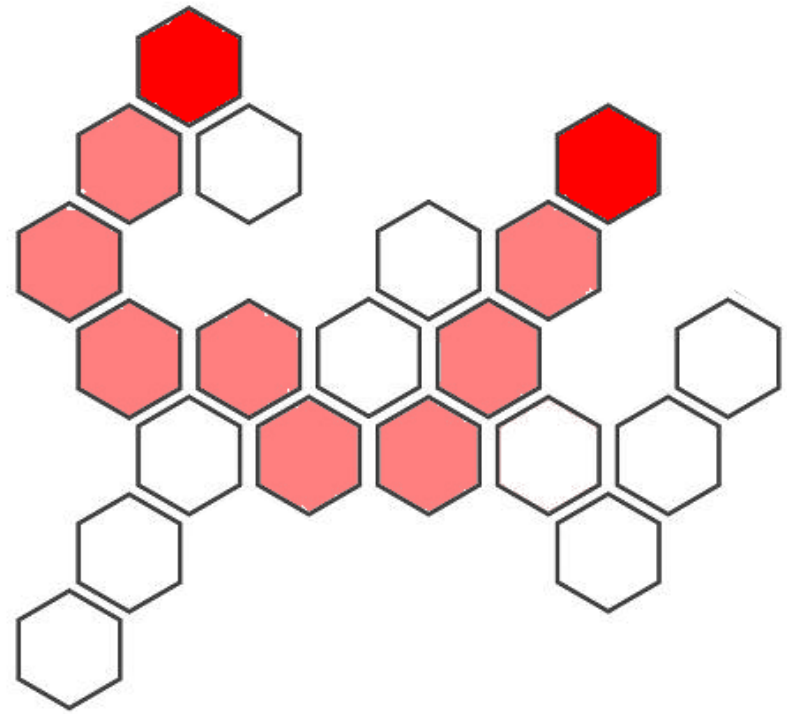


Topologic

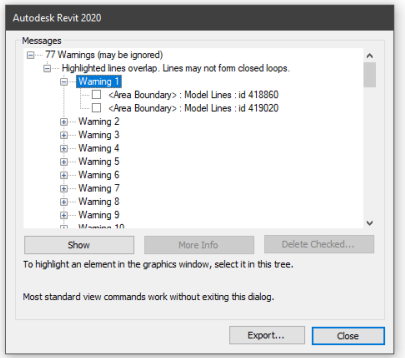


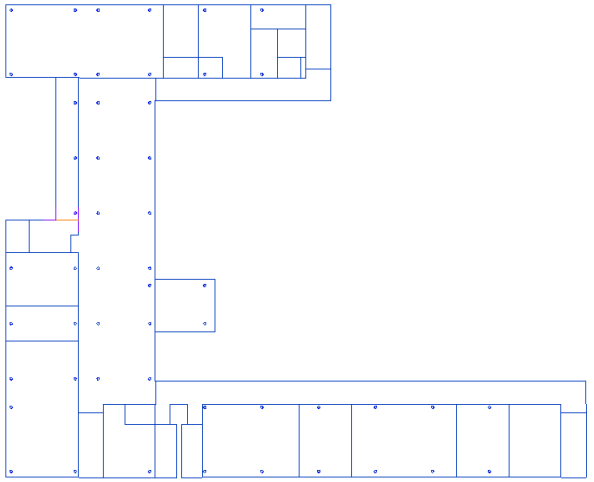
Topologic Cell Complexes

ft Wassim Jabi

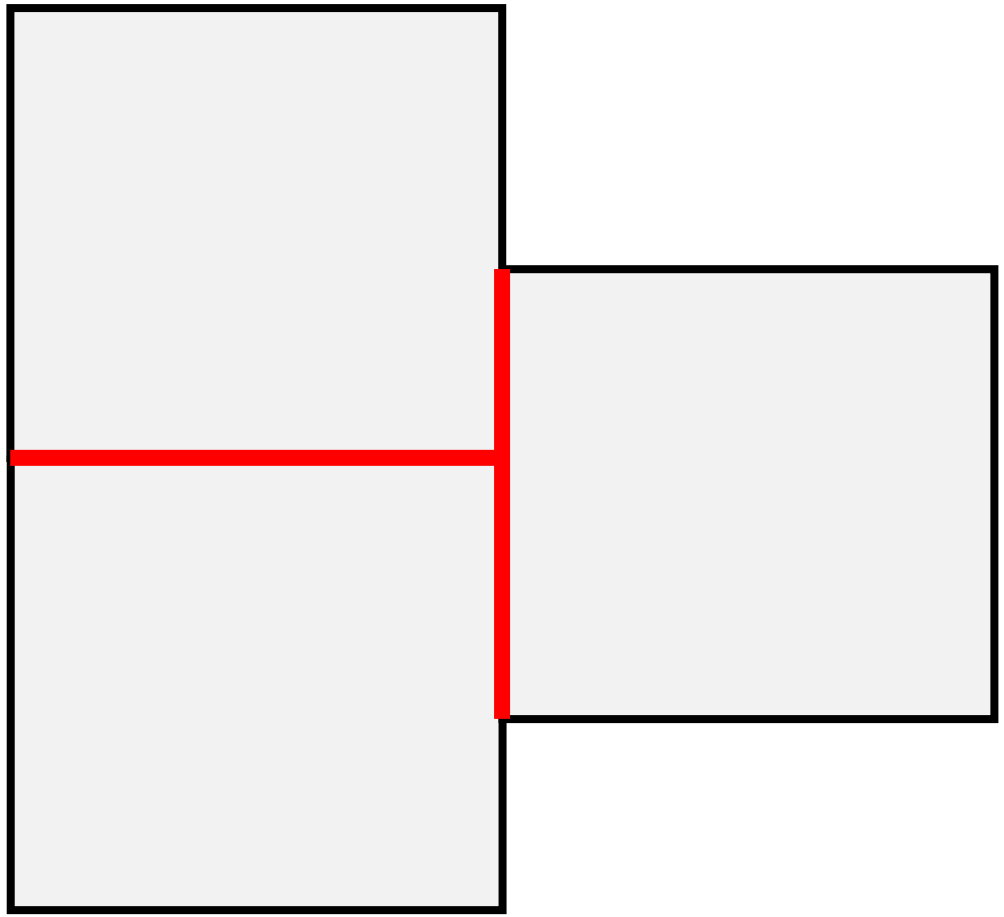
Previously

Merge Overlapping Lines
Using Rhino Inside!





The Problem



Topologic

https://topologic.app/

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Featured Guest in this video!

Wassim Jabi · 1st

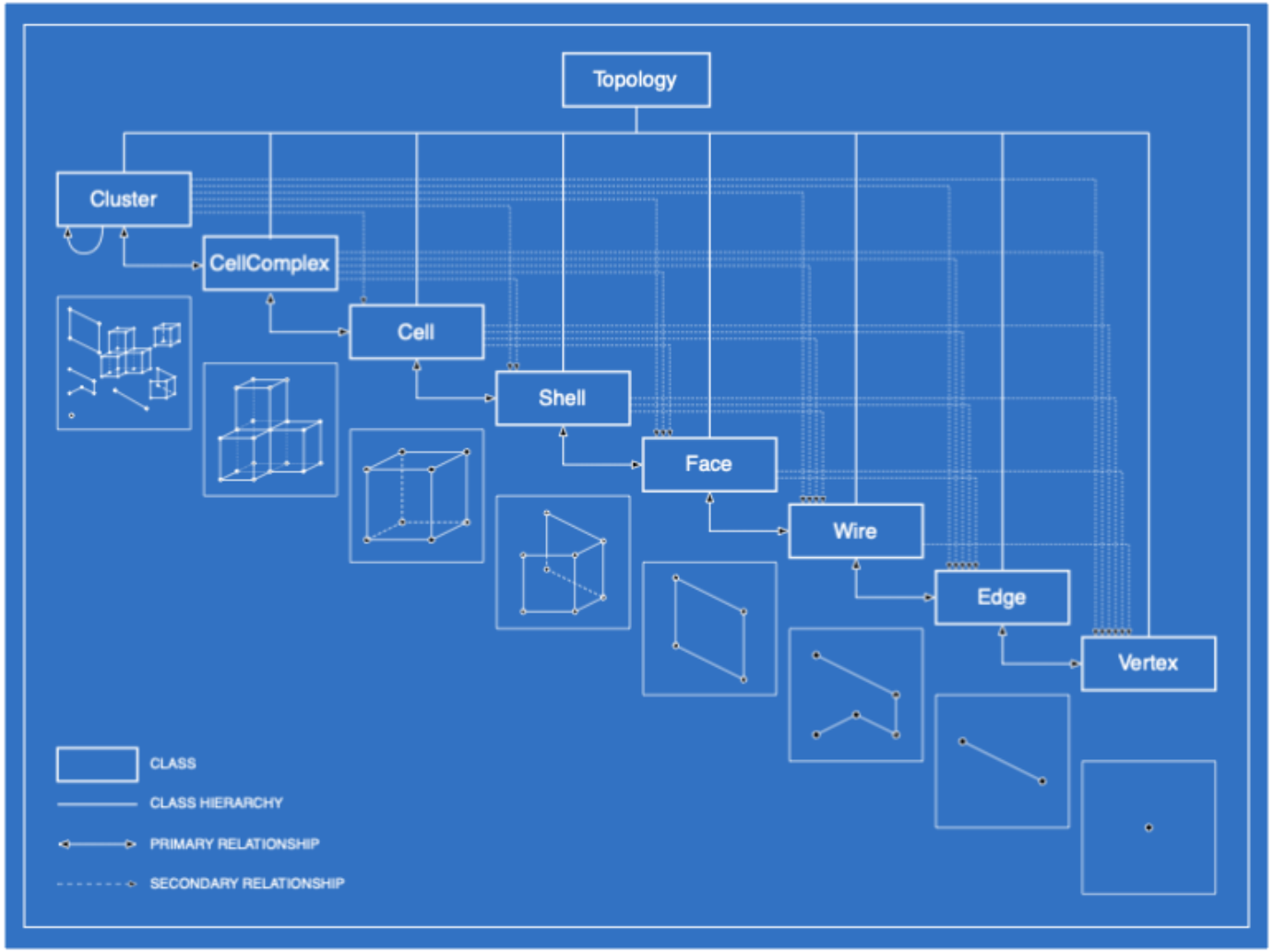
(Cardiff UK)

Wassim Jabi • 5:13 PM

Hi Gavin. Was watching your video on getting room boundaries from Revit. I think I know the answer to the following, but hoping to be proven wrong: Is there any way you can think of to create room boundaries from Revit that always share lines (similar to Testfit plans?). Obviously this would allow me to build Topologic CellComplexes and run energy analysis

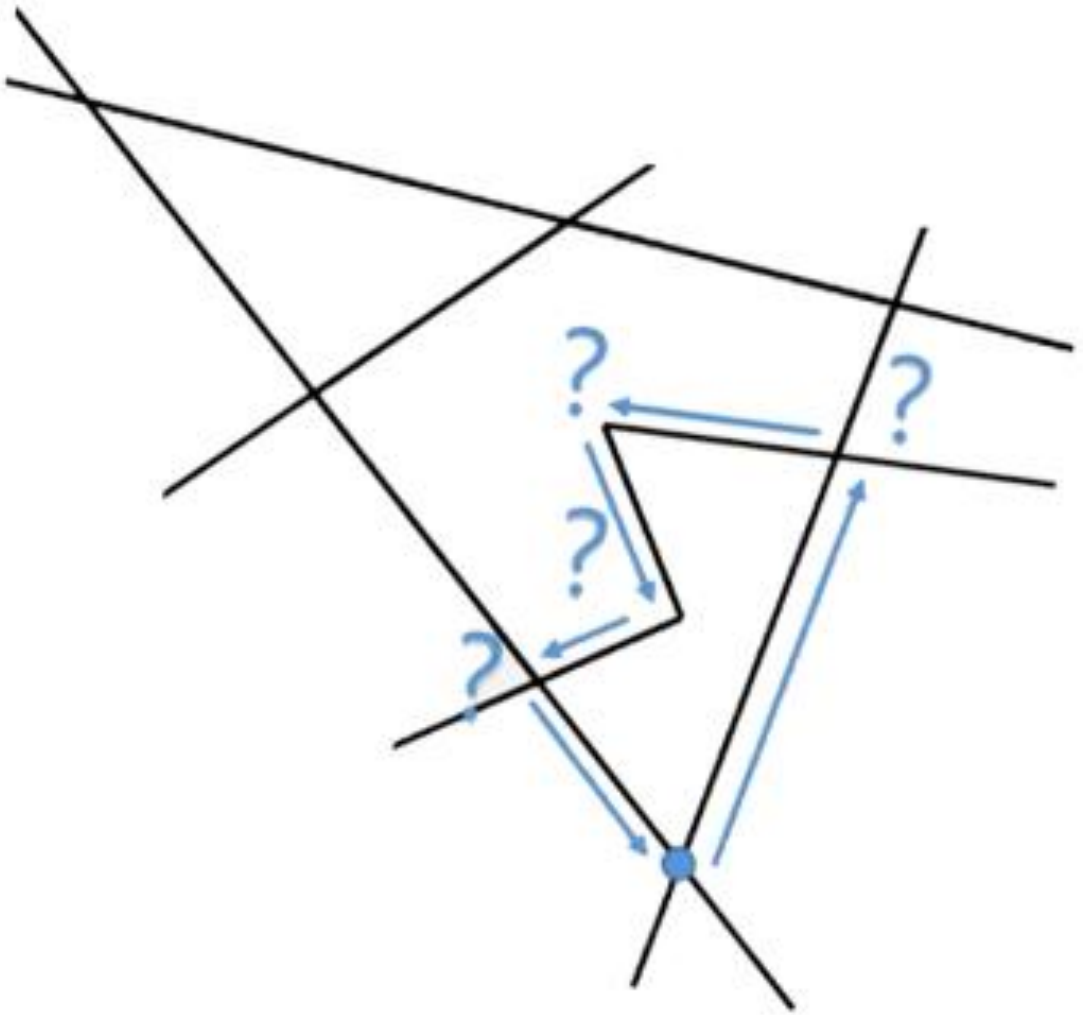
Topologic

https://topologic.app/



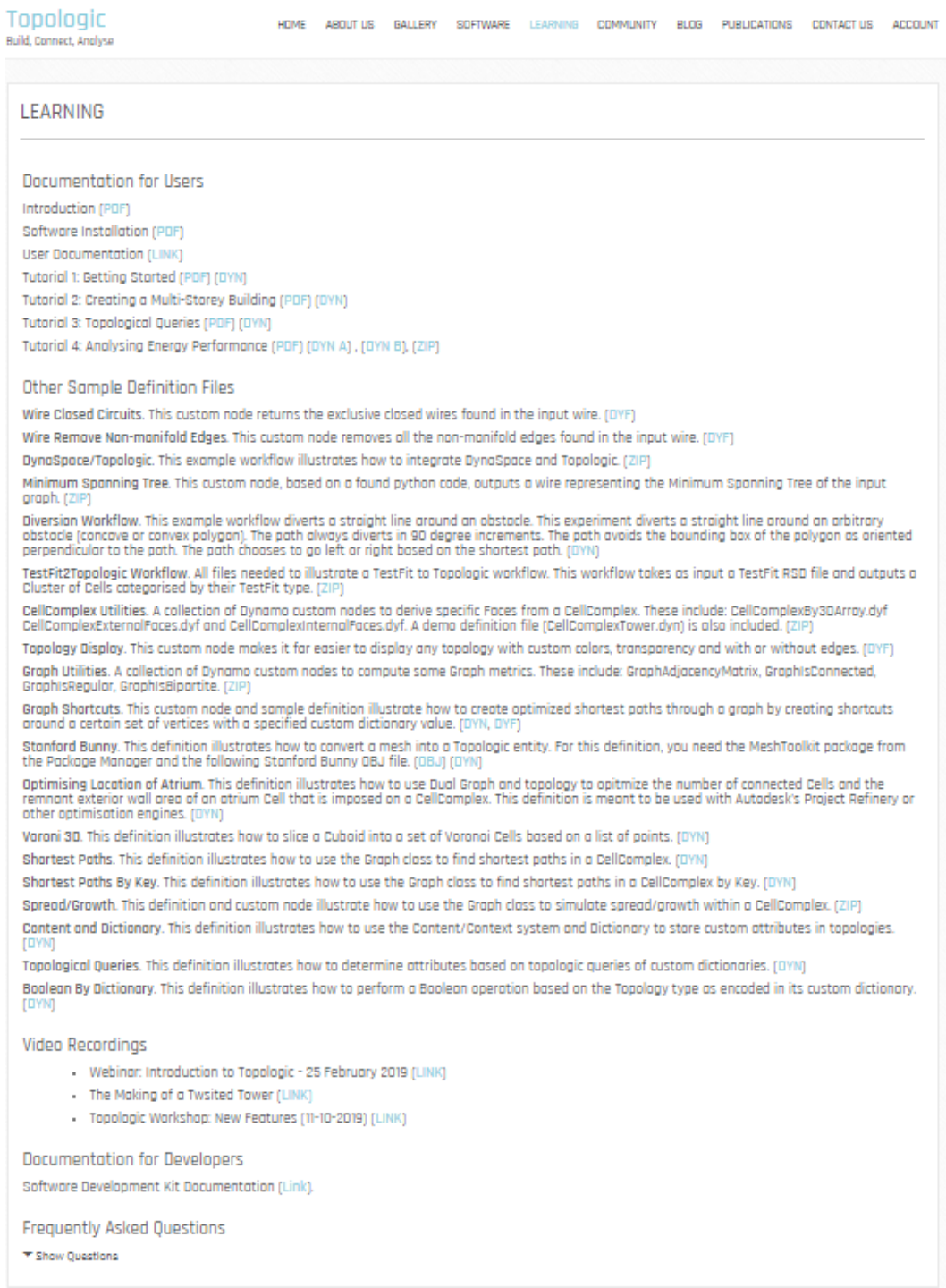
Topologic

https://topologic.app/



Resource files and package

https://topologic.app/



Topologic
Build, Connect, Analyse

HOME ABOUT US GALLERY SOFTWARE LEARNING COMMUNITY BLOG PUBLICATIONS CONTACT US ACCOUNT

LEARNING

Documentation for Users

Introduction (PDF)

Software Installation (PDF)

User Documentation (LINK)

Tutorial 1: Getting Started (PDF) (DYN)

Tutorial 2: Creating a Multi-Storey Building (PDF) (DYN)

Tutorial 3: Topological Queries (PDF) (DYN)

Tutorial 4: Analysing Energy Performance (PDF) (DYN A) , (DYN B), (ZIP)

Other Sample Definition Files

Wire Closed Circuits. This custom node returns the exclusive closed wires found in the input wire. (DYF)

Wire Remove Non-manifold Edges. This custom node removes all the non-manifold edges found in the input wire. (DYF)

DynaSpace/Topologic. This example workflow illustrates how to integrate DynaSpace and Topologic. (ZIP)

Minimum Spanning Tree. This custom node, based on a found python code, outputs a wire representing the Minimum Spanning Tree of the input graph. (ZIP)

Diversion Workflow. This example workflow diverts a straight line around an obstacle. This experiment diverts a straight line around an arbitrary obstacle (concave or convex polygon). The path always diverts in 90 degree increments. The path avoids the bounding box of the polygon as oriented perpendicular to the path. The path chooses to go left or right based on the shortest path. (DYN)

TestFit2Topologic Workflow. All files needed to illustrate a TestFit to Topologic workflow. This workflow takes as input a TestFit RSD file and outputs a Cluster of Cells categorised by their TestFit type. (ZIP)

CellComplex Utilities. A collection of Dynamo custom nodes to derive specific Faces from a CellComplex. These include: CellComplexBy3DArray.dyf CellComplexExternalFaces.dyf and CellComplexInternalFaces.dyf. A demo definition file (CellComplexTower.dyn) is also included. (ZIP)

Topology Display. This custom node makes it far easier to display any topology with custom colors, transparency and with or without edges. (DYF)

Graph Utilities. A collection of Dynamo custom nodes to compute some Graph metrics. These include: GraphAdjacencyMatrix, GraphIsConnected, GraphIsRegular, GraphIsBipartite. (ZIP)

Graph Shortcuts. This custom node and sample definition illustrate how to create optimized shortest paths through a graph by creating shortcuts around a certain set of vertices with a specified custom dictionary value. (DYN, DYF)

Stanford Bunny. This definition illustrates how to convert a mesh into a Topologic entity. For this definition, you need the MeshToolkit package from the Package Manager and the following Stanford Bunny OBJ file. (OBJ) (DYN)

Optimising Location of Atrium. This definition illustrates how to use Dual Graph and topology to opitmize the number of connected Cells and the remnant exterior wall area of an atrium Cell that is imposed on a CellComplex. This definition is meant to be used with Autodesk's Project Refinery or other optimisation engines. (DYN)

Voroni 3D. This definition illustrates how to slice a Cuboid into a set of Voronoi Cells based on a list of points. (DYN)

Shortest Paths. This definition illustrates how to use the Graph class to find shortest paths in a CellComplex. (DYN)

Shortest Paths By Key. This definition illustrates how to use the Graph class to find shortest paths in a CellComplex by Key. (DYN)

Spread/Growth. This definition and custom node illustrate how to use the Graph class to simulate spread/growth within a CellComplex. (ZIP)

Content and Dictionary. This definition illustrates how to use the Content/Context system and Dictionary to store custom attributes in topologies. (DYN)

Topological Queries. This definition illustrates how to determine attributes based on topologic queries of custom dictionaries. (DYN)

Boolean By Dictionary. This definition illustrates how to perform a Boolean operation based on the Topology type as encoded in its custom dictionary. (DYN)

Video Recordings

- Webinar: Introduction to Topologic - 25 February 2019 (LINK)
- The Making of a Twsited Tower (LINK)
- Topologic Workshop: New Features (11-10-2019) (LINK)

Documentation for Developers

Software Development Kit Documentation (Link).

Frequently Asked Questions

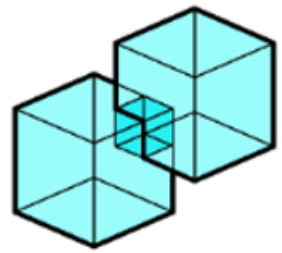
Show Questions

Anyway…

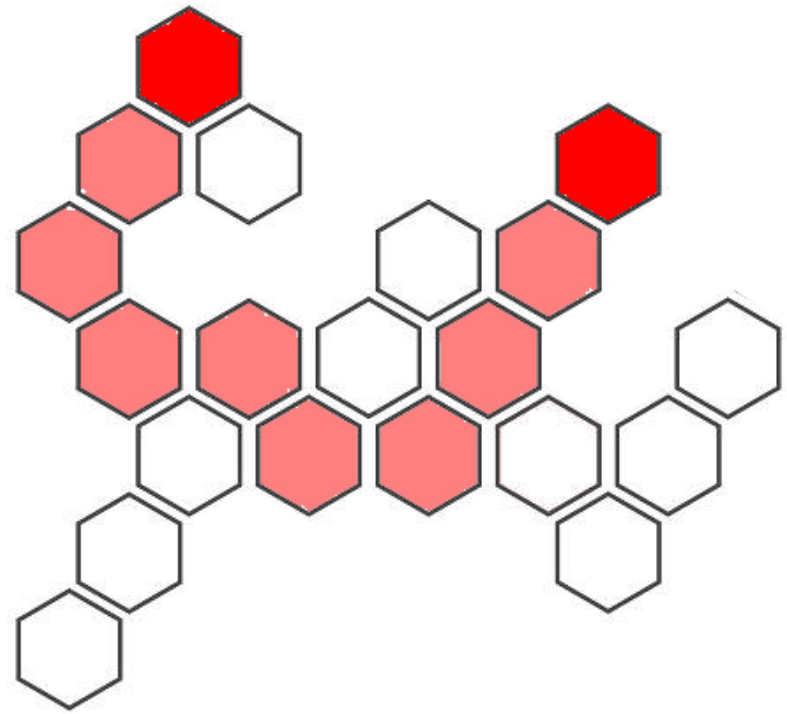
Over to Wassim!

Files are on github

https://github.com/aussieBIMguru



Topologic



Topologic Cell Complexes

ft Wassim Jabi