


Shortest Distance using Dynamo!

Thanks for the Inspiration!

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The goal of this [#Dynamo](#) script was to see if we could do better than the native [#Revit](#) duct routing tool. I think we were successfully!!
The main key is letting the VAV box move. Add Project Refinery to the mix the rout can be optimized!
Shout to to [Wassim Jabi](#) and the Topologic Dynamo package for making the workflow easy!

[#MEP](#) [#bim](#)
[#computationaldesign](#)
[#generativedesign](#)

 Parametric Duct Layout

0:01 / 0:25



Sean Fruin · 1st
Director of Design Technology



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Previously...

Shortest Distance Finder in Dynamo!

243 views • Mar 31, 2019



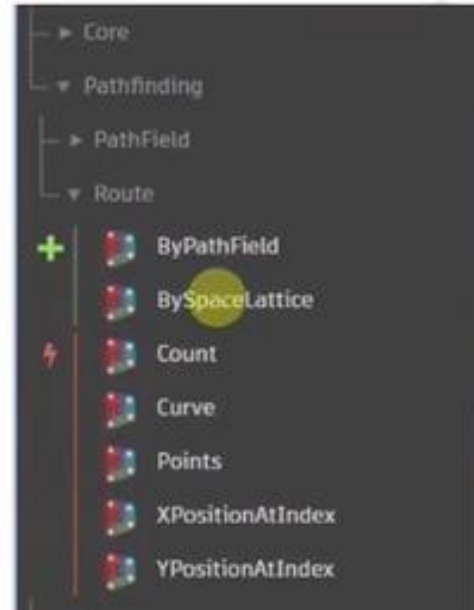
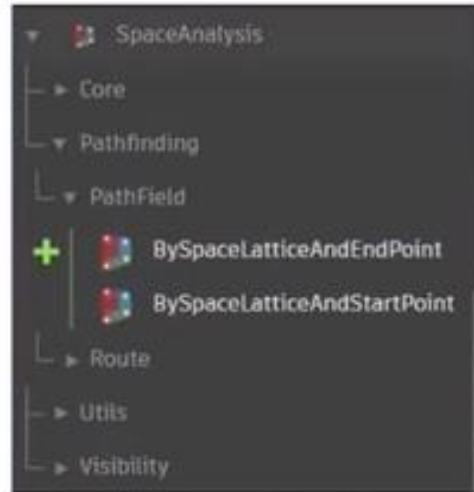
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Previously...

Space Analysis package



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Limitations

Processing speed

Path desirability control

2D lattice only, lattice based



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Alternative Approach



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Topologic

<https://topologic.app/>

Dynamo

List

(Group of interconnected solid)

Solid

Mesh (or any open geometry)

Surface

Polycurve

Curve/Line

Point

Topologic

Cluster

CellComplex

Cell

Shell

Face

Wire

Edge

Vertex



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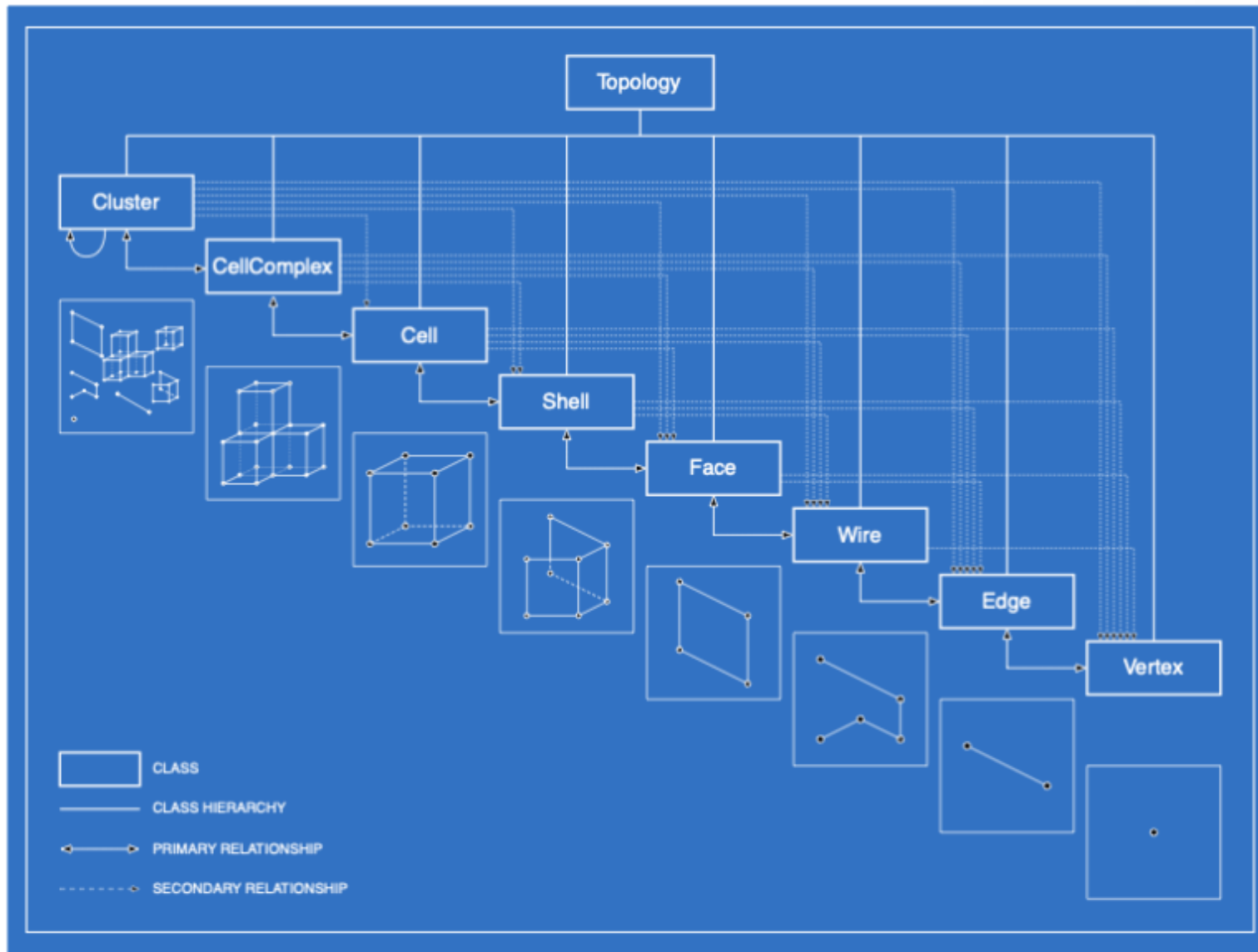
Alternative Approach

<https://topologic.app/>

Topologic allows you to build 2D and 3D geometries just like Dynamo. The difference is that these objects have a richer data structure that allows us to query them for information that is not usually available using Dynamo geometries. In particular, Topologic geometries have topological information embedded in them (thus the name). For example, you can ask a face to give you back its edges or its vertices. You may have noticed that we use the term face instead of surface and vertex instead of point. This is consistent with the literature on topology. Below is a mapping between Dynamo geometries and Topologic topologies:

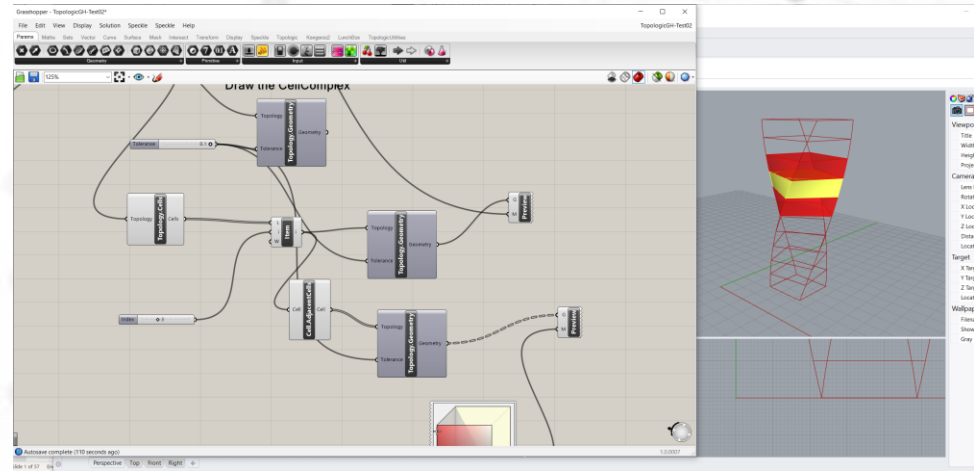
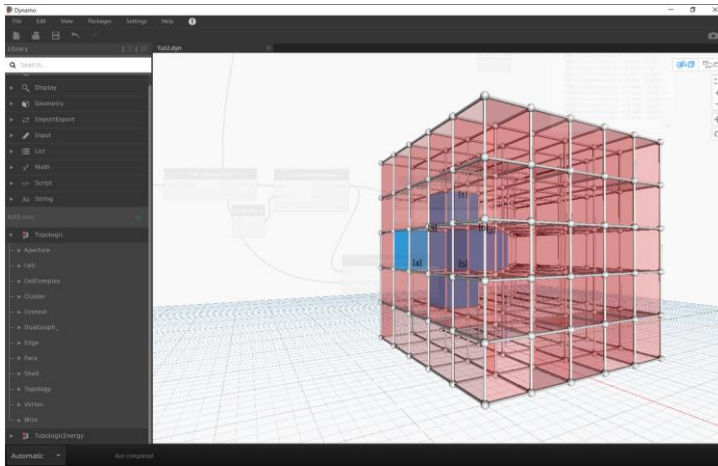


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Topologic

<https://topologic.app/>

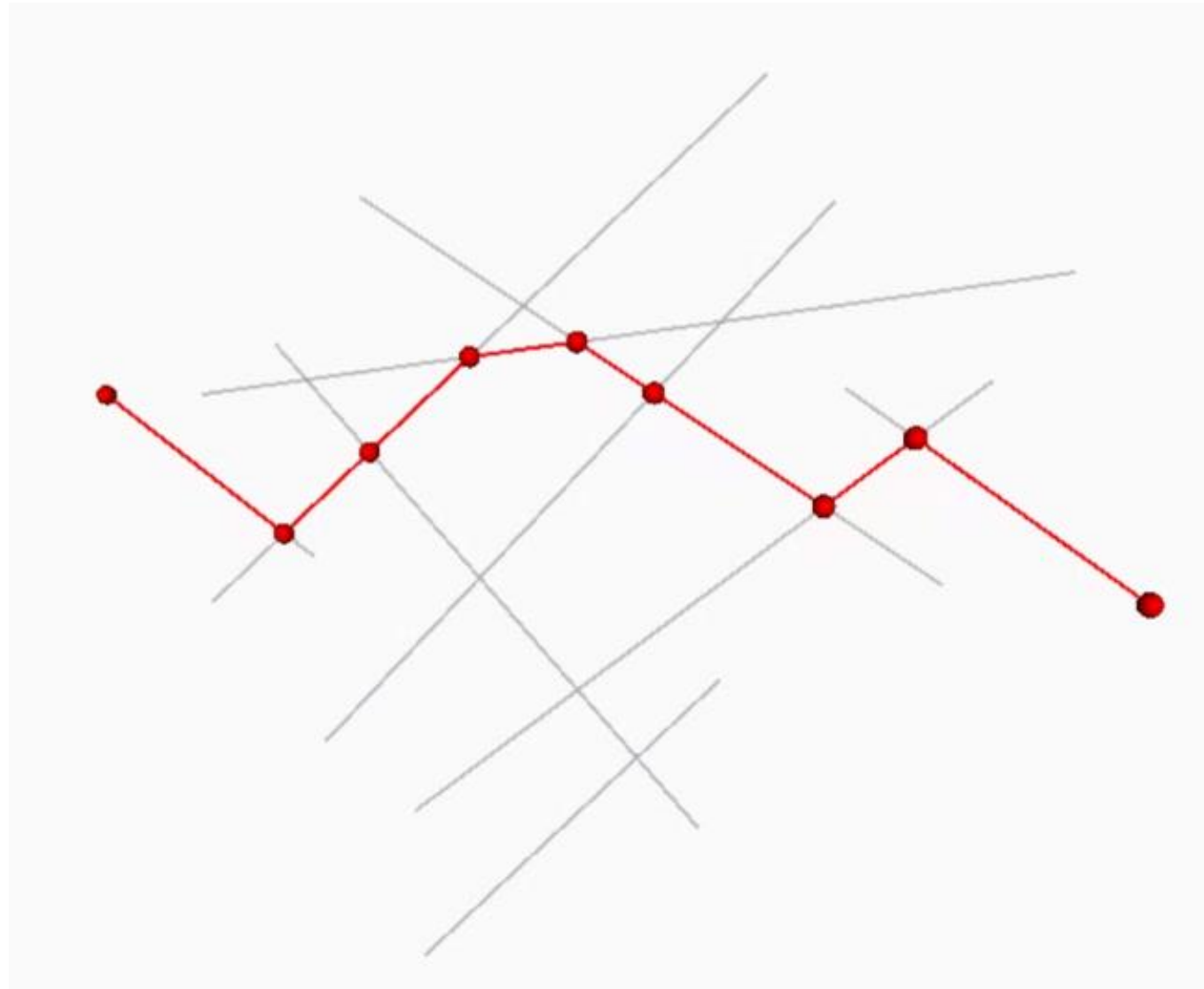


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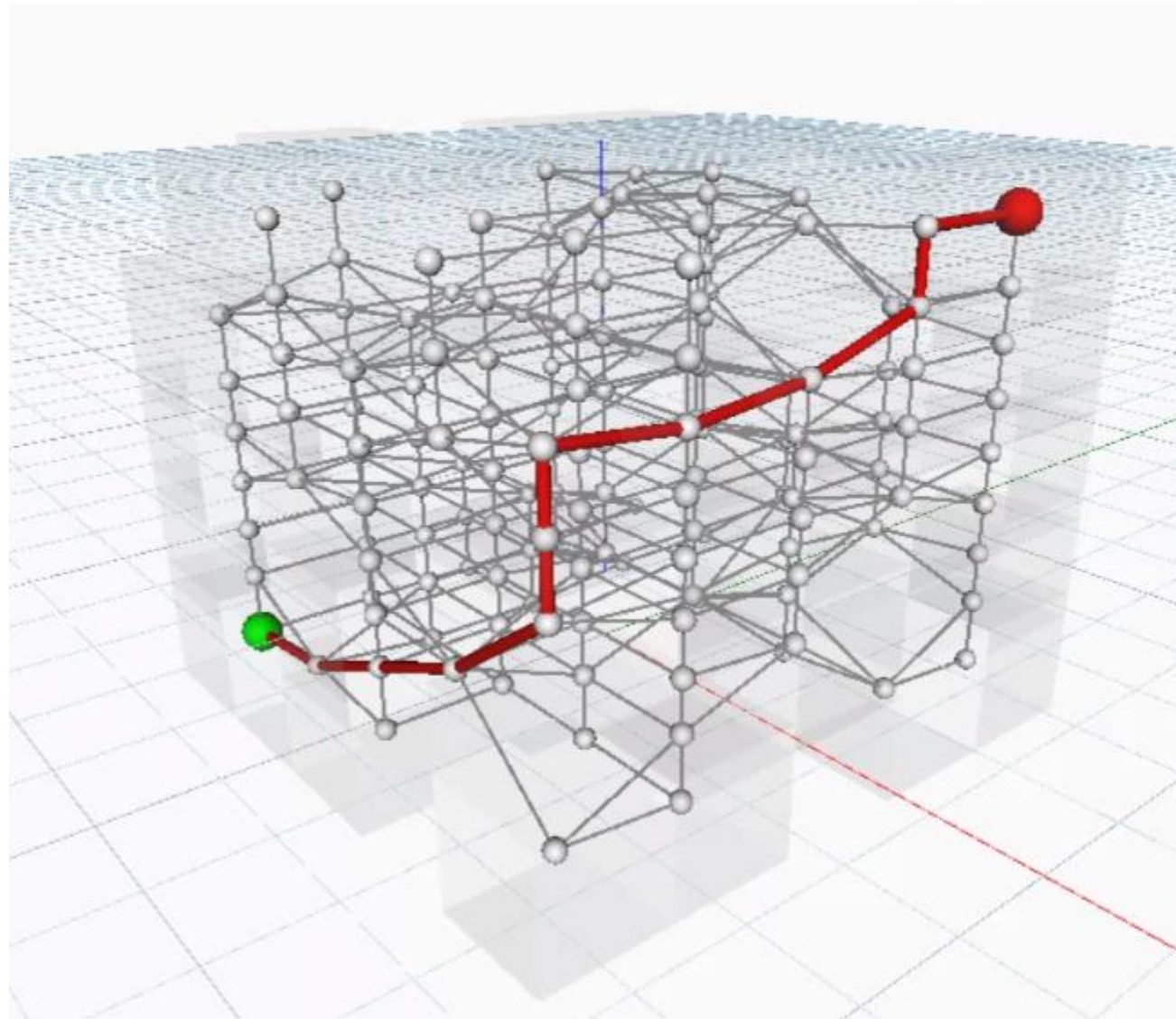
Today's workflow...



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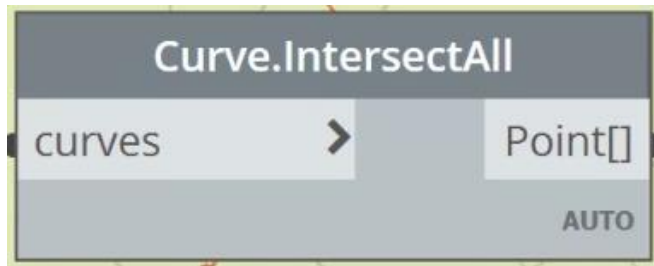
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Custom Nodes

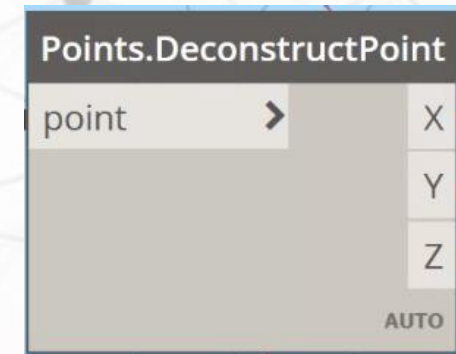
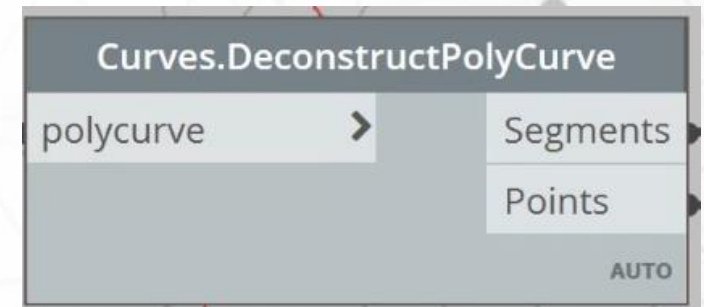
BiMorph



Topologic



Lunchbox



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Versioning

2.0.3 Ideally

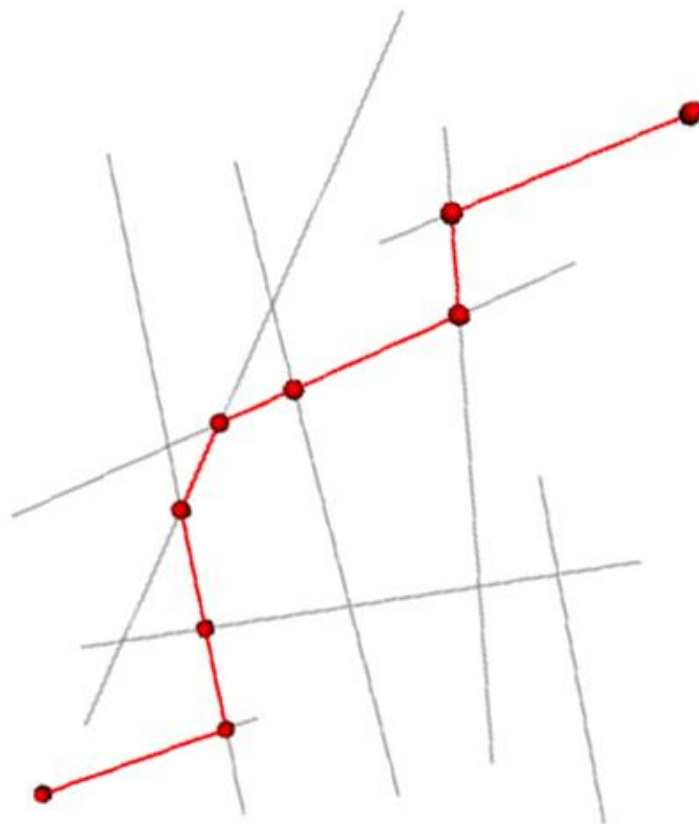
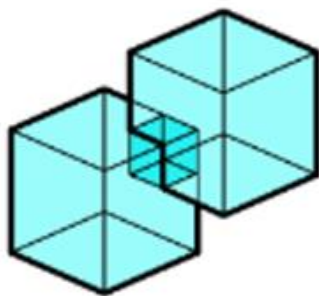


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Without further ado...



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using Dynamo!