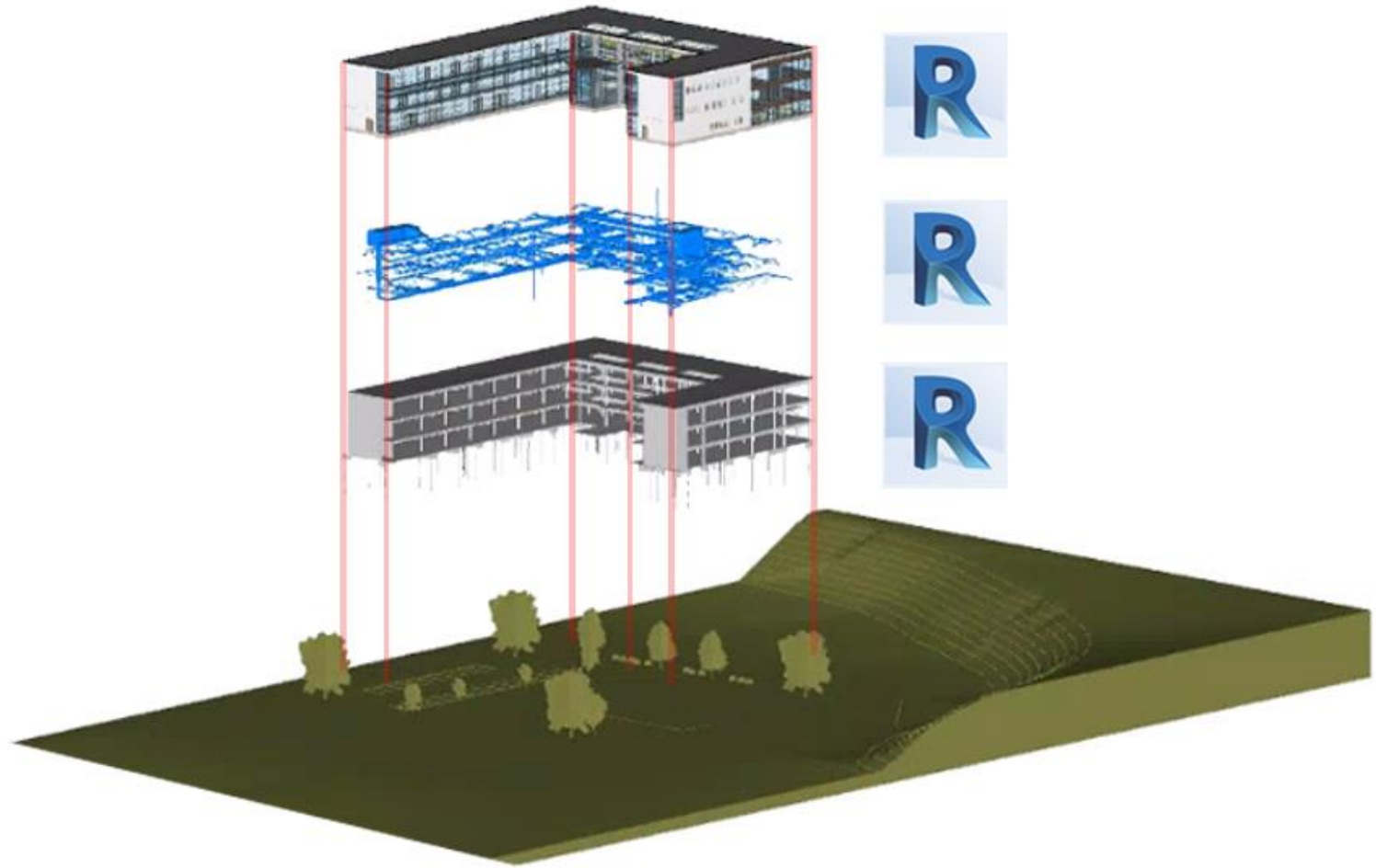
Shared Coordinates



Using Shared Coordinates

In Revit

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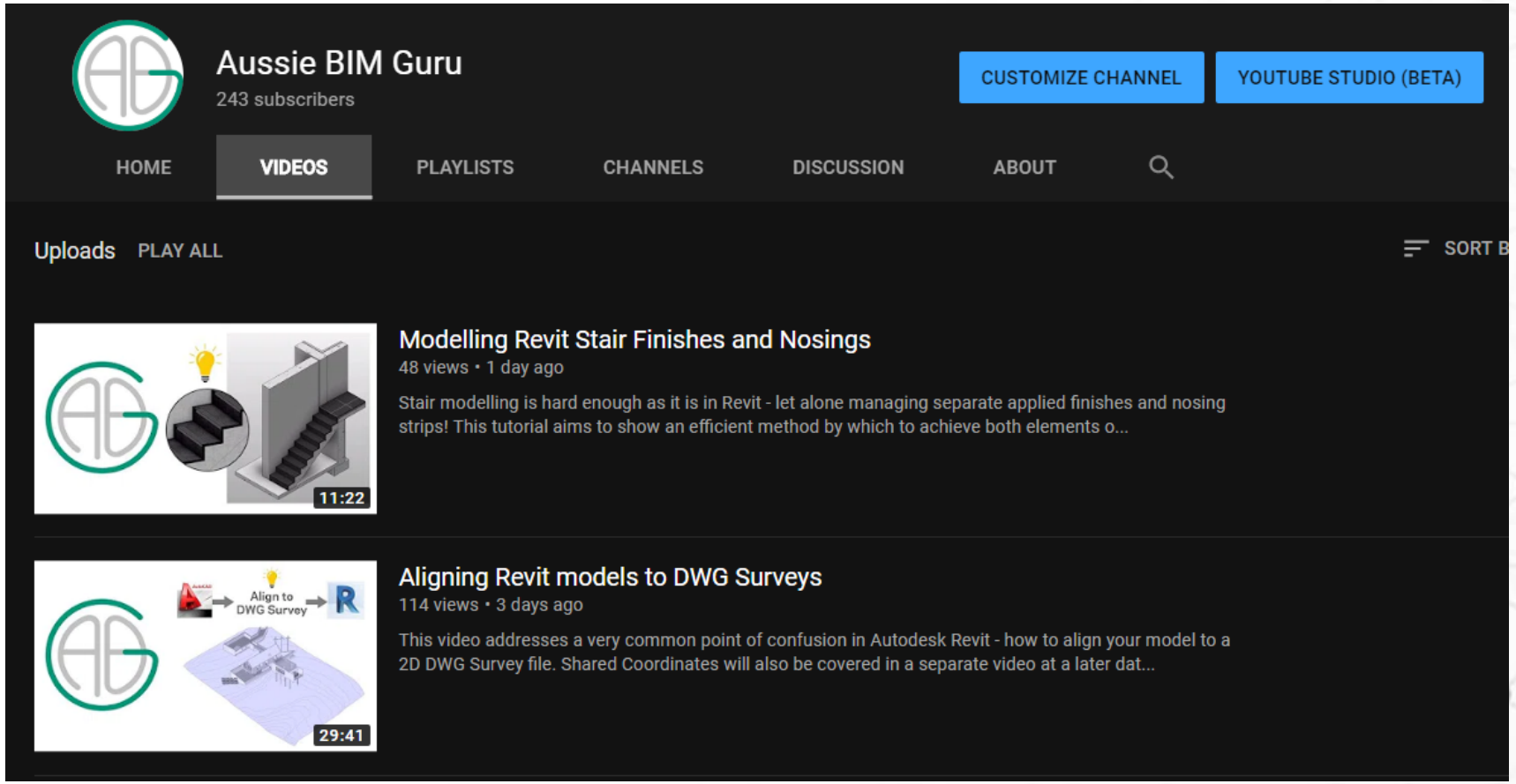
Watch this first!



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Demo starts halfway in

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What are Shared Coordinates

A system in Revit that can be used to establish each models relation to one another in coordinates.

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You may have heard of them

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Why use them?

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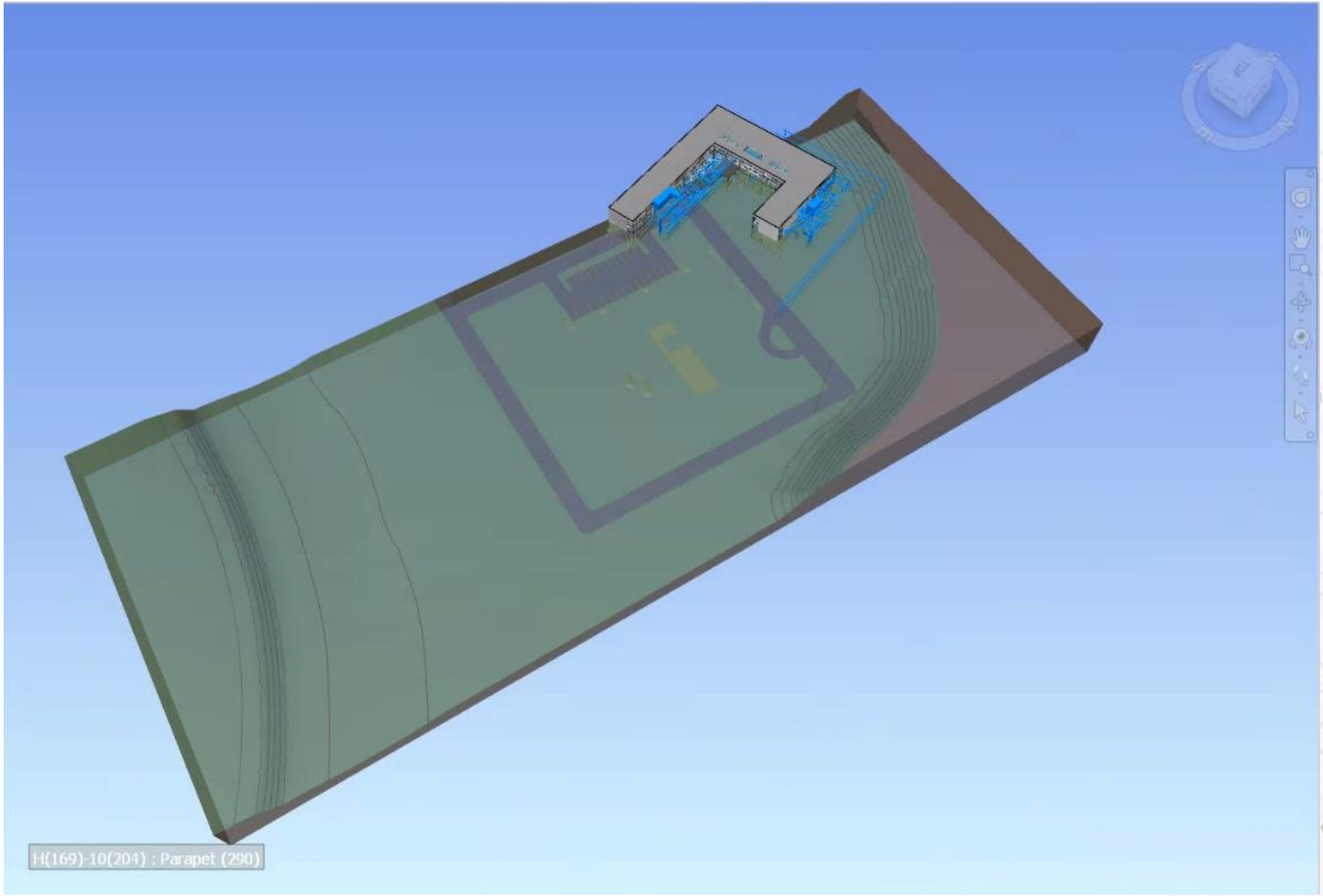

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Common symptoms

Horizontal misalignment
Vertical misalignment
All using different origins
Starting in isolation

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Irony of the situation

The survey(s) are shared!

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Solution

The coordinates should be too!

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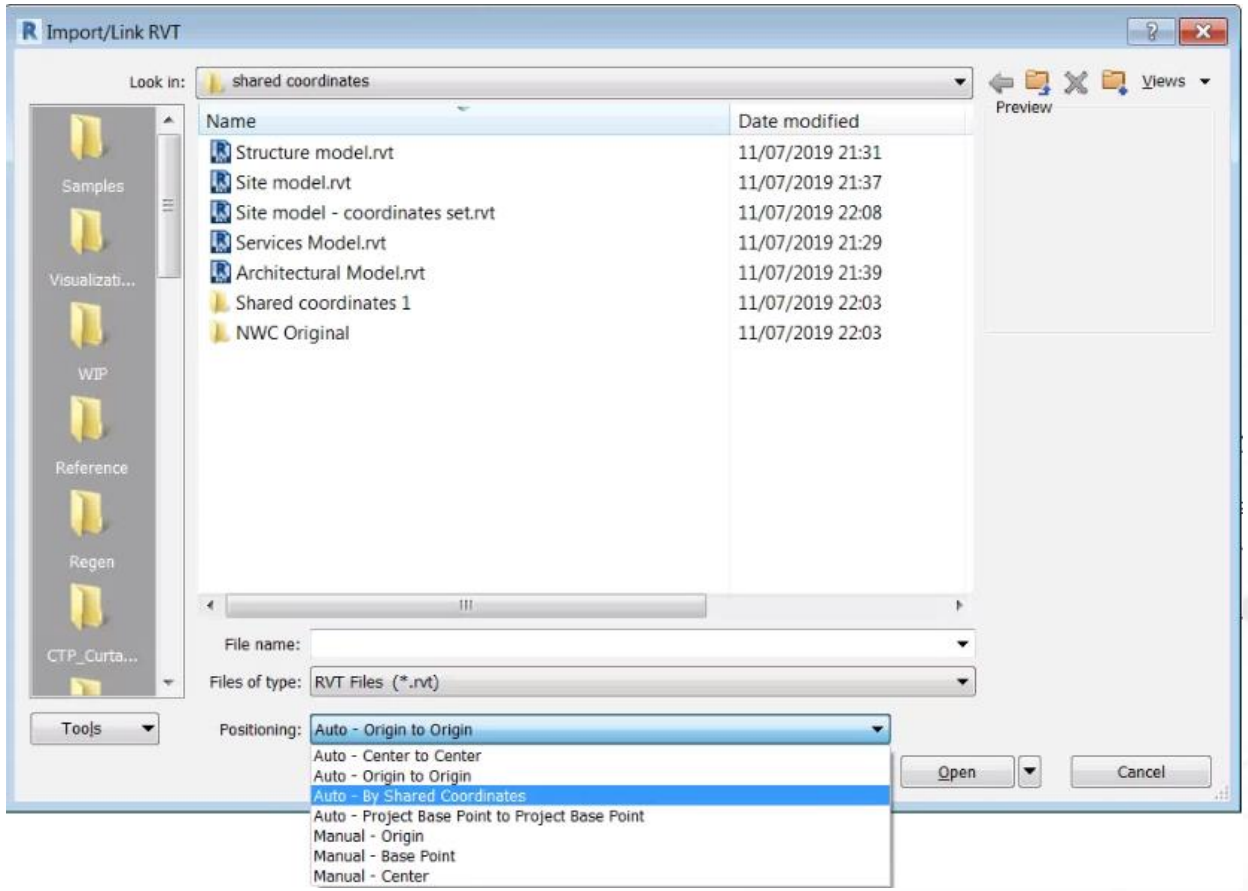
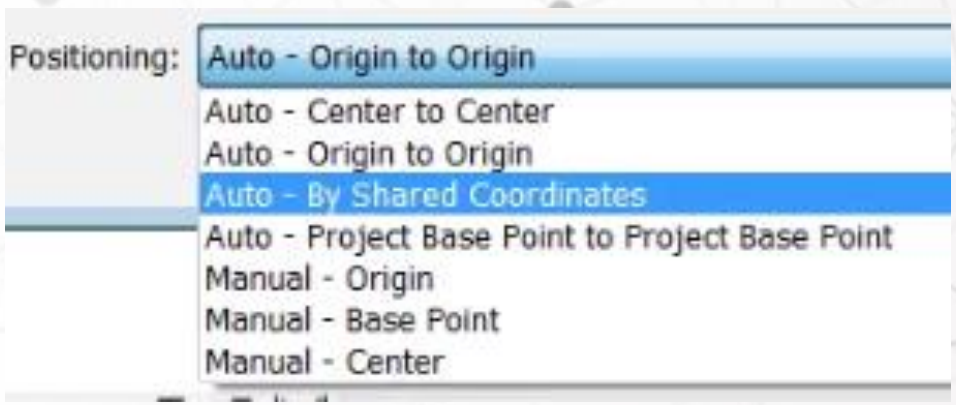
‘Brainless’ Positioning





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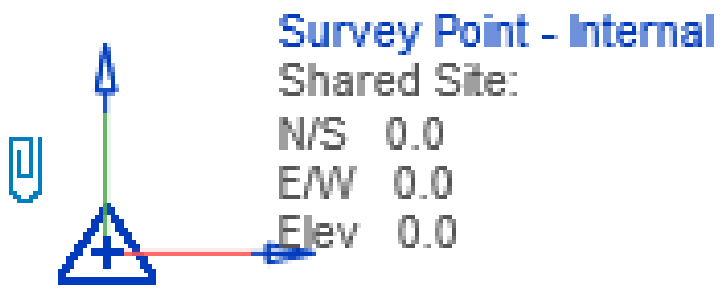
Origins?

If origins don’t match
this won’t really be an issue.



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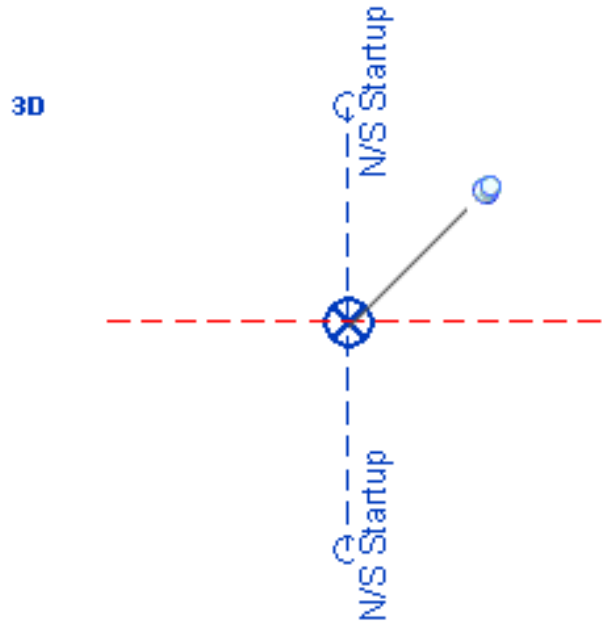
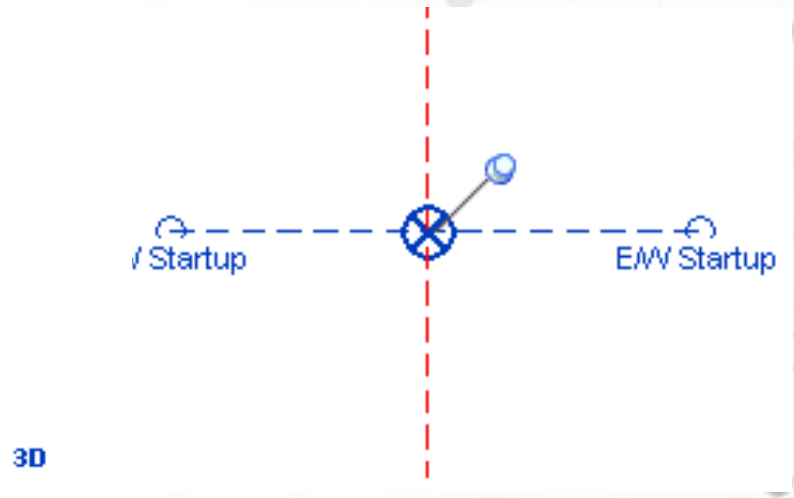
In either case…

Mark/track it!!!





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Common Reason

Thisaway
on day 1

Super important
business meetings
on Day 10

Waiting
for our
fee first

Won't
share our
template

Thataway
on day 3

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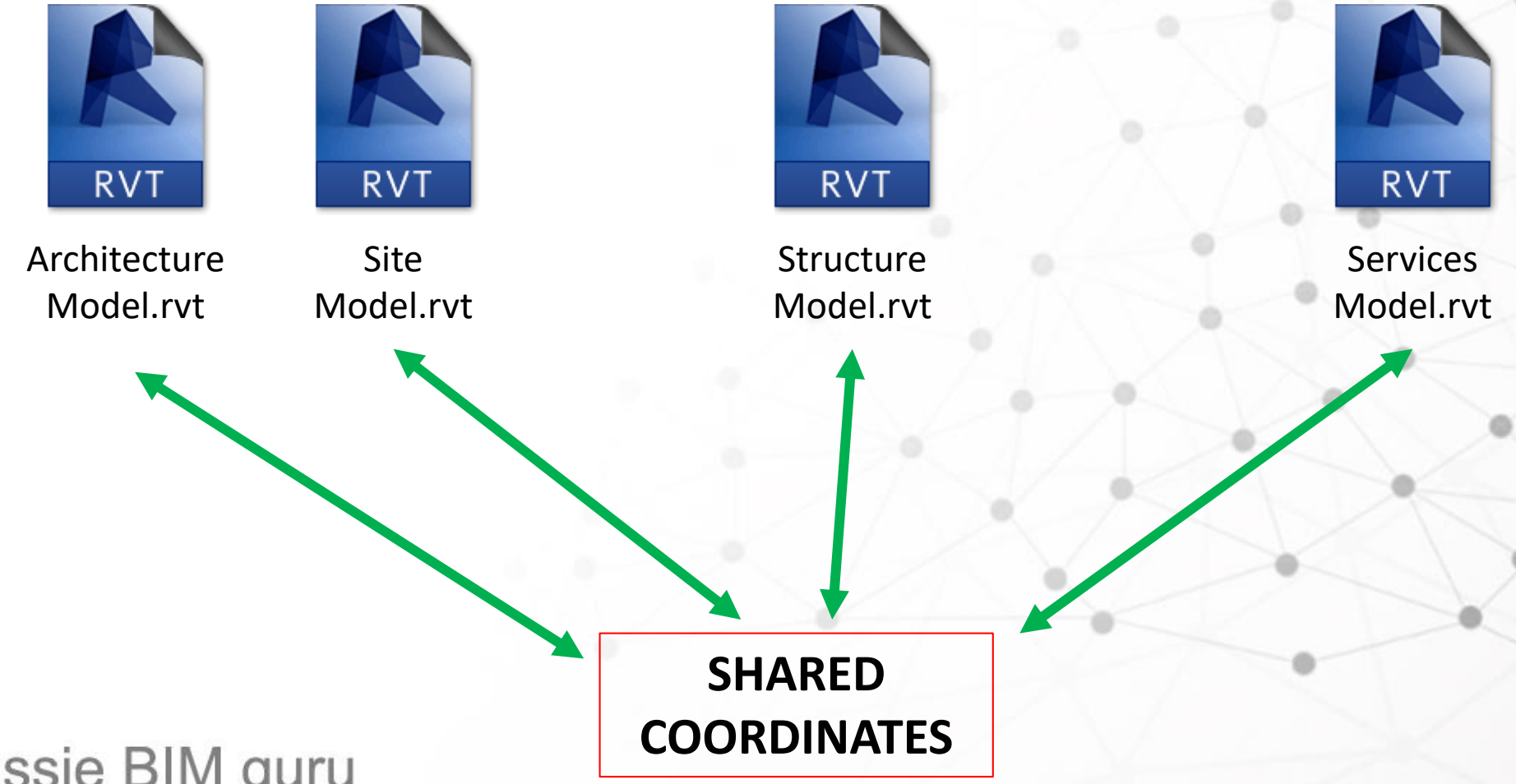
A Single Source



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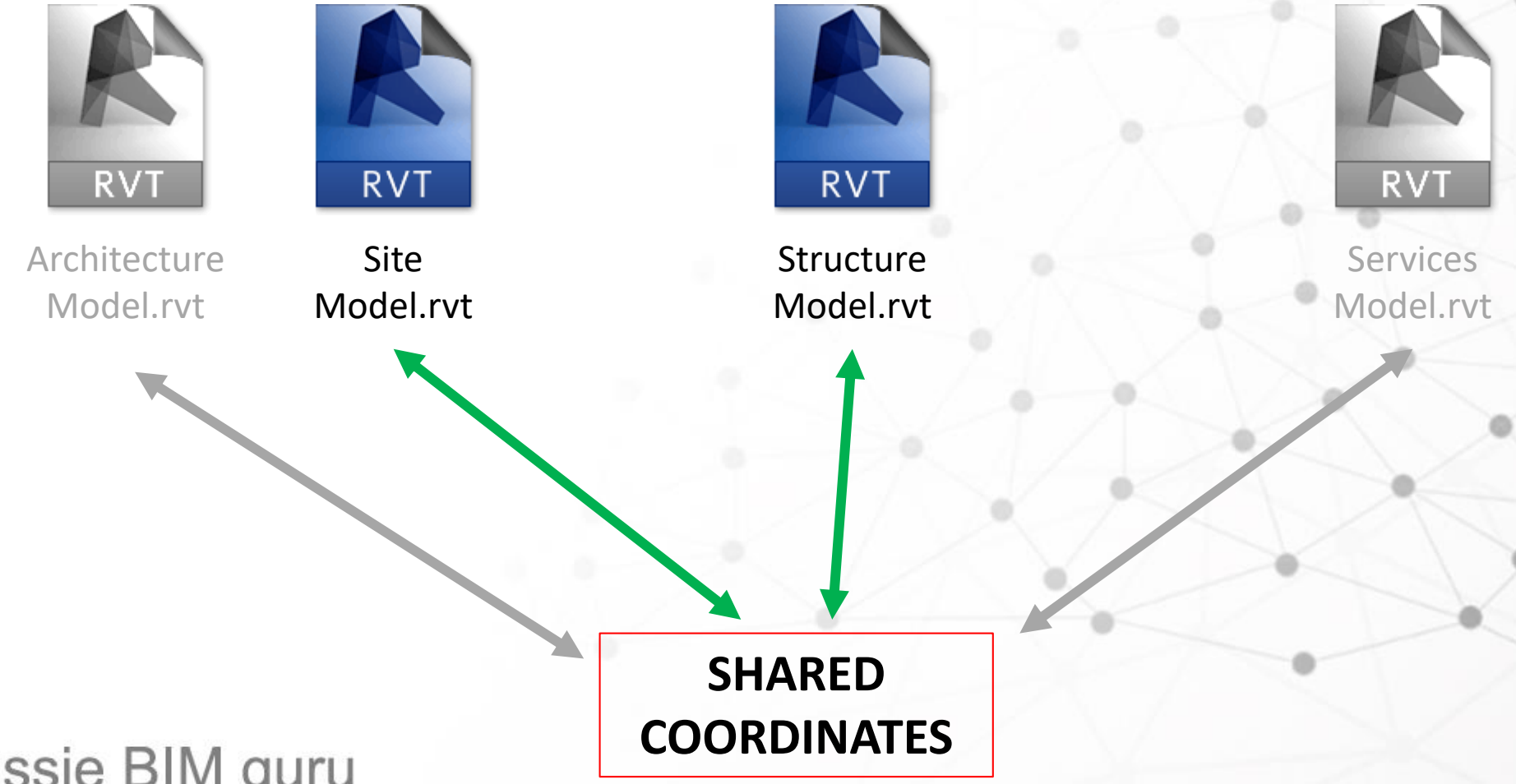
Connects the Models



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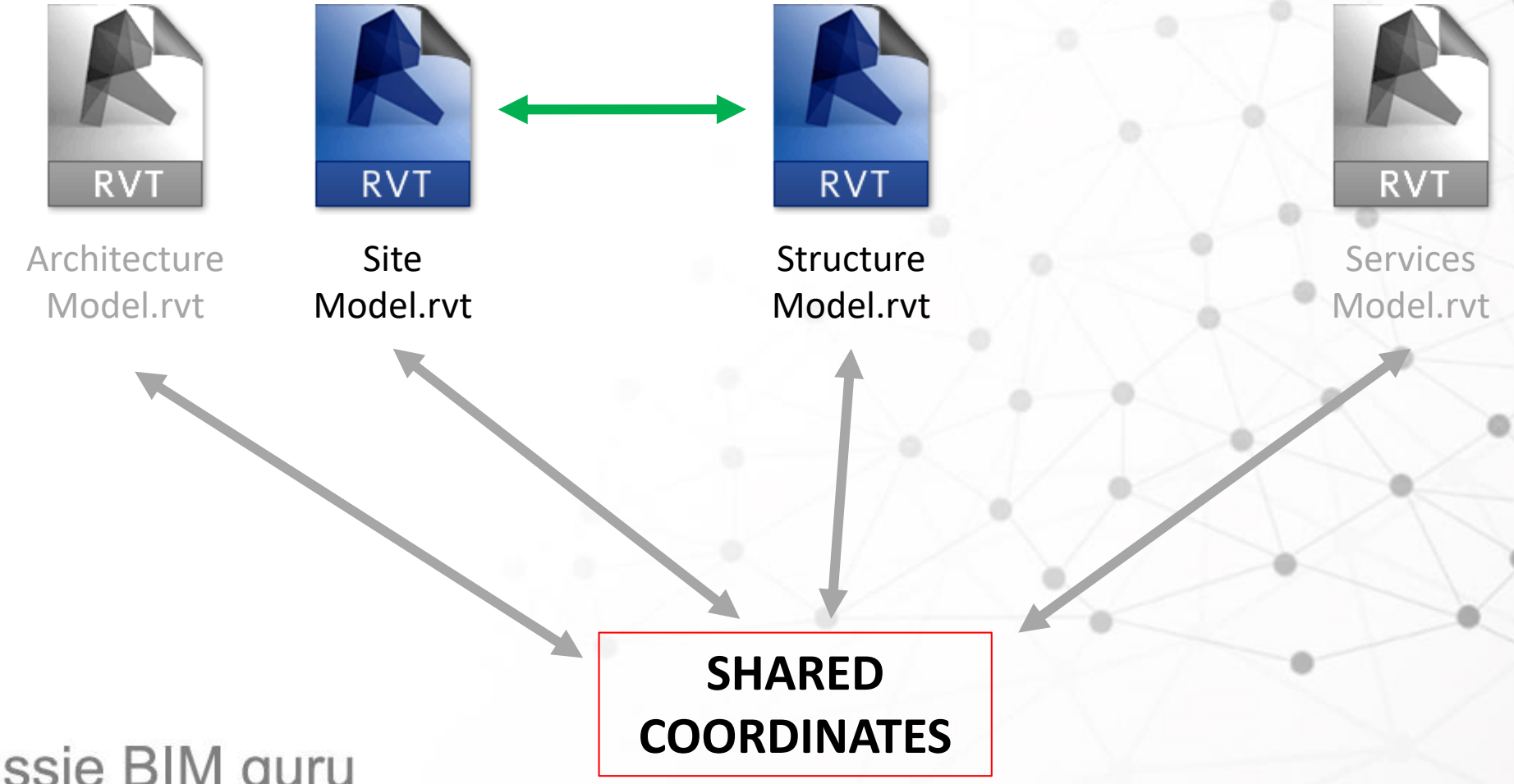
Together



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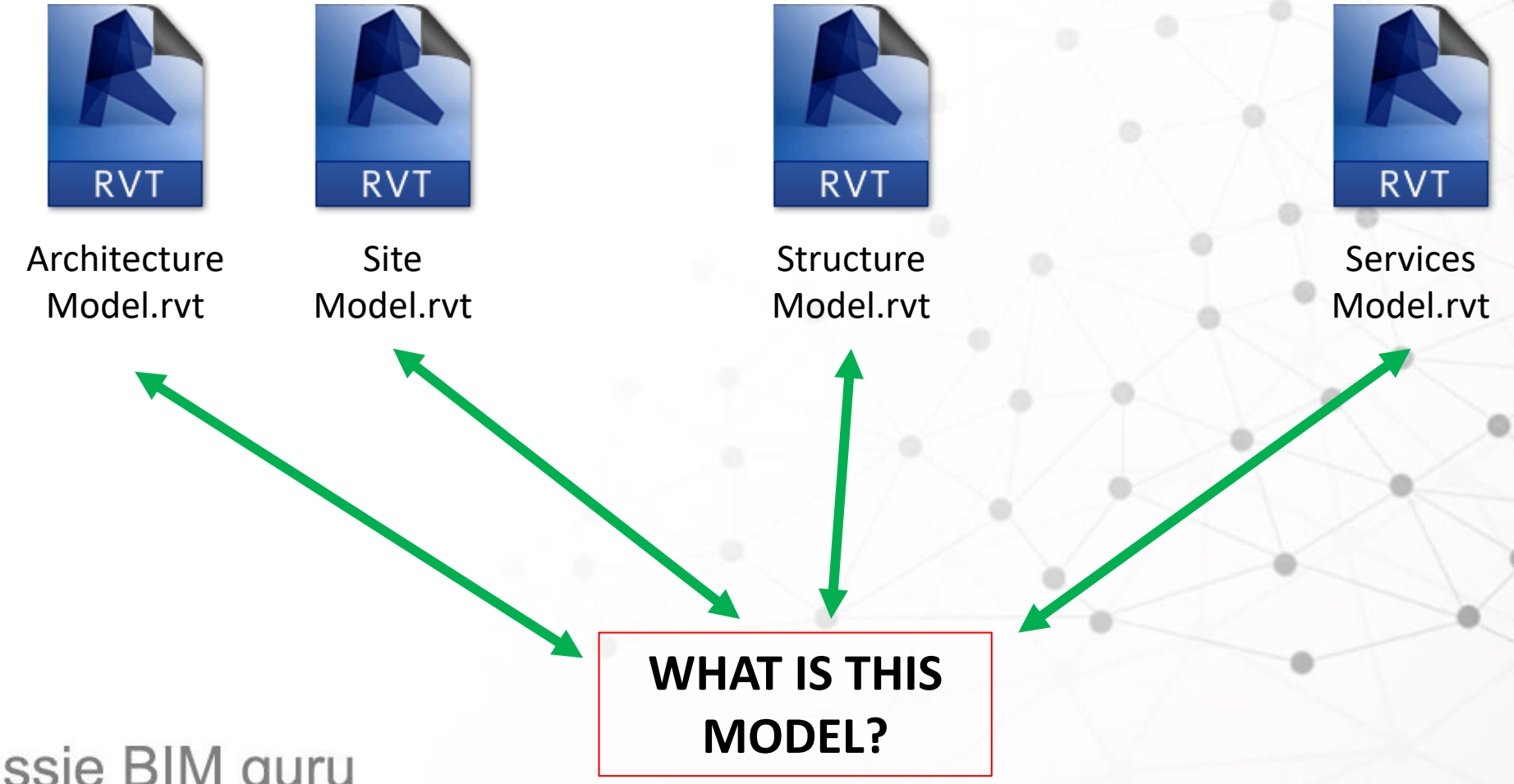
But How?



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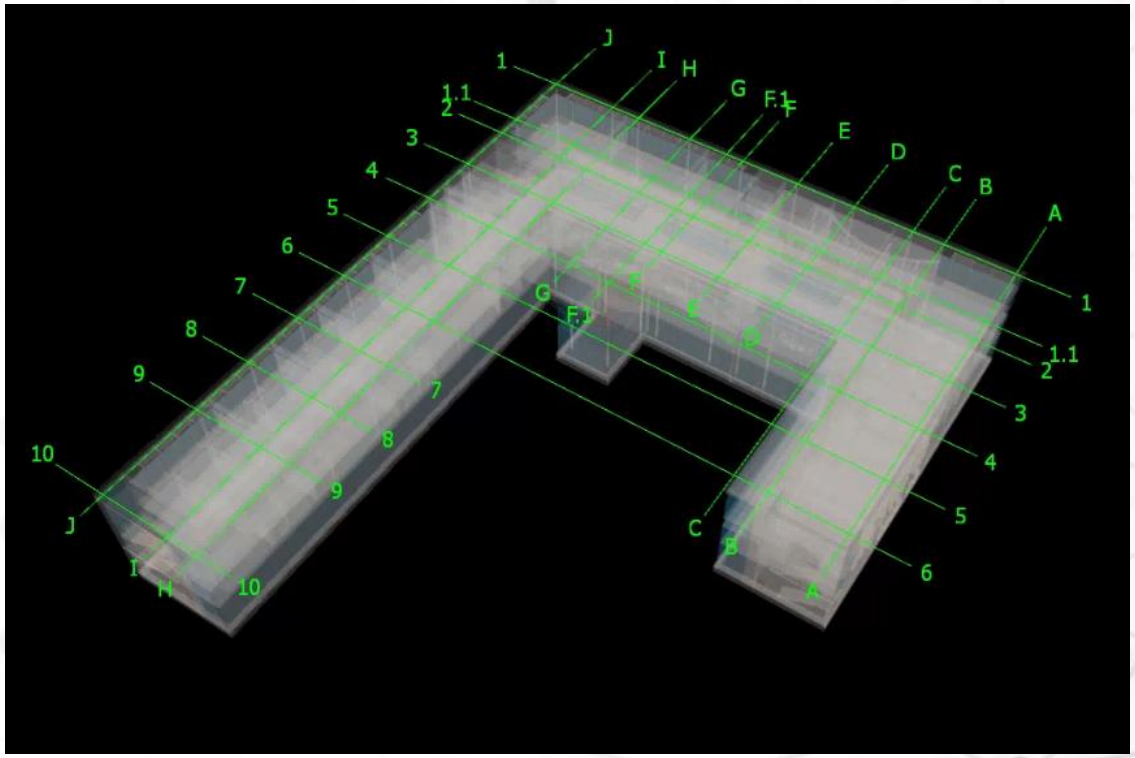
Never: DWG?

It is **possible** to use a DWG survey to acquire shared coordinates

But it is also very confusing…
Any CAD Manager's even around?

If everything must be origin linked back to the original Survey, **maybe this is necessary**



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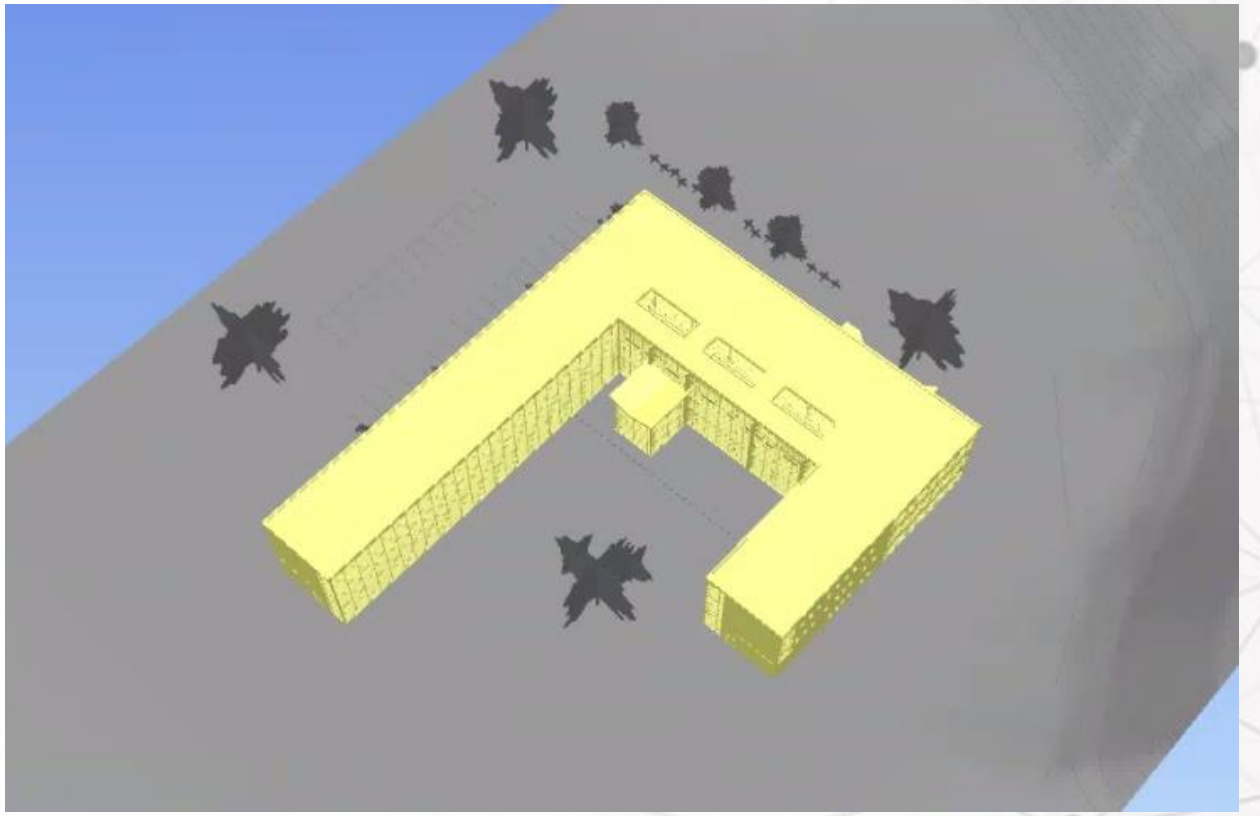
Option 1: Architecture

Usually the first model created

Often used as a starting point for other disciplines before survey is established

Usually starting point of grids and levels



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Establish shared coordinates

Architecture Model.rvt

Publish shared coordinates

Acquire shared coordinates

Structure Model.rvt

Services Model.rvt

Site Model.rvt

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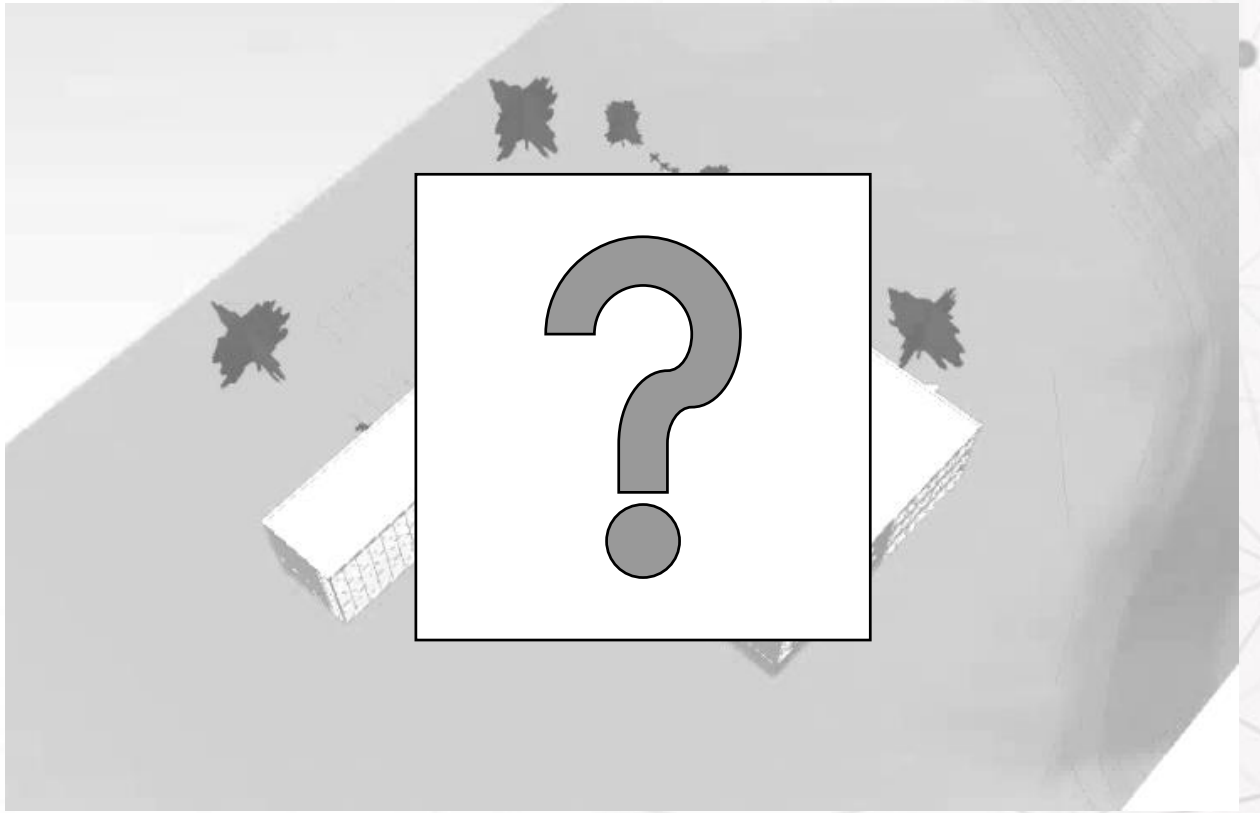
Option 1: Architecture

But….

What if the building moves?

What if more buildings enter the project scope?

What if this building is removed from the project scope?



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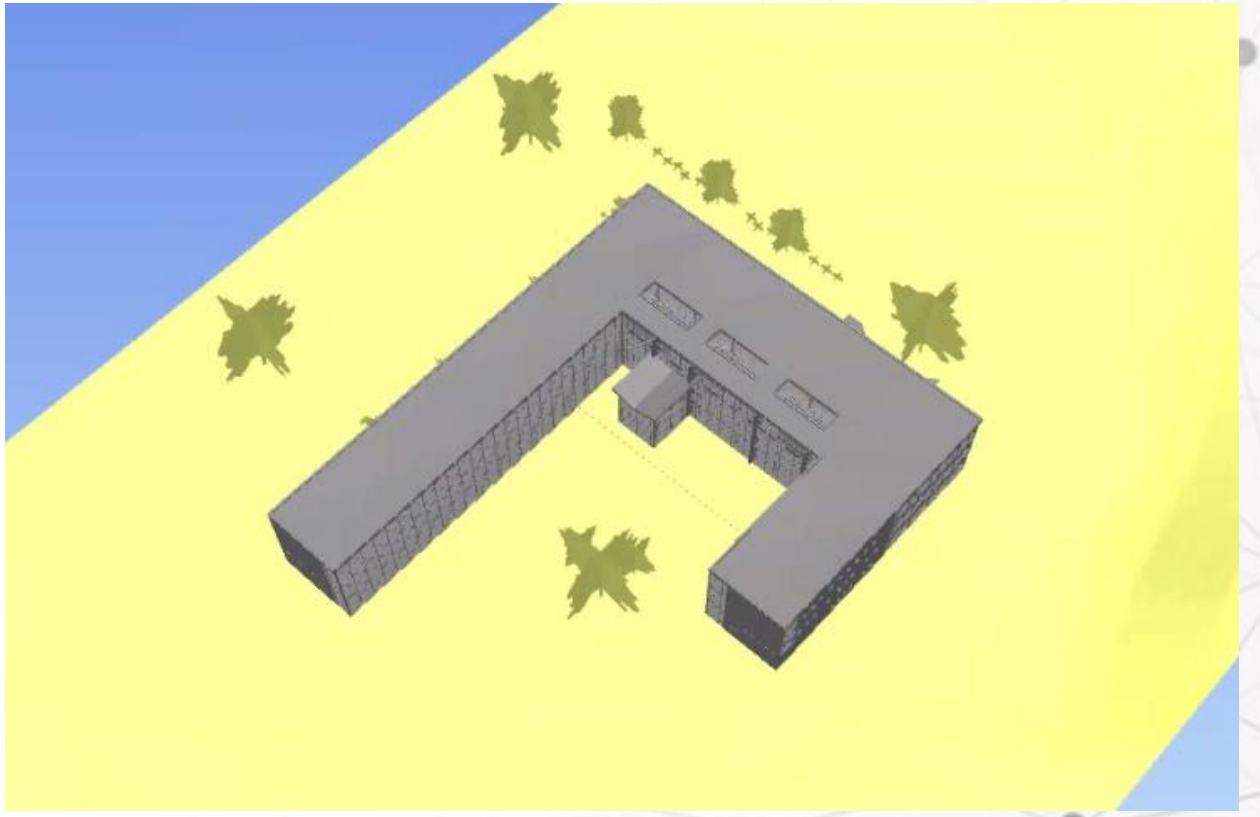
Option 2: The Site

The world cannot be moved!

Usually a ‘cleaned’ version of the building model anyway.

Usually where the survey will end up being verified.

Holds property boundaries usually.



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Establish shared coordinates

Site Model.rvt

Publish shared coordinates

Acquire shared coordinates

Structure Model.rvt

Services Model.rvt

Architecture Model.rvt

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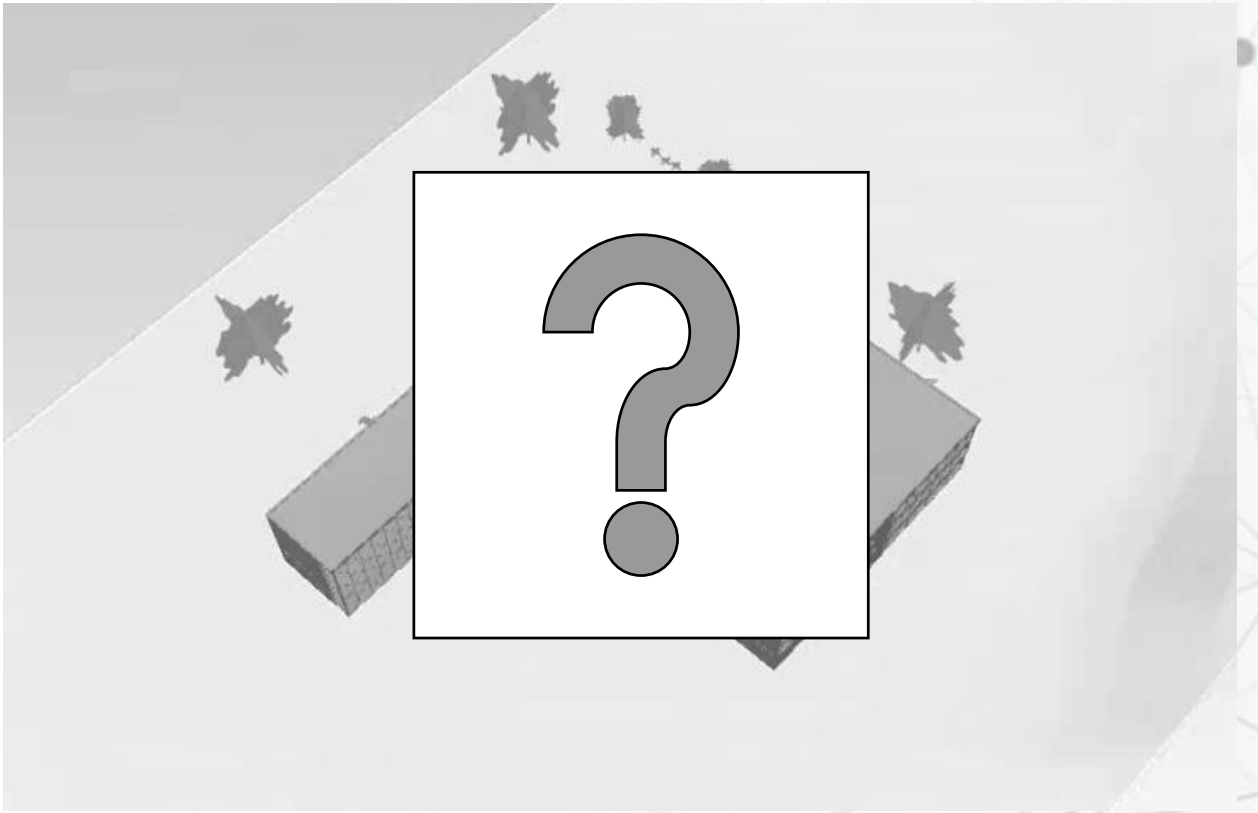
Option 2: The Site

But….

What if a new site is chosen?

What if the survey is wrong or a new one is provided?

These challenges are manageable with team communication!



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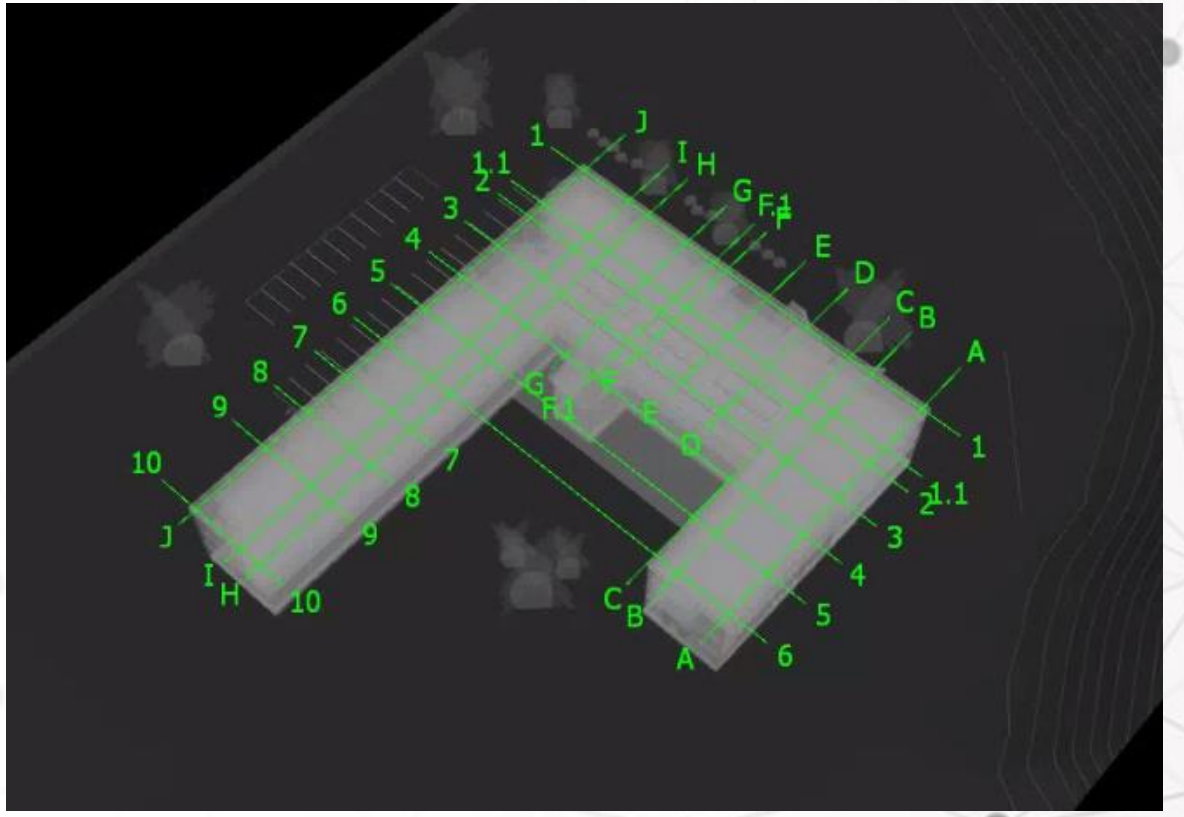
Ideally: Control Model

Contains grids, levels and coordinates only. Low impact on overall project.

Rarely changed and low file size (easy to exchange).

Maybe too much for small projects.



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Establish shared coordinates

Control Model.rvt

Publish shared coordinates

Acquire shared coordinates

Structure Model.rvt

Services Model.rvt

Architecture Model.rvt

Site Model.rvt

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Anyway… demonstration time!

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Scenario

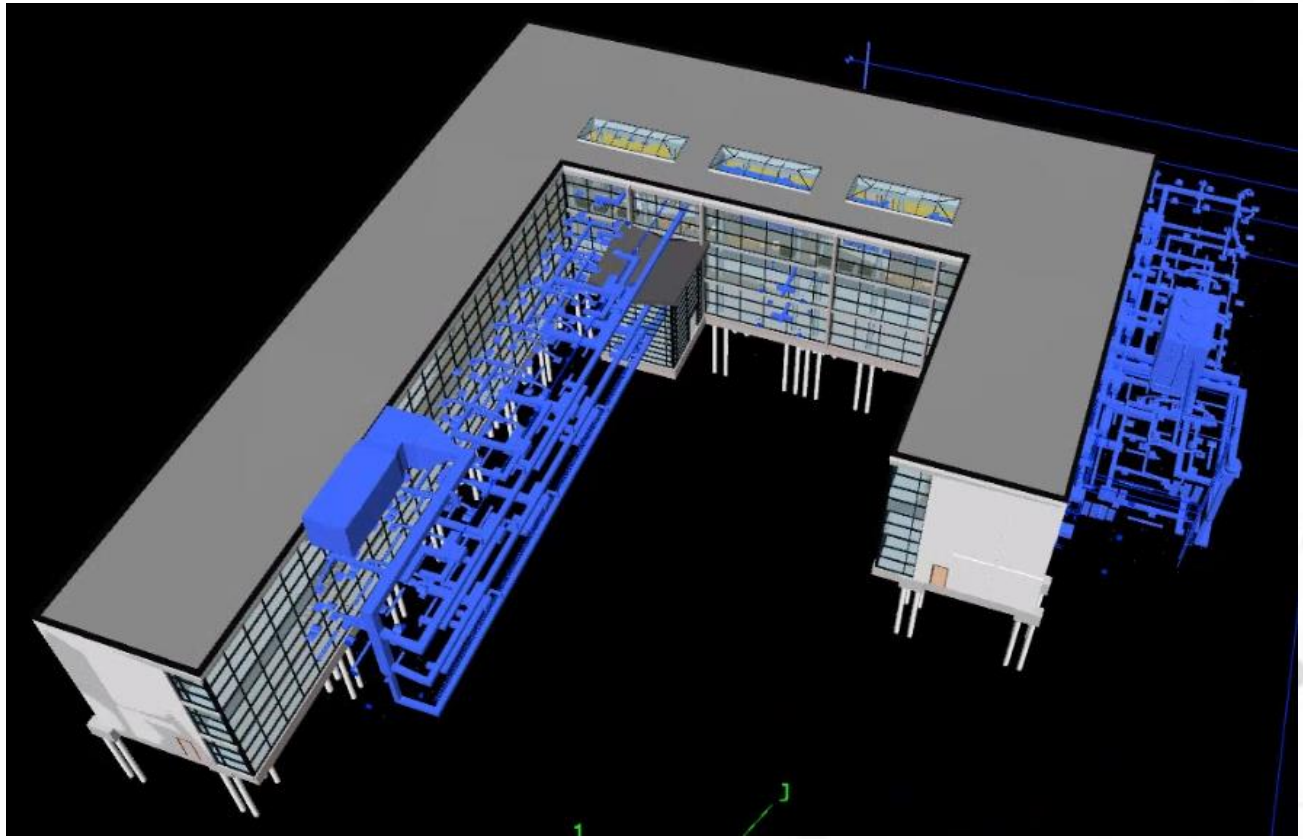
1. Architect has a building model first, begins without survey

2. **Shares** the model with structure

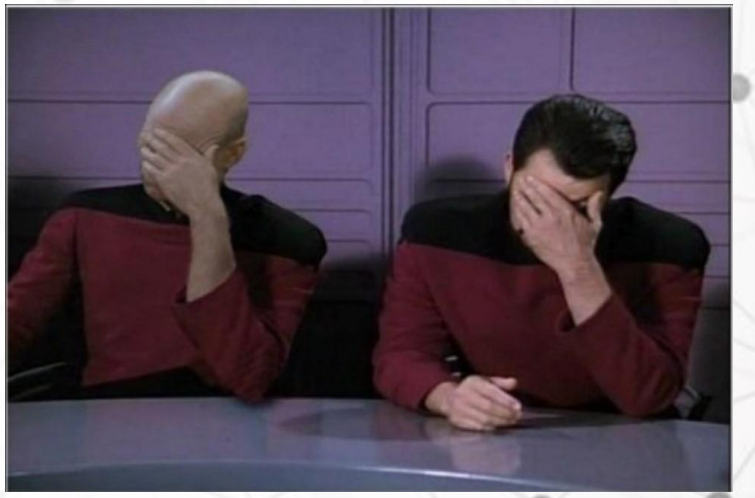
3. Structure begins modelling with **origin to origin** positioning

4. Services engineer begins modelling in **isolation**

Coordination time!



Architect Structure



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Even Worse...

1. Architect receives survey

2. Creates **site** model, aligns that to survey

3. Aligns to survey, **models in isolation**

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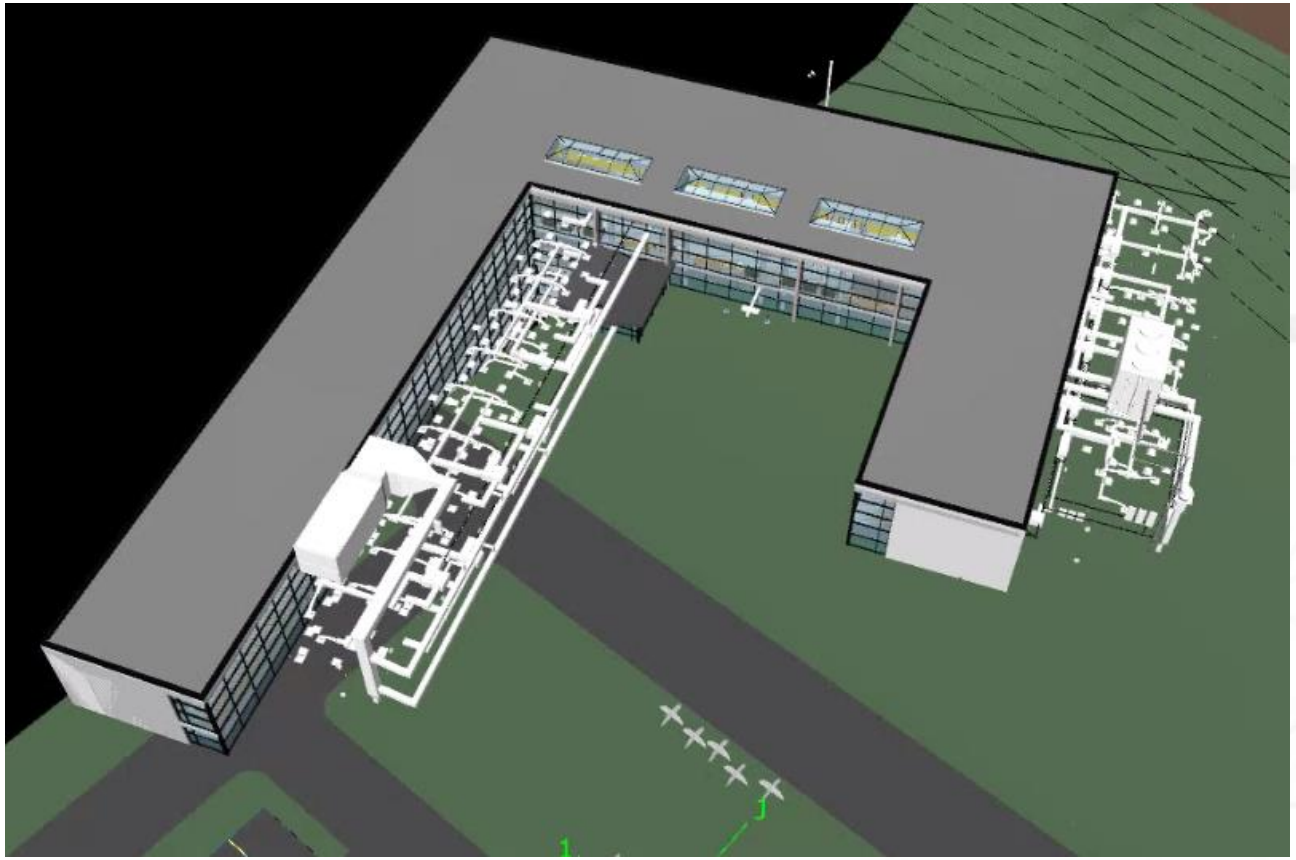
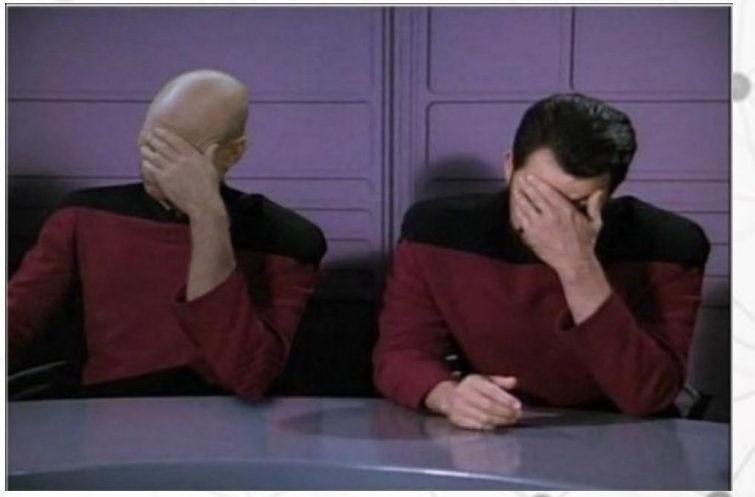
Coordination time!



Client

Project Manager



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Who fixes this mess?

BIM Lead Consultant

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Let’s fix this
Using Shared Coordinates

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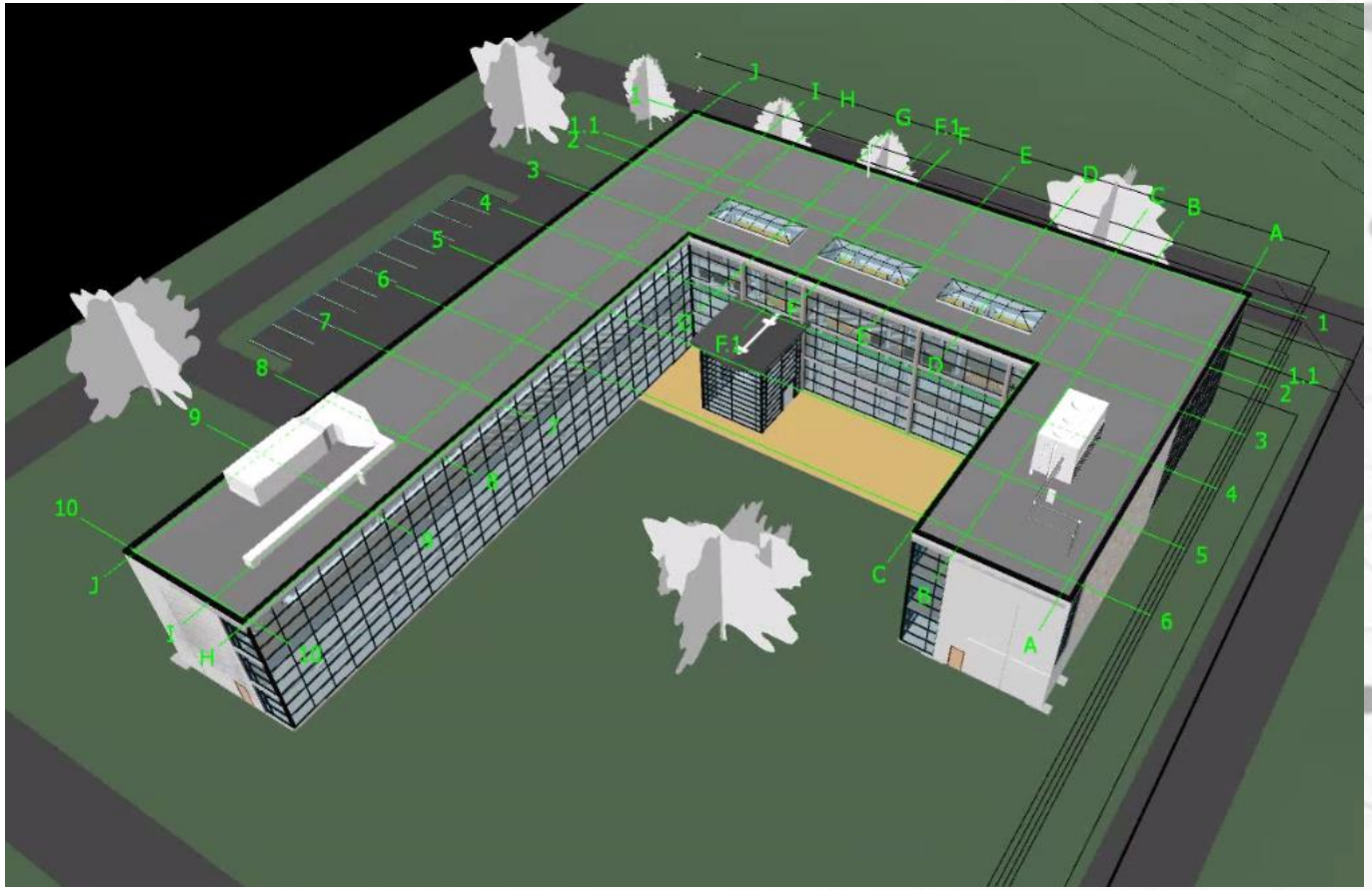
Everyone’s happy!

Project Manager



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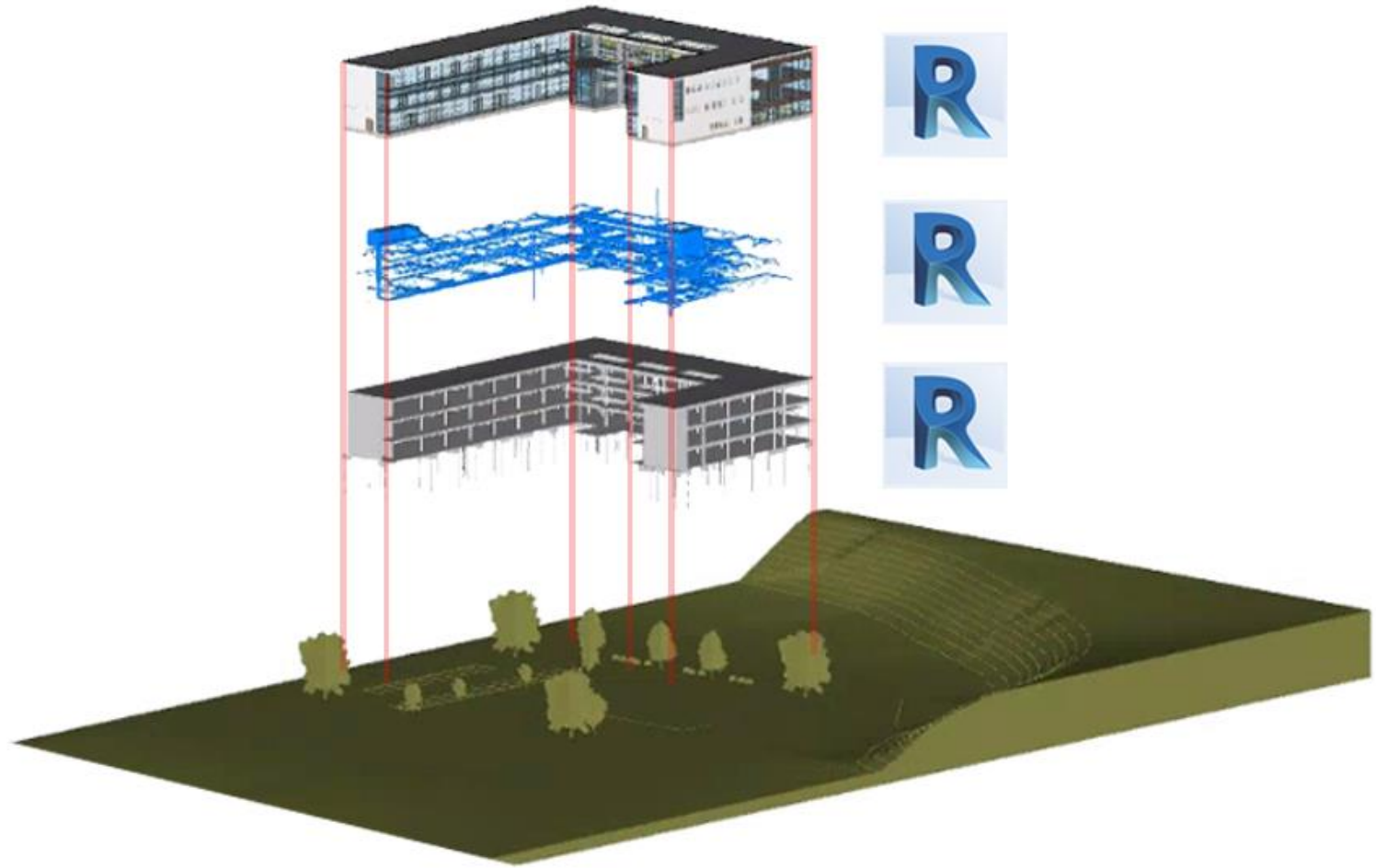
Shared Coordinates