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http://aucache.autodesk.com/social/visualization.html

2. Use “Extended Display” to project the website on screen if you plan to work on your computer – or use “Duplicate” to display same image on screen and computer.

Practically Dynamo:
Practical Uses for Dynamo within Revit

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Class summary

This lecture will describe the uses of the Dynamo extension and explain how it interacts with Revit software to help any Revit user to apply it to their every day Revit practical use. No twisting towers here!
No programming experience? No problem Dynamo is so easy to learn anyone could pick it up quickly.

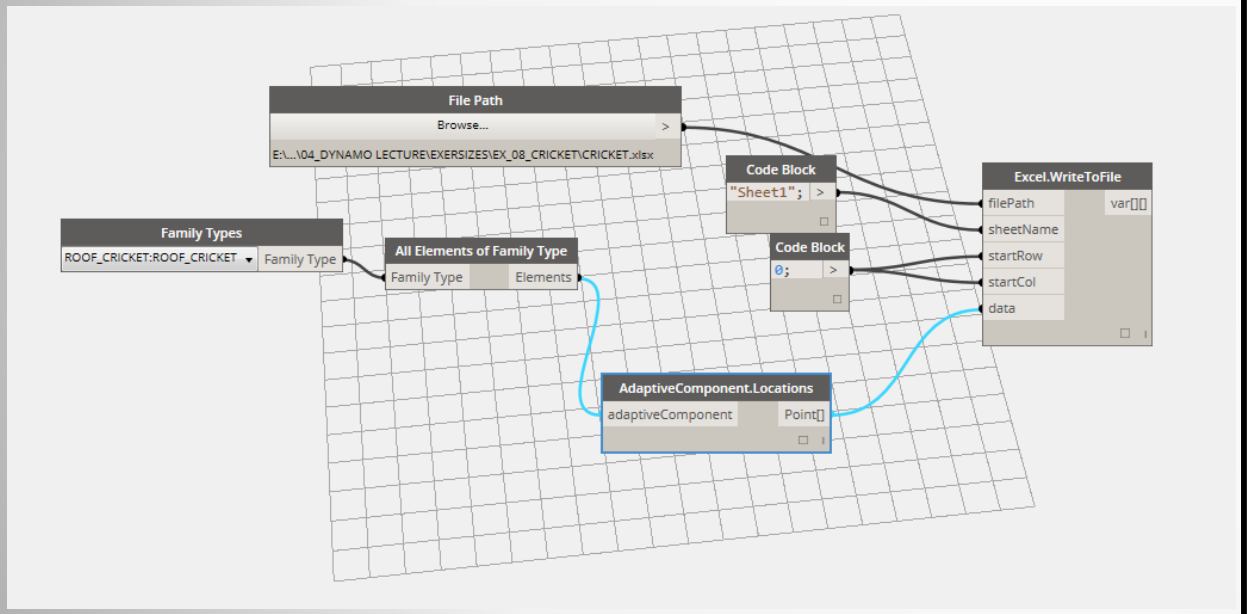
Key learning objectives

At the end of this class, you will be able to:

- Learn the answer to the question: What is the Dynamo extension?
- Learn how to program using visual programming
- Learn how to create practical uses in the office
- Learn to script in the Dynamo extension using DesignScript programming language

Introduction

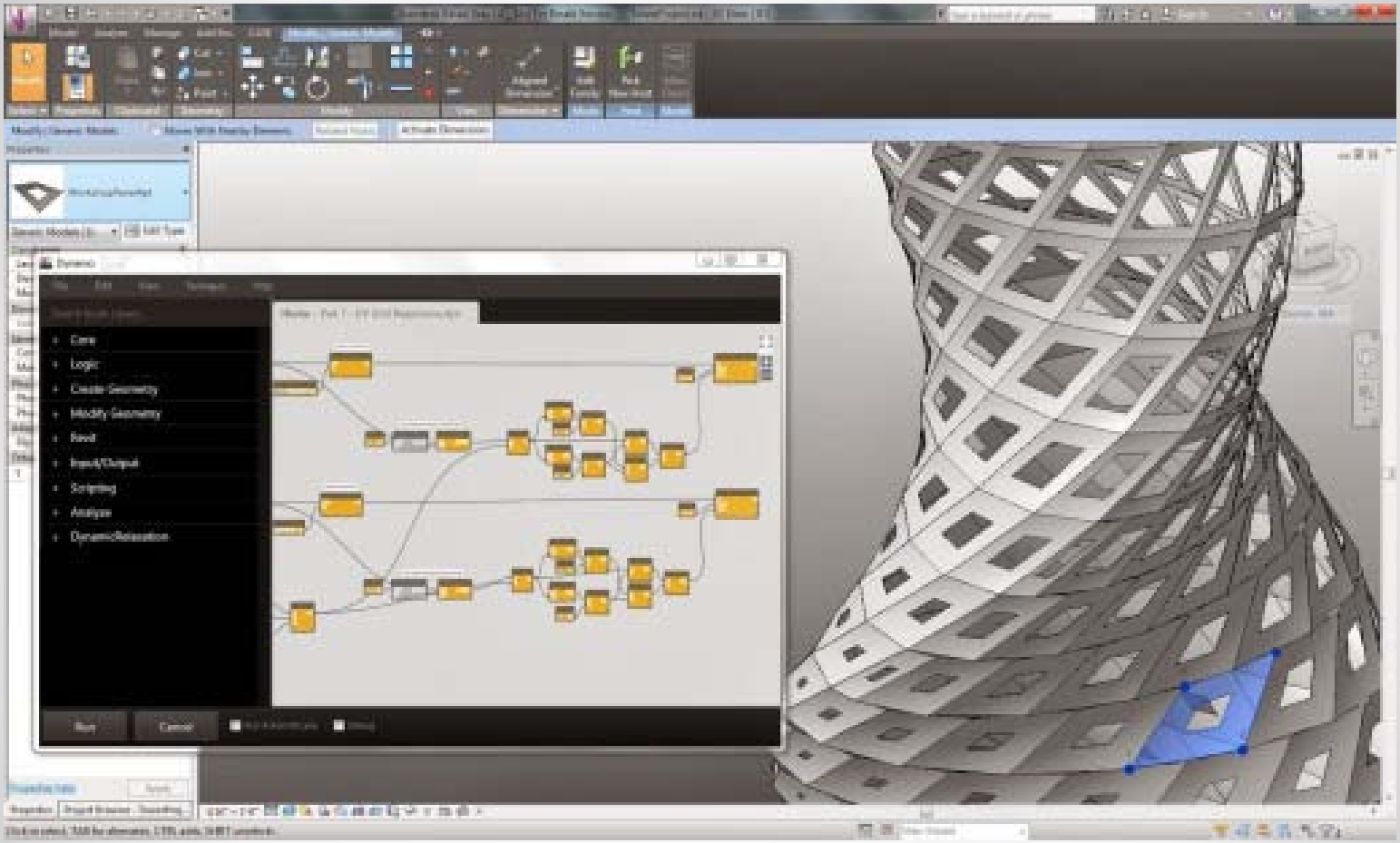
DYNAMO IS A VISUAL PROGRAMING LANGUAGE



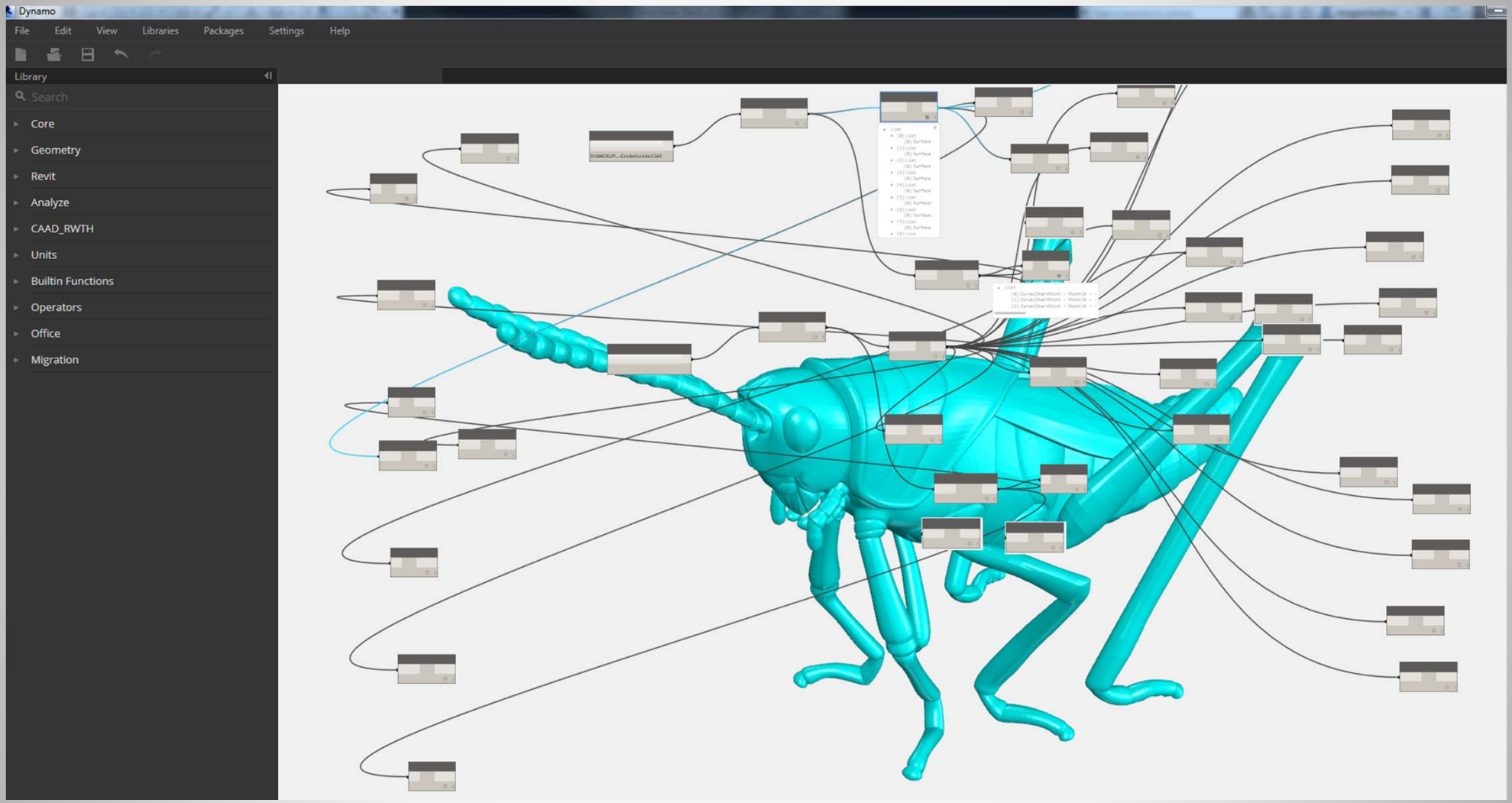
Visual Programming Code

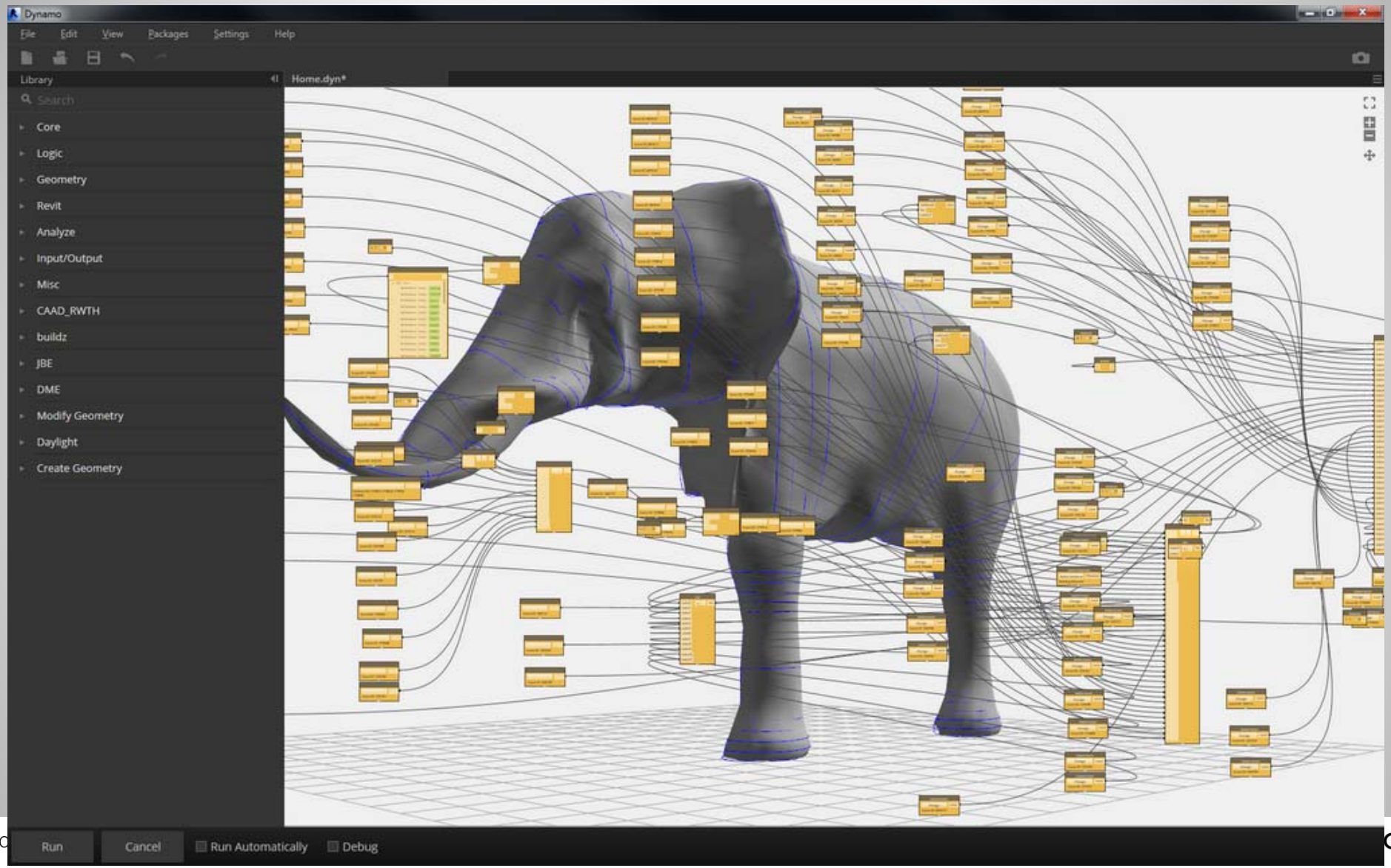
```
private void Module_Startup(object sender, EventArgs e)
{
    AdaptivePointParamUpdater updater = new AdaptivePointParamUpdater(this.Application.ActiveAddInId);
    try
    {
    UpdaterRegistry.RegisterUpdater(updater);
    UpdaterRegistry.AddTrigger(updater.GetUpdaterId(), new ElementClassFilter(typeof(FamilyInstance)),
Element.GetChangeTypeElementAddition());
    UpdaterRegistry.AddTrigger(updater.GetUpdaterId(), new ElementClassFilter(typeof(FamilyInstance)),
Element.GetChangeTypeGeometry());
    }
    catch{}
}
public class AdaptivePointParamUpdater : IUpdater
{
    static AddInId m_appId;
    static UpdaterId m_updaterId;
    public AdaptivePointParamUpdater(AddInId id)
    {
        m_appId = id;
        m_updaterId = new UpdaterId(m_appId, new Guid("1BF1F6A2-4C06-42d4-97C1-D1B4EB593EFF"));
    }
    public void Execute(UpdaterData data)
    {
        Document doc = data.GetDocument();
        Autodesk.Revit.ApplicationServices.Application app = doc.Application;
        foreach (ElementId id in data.GetAddedElementIds())
        {
            adaptivePointParams(data.GetDocument(), id);
        }
        foreach (ElementId id in data.GetModifiedElementIds())
        {
            adaptivePointParams(data.GetDocument(), id);
        }
    }
    public string GetAdditionalInformation(){return "Data about adaptive parameters";}
    public ChangePriority GetChangePriority(){return ChangePriority.FloorsRoofsStructuralWalls;}
     public UpdaterId GetUpdaterId(){return m_updaterId;}
    public string GetUpdaterName(){return "AdaptivePoints";}

    private void adaptivePointParams(Document doc, ElementId id)
    {
        FamilyInstance fi = doc.GetElement(id) as FamilyInstance;
        if (fi != null && AdaptiveComponentInstanceUtils.IsAdaptiveComponentInstance(fi))
        {
            int ctr = 1;
            foreach (ElementId elementId in
AdaptiveComponentInstanceUtils.GetInstancePlacementPointElementRefIds(fi))
            {
                ReferencePoint rp = doc.GetElement(elementId) as ReferencePoint;
                XYZ position = rp.Position;
                if (ctr == 1)
                {
                    fi.get_Parameter("point1x").Set(Math.Round(position.X,3));
                    fi.get_Parameter("point1y").Set(Math.Round(position.Y,3));
                    fi.get_Parameter("point1z").Set(Math.Round(position.Z,3));
                }
                else if (ctr == 2)
                {
                    fi.get_Parameter("point2x").Set(Math.Round(position.X,3));
                    fi.get_Parameter("point2y").Set(Math.Round(position.Y,3));
                    fi.get_Parameter("point2z").Set(Math.Round(position.Z,3));
                }
                ctr++;
            }
        }
    }
}
```

Traditional API Code



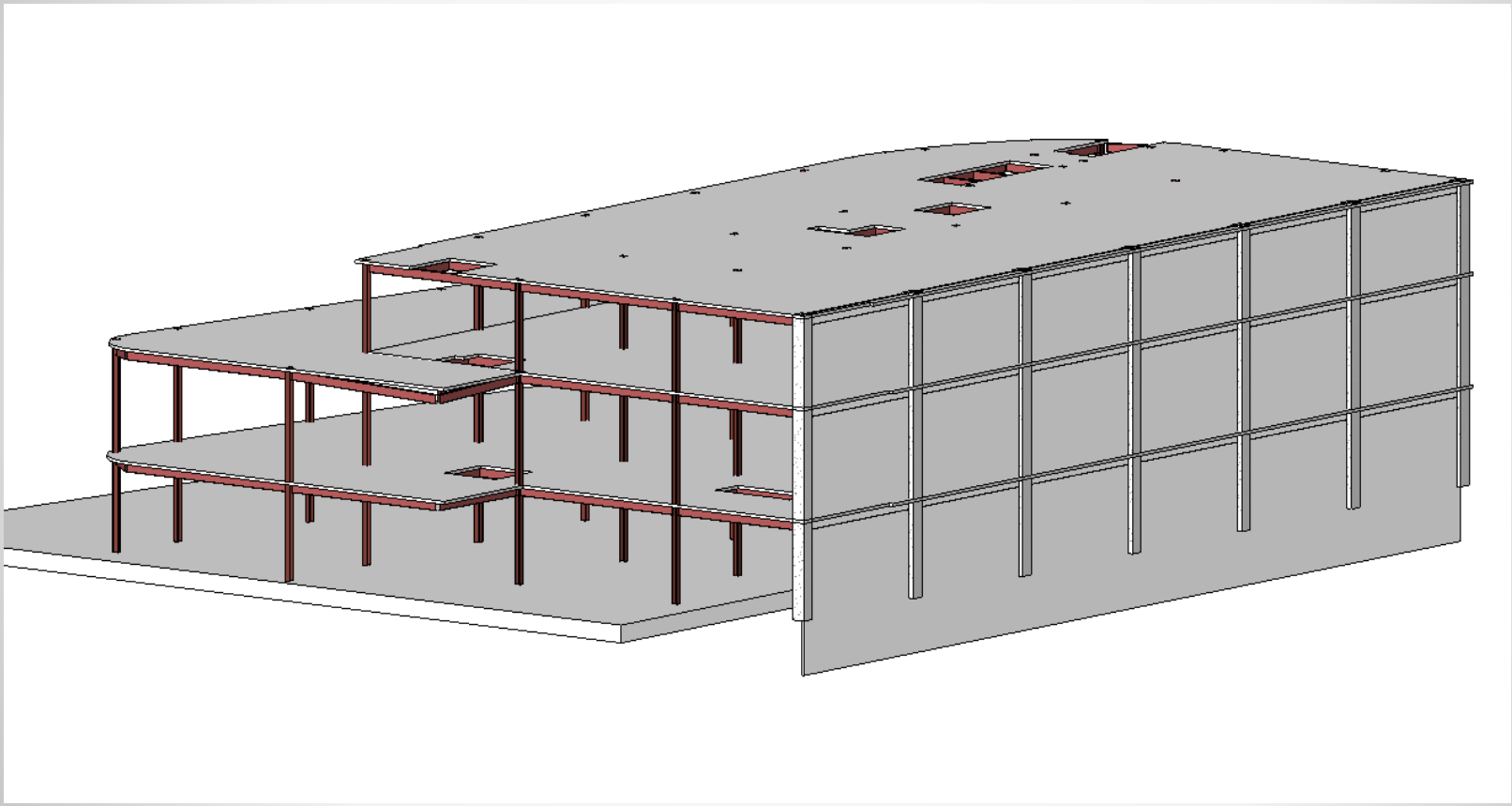
Source
http://85flukus.wordpress.com/2013/12/11/dynamo-for-revit/


Dynamo
File
Edit
View
Libraries
Packages
Settings
Help
Library
Search
Core
Geometry
Revit
Analyze
CAAD_RWTH
Units
Builtin Functions
Operators
Office
Migration

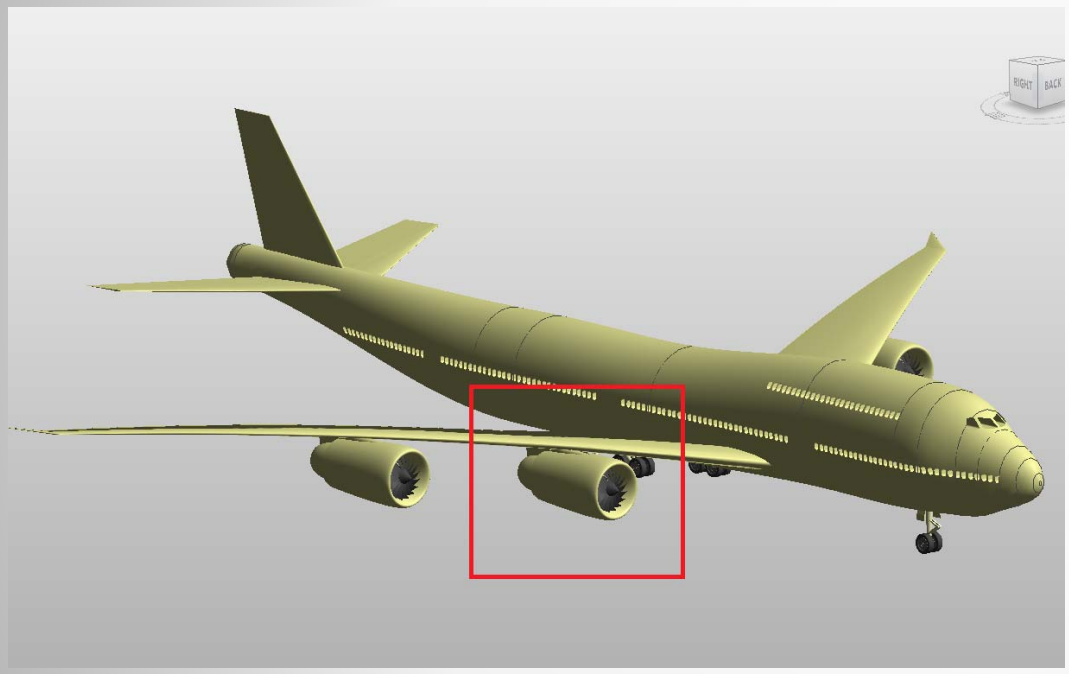

Dynamo
File
Edit
View
Packages
Settings
Help
Library
Search
Core
Logic
Geometry
Revit
Analyze
Input/Output
Misc
CAAD_RWTH
buildz
JBE
DME
Modify Geometry
Daylight
Create Geometry
Home.dyn*
Run
Cancel
Run Automatically
Debug

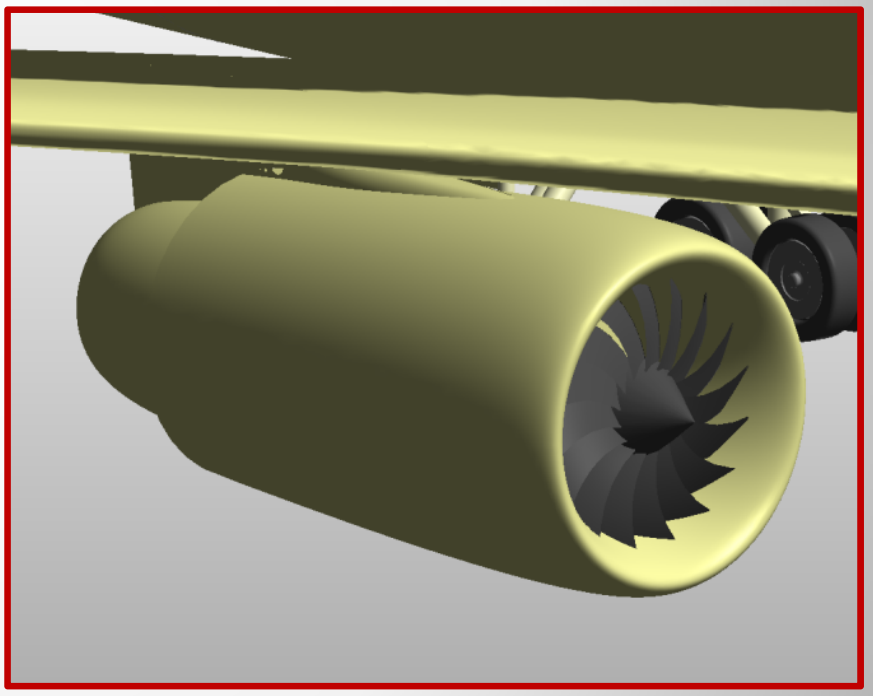
Exercises

Getting and Setting Parameters (Col/Wall Base)

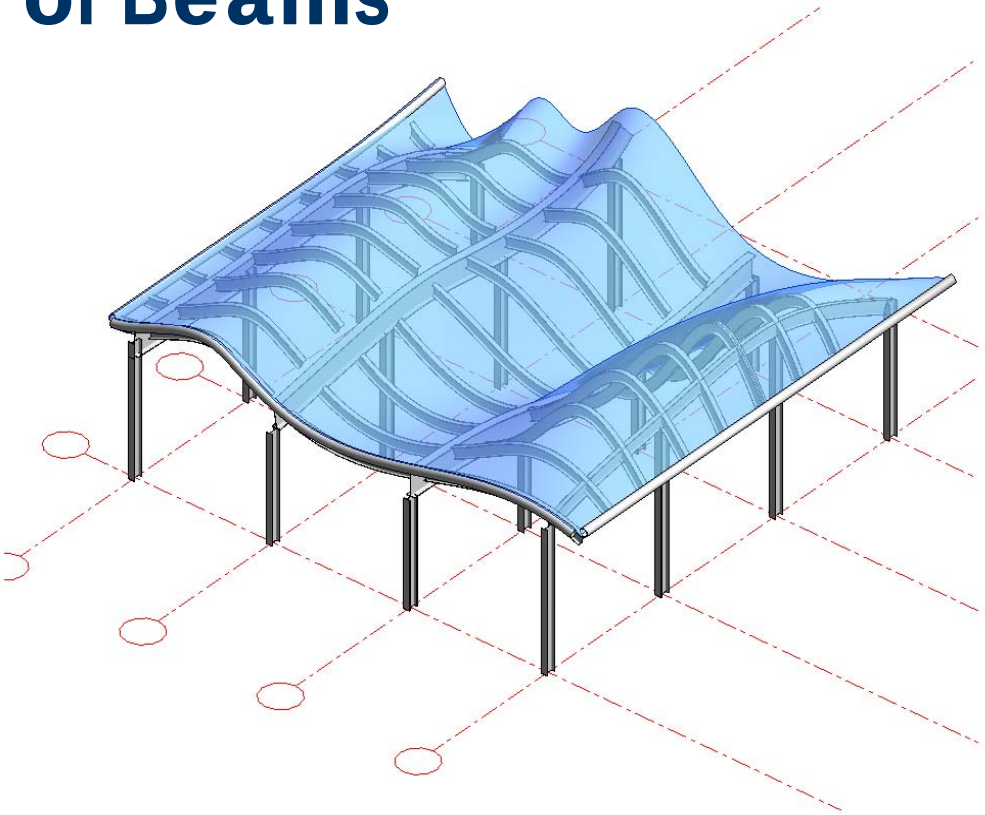


Profile Order

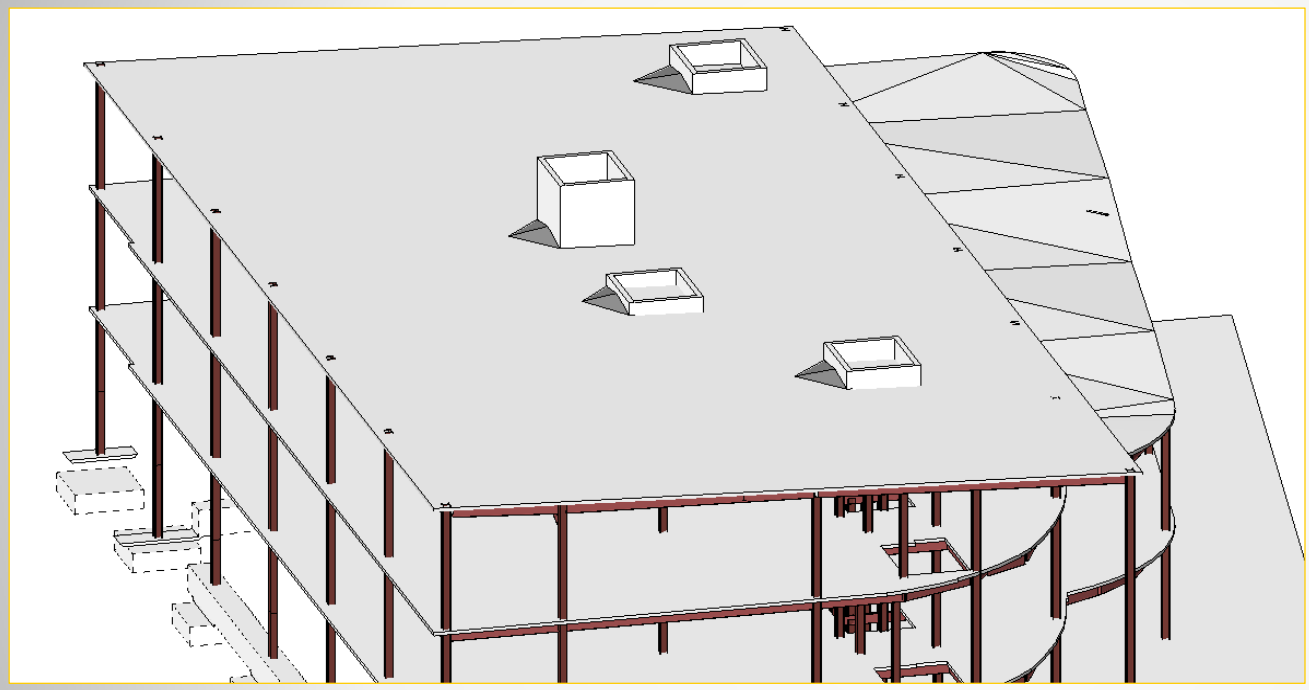


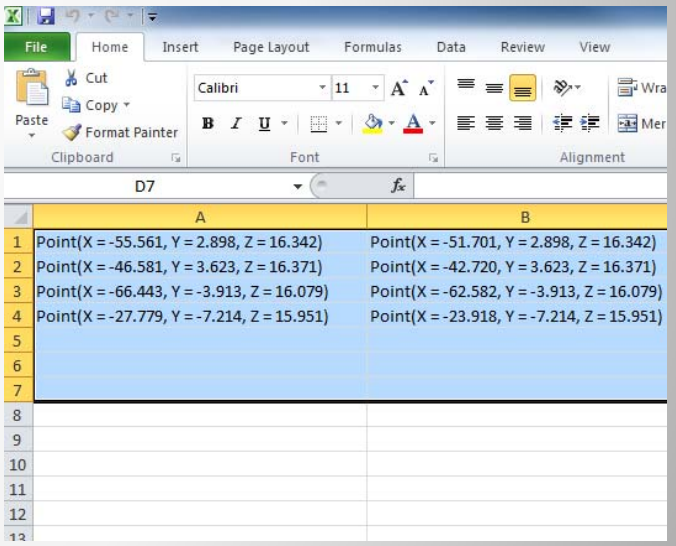


Intersection of Beams

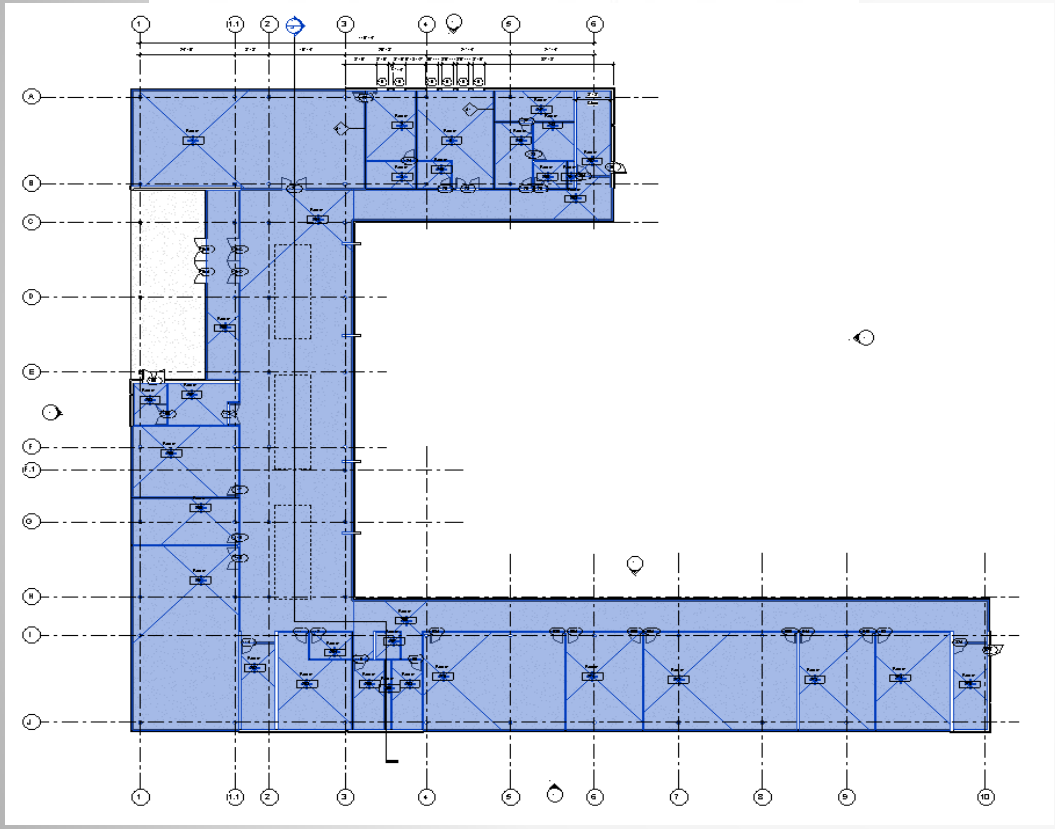


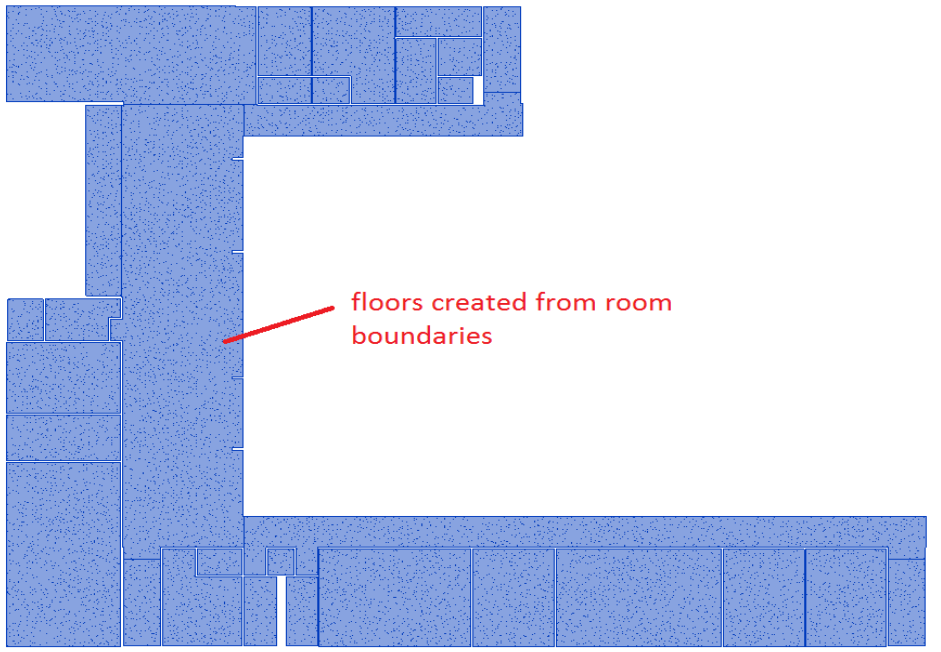
Extracting AC Points and Writing to Excel





Create Finish Floors from Rooms





Create Topo From Excel Points and Modify

C21

	A	B	C	D	E	F
1	6.315760423	6.315760423	-2.13E+01	-21.3194	-21.3194	-20.78064538
2	85.70306119	-30.14354485	-3.01E+01	85.70306	6.923102	6.923101532
3	-2.57E-05	-2.57E-05	-2.57E-05	-2.57E-05	5.177094	6.06595103
4						
5						
6						
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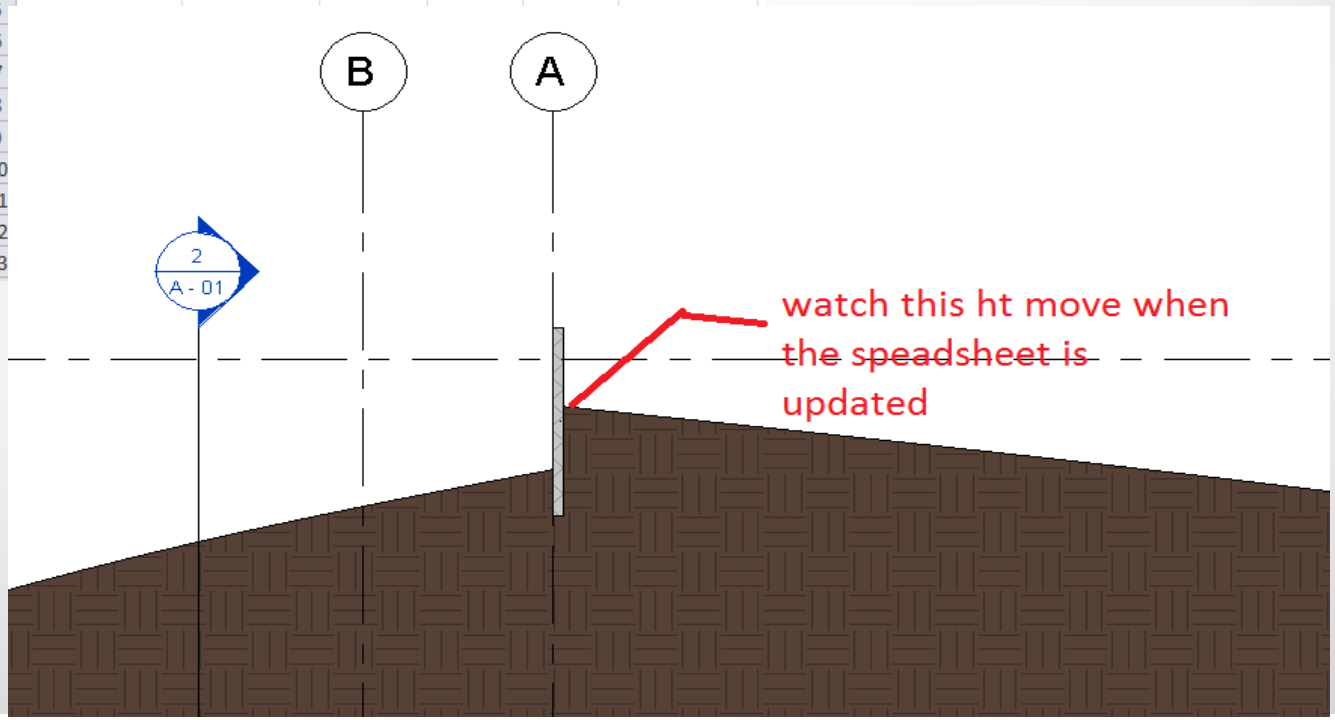
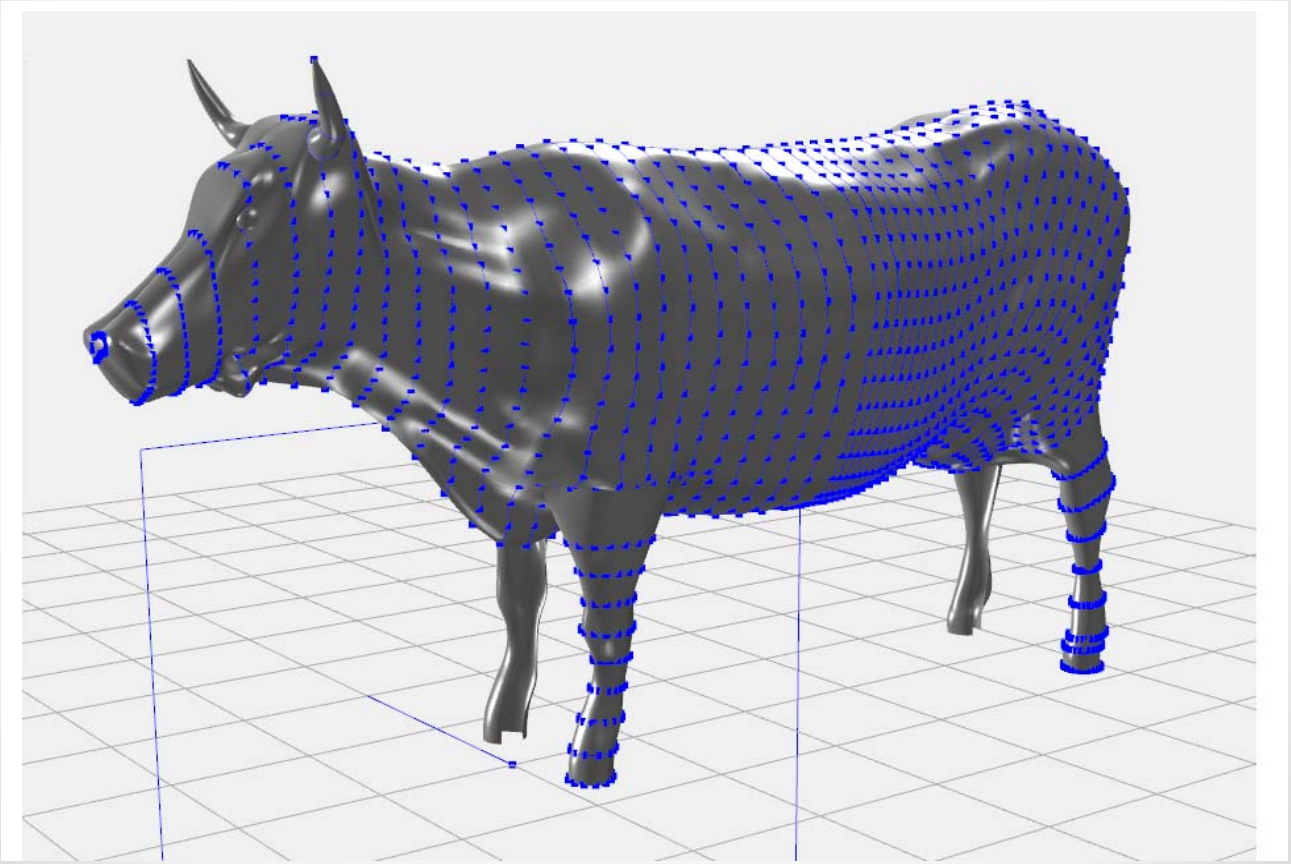
13						



Design Scripting and the Revit Cow



Lets Get Started!!!!!!!!

Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2014 passes given out each day!
- Best to do it right after the session
- Instructors see results in real-time