

Revit to Google Cardboard

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Senior Executive - Design Systems & Technology
@MarkACronin



Class summary

Are you interested in Virtual Reality but think the cost of entry is too high? Think again! With a \$20 Google Cardboard headset you can use Virtual Reality to immerse your clients in your design. From photospheres to web hosted experiences, find out all you need to know to get started in Virtual Reality.

Key learning objectives

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

- Learn how to transfer Revit models into a virtual environment
- Identify the different VR options available in Google Cardboard
- Experience the your Revit models in VR
- Learn different ways to prepare files for Google Cardboard

Before we get started...

Before we get started...

Take out your phone and:

- Connect to conference WiFi (?)
- Download a QR code scanner
- Download the Iris Scope Mobile App (QR code in your handout)
- Have your Autodesk Sign In details to hand

Introduction

Introduction

- Review of current technology (What)
- Benefits of use (Why)
- Options to consider (How)
- Lab activities/demos
- Future direction (Summary)

Introduction

~~What~~
How



Review of current technology (What)

Review of current technology (What)



Review of current technology (What)

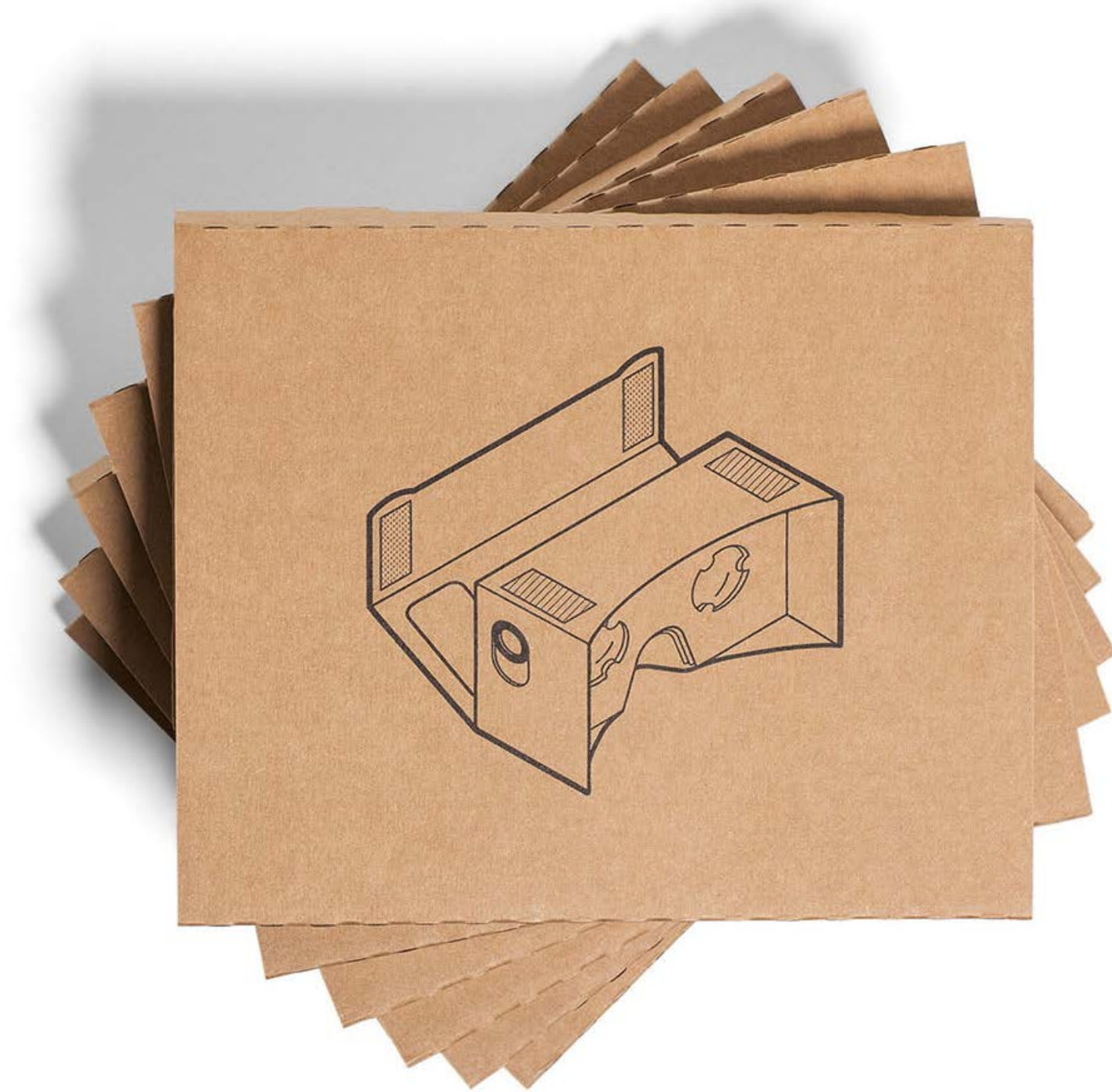


Review of current technology (What)


Daydream View



Review of current technology (What)



Review of current technology (What)



Review of current technology (What)

<input type="checkbox"/> Oculus Rift (CV1)	<input type="checkbox"/> Homido
<input type="checkbox"/> HTC Vive	<input type="checkbox"/> ImmersiON-VRelia BlueSky Pro
<input type="checkbox"/> Microsoft Hololens	<input type="checkbox"/> Impression Pi
<input type="checkbox"/> Samsung Gear VR	<input type="checkbox"/> Magic Leap
<input checked="" type="checkbox"/> Google Cardboard	<input type="checkbox"/> Meta
<input type="checkbox"/> StarVR	<input type="checkbox"/> ODG
<input type="checkbox"/> AirVR	<input type="checkbox"/> Pinch VR
<input type="checkbox"/> Avegant Glyph	<input type="checkbox"/> Razer OSVR
<input type="checkbox"/> Cmoar	<input type="checkbox"/> Sony Project Morpheus
<input type="checkbox"/> Daqri Smart Helmet	<input type="checkbox"/> Viewbox
<input type="checkbox"/> Durovis Dive 5	<input type="checkbox"/> Visus
<input type="checkbox"/> Dior Eyes VR	<input type="checkbox"/> Vrvana Totem
<input type="checkbox"/> Emax X1	<input type="checkbox"/> Xingear XG
<input type="checkbox"/> Epson Moverio	<input type="checkbox"/> Zeiss One VR
<input type="checkbox"/> Fove	

Benefits of use (Why)

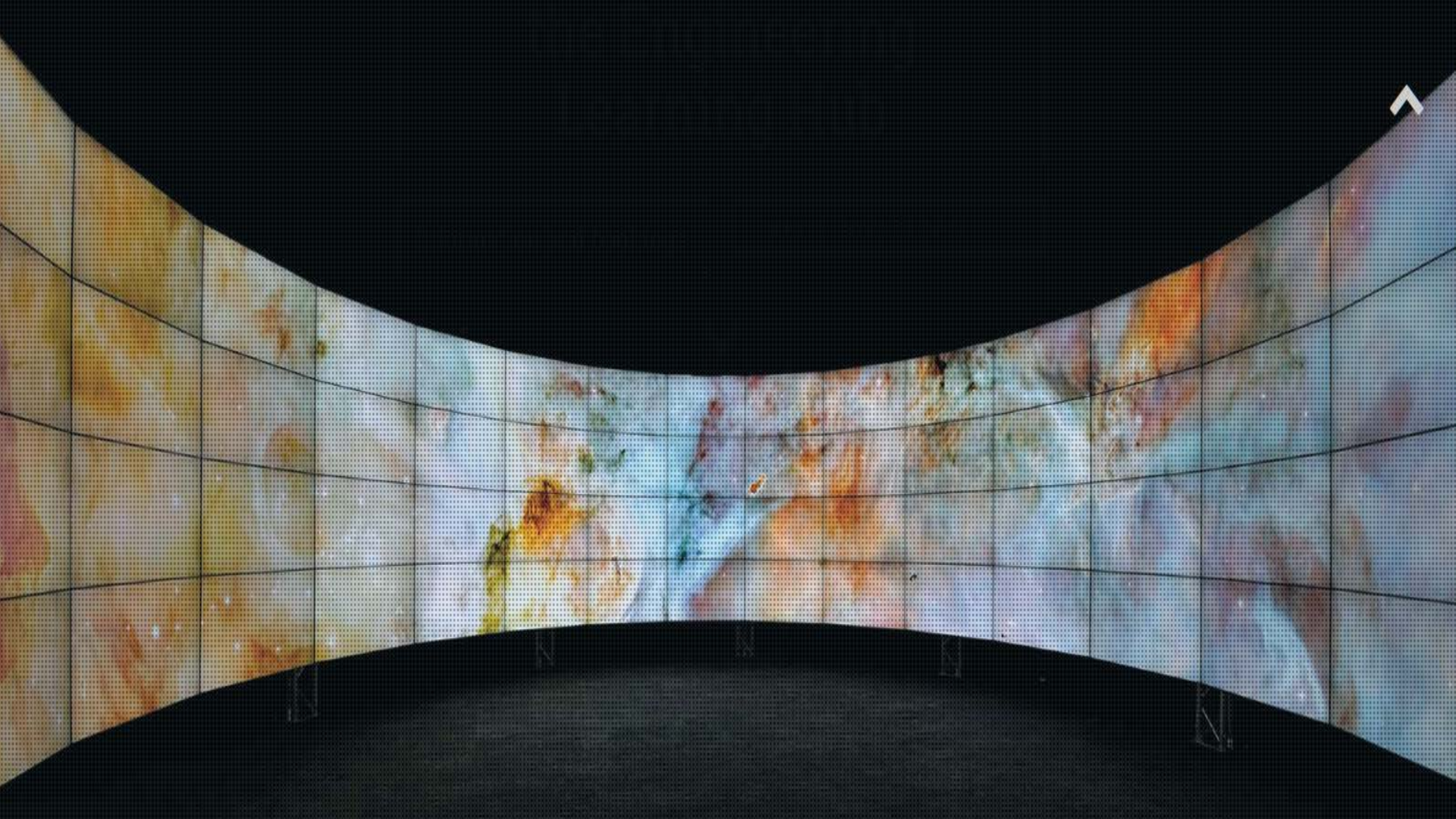
Benefits of use (Why)



Benefits of use (Why)







Options to consider (How)

Options to consider (How)

- Time/budget
- Resource Skill
- Stage of project
- Style



Options to consider (How)

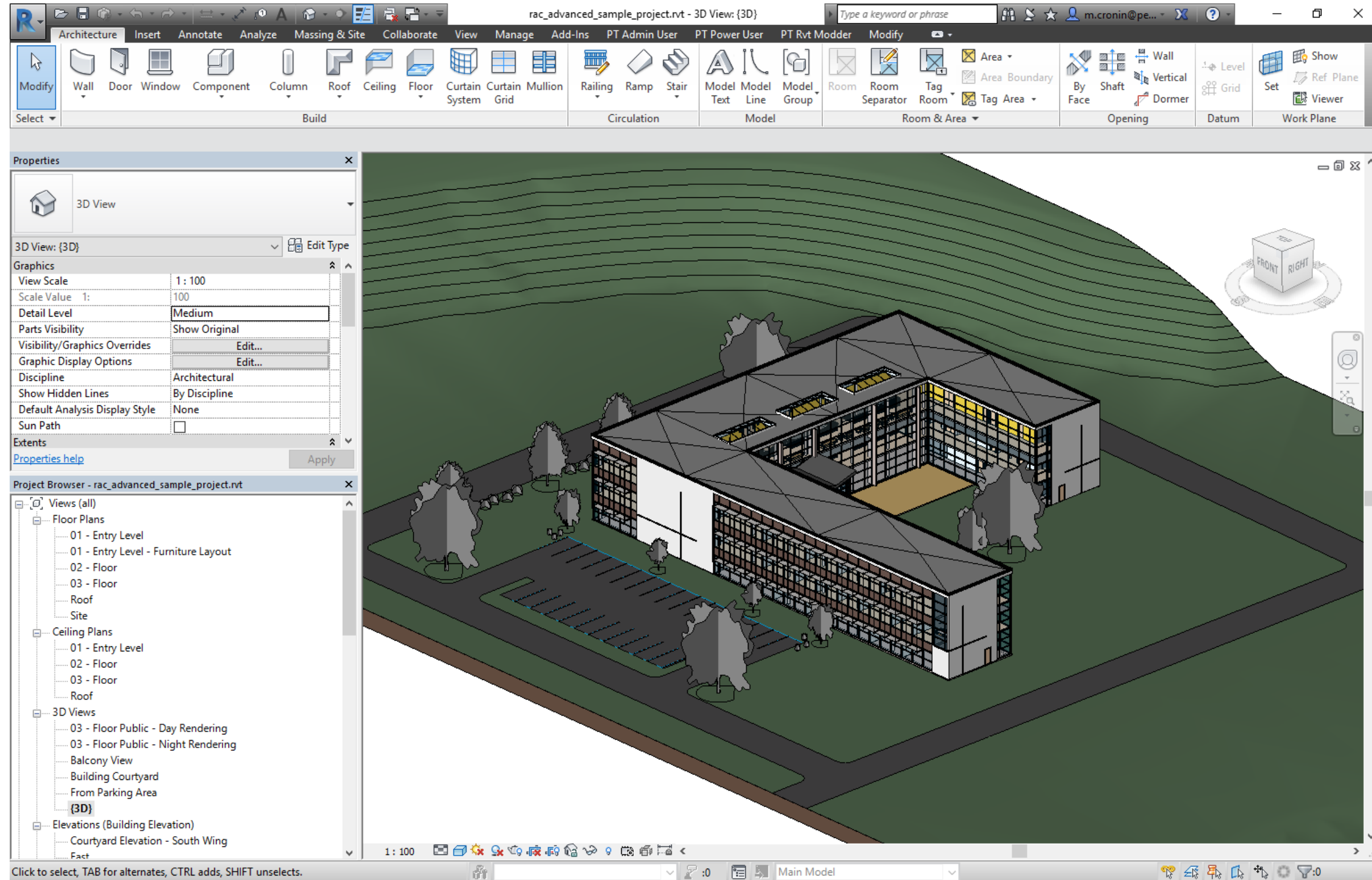
Easy



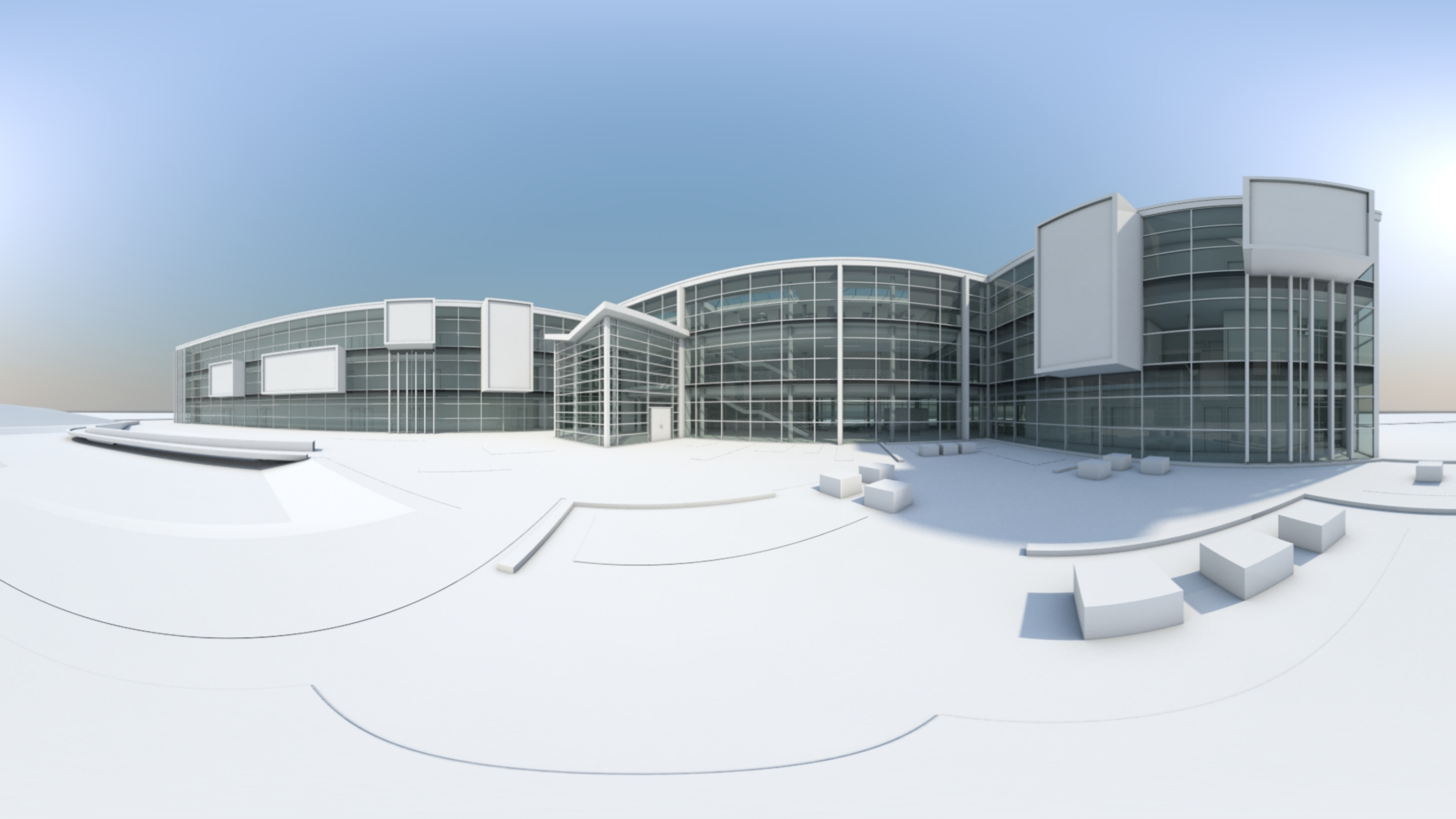
Hard

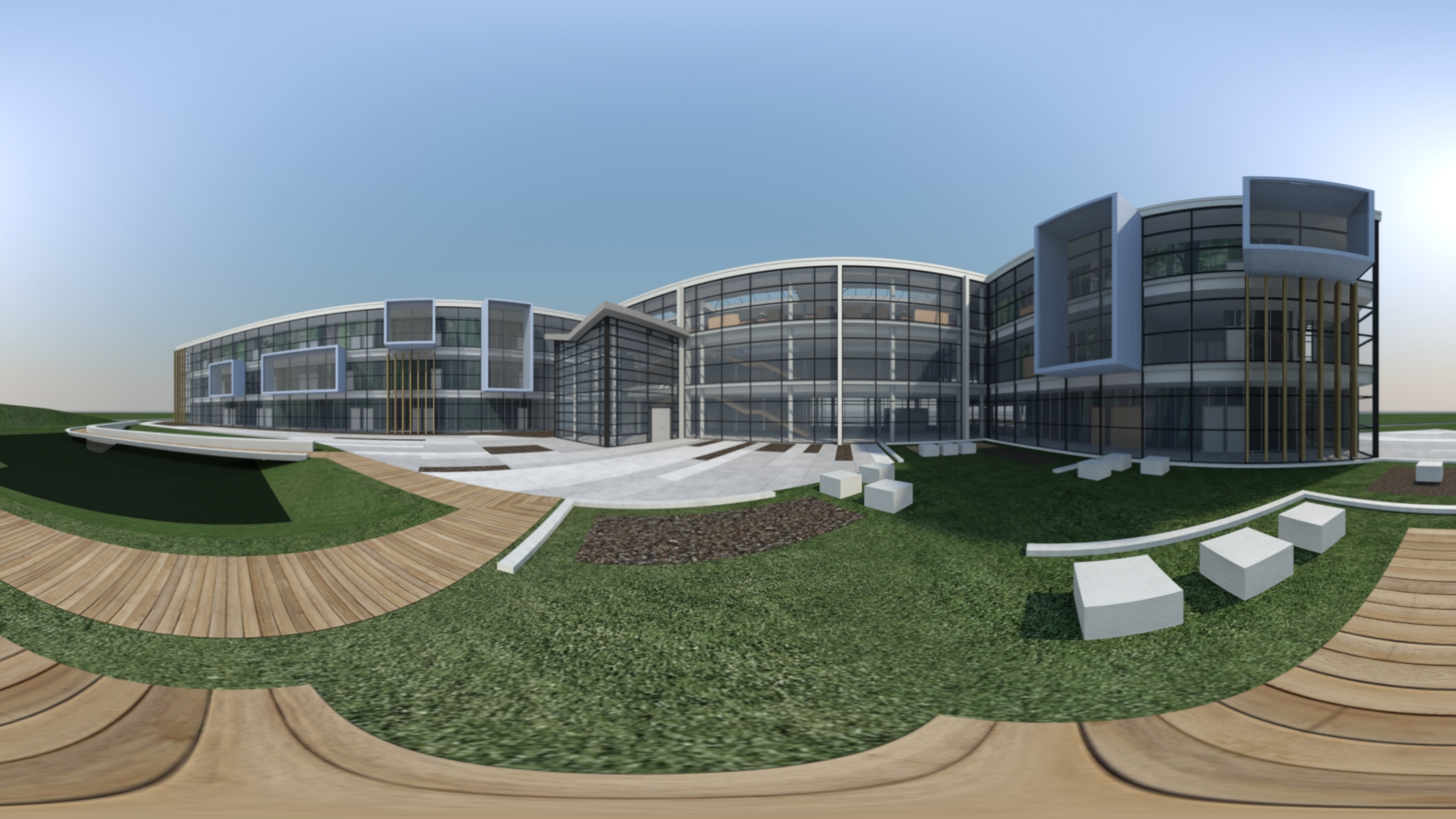


Options to consider (How)





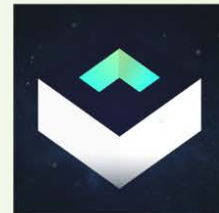






Options to consider (How)

Easy



Hard

Options to consider (How)

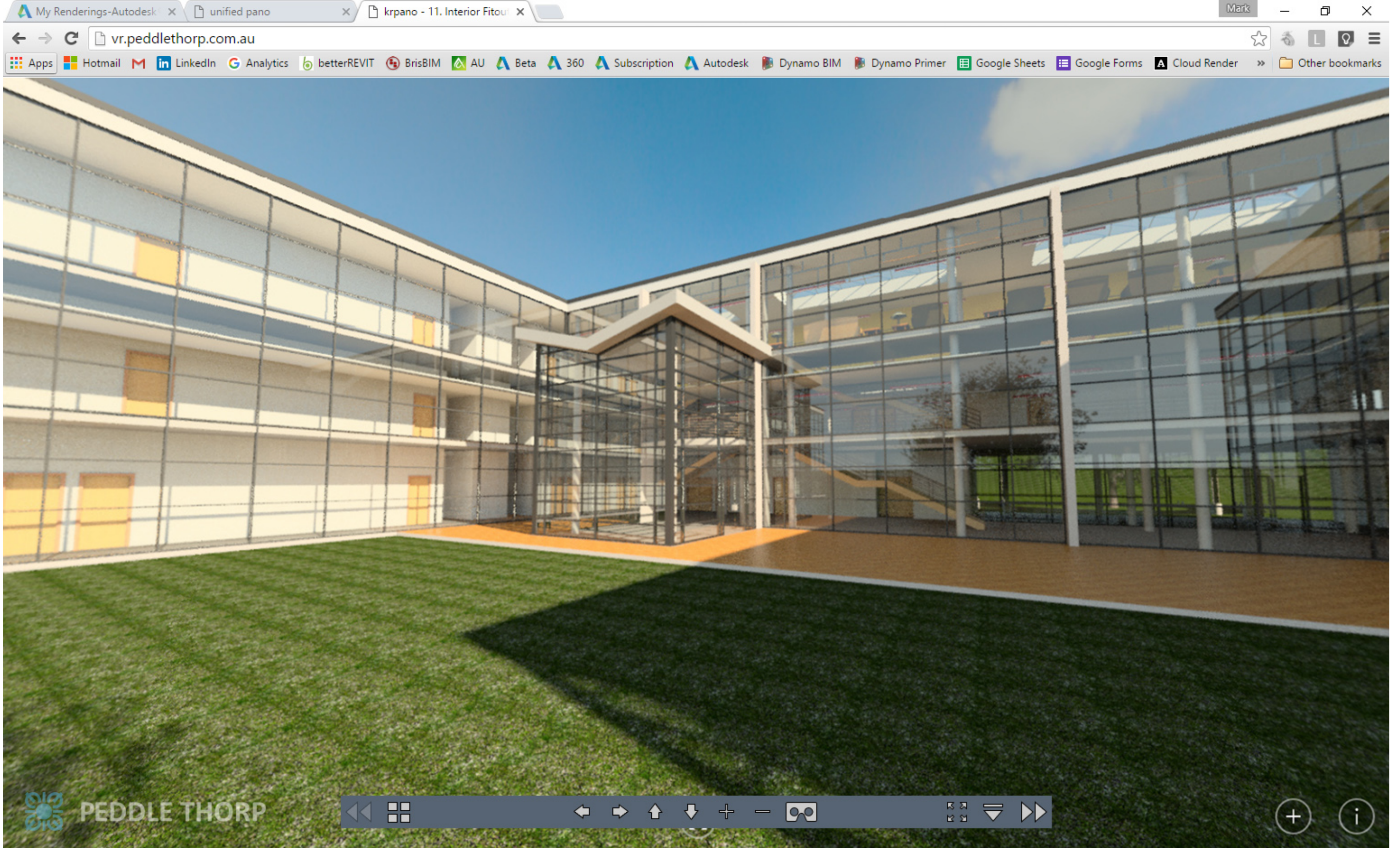


Options to consider (How)

<http://pano.autodesk.com/pano.html?url=jpgs/c4b5671a-0293-4f0d-9004-39857cd6ea92>

Options to consider (How)





Options to consider (How)



Lab activities

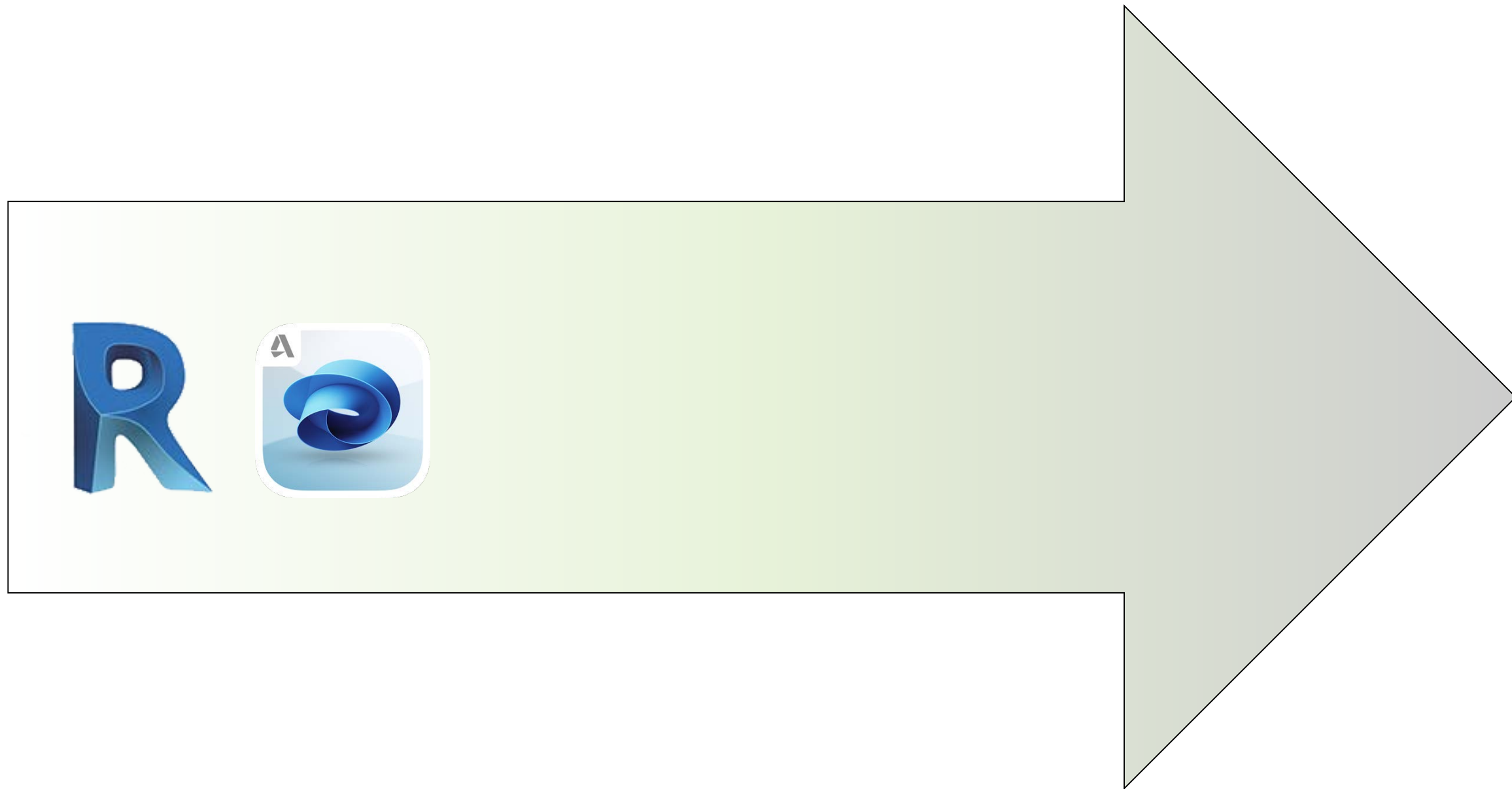
Lab activities

- 1 – Revit to Render in Cloud
- 2 – Material Overrides in Revit and re-render
- 3 – Build Google Cardboard headset and view A360 renders
- 4 – Upload renders to Iris Scope and view with Cardboard
- 5 – Demo - Workflow using InsiteVR, Modelo & Kubity
- 6 – Revit to 3ds Max default render
- 7 – 3ds Max white render
- 8 – Demo - Prepare and host VR files on your website

Lab activity 1

Lab activity 1

Easy



Hard

Lab activity 1

Summary of steps

- In Revit place a camera in the model
- Send the scene to the cloud for rendering

Lab activity 1

Start Revit 2017

Open:

Start1_rac_advanced_sample_project.rvt

Located:

C:\Datasets\Lab01 San Polo 3401A\Revit to Cardboard\Lab Activity 1

If there is no dataset on your PC:

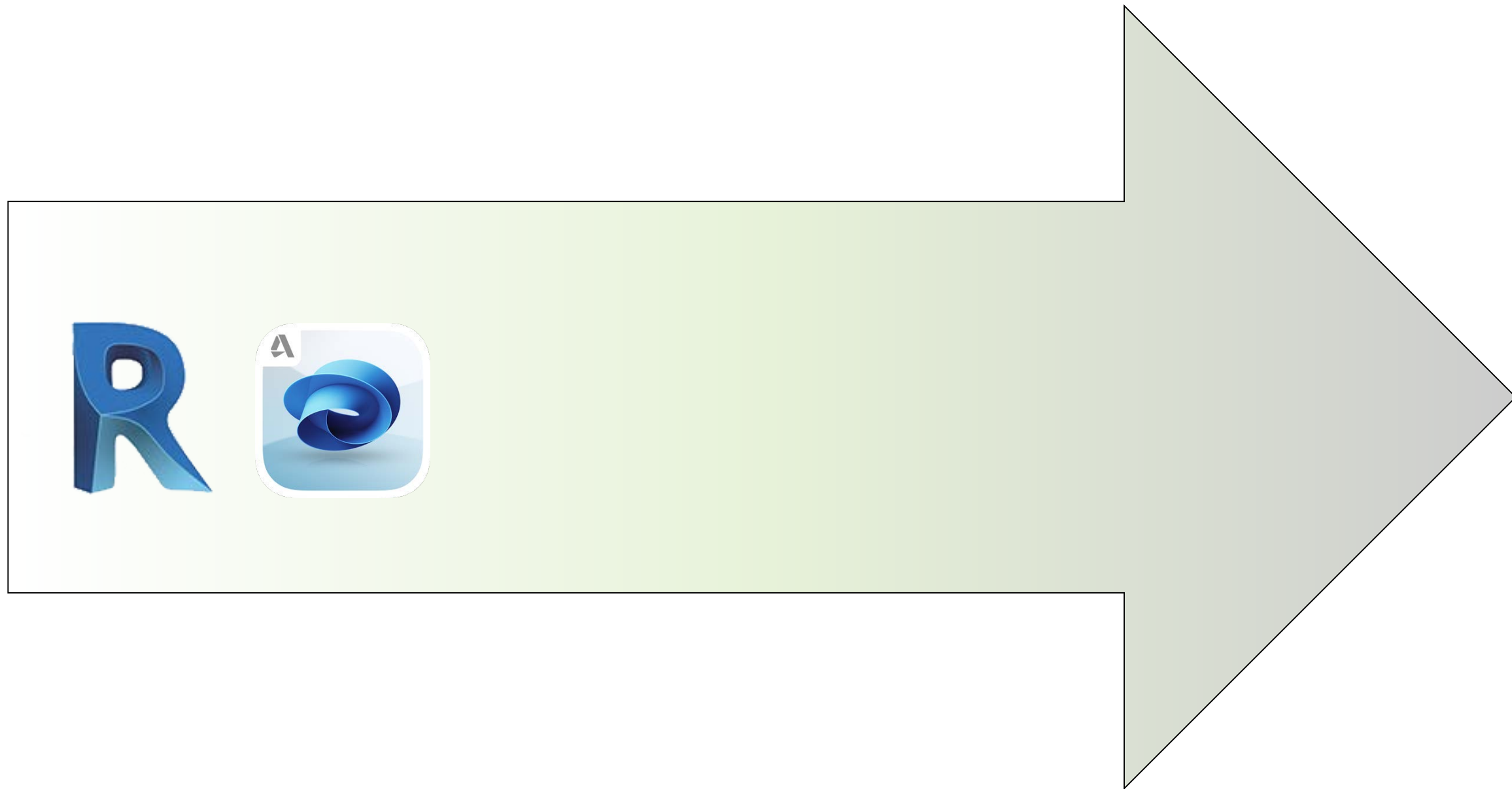
C:\Program Files\Autodesk\Revit 2017\Samples



Lab activity 2

Lab activity 2

Easy



Hard

Lab activity 2

Summary of steps

- Create a new phase
- Edit the Phase filters
- Send the model to Render in Cloud

Lab activity 2

Continuing in Revit 2017, or alternatively open:

Open:

Start2_rac_advanced_sample_project.rvt

Located:

C:\Datasets\Lab01 San Polo 3401A\Revit to Cardboard\Lab Activity 2

If there is no dataset on your PC:

C:\Program Files\Autodesk\Revit 2017\Samples

Lab activity 3

Lab activity 3

Easy

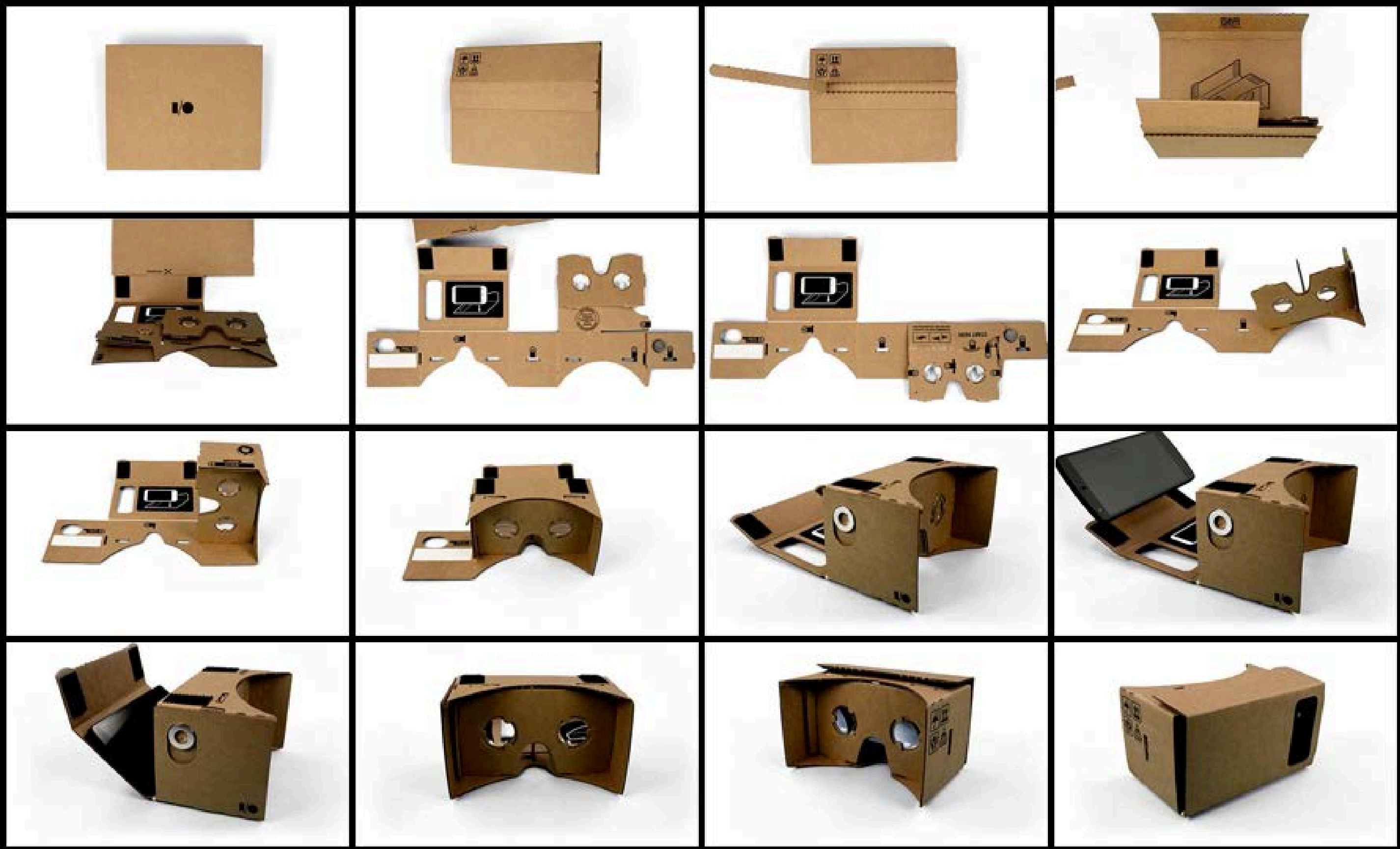


Hard

Lab activity 3

Summary of steps

- Open and assemble your free Autodesk Google Cardboard headset
- Access Cloud Gallery
- View renders in browser
- Share renders
- View renders in Google Cardboard

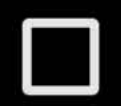
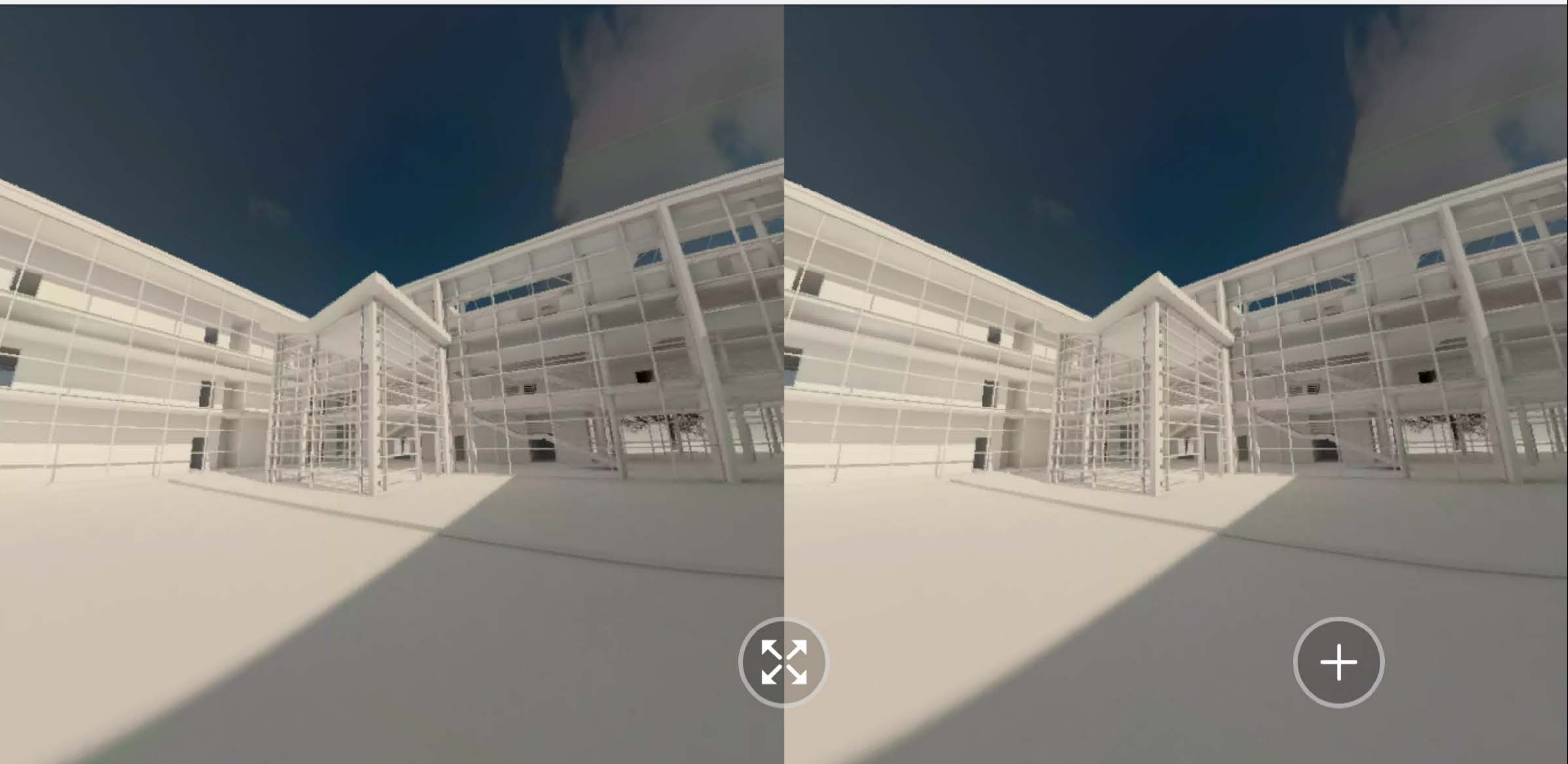


Lab activity 3

- Continuing on from Lab Activity 2, browse to <https://rendering.360.autodesk.com/mygallery.aspx>

pano.autodesk.com/pano.html?url=jpgs/1c0b7cb7-5dc5-4042-9690-a41191646

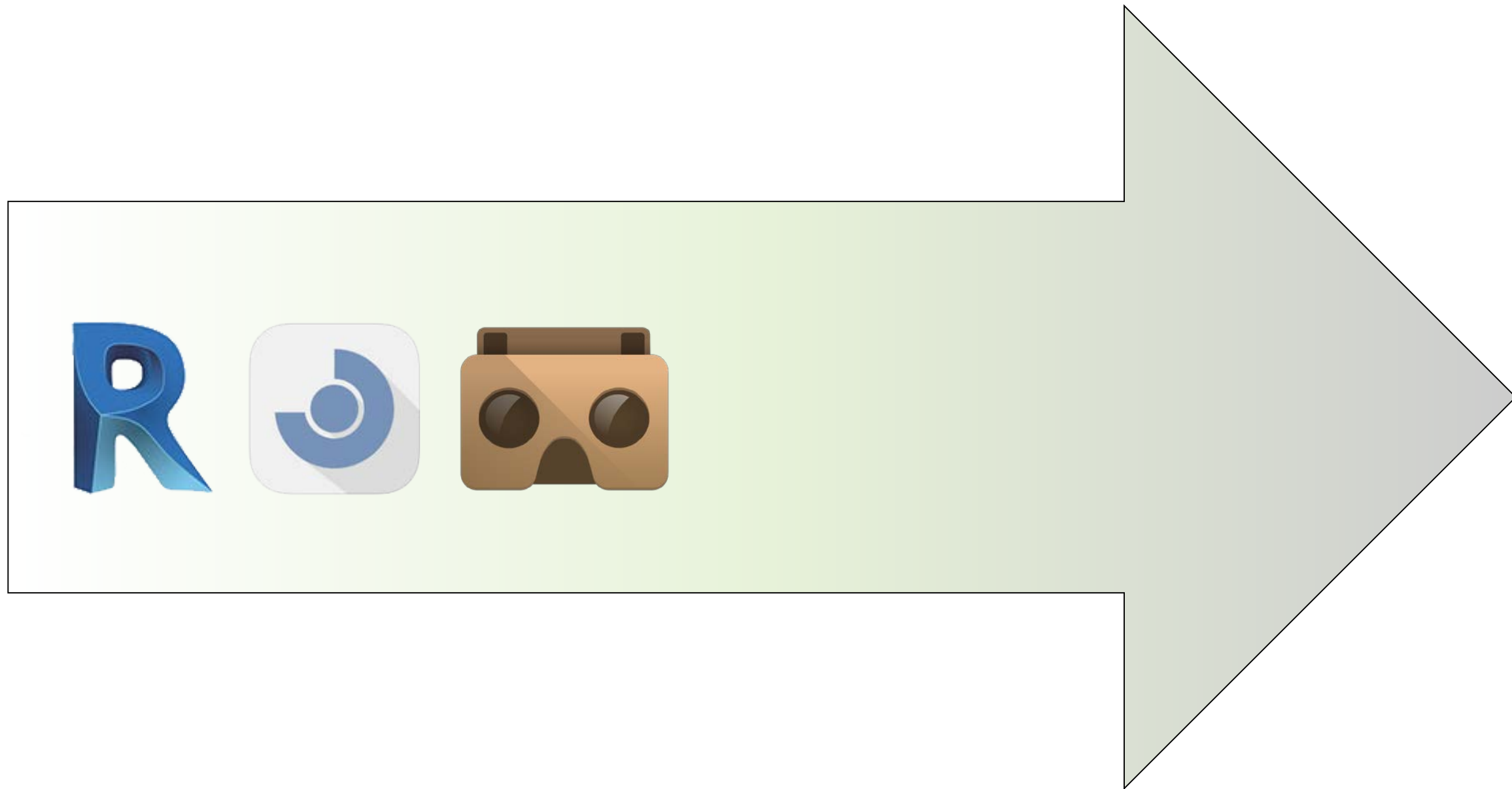
16



Lab activity 4

Lab activity 4

Easy



Hard

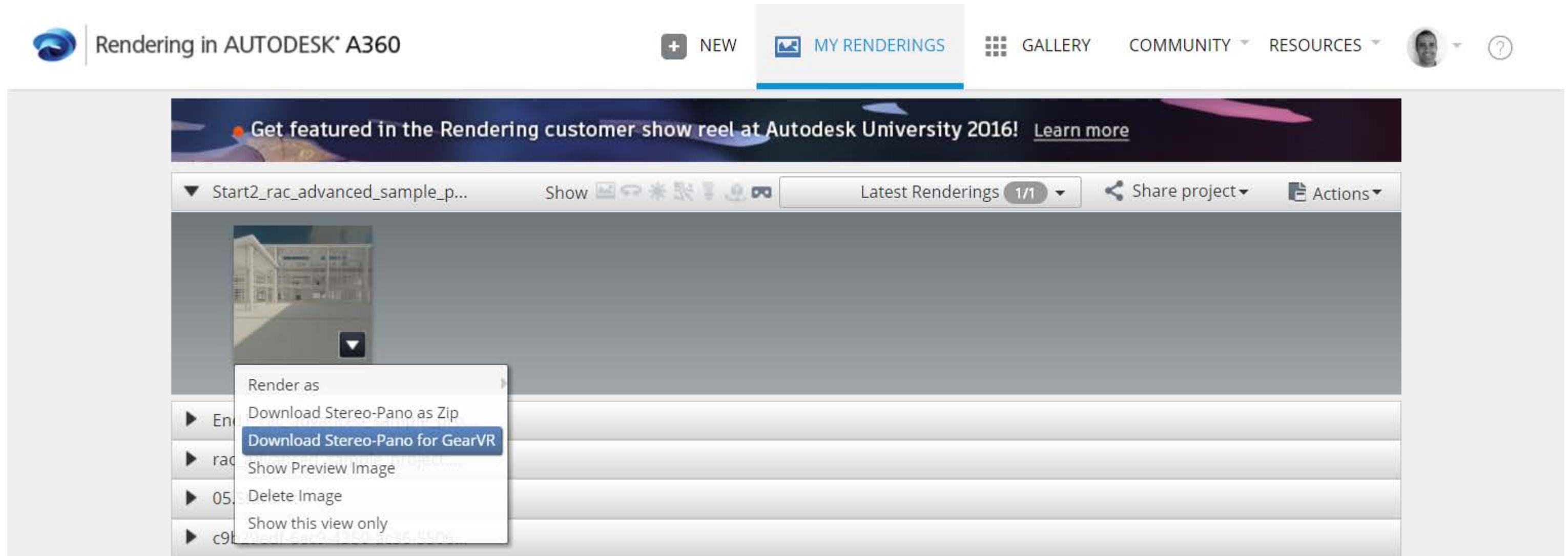
Lab activity 4

Summary of steps

- Download Iris Scope App
- Upload previously rendered content to Iris
- View Iris content in a browser
- View Iris content in Google Cardboard



Lab activity 4



Want to try V-Ray for Revit public beta?

REGISTER

COMING SOON

Professional rendering for architects & designers



Revit

Lab activity 4



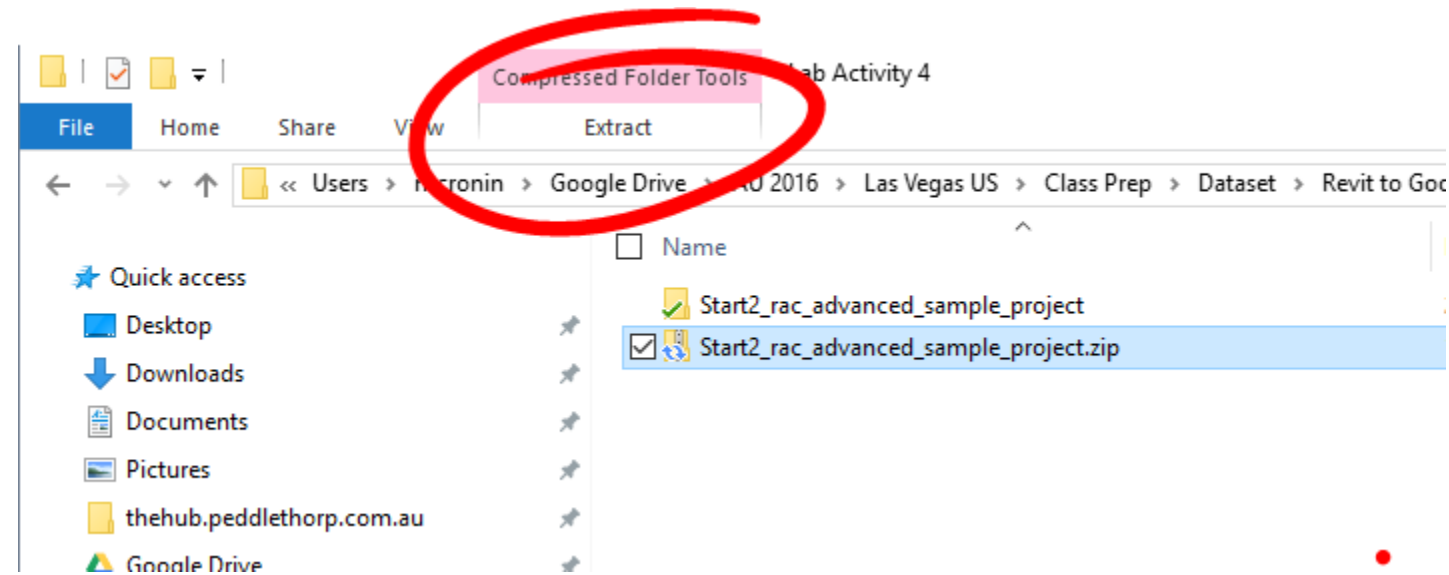
AUTODESK®
3DS MAX® 2017



Lab activity 4



Lab activity 4





TRY NOW

SCOPE LIBRARY

- Home
- Iris Prospect
- Iris Scope
- Help & Support
- Research & Blog
- Careers
- Contact Us

MENU



SHARE YOUR VISION

Create your own virtual reality experiences in seconds
Compatible with native 3D formats, no training required

Trusted by:

sh p

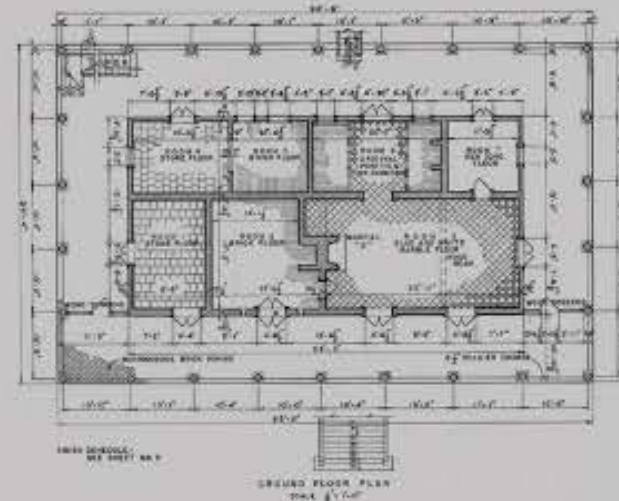
Mortenson
CONSTRUCTION

Miele
Australia

TELEGENIC4K

co-office
UX DESIGN FOR SPACE

TA
ARCHITECTS



Scope Library

Upload and delete your 360 panoramas here. When you log into the Iris Scope App, your panos are downloaded and are ready for viewing on your smartphone. If you don't have our app yet, you can [download it here!](#)

Equirectangular panos will not currently work in Scope.

We launched upload support for a few alternative formats a little early. We are working on an update to the mobile apps that will be published soon so you can view your spherical panos and 360 captures in VR.

ADD NEW PANOSET



AU Sample Panoset

0 panos



Upload Panorama ?

Drag and Drop
or click to open file explorer

Stereo Cubic A360

Autodesk 360



Stereo Cubic

VRay, Lumion, OTOY



Mono Spherical

Ricoh Theta, Corona Render



Stereo Spherical

Corona Render



Note: Spherical panos will not currently work in Scope.

UPLOAD

AU Sample Panoset

0 panos



ADD NEW PANOSSET ?



Log in

Email

m.cronin@peddlethorp.com.au

Password

?

LOG IN


Don't have an account yet?

SIGN UP FOR FREE

4


≡


Sandbox





AU Sample Panoset

Demo Content

Salle Labrouste - #1
by Bertrand Benoit

Salle Labrouste - #2
by Bertrand Benoit

Church on the Water - #1
by Aldo García


Church on the Water - #2
by Aldo García

DOWNLOAD SET

REMOVE SET


≡

Sandbox



AU Sample Panoset

Demo Content

Start2_rac_advanced_sample
🕒 1 minute ago

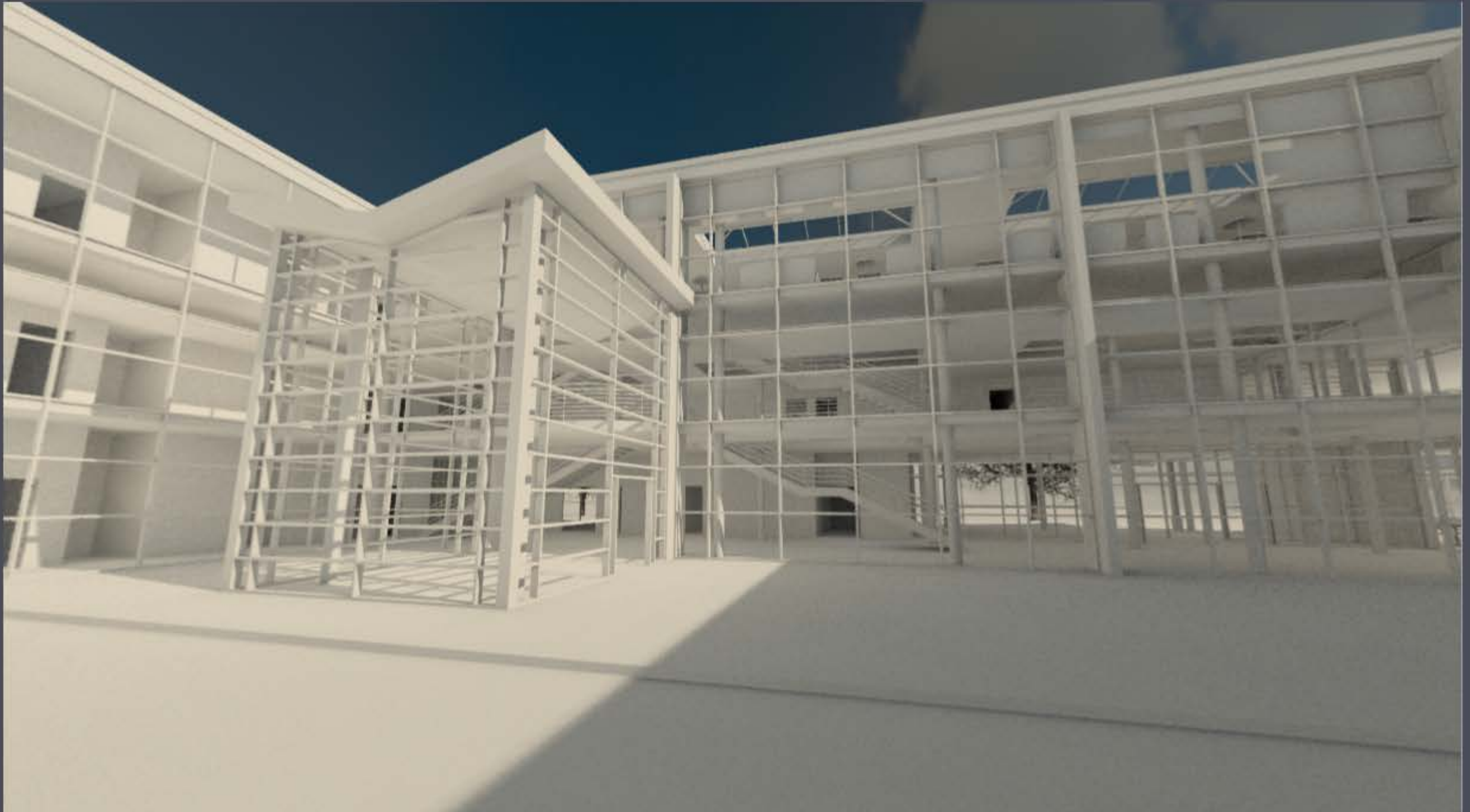
DOWNLOAD

DOWNLOAD SET

REMOVE SET



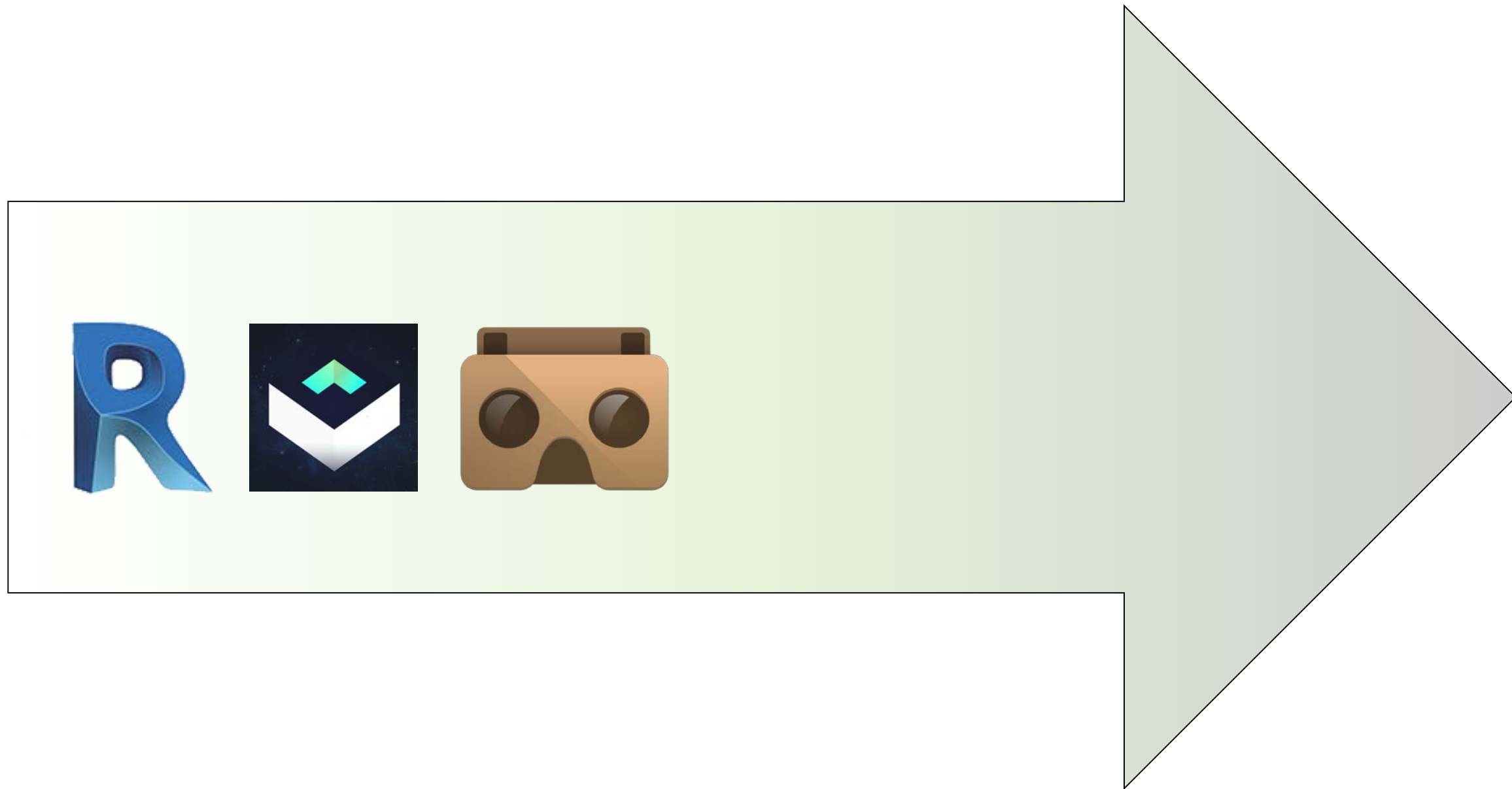




Lab activity 5

Lab activity 5

Easy



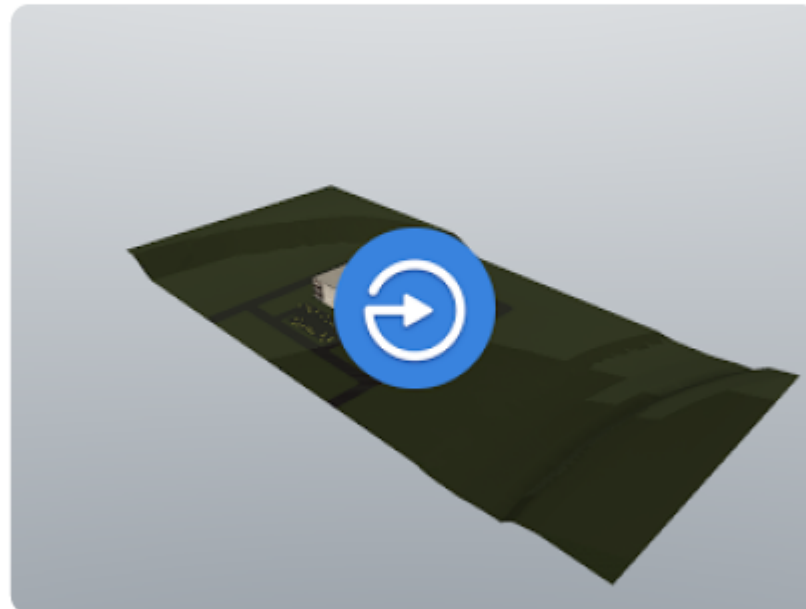
Hard

Lab activity 5

Start4_rac_advanced_sample_project



Expires on October 29 2016 at 11:27 PM null



<https://qvr.io/p/qnC9kE>



qrVR Exporter

qrVR Exporter

Exporting 3D Model...

Cancel

Starting...

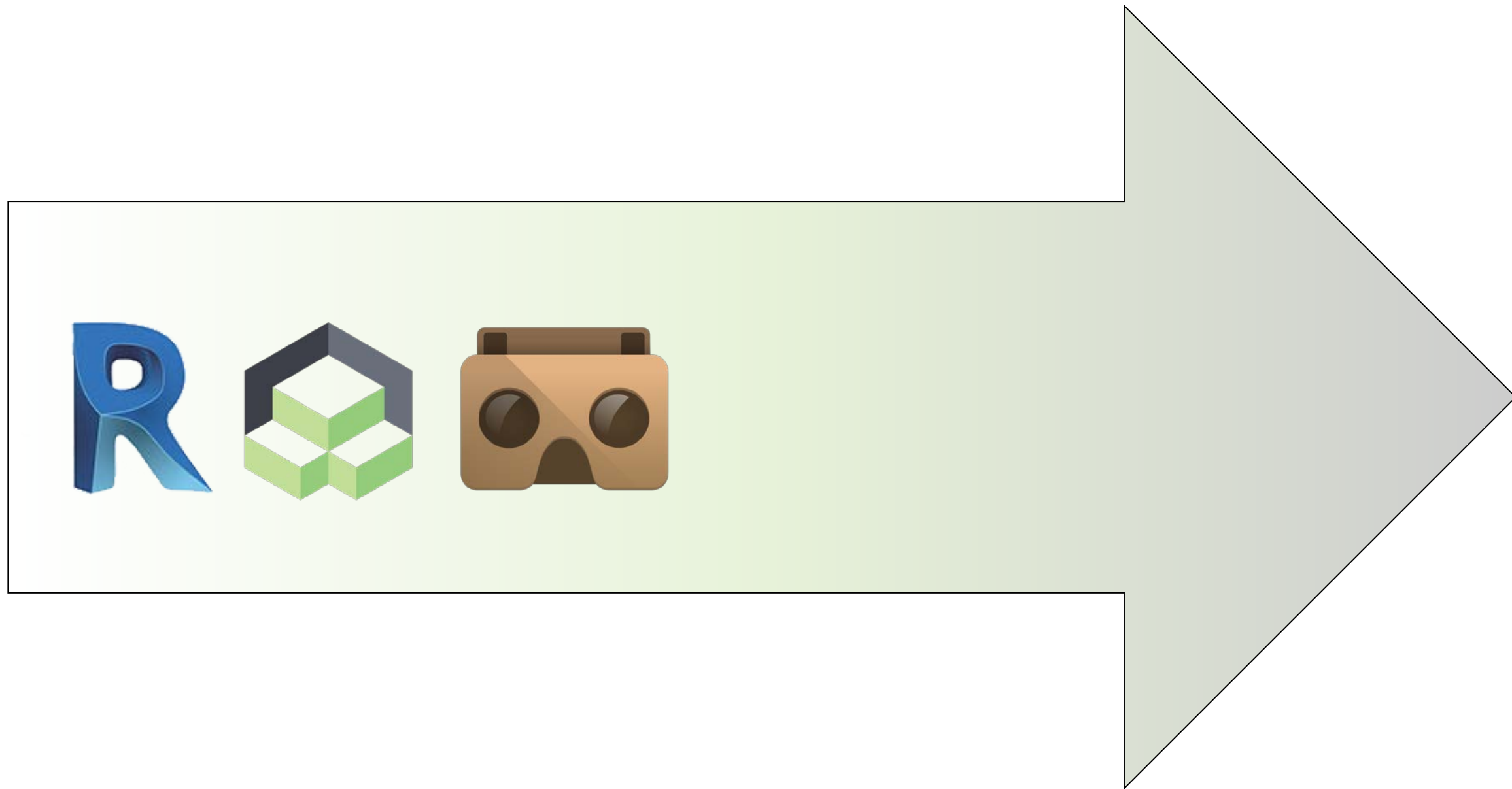
IMPORTANT NOTICE

On November, with the launch of our dedicated **paid** desktop app, the support for this extension will be shut down.

Lab ~~activity~~ 5 - Demo

Lab activity 5 - Demo

Easy



Hard

Lab activity 5 - Demo

LOG IN



Insite VR

The easiest way to visualize your designs in virtual reality.

REQUEST A DEMO

TRY FREE VIEWER

Lab activity 5 - Demo



[Help Center](#)



Mark Cronin ▾

Plan

Current Plan

Free
\$0
per month

- Up to 3 projects hosted
- 3 - 360 images per project

Current Plan

Enterprise
Contact Us

- Upload 3D models and 360 images from Revit, Sketchup, and Rhino.
- GearVR support

Contact Us



Lab activity 5 - Demo

[? Help Center](#)

Mark Cronin ▾

Au sample

Permission: [Upload & Publish](#) Project Code: 2016 Visibility: [Invite Only](#) Created By: Mark Cronin

[Home](#) / [Projects](#) / Au sample

🏠 3D Model

Title	Uploaded By	Status
-------	-------------	--------

You haven't added a 3D Model.
You can upload a 3D Model using the "Add 3D Model" button to the right.

🖼️ Unpublished 360 Images

Title	Uploaded By
-------	-------------

There are no 360 images pending publishing.

🖼️ 360 Images

Title	Uploaded By
-------	-------------

📌 o6. Med Res 3ds Max with
Landscape.jpg

[Details](#) Mark
Cronin

Actions

+ Add 360 Image

+ Add 3D Model

👤 View Team

🔧 Settings

⬇️ Download App

🔌 Start Presentation



Lab activity 5 - Demo





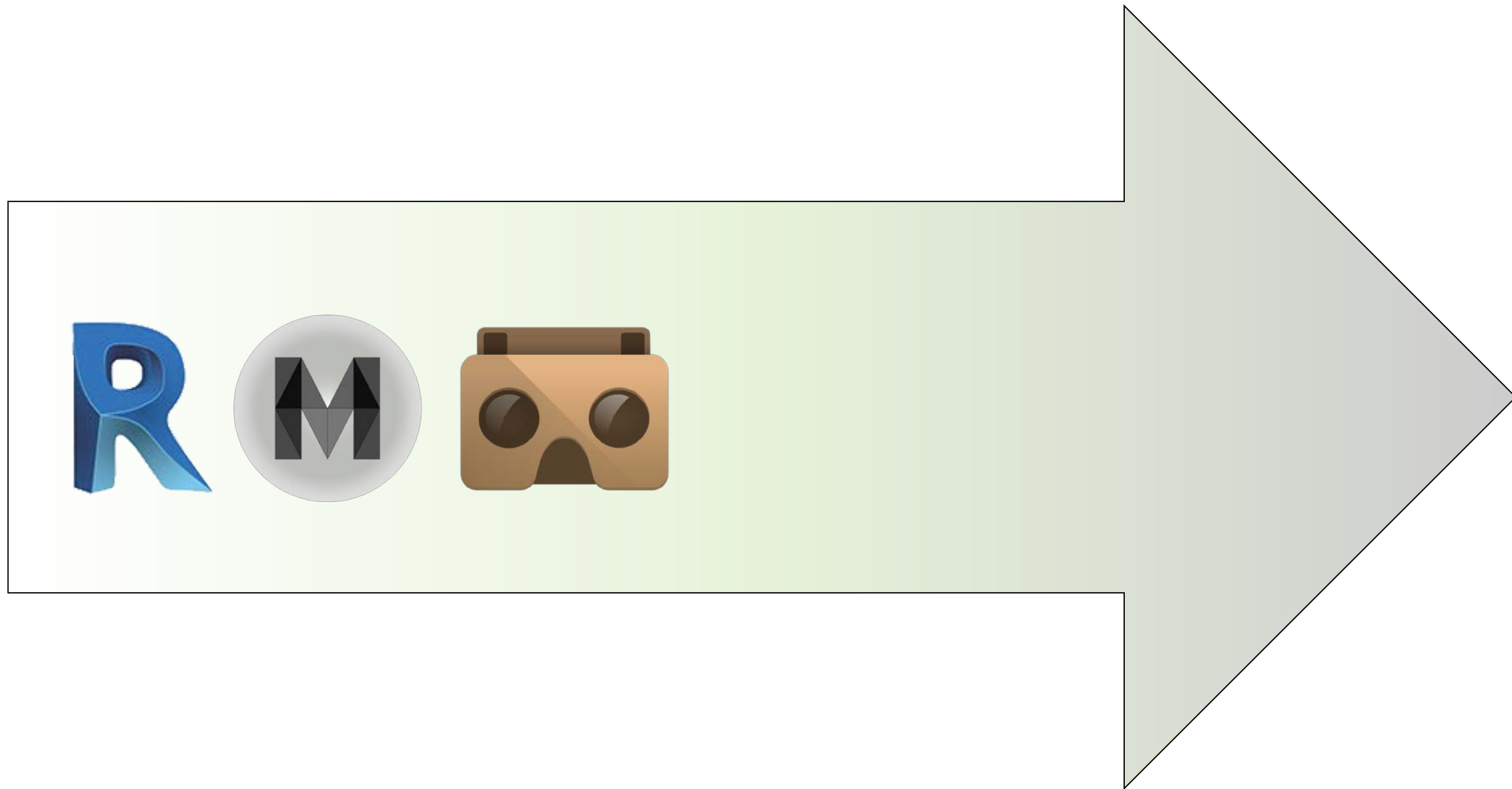
Lab activity 5 - Demo

- <https://www.insitevr.com/view/VJhVHL1nb>



Lab activity 5 - Demo

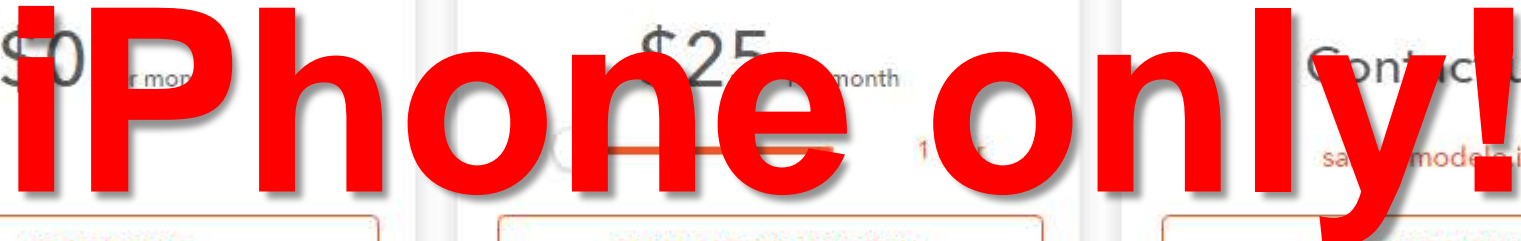
Easy






Project

Pricing Guide

Start collaborating in 3D with unlimited collaborators, for free.



Free	Studio	Enterprise
		
\$0/month	\$25/month	Contact us
SIGN UP FREE	START 14 DAYS FREE TRIAL	REQUEST A DEMO
<ul style="list-style-type: none">1 user5 GB of storageUp to 50 MB per model uploadUnlimited projects & collaboratorsVR viewingEmail and chat support	<ul style="list-style-type: none">Up to 10 users1 TB of shared storageUp to 1 GB per model uploadUnlimited projects & collaboratorsVR viewingClient share linksUser permission controlsSupport response within 24 hours	<ul style="list-style-type: none">More than 10 team membersUnlimited storageUnlimited file upload sizeUnlimited projects & collaboratorsVR viewingClient share linksUser permission controlsSupport response within 12 hours

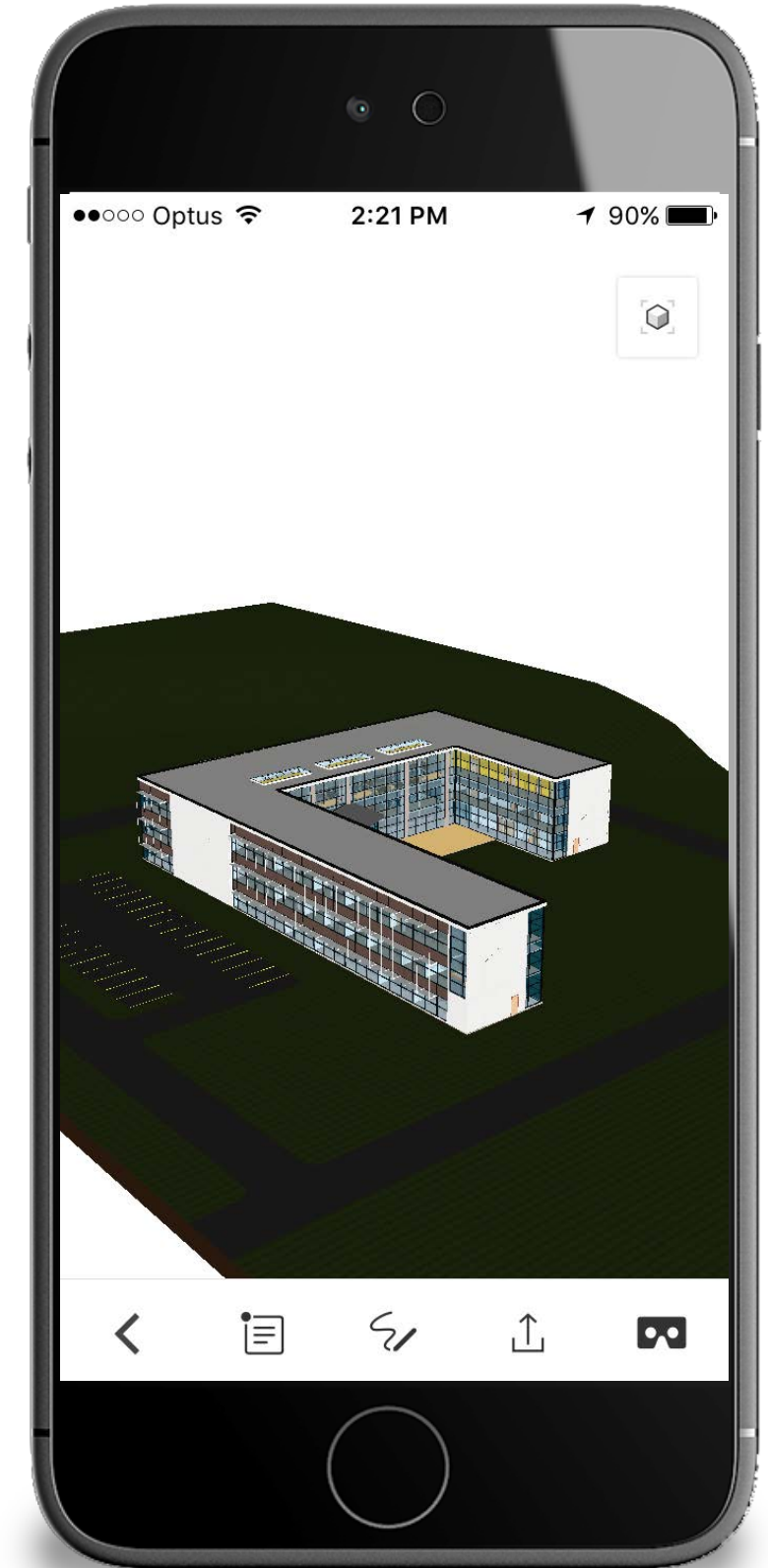
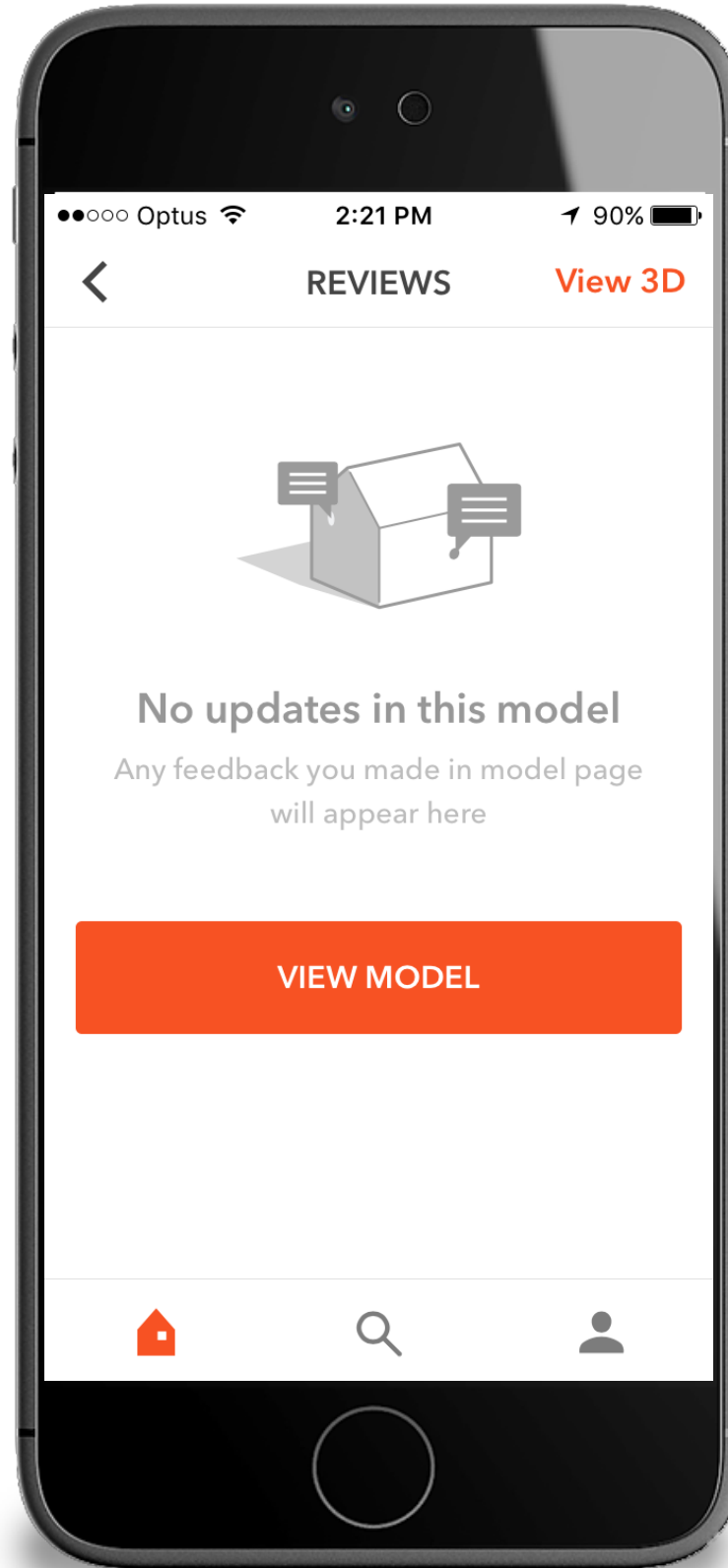
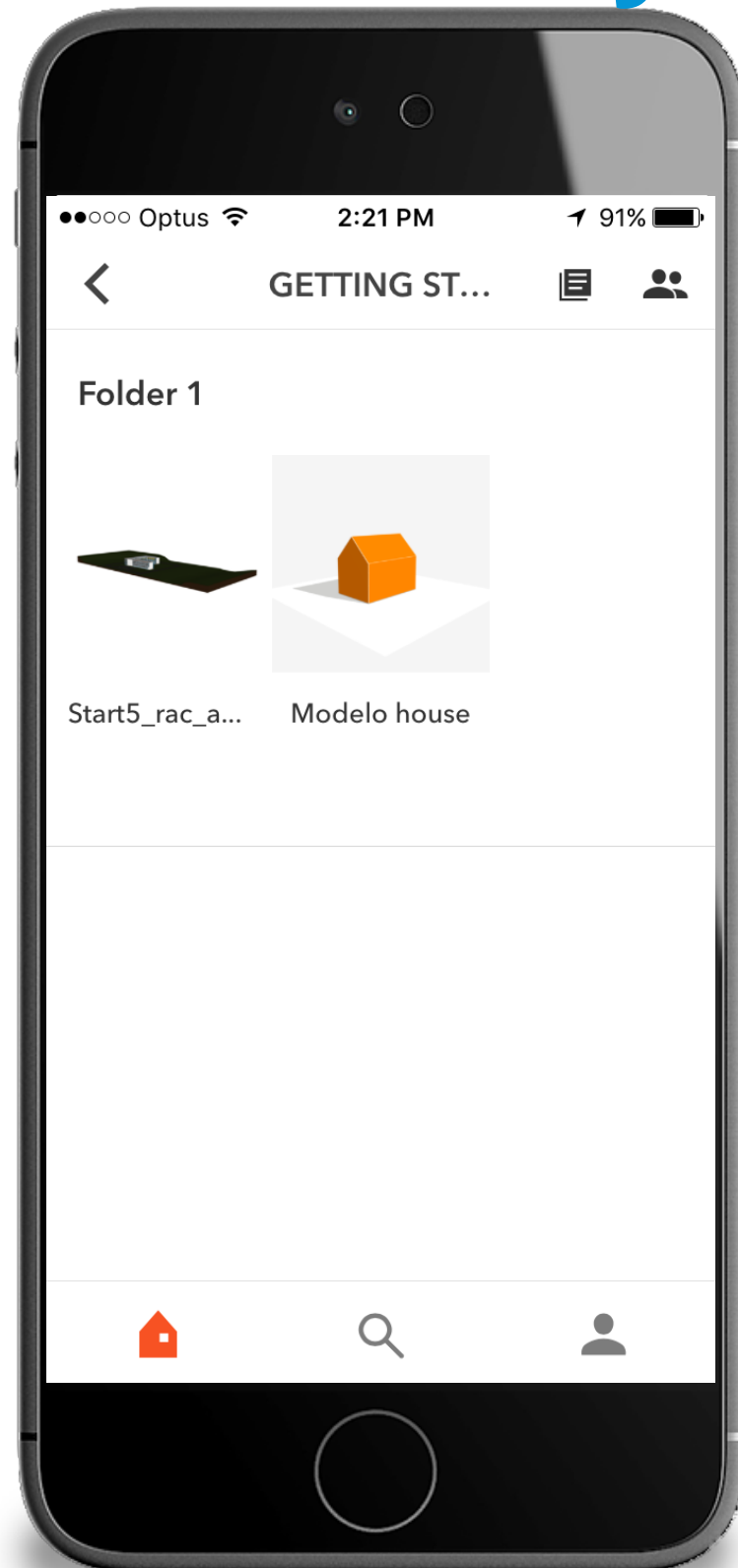


Lab activity 5

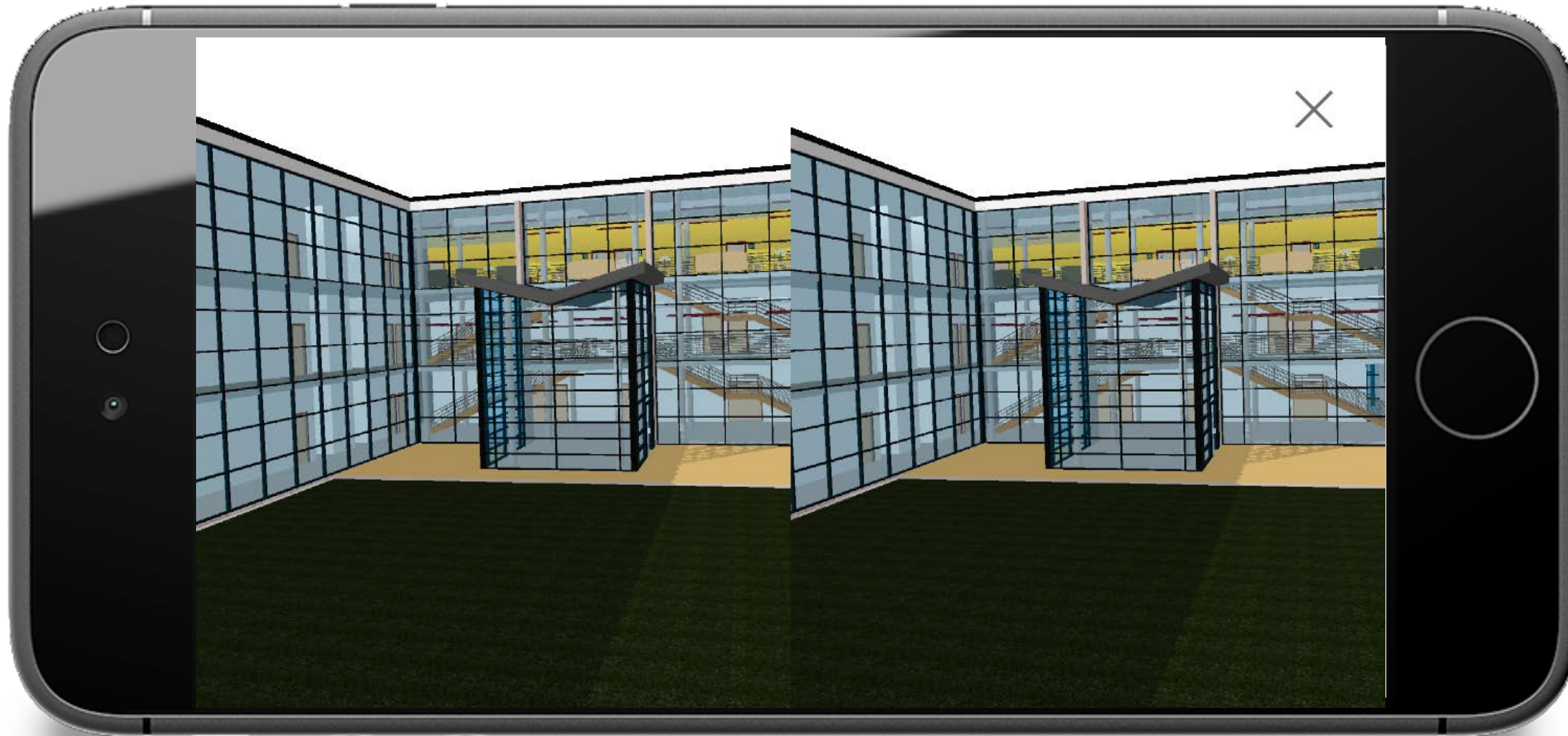
Video Link:

- Refer to Dataset (Lab Activity 5)

Lab activity 5 - Demo

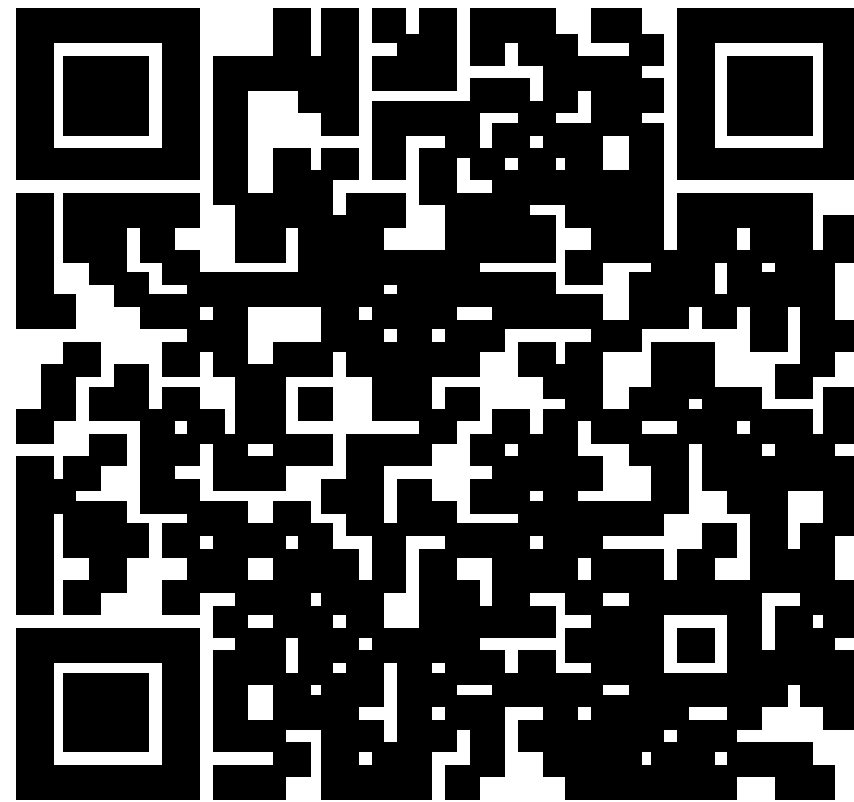


Lab activity 5 - Demo



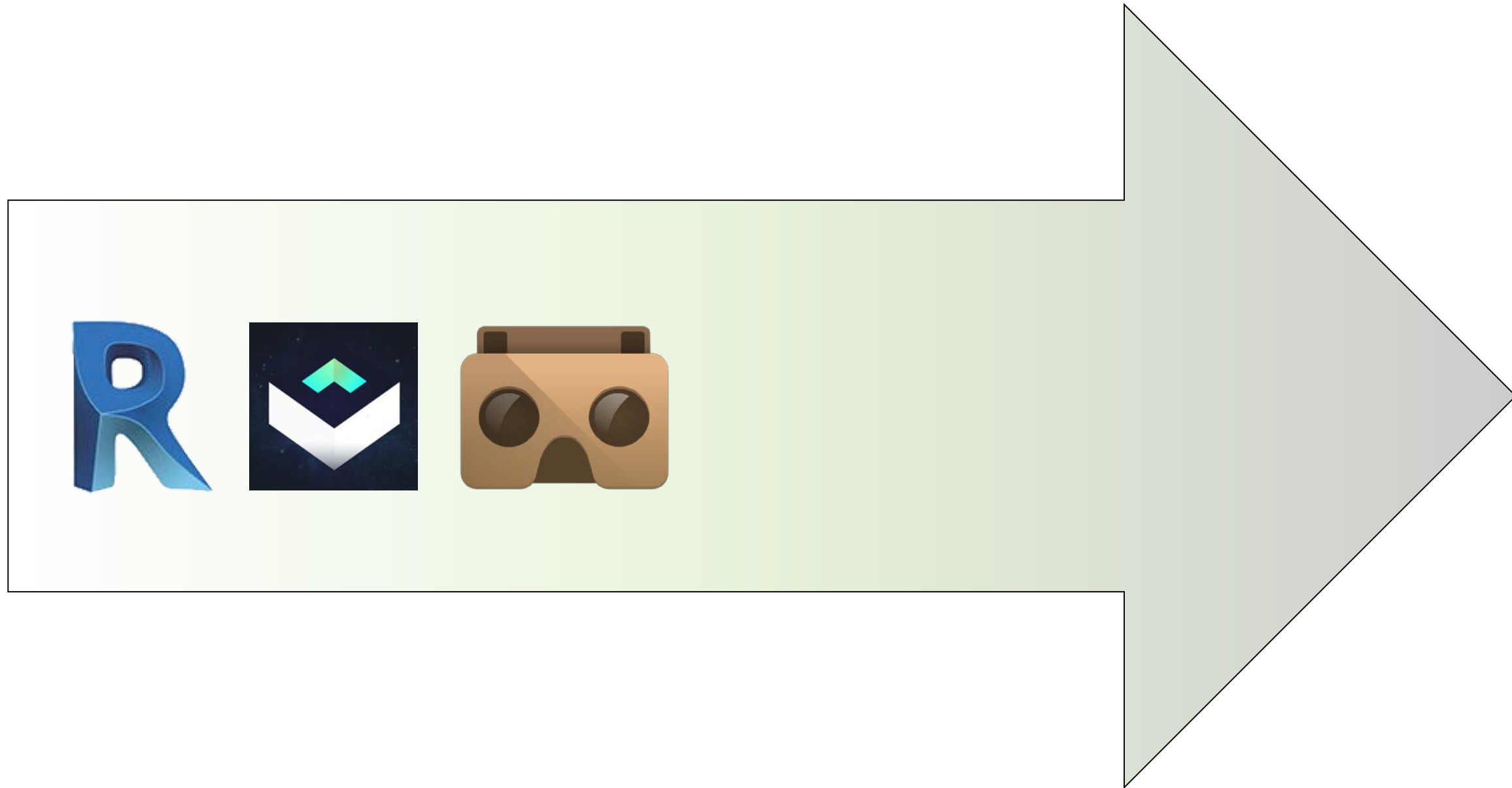
Lab ~~activity~~ 5 - Demo

- <https://beta.modelo.io/share-token/jDuOE0s5ji>



Lab activity 5 - Demo

Easy



Hard

Lab activity 5 - Demo

Powered by Kubity

[What is qrVR?](#)Play video

Learn more

Convert any 3D file to qrVR

SketchUp, Revit, Rhino & [more](#)

Drag your 3D file here



OR BROWSE



Cast from the qrVR app

Download the app



[Feedback](#)

[Get your Google CardBoard](#)

[About](#) [Partner](#) [Terms](#) [Privacy](#) [Support](#)

[English \(United States\)](#)

Lab ~~activity~~ 5 - Demo

Video Link:

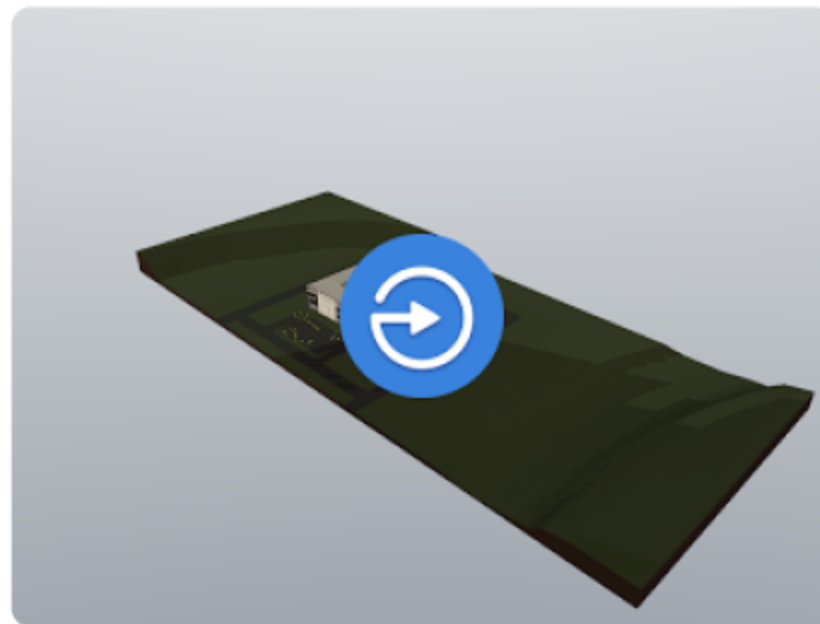
- Refer to Dataset (Lab Activity 5)

Lab activity 5 - Demo

Start5_rac_advanced_sample_project



Expires on November 17 2016 at 06:21 AM null



<https://qrvr.io/p/4ZBwsv>



Download the app



Download on the
App Store



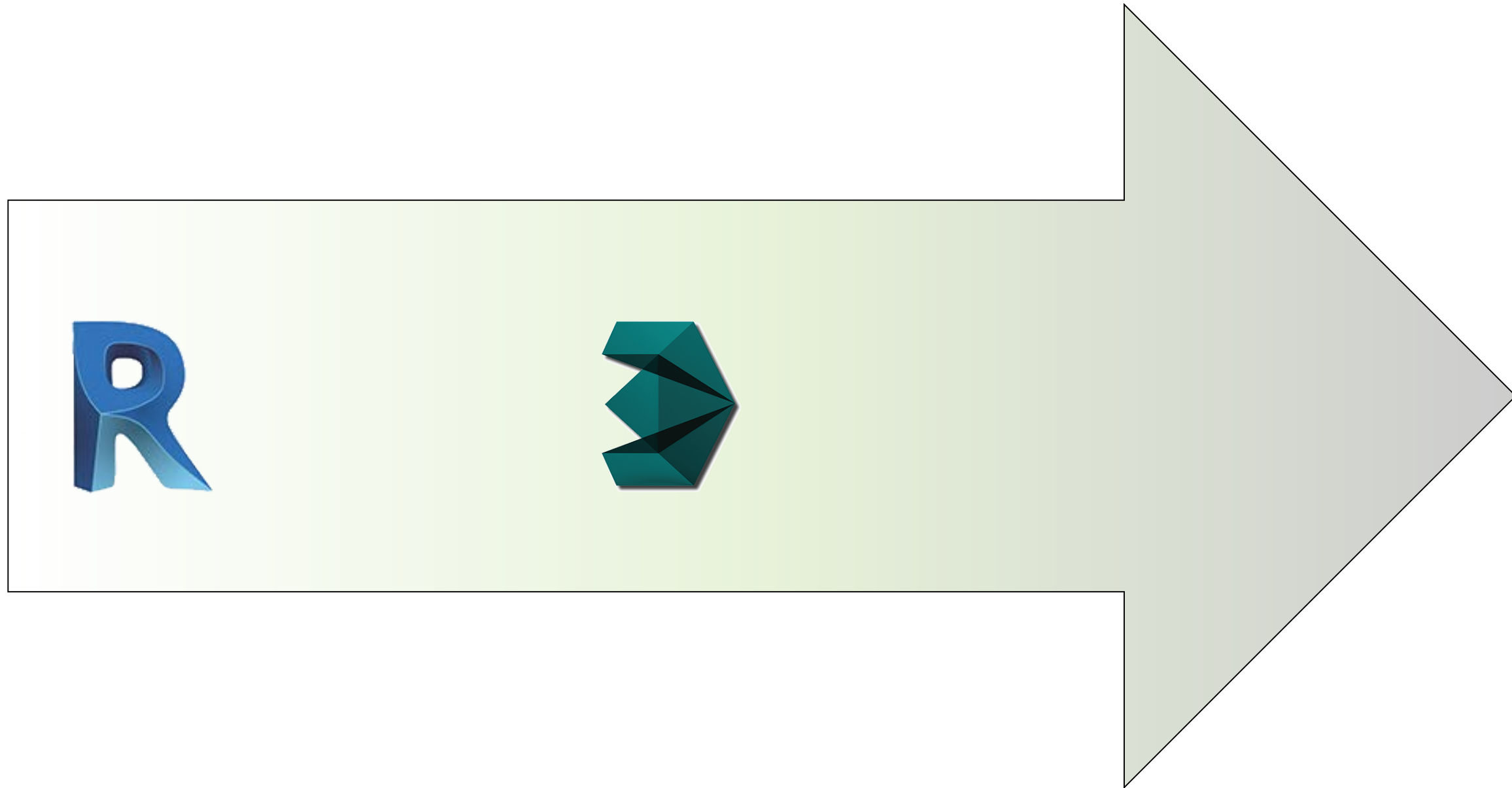
GET IT ON
Google Play



Lab activity 6

Lab activity 6

Easy



Hard

Lab activity 6

Summary of steps

- Export fbx file from Revit
- Import into 3ds Max
- Check exposure control
- Default render with panorama exporter

Lab activity 6

Continuing in Revit 2017, or alternatively open:

Open:

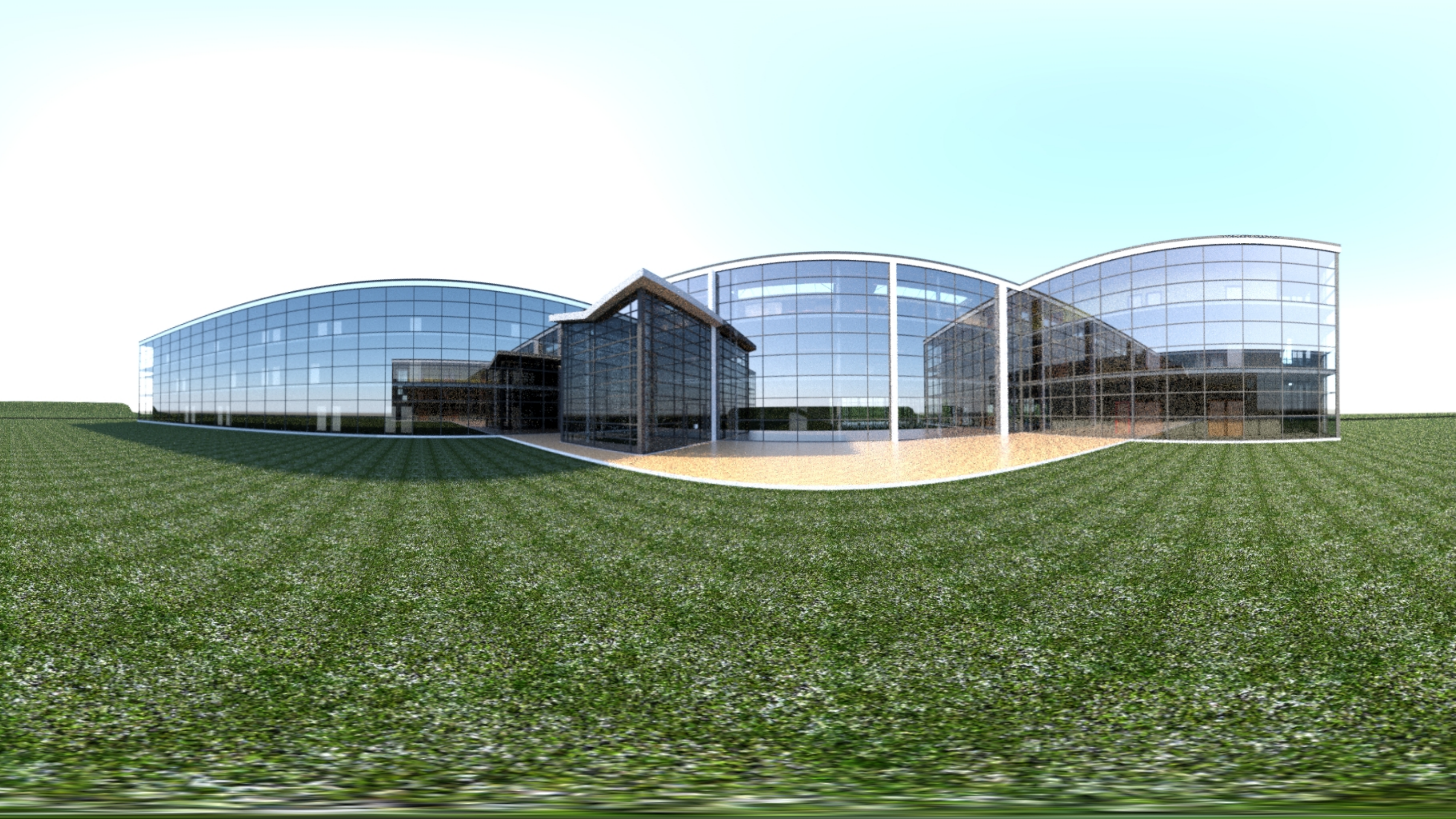
Start6_rac_advanced_sample_project.rvt

Located:

C:\Datasets\Lab01 San Polo 3401A\Revit to Cardboard\Lab Activity 6

If there is no dataset on your PC:

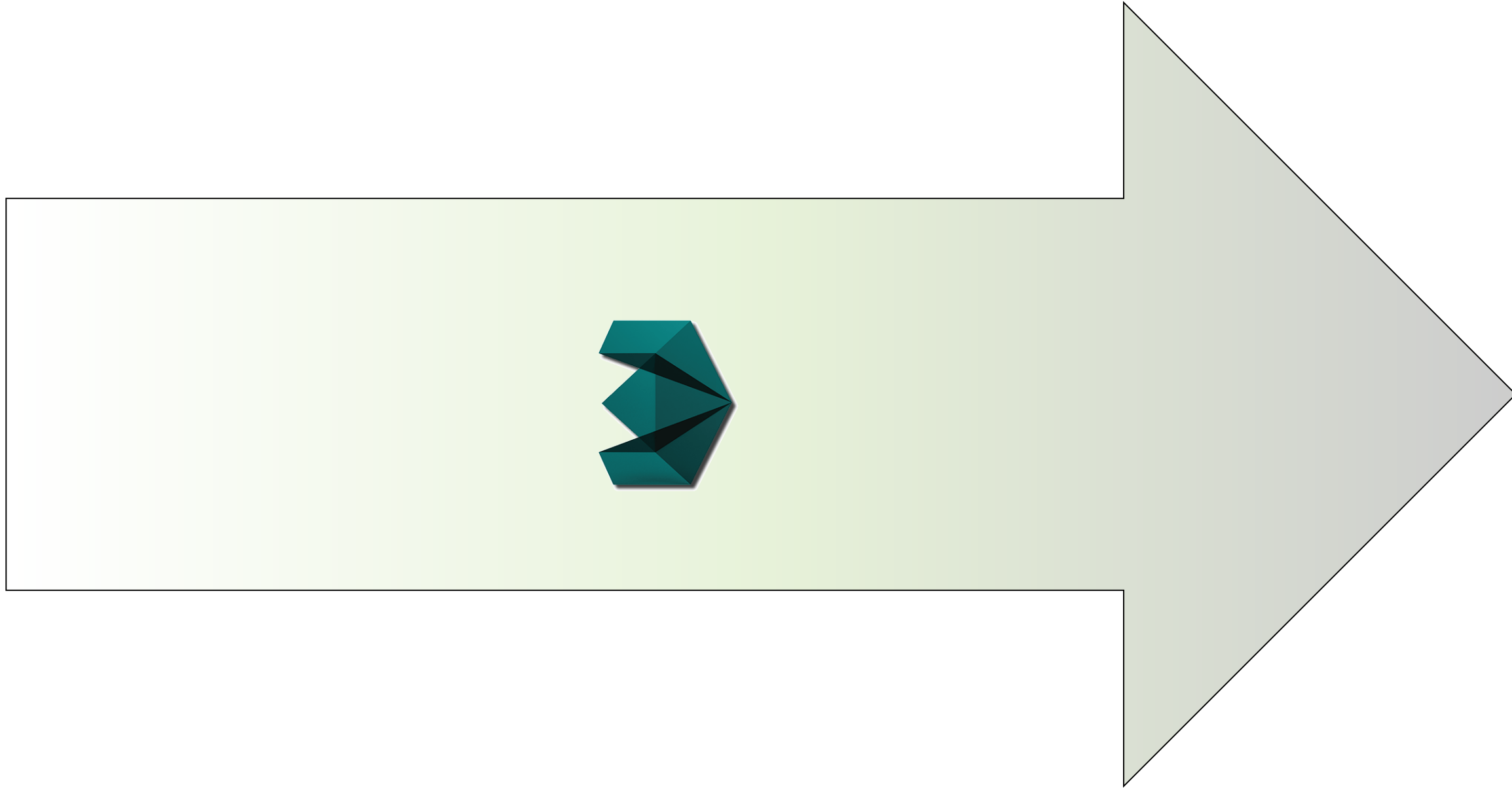
C:\Program Files\Autodesk\Revit 2017\Samples



Lab activity 7

Lab activity 7

Easy



Hard

Lab activity 7

Summary of steps

- Create and apply materials
- Adjust lighting
- Select different render engine
- Render with panorama exporter

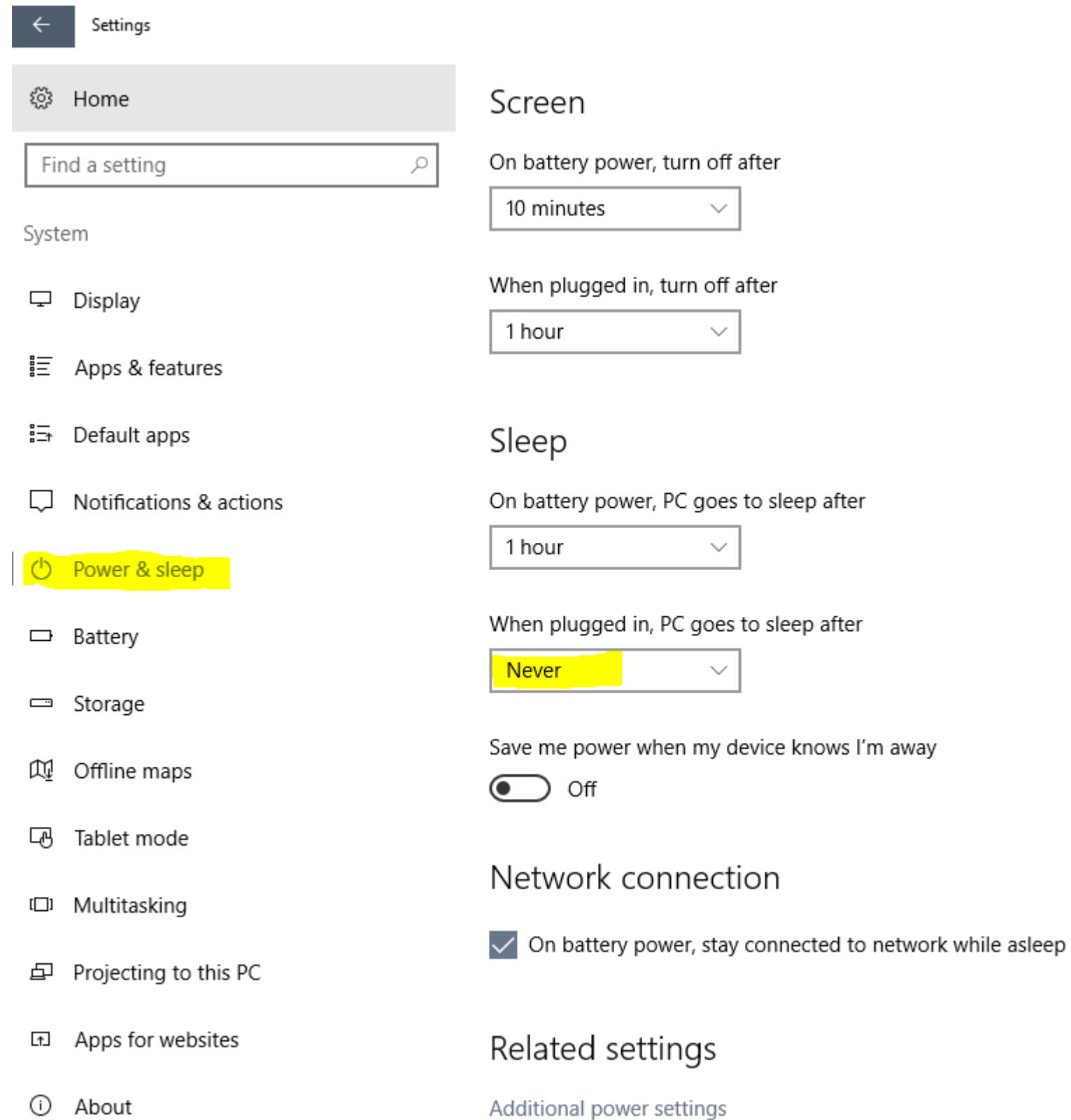
Lab activity 7

Continuing in 3ds Max 2017, open:
Start7_rac_advanced_sample_project.max

Located:

C:\Datasets\Lab01 San Polo 3401A\Revit to Cardboard\Lab Activity 7

Lab activity 7



The screenshot shows the Windows Settings application. The left sidebar contains a list of settings categories: Settings (with a back arrow), Home, Find a setting (search bar), System, Display, Apps & features, Default apps, Notifications & actions, Power & sleep (highlighted in yellow), Battery, Storage, Offline maps, Tablet mode, Multitasking, Projecting to this PC, Apps for websites, and About. The main content area is titled 'Screen' and 'Screen' settings. It includes two dropdown menus: 'On battery power, turn off after' set to '10 minutes' and 'When plugged in, turn off after' set to '1 hour'. Below these is the 'Sleep' section, which includes two more dropdown menus: 'On battery power, PC goes to sleep after' set to '1 hour' and 'When plugged in, PC goes to sleep after' set to 'Never' (highlighted in yellow). There is also a toggle switch for 'Save me power when my device knows I'm away' which is currently 'Off'. The 'Network connection' section has a checked checkbox for 'On battery power, stay connected to network while asleep'. At the bottom, there is a 'Related settings' section with a link to 'Additional power settings'.

Settings

Home

Find a setting

System

Display

Apps & features

Default apps

Notifications & actions

Power & sleep

Battery

Storage

Offline maps

Tablet mode

Multitasking

Projecting to this PC

Apps for websites

About

Screen

On battery power, turn off after

10 minutes

When plugged in, turn off after

1 hour

Sleep

On battery power, PC goes to sleep after

1 hour

When plugged in, PC goes to sleep after

Never

Save me power when my device knows I'm away

Off

Network connection

☒ On battery power, stay connected to network while asleep

Related settings

[Additional power settings](#)







Share with
your friends



**Virtual Reality is here and it's
bringing the world closer than you think.**

Download the App to your device

You can get the QUT Global Goggles experience on both iOS and Android devices.



Lab activity 7

Refer to app. Download from:

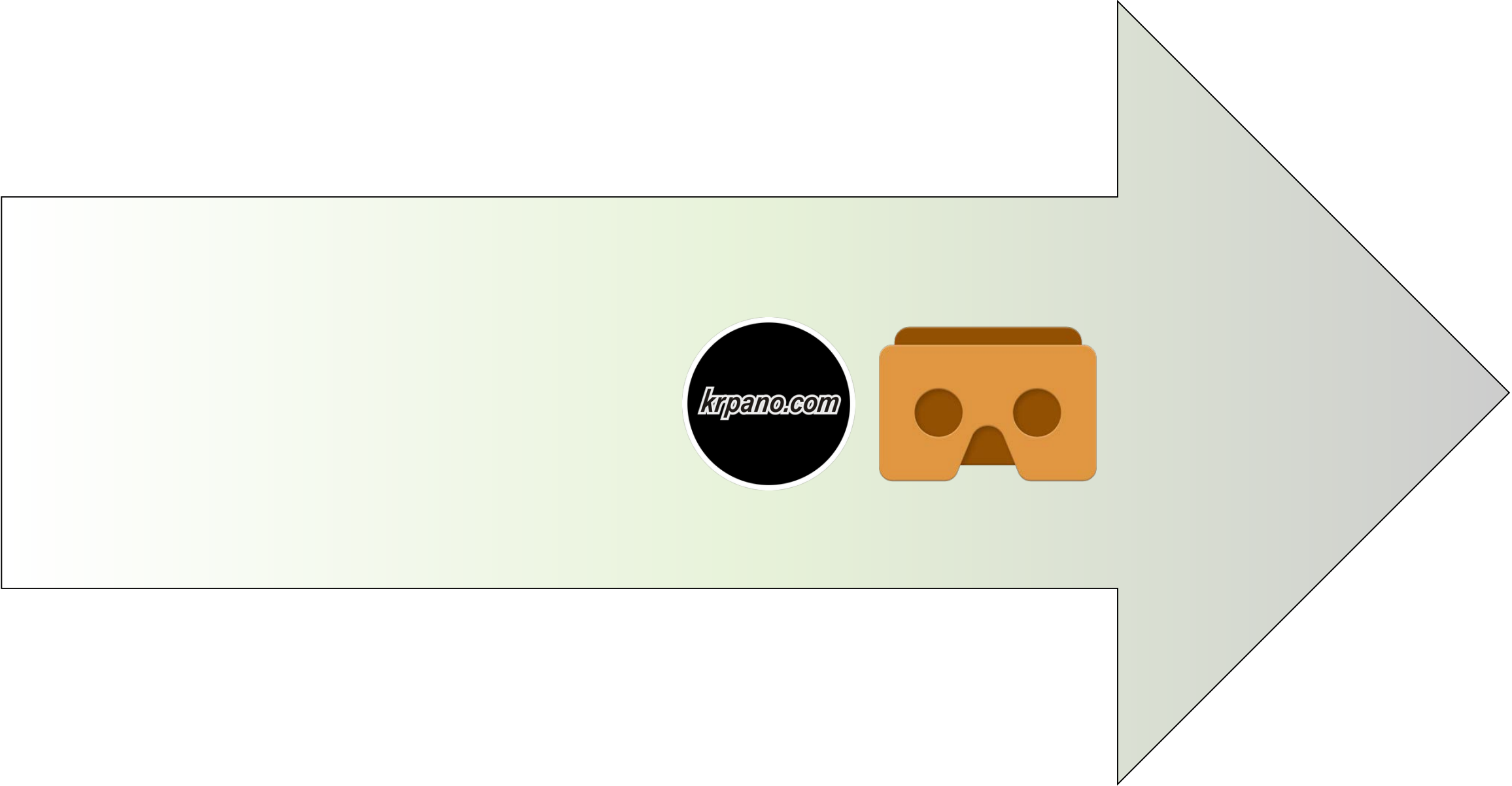
- <http://qutglobalgoggles.com/>

Additional Lab Demo



Additional Lab Demo

Easy



Project



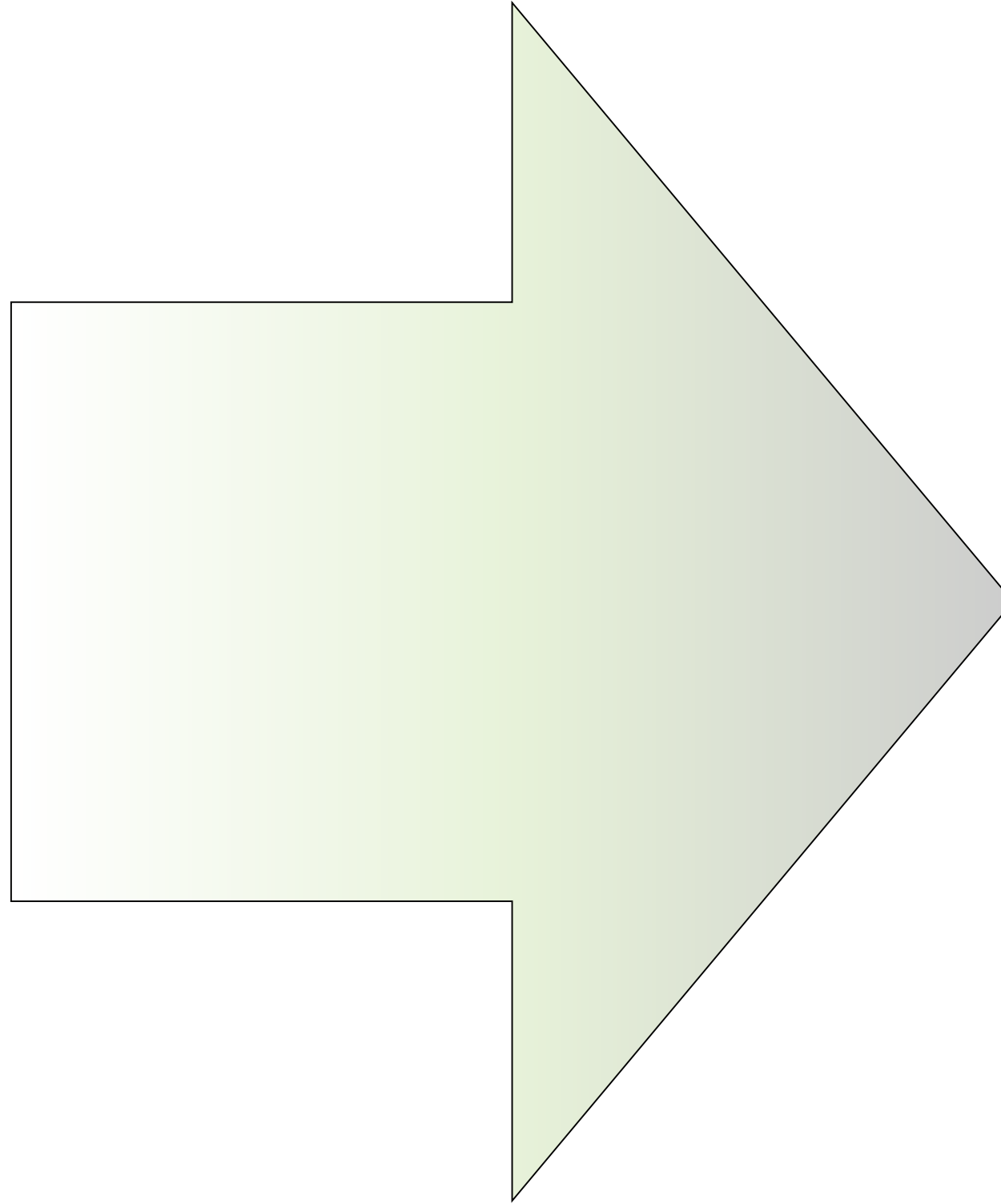
Additional Lab Demo

- Continuing with the content created in previous lab activities
- Preparing files for hosting on your own website
- Preparing tours (multi-scene via hotspost)

Additional Lab Demo

Image files

- Burleigh_Church_VR.jpg
- Griffith Uni Library_VR_LEFT.jpg
- Griffith Uni Library_VR_MIDDLE.jpg
- Griffith Uni Library_VR_RIGHT.jpg
- Mater_Redlands_OT_VR_VIEW_01.jpg
- Mater_Redlands_OT_VR_VIEW_02.jpg
- Mater_Redlands_OT_VR_VIEW_03.jpg
- University of Papua New Guinea_BSPP_VR.jpg
- Waigani_Aerial_VR.jpg
- Waigani_Court_VR.jpg
- Waigani_Entry_VR.jpg



- aspnet_client
- Cust
- panos
- plugins
- skin
- index.html
- PT_Logo.png
- PTH_Logo.png
- tour.js
- tour.swf
- tour.xml
- tour_editor.html

Web ready



Additional Lab Demo

Video Link:

- Refer to Dataset (Lab Demo 8)

Additional Lab Demo

Video Link:

- Refer to Dataset (Lab Demo 8)

Additional Lab Demo

All sample renders from today
hosted on Peddle Thorp's
website via krpano

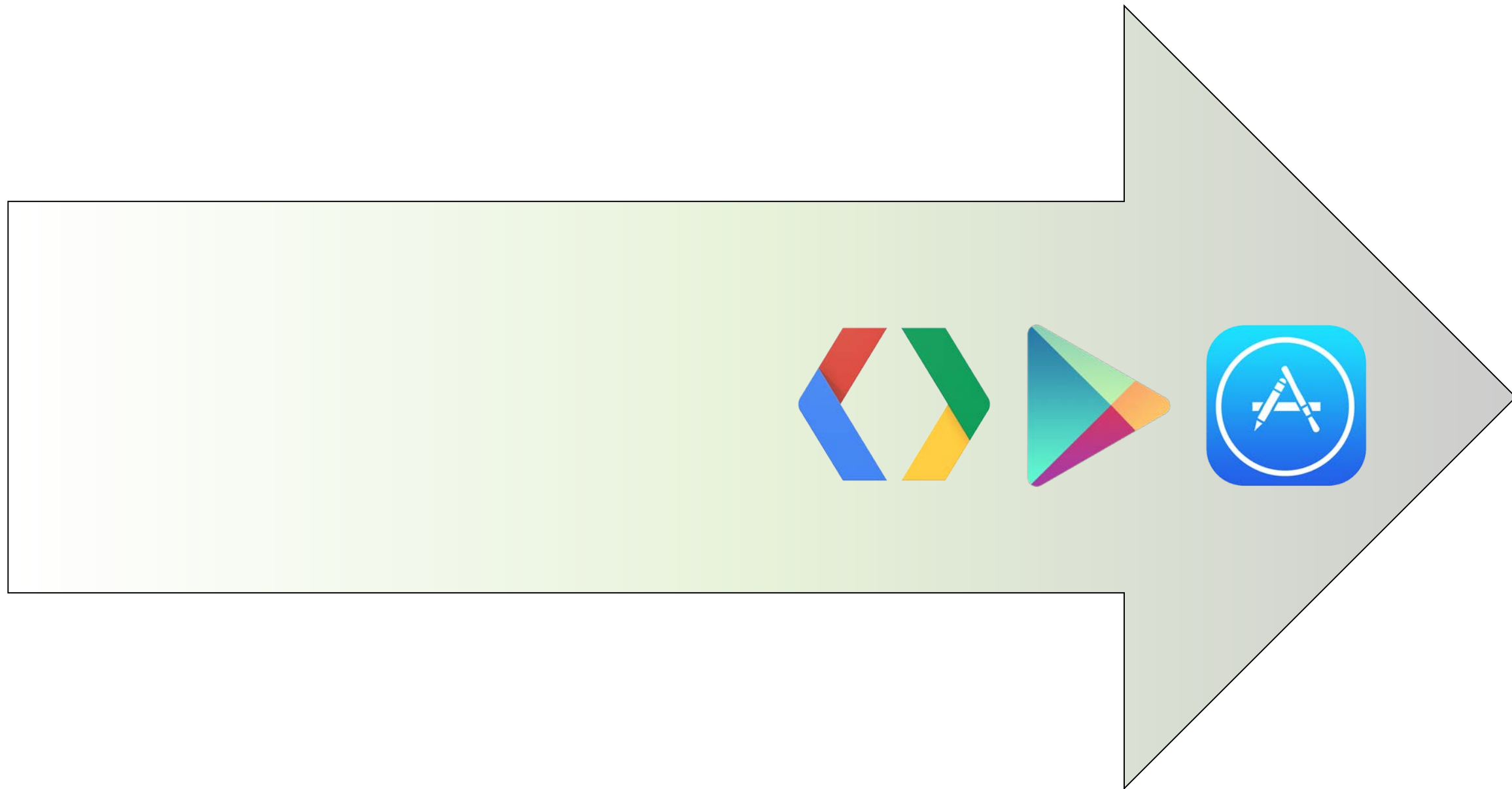
<http://vr.peddlethorp.com.au/AU2016/>



More Advanced Concepts

More Advanced Concepts

Easy



Hard

More Advanced Concepts



LIVEDESIGN



STINGRAY



More Advanced Concepts



Google Developers

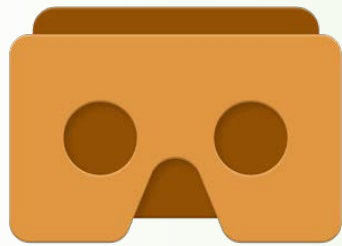
```
1 package com.autodesk.a360cardboard;
2
3 import com.google.vrtoolkit.cardboard.CardboardActivity;
4
5 import android.annotation.SuppressLint;
6 import android.content.Context;
7 import android.os.Build;
8 import android.os.Bundle;
9 import android.os.Vibrator;
10 import android.util.Log;
11 import android.webkit.WebSettings;
12 import android.webkit.WebView;
13 import android.webkit.WebViewClient;
14
15 public class MainActivity extends CardboardActivity {
16
17     private static final String TAG = "A360CardboardActivity";
18     private static final int DELAY = 500;
19
20     private Vibrator mVibrator;
21     private WebView mWebView;
22     private boolean mInModel;
23     private boolean mClicked;
24     private boolean mHandled;
25     private int mClickCount;
26
27     @SuppressWarnings("SetJavaScriptEnabled")
28     @Override
29     public void onCreate(Bundle savedInstanceState) {
30         super.onCreate(savedInstanceState);
31
32         mVibrator = (Vibrator) getSystemService(Context.VIBRATOR_SERVICE);
33         mClicked = false;
34         mHandled = false;
```



Future Direction (Summary)

Future Direction (Summary)

NOW



Future

Welcome to Vrok-it!

"Vrok" is a combination of *Virtual Reality Online Collaboration* and the verb *to grok*. Vrok-it allows multiple people to grok a 3D model in a way that simply wasn't possible before.

Getting started

Click the QR code – or scan it from your phone – to launch a stereoscopic 3D viewer for [Google Cardboard](#)* connected to this session. The 3D models you load via this page – and operations you perform on them – will be visible to all connected viewers. You can upload your own models, but for best results keep these under 2MB in size.

Here's a video of Vrok-it in action showing both this master page and a connected client device:



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VR Viewer

Build a shareable VR model that updates in real-time.

Flux Labs - Design Iterations in SketchUp using Virtual Reality



FLUX +  FLUX Labs

SketchUp in VR w/ Flux

— <https://labs.flux.io/flux-unity-viewer/>

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Future Direction (Summary)



Daydream View



Future Direction (Summary)



 Windows 10



Future Direction (Summary)

Video Link:

- <https://www.microsoft.com/microsoft-hololens/en-us>

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Video link:

- <https://www.google.com/get/cardboard/plastic/>

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