AB1778 - As-Built and Conceptual Modeling with Autodesk® ReCap™, Autodesk® Revit®-Based Software, and Autodesk® AutoCAD®

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AUTODESK®

Class summary

Reality capture is becoming predominant in architectural, engineering, or construction work. Using the Autodesk ReCap family of products and services in conjunction with Autodesk applications, it's now becoming very easy to design in context using as-built scanned data as a reference. This class teaches you how to take advantage of new workflows based on ReCap software for several use cases that are related to BIM, such as retrofitting a renovation, conceptual modeling, and so on, using both laser scanners and photographs.

Key learning objectives

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

- Use reality capture workflows for BIM
- Prepare laser scans for Autodesk applications using ReCap Pro
- Create a 3D model from photos using ReCap Photo
- Use ReCap data in Autodesk AutoCAD and Autodesk Revit

Autodesk ReCap Pro

Autodesk® ReCap™

A family of software and services to create intelligent 3D data from photos and scans

Autodesk® ReCap Family of Products & Services

ReCap

- Desktop product for editing and visualizing 3D data from laser scans
- Processes scans from any device and export to Autodesk products
- Autodesk 360 cloud publishing for sharing laser scans and 3D data
- Easy-to-use with intuitive GUI

ReCap Pro

Same features as ReCap plus:

- Snap registration for in-field data preparation and verification
- Add survey control to 3D data to tie into control and verify accuracy

ReCap 360

- Central portal for all Reality Capture clouds services
- **ReCap 360 Real View:** Web service for sharing and collaboration of scans
- **ReCap 360 Photo:** Photo-to-3D Web service

Autodesk® ReCap For Laser Scanning

Indexation, Clean up, Regioning
3D & Panoramic Viewing on desktop
Pro only: Point cloud to point cloud Registration

Autodesk® ReCap vs ReCap Pro

Laser Scans Features	ReCap	ReCap Pro
Indexing	●	●
Visualization	●	●
Measurements	●	●
Editing	●	●
Scan Publication to ReCap 360	●	●
Scan-to-scan Registration		●
Survey Control Verification		●

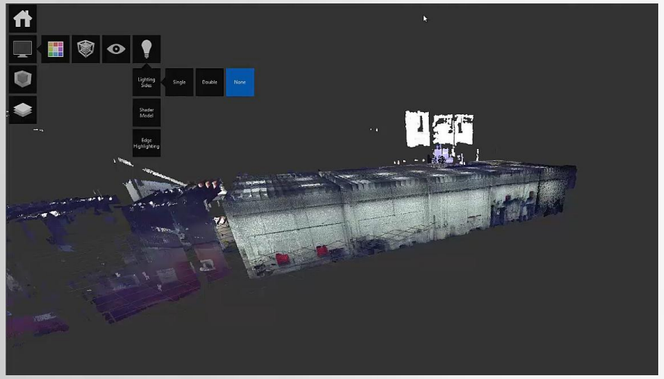
ReCap Pro is the same product (same installer) as ReCap with license-enabled additional features.

Demo

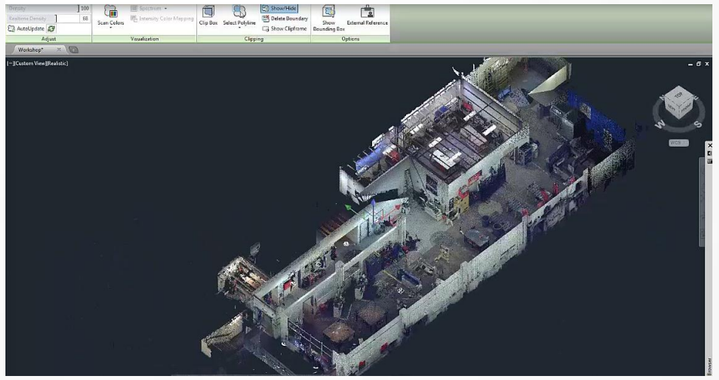
Autodesk® ReCap™ Industry Workflows

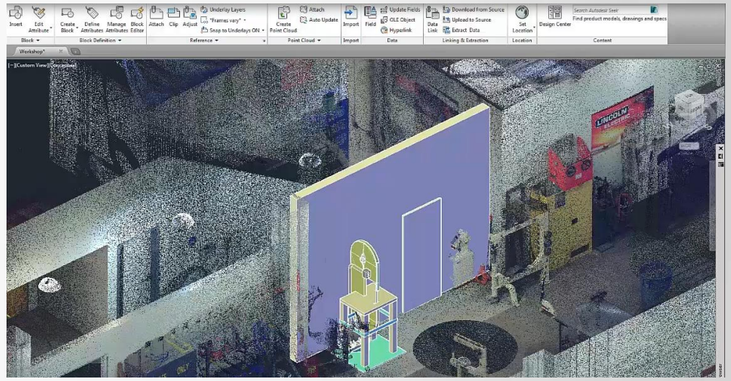
Building Retrofit

Autodesk® ReCap Pro



AUTODESK AUTOCAD 2014



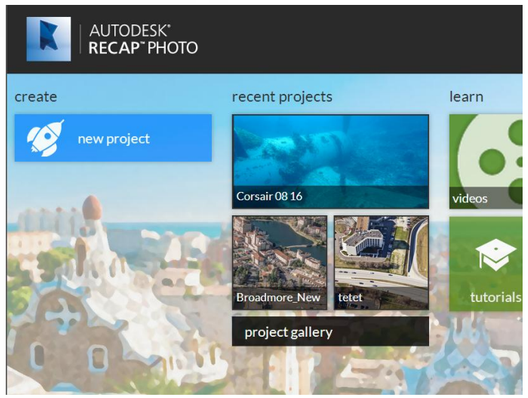


Courtesy of TechShop San Francisco

Autodesk ReCap Photo

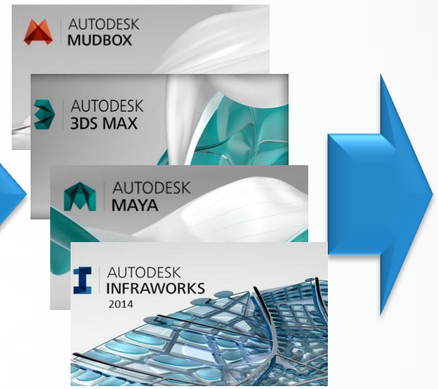
Autodesk® ReCap 360 Photo

Photos

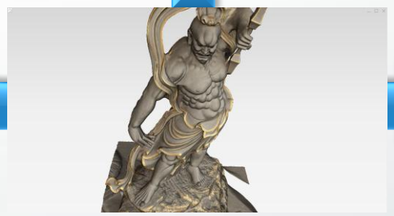


http://recap.autodesk.com

3D Mesh



Very large meshes

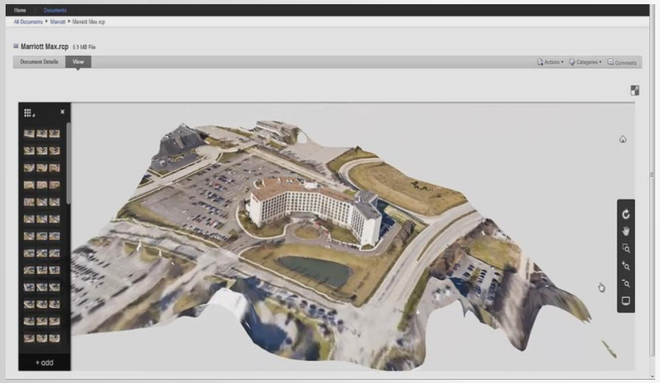


Project Memento

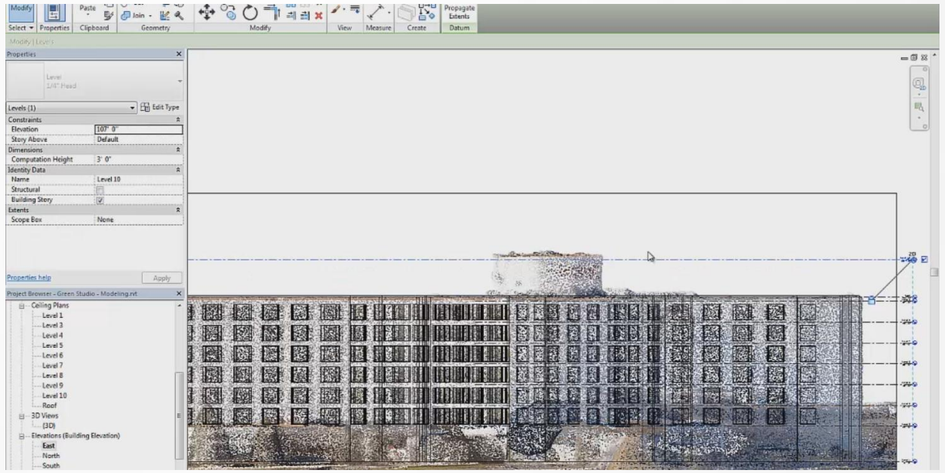
Autodesk® ReCap™ Industry Workflows

Rapid Energy Modeling

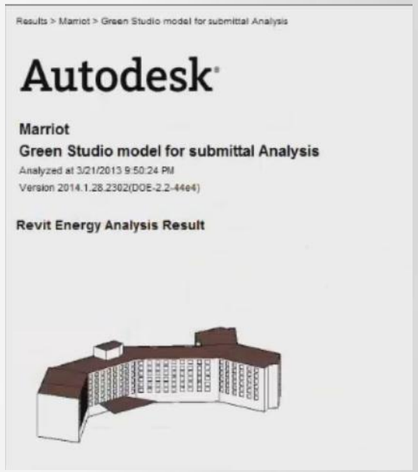
Autodesk® ReCap 360 Photo



AUTODESK REVIT

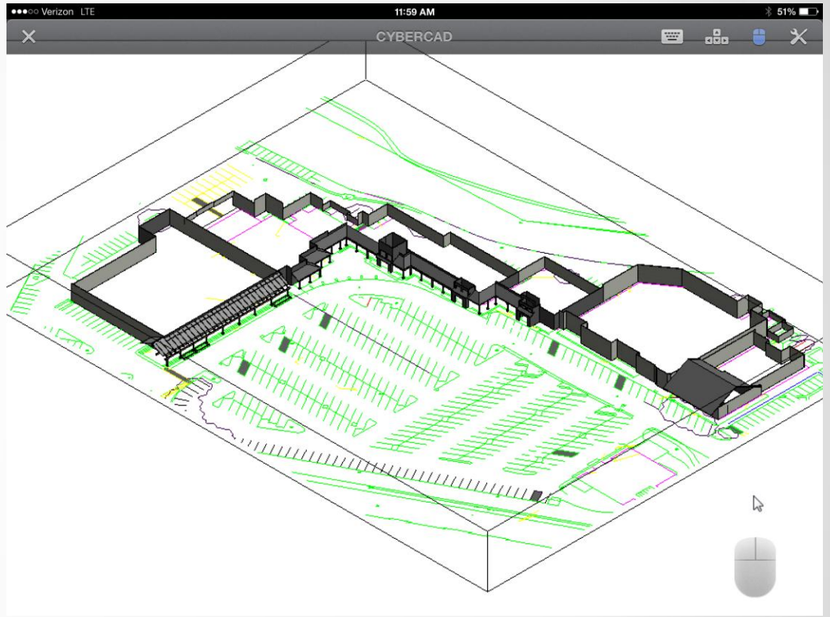


Autodesk®
Green Building Studio



Courtesy of Janko Group and Tigerhill Studio

From GoPro images to a Revit Model



Courtesy of

U.S. CAD ACHIEVE MORE.

Perkowitz + Ruth ARCHITECTS

Towards a Bigger Picture

range sensors

laser scanning

scan to BIM

feature recognition

point survey

photogrammetry

hybrid modeling

mesh healing

survey control

augmented reality

measurement

time delta analysis

machine controlled grading

3d printing

reverse engineering

metrology

range sensors

Capture

feature recognition

Manipulation

point survey

photogrammetry

mesh healing

Reality Computing

#RealityComputing

survey control

measurement

time delta analysis

Realization

Analysis

machine controlled grading

metrology

range sensors
laser scanning
scan to BIM
feature recognition
Capture
Reality Computing
point survey
Manipulation
photogrammetry
hybrid modeling
mesh healing
#RealityComputing
(post on AU 2013 mobile app!)
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time delta analysis
Realization
@rcklr
machine controlled grading
Analysis
3d printing
reverse engineering
metrology

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