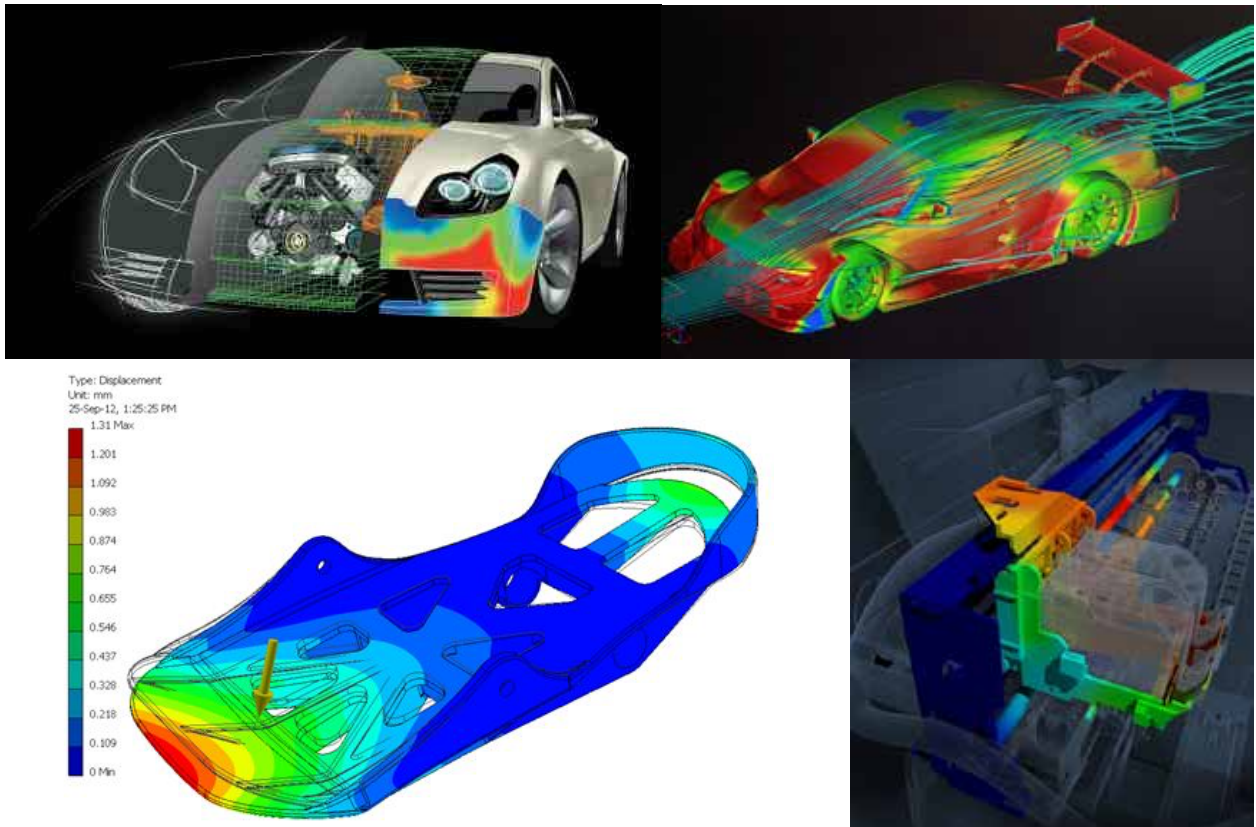




Andy Chan MBsHK MHKIBIM

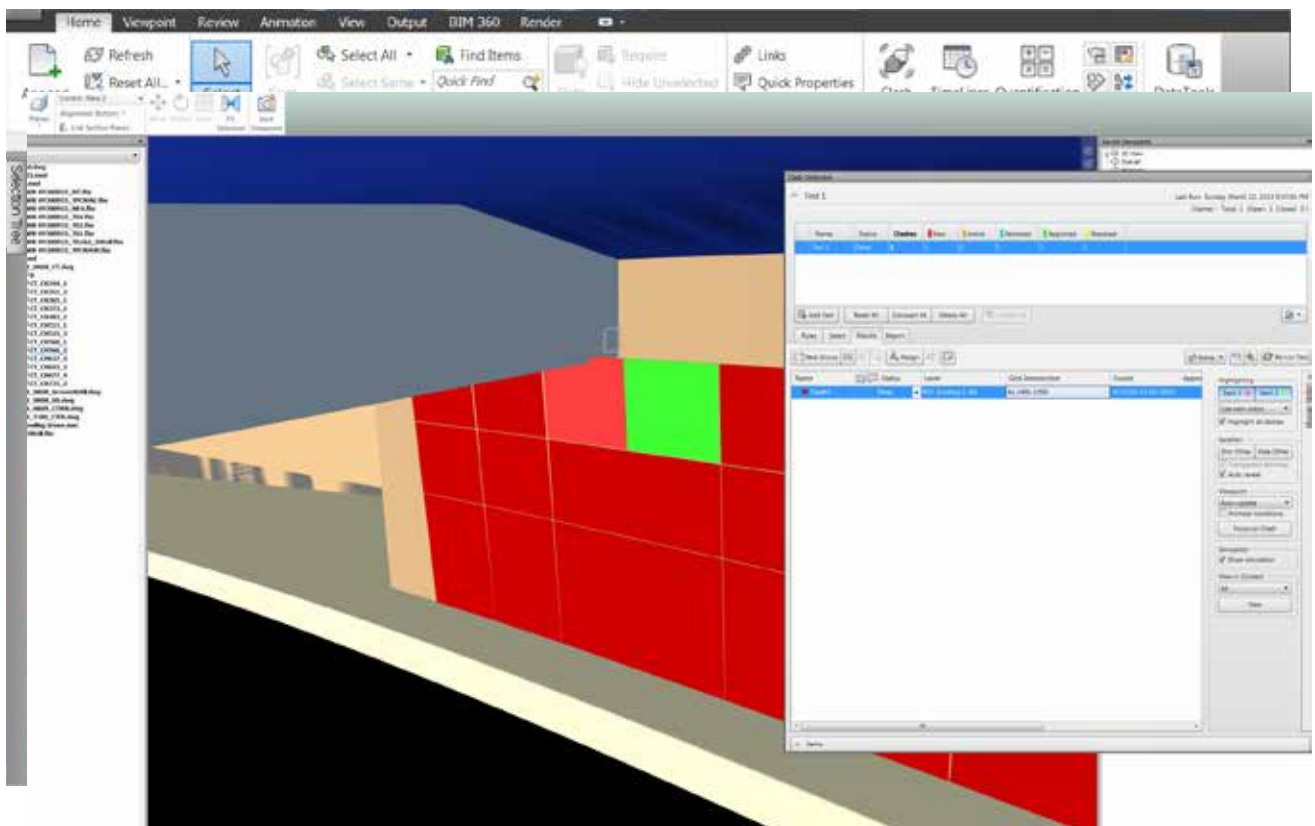
BIM Fundamental : Digital Prototyping



BIM is not Visualization



BIM :Reliable database for decision



BIM is an intelligent model-based Process

US National BIM Standard:

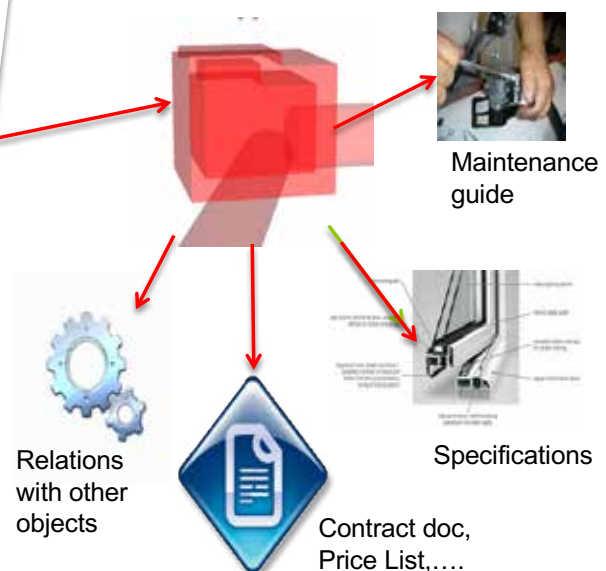
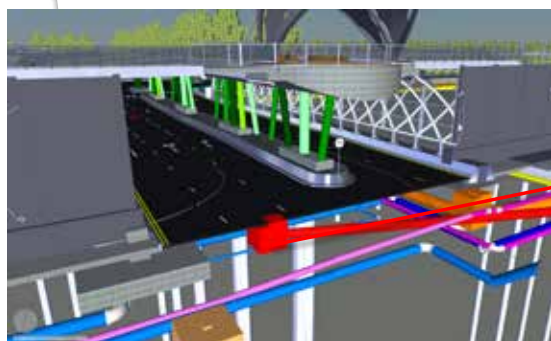
- digital representation of physical facility
- shared knowledge resource for information
- reliable basis for decisions during its life-cycle

London Blackfriars station, courtesy of Network Rail and Jacobs®

Understanding Building Information Modeling

CAD: lines, arcs, solids and surfaces
vs

BIM objects: have an identity, attributes &
data repository for processing



BIM: Information Driven Model

Construction Instant

Construction System

Physical
Constraint

Induced
Properties

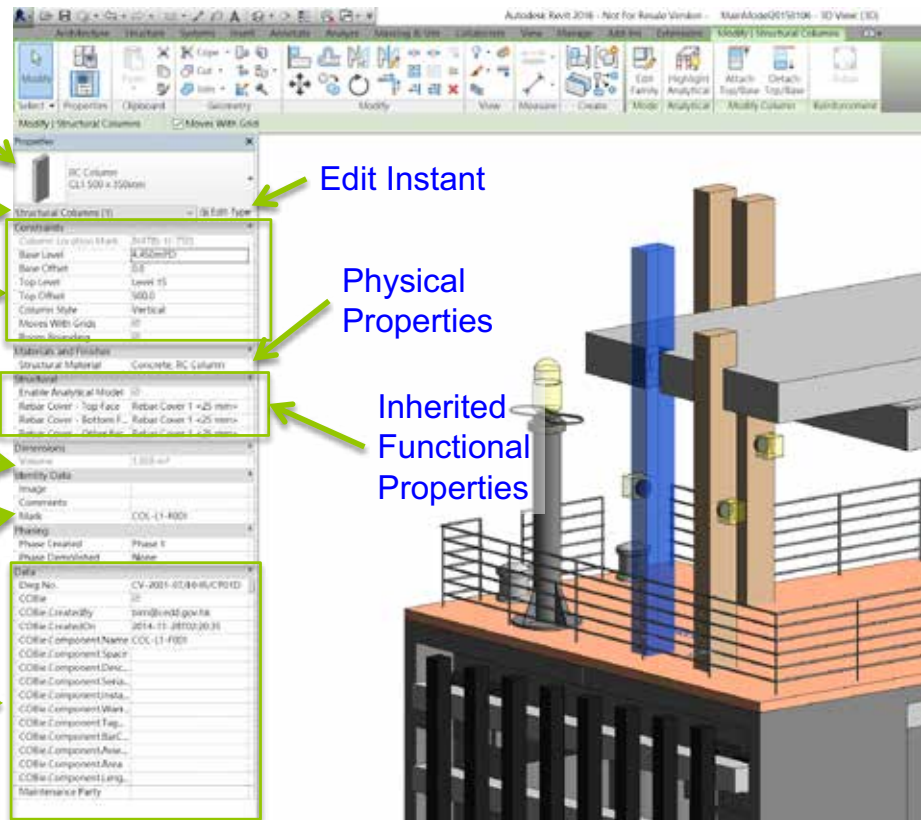
Unique IDs

User-defined
Properties

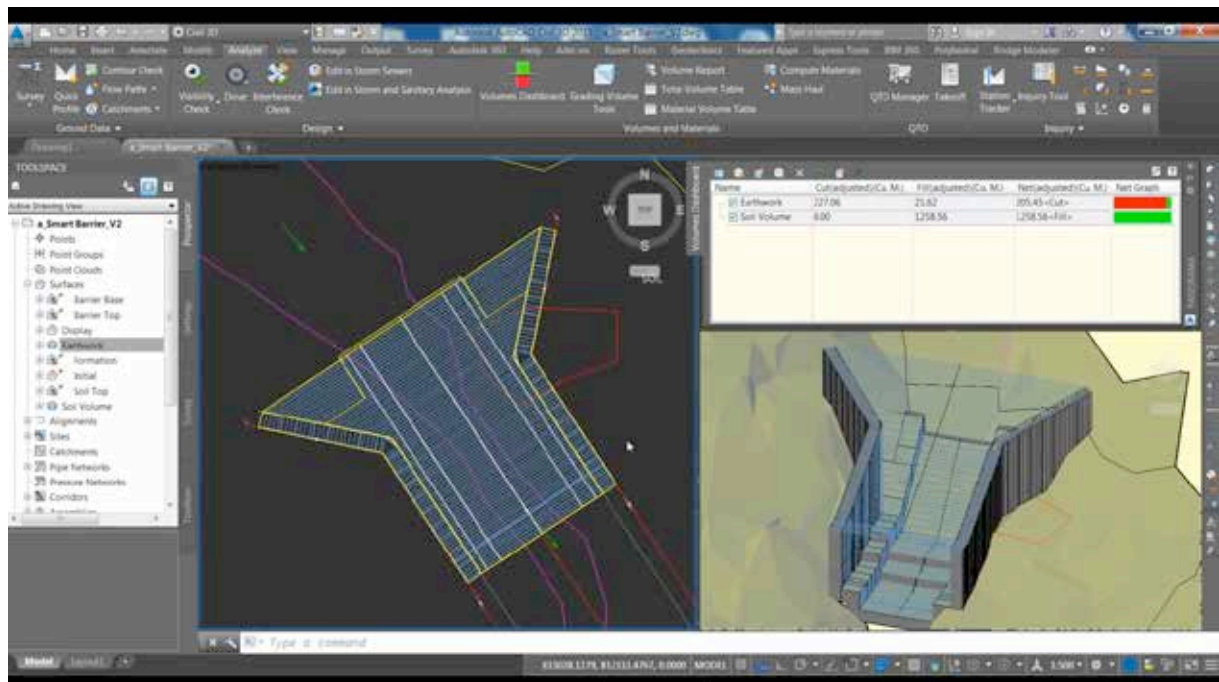
Edit Instant

Physical
Properties

Inherited
Functional
Properties



Ideal Analysis with BIM



CEDD: Ridge Barrier Design

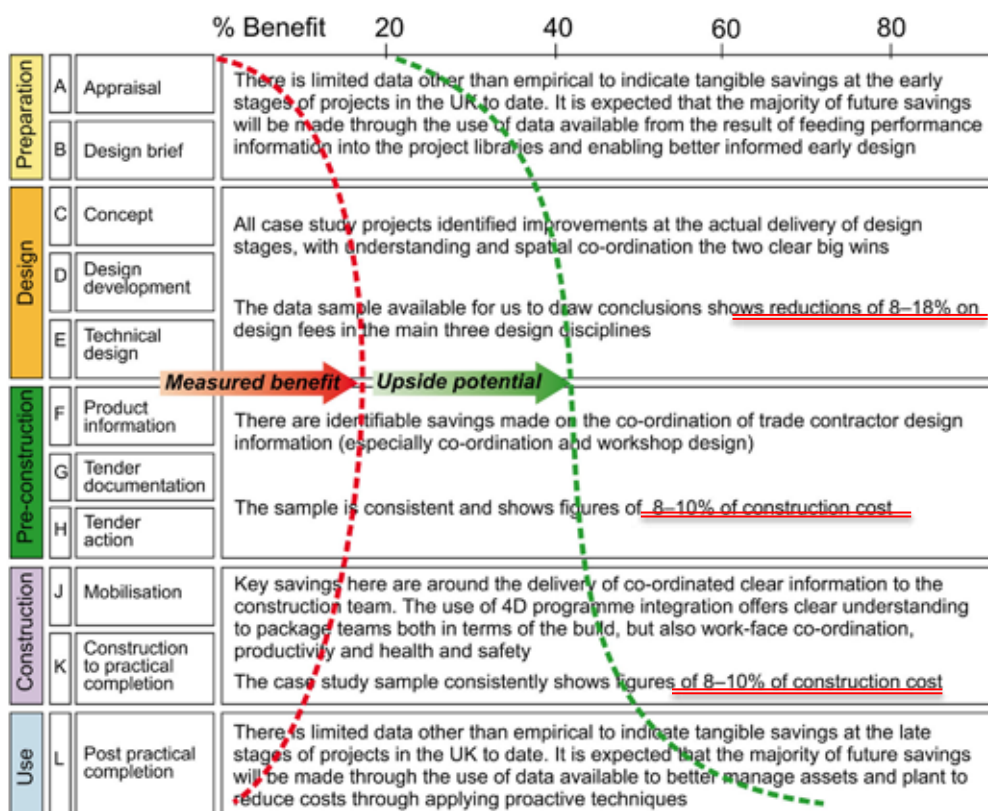
Reveal the Values in The “B”, “I” and “M”

B : Business Operation

I: Information Analysis

M: Geometrical Visualization

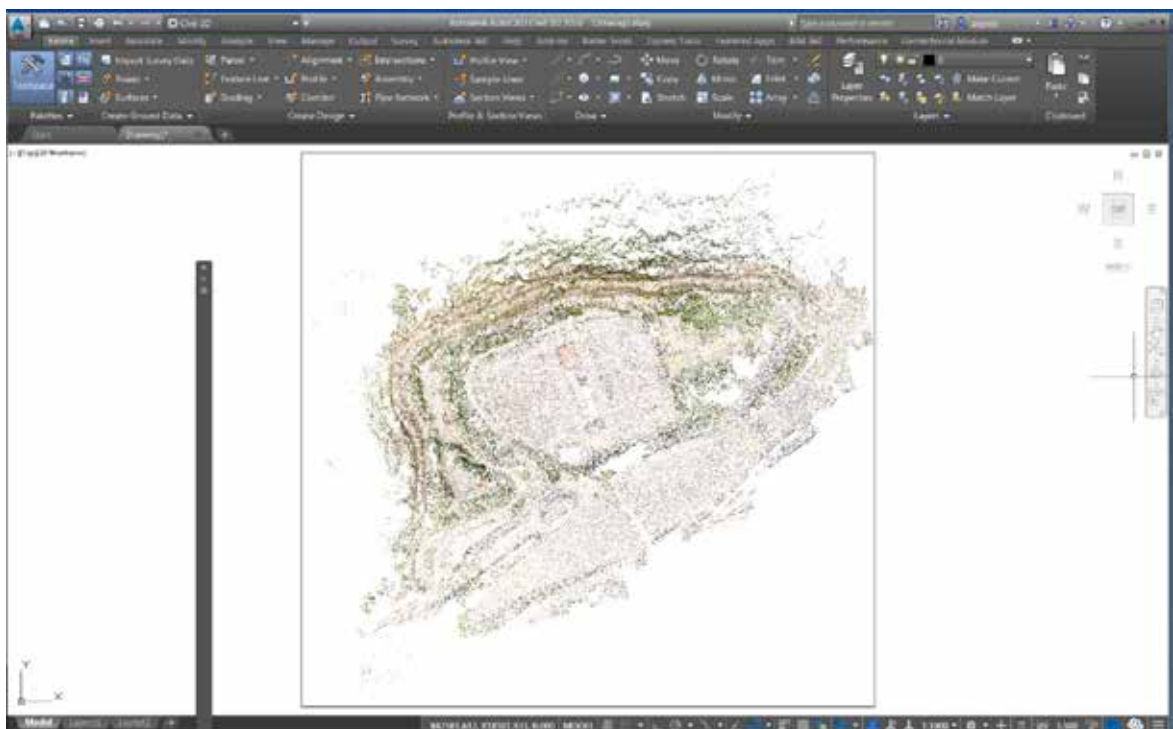
Measured Saving of BIM in UK Project



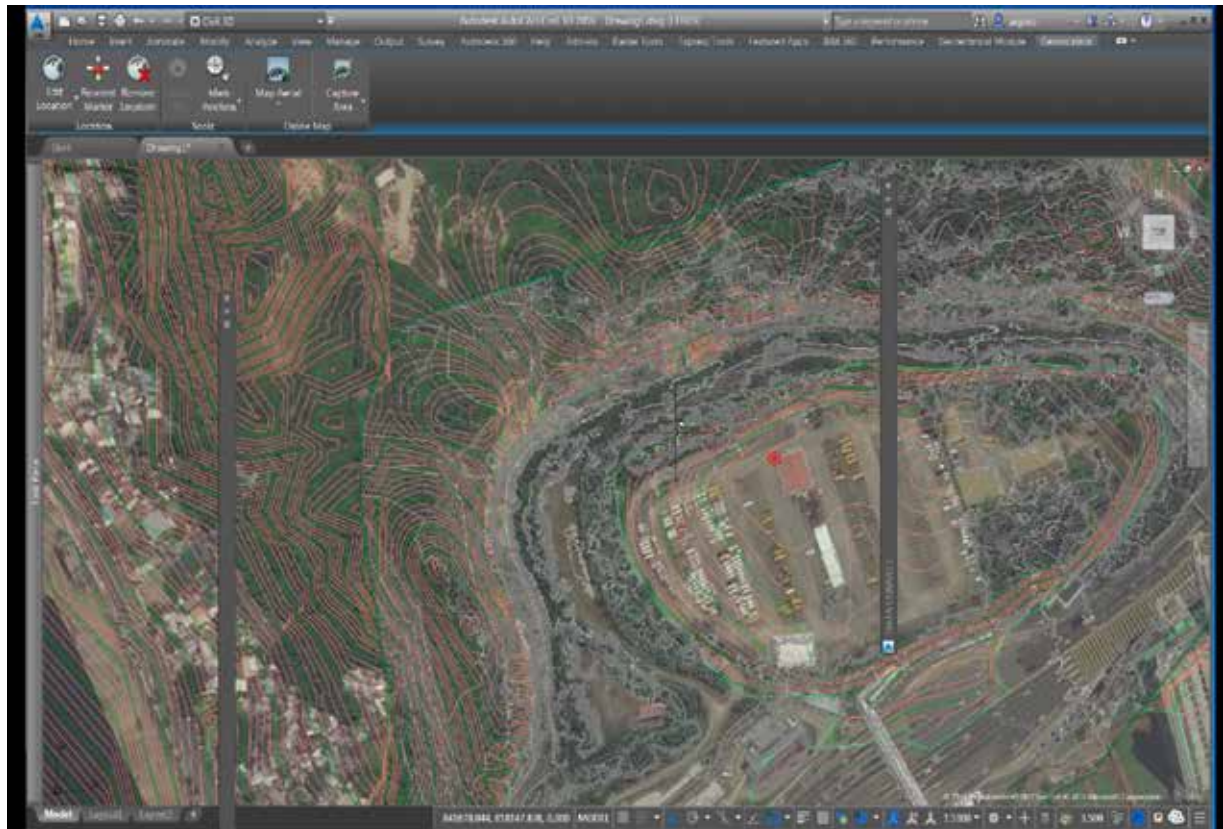
“M” : Geometrical Visualization

Terrain Condition
Underground Condition

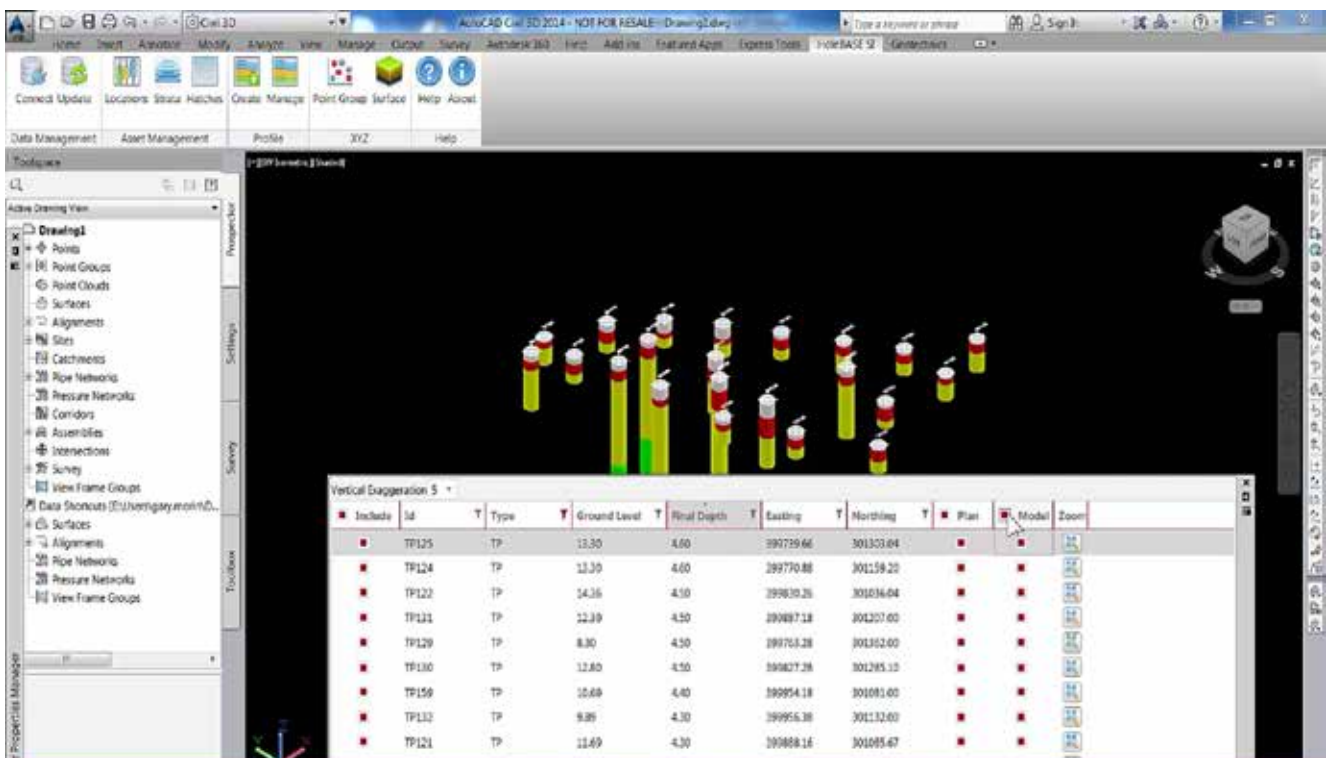
Modelling with Terrain from LiDAR



Overlay of GIS/Aerial photographs

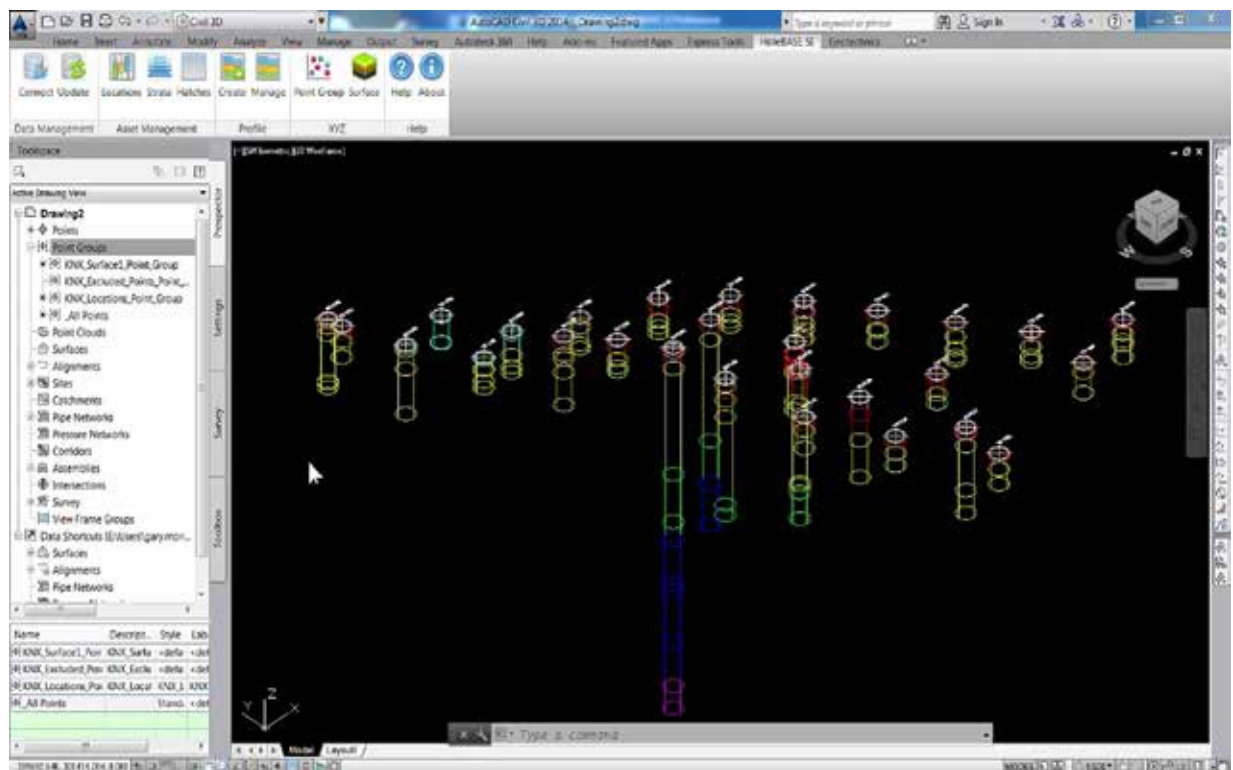


Underground information from AGS



Manage the boreholes to display

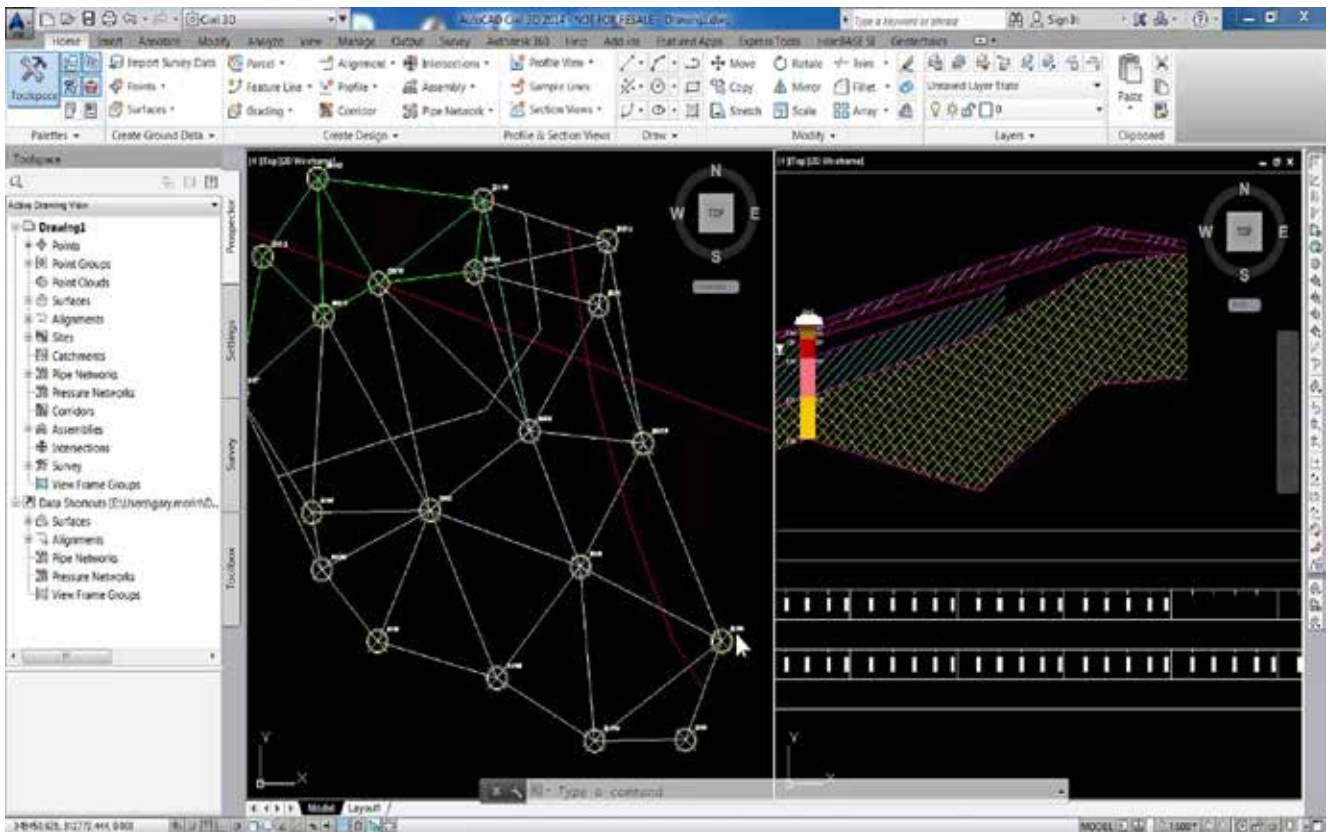
Visualizing reports from SI reports



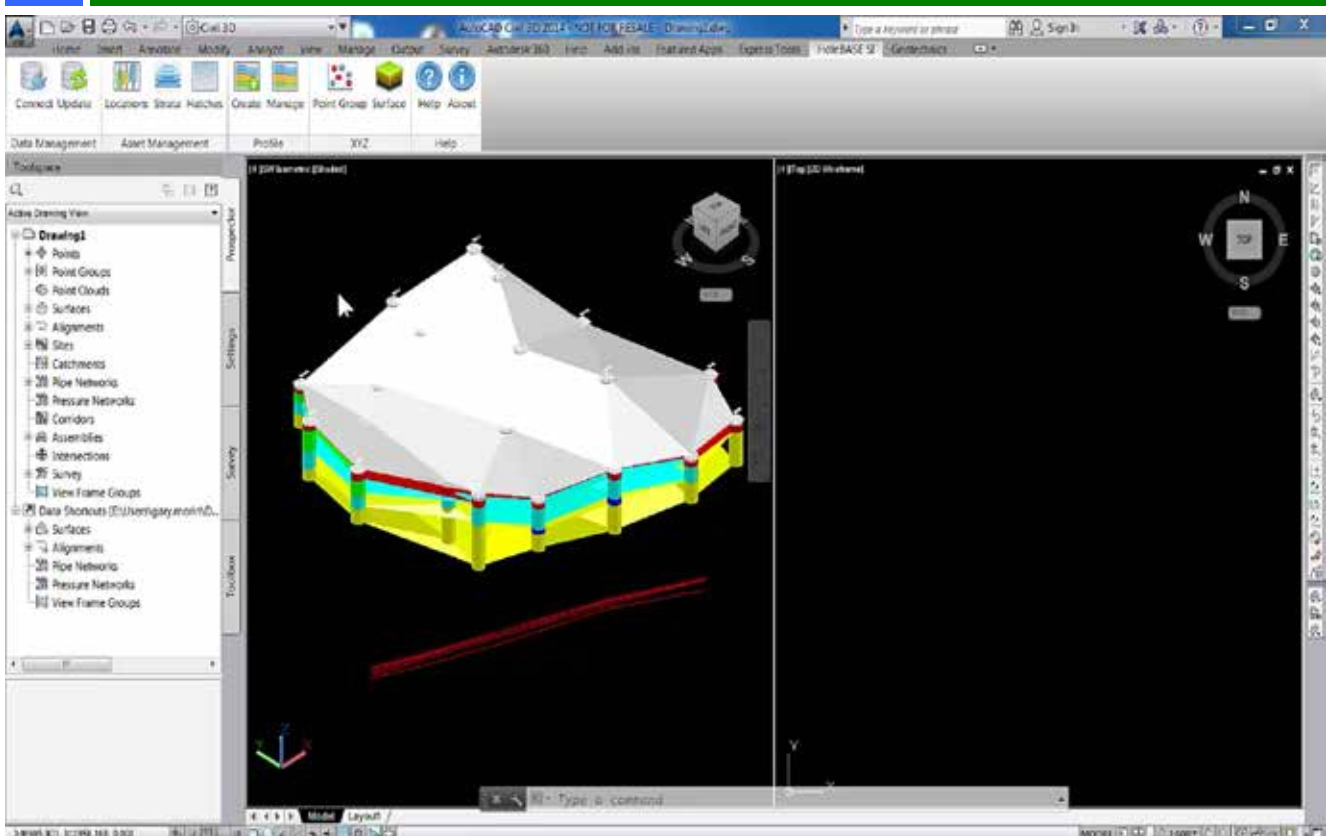
“I” : Integrated Analysis

Strata and Sections

Strata modeling



Sections and Profiles

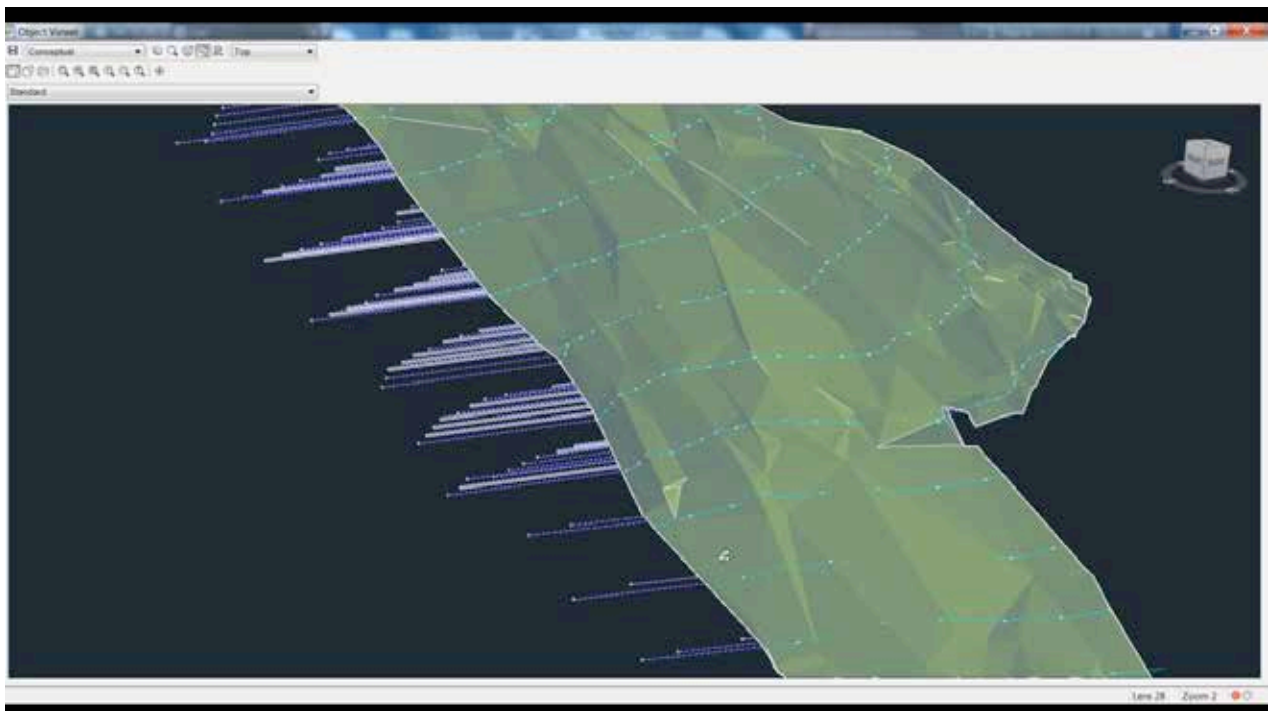


“B” : Business Operation

Soil Nail Design
Rigid Barrier Optimization
Site formation Analysis
Pile Depth Analysis

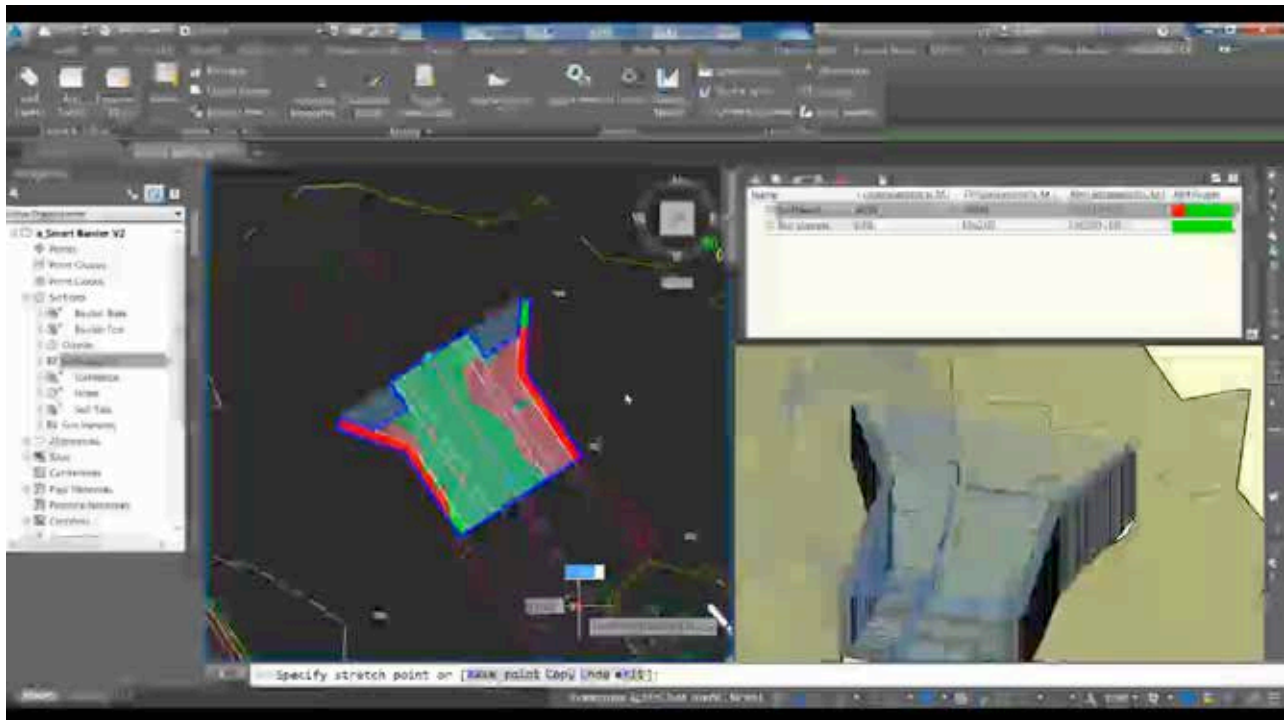
Soil Nail Layout/Clash analysis

Pilot projects



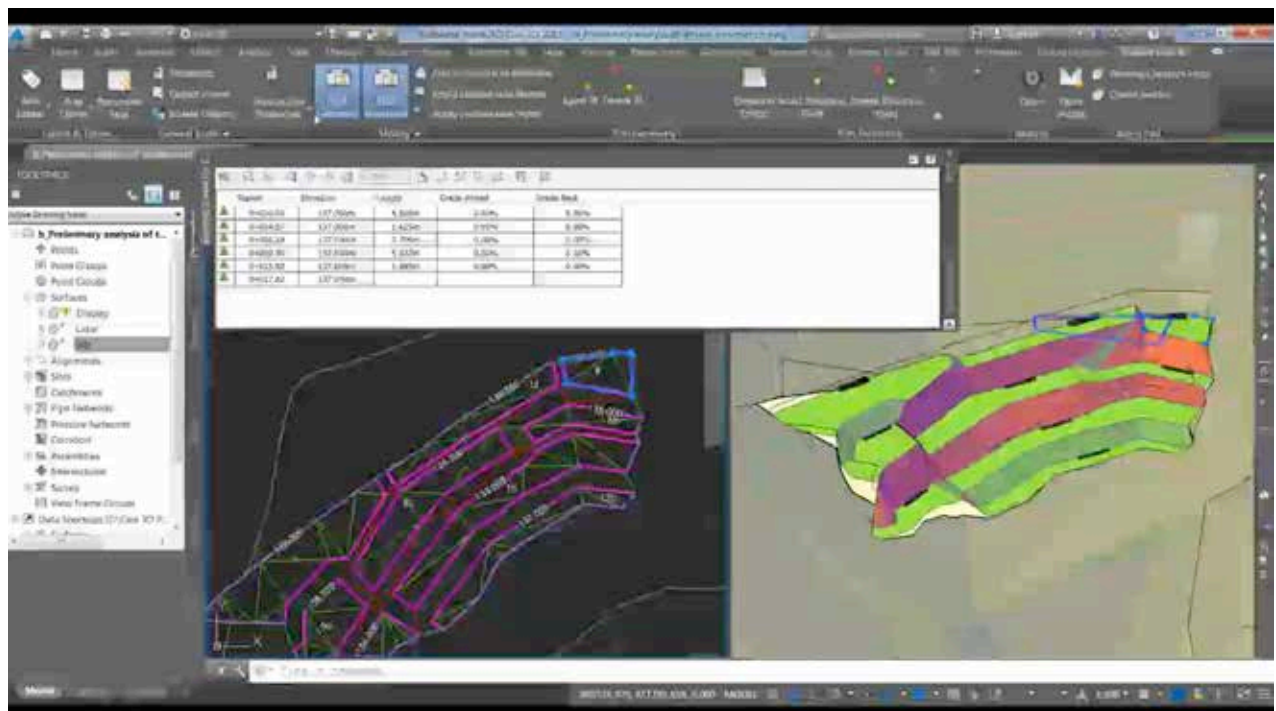
Rigid Barrier/Earthwork optimization

Pilot projects



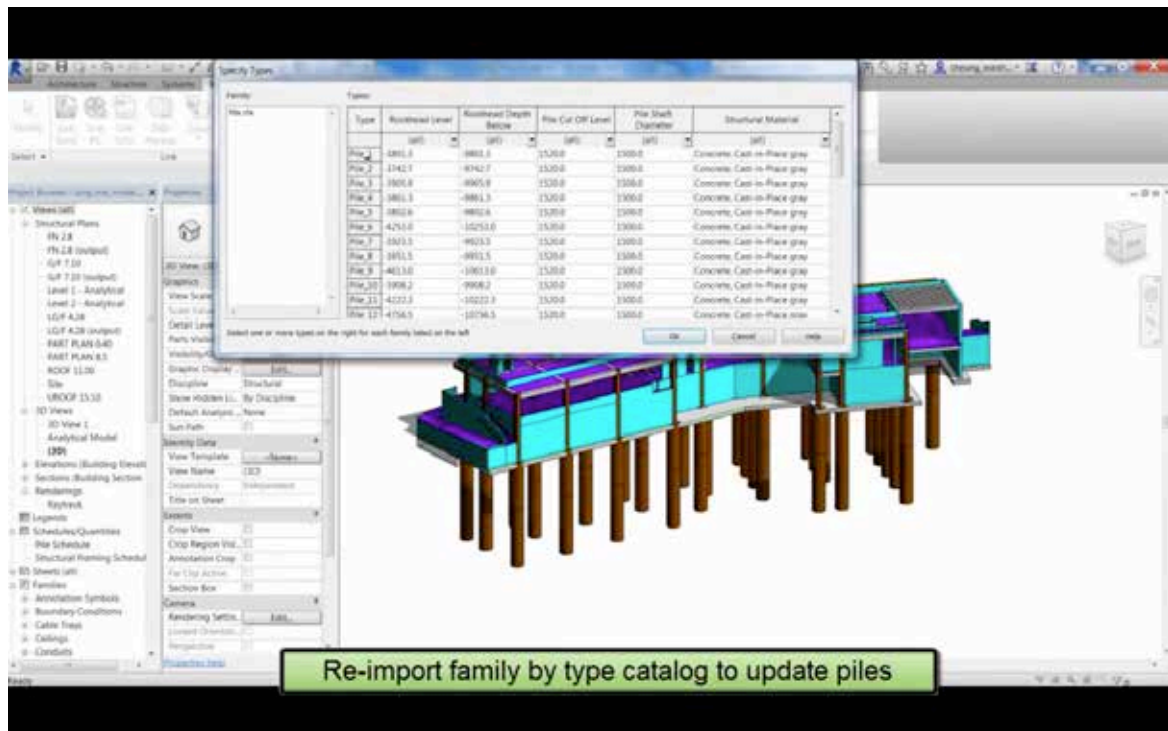
Site formation Design

Pilot Projects



Pile Depth calculation

Pilot project



Summary

BIM for Geotechnical Application

- BIM is not 3D visualization
 - ▣ Informative database to reduce risk
- ROI of BIM : Dynamic analytical capacity
 - ▣ Smart Modeling with engineering knowledge
- Learn more..
<https://www.ice.org.uk/eventarchive/bim-in-geotechnics>



BIM Overview and Application

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