

Deconstructing BIM

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Golder Associates Office Locations 2016
More than 6,500 employees and 165 offices on 6 continents

BIM@GOLDER.COM



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Service Areas



Our Purpose, Vision & Values



Our purpose:

Engineering Earth's Development
Preserving Earth's Integrity

Our vision:

The freedom to excel
The knowledge to find the answers
The passion to make a difference

Our values:



Integrity

We are honest, reliable, ethical and trustworthy in our work and relationships.



Excellence

We pursue excellence in our technical solutions and service to our clients and colleagues.



Teamwork

We are a connected community, actively sharing knowledge and experience to bring value to our clients.



Caring

We respect and care about our people, clients, communities and the environments in which we live and work.



Ownership

We take pride in the work we do for clients and are personally invested in our company and in its success.



Random fact...

Mulberry Harbour



Key learning objectives

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

- Leverage BIM models in planning for the future of existing assets.
- Leverage BIM and cloud/mobile technologies to deliver outputs beyond the traditional construction mindset.
- Reduce uncertainty and risk when making decisions.
- Increase efficiency by making the most informed decisions based on the best quality data derived in a cost effective way.





Existing infrastructure...





Construction 2025...



HM Government 2013

Industrial Strategy: government and industry in partnership

Lower costs

33%

reduction in the initial cost of construction and the whole life cost of built assets

Faster delivery

50%

reduction in the overall time, from inception to completion, for newbuild and refurbished assets

Lower emissions

50%

reduction in greenhouse gas emissions in the built environment

Improvement in exports

50%

reduction in the trade gap between total exports and total imports for construction products and materials

Towards a Digitally Built Britain.



Cabinet Office



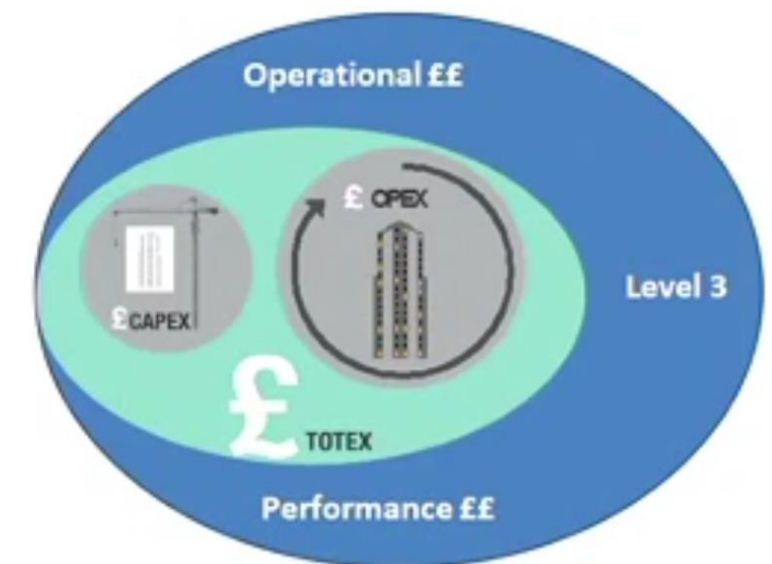
BIS Department for Business Innovation & Skills

13



David Philp

Head of BIM Implementation at the UK Cabinet Office



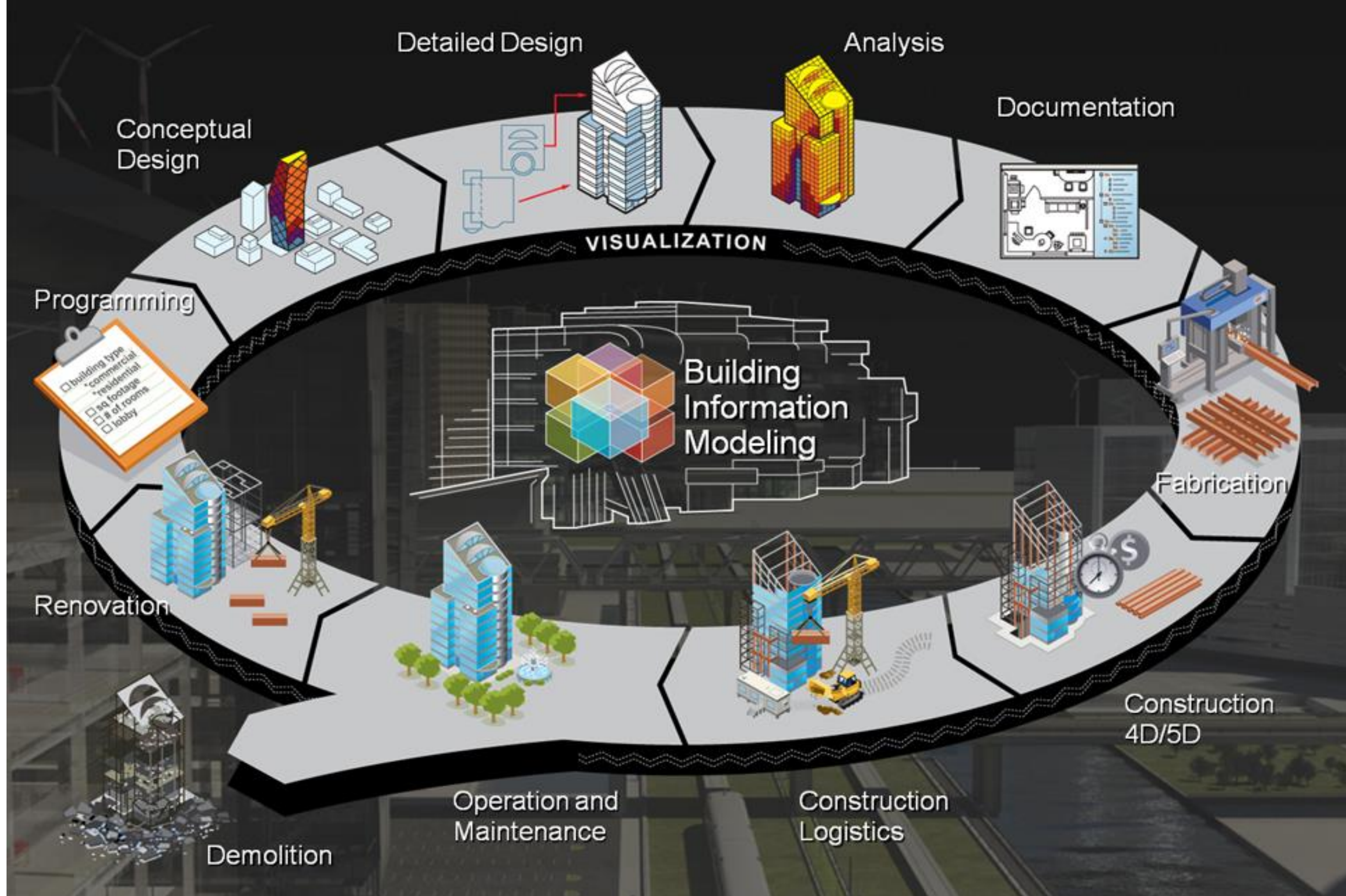
LCIA - June 2016 - Lean and BIM Presentation



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How it is currently done.....

Existing infrastructure...



Why change...



What if it was a complicated site...



What if there are hazards that need to be tracked...



**2D Plan / Hard
copies**

**Environmental
Reporting**

Health & Safety

**Environmental
Sampling/Testing**

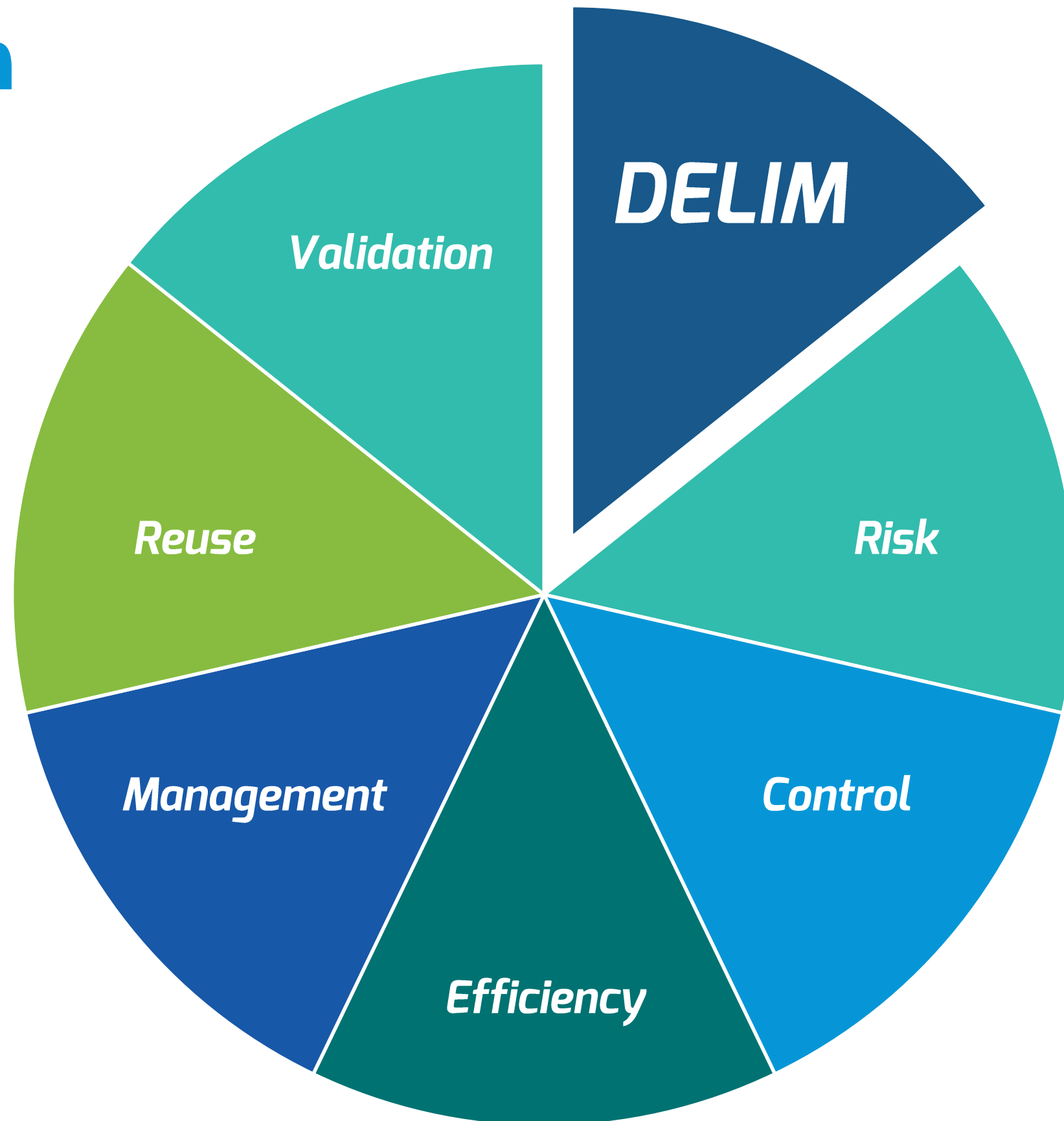
Design

Costing

Planning



Solution



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What is DELIM?

DELIM is the process of **Digitally** mapping **Environmental** hazards, to make better informed **Lifecycle** decisions for existing infrastructure from maintenance to additions or demolition, utilising Building **Information Modelling** (BIM) tools.



SCAN2BIM



BIM



**Environmental
Hazard
Identification**



**Health, Safety
and Scheduling**



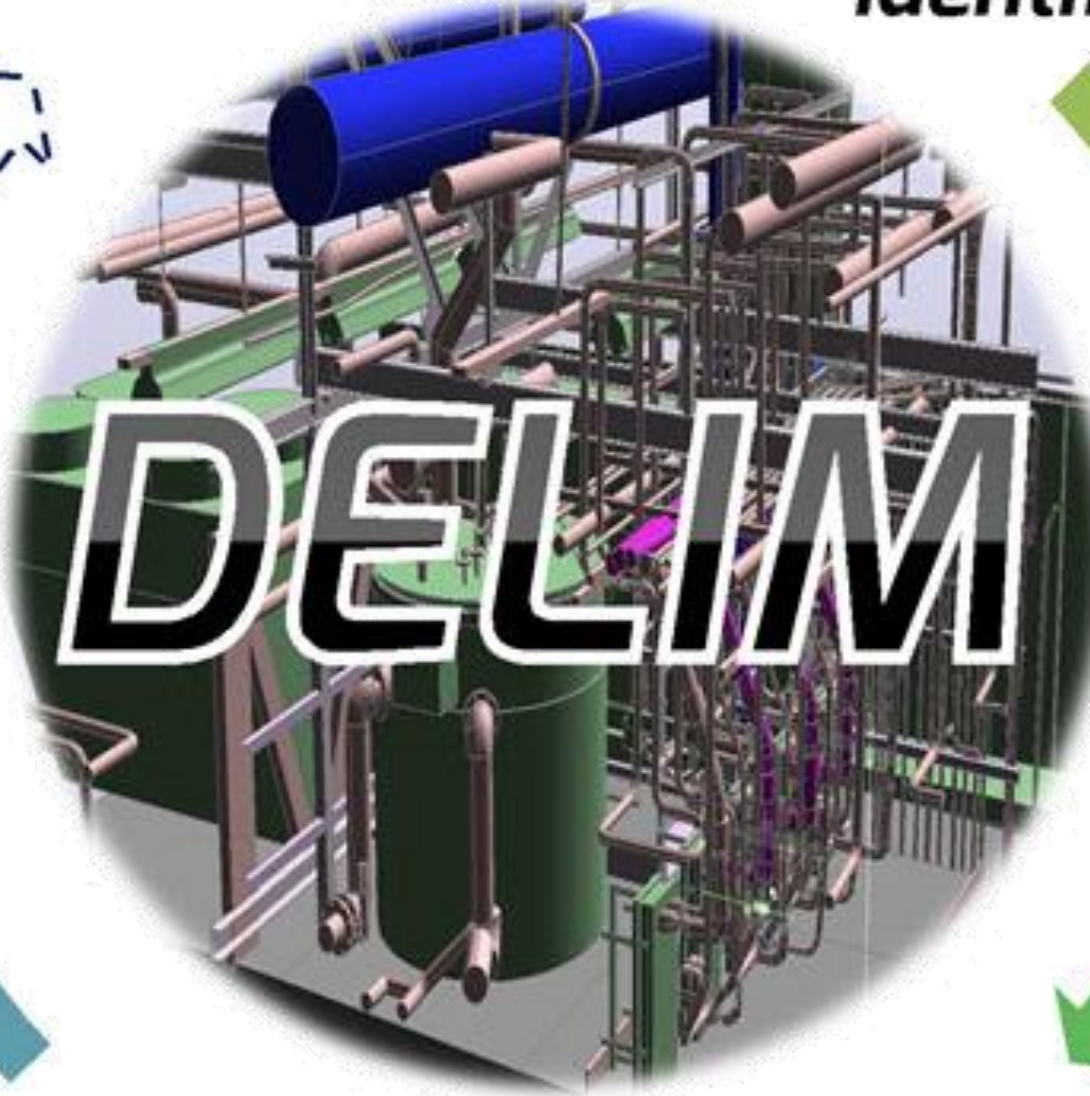
**Maintain
/ Monitor**



Design



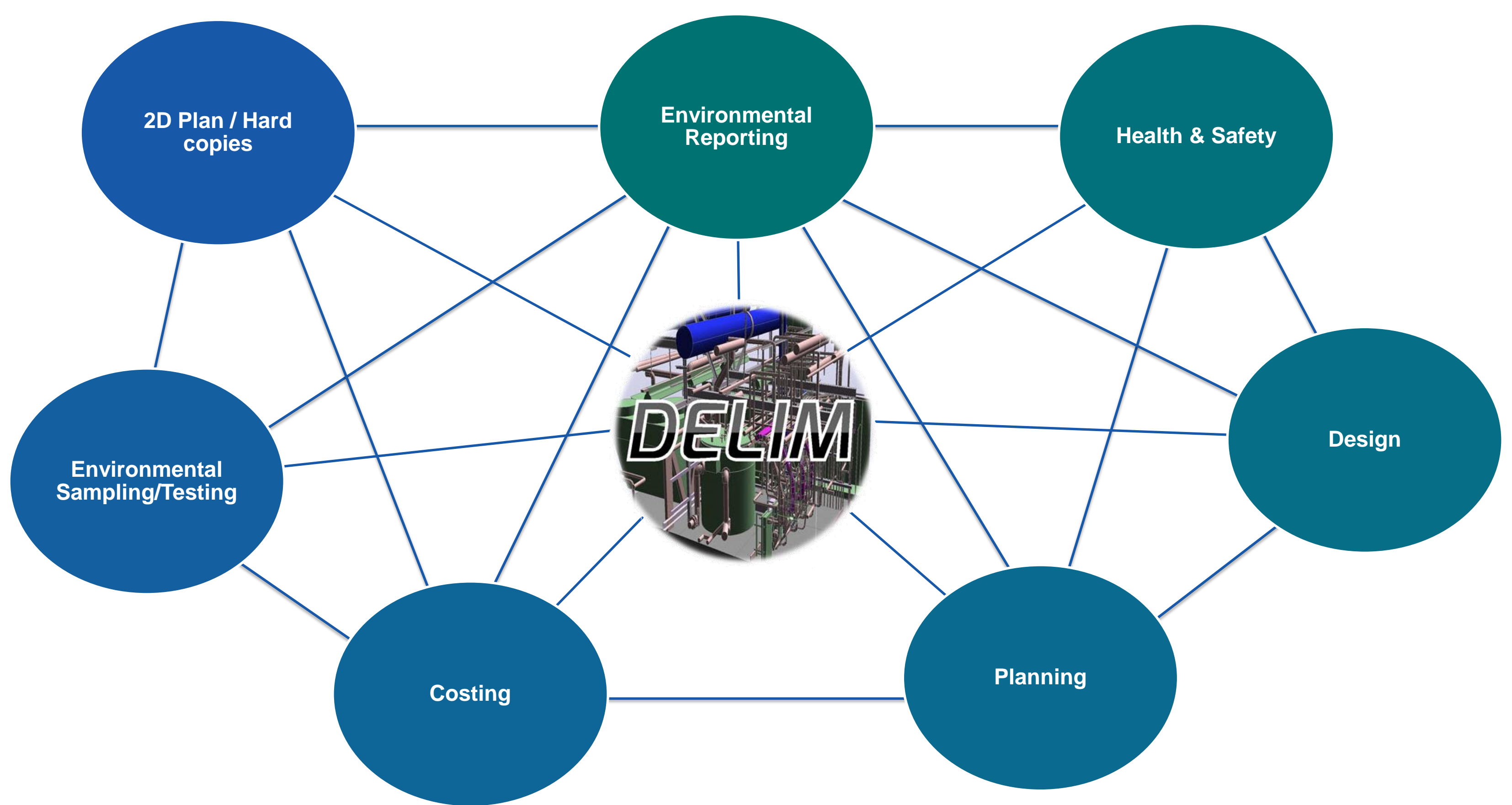
**Demolition /
Remediation**



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Developing DELIM

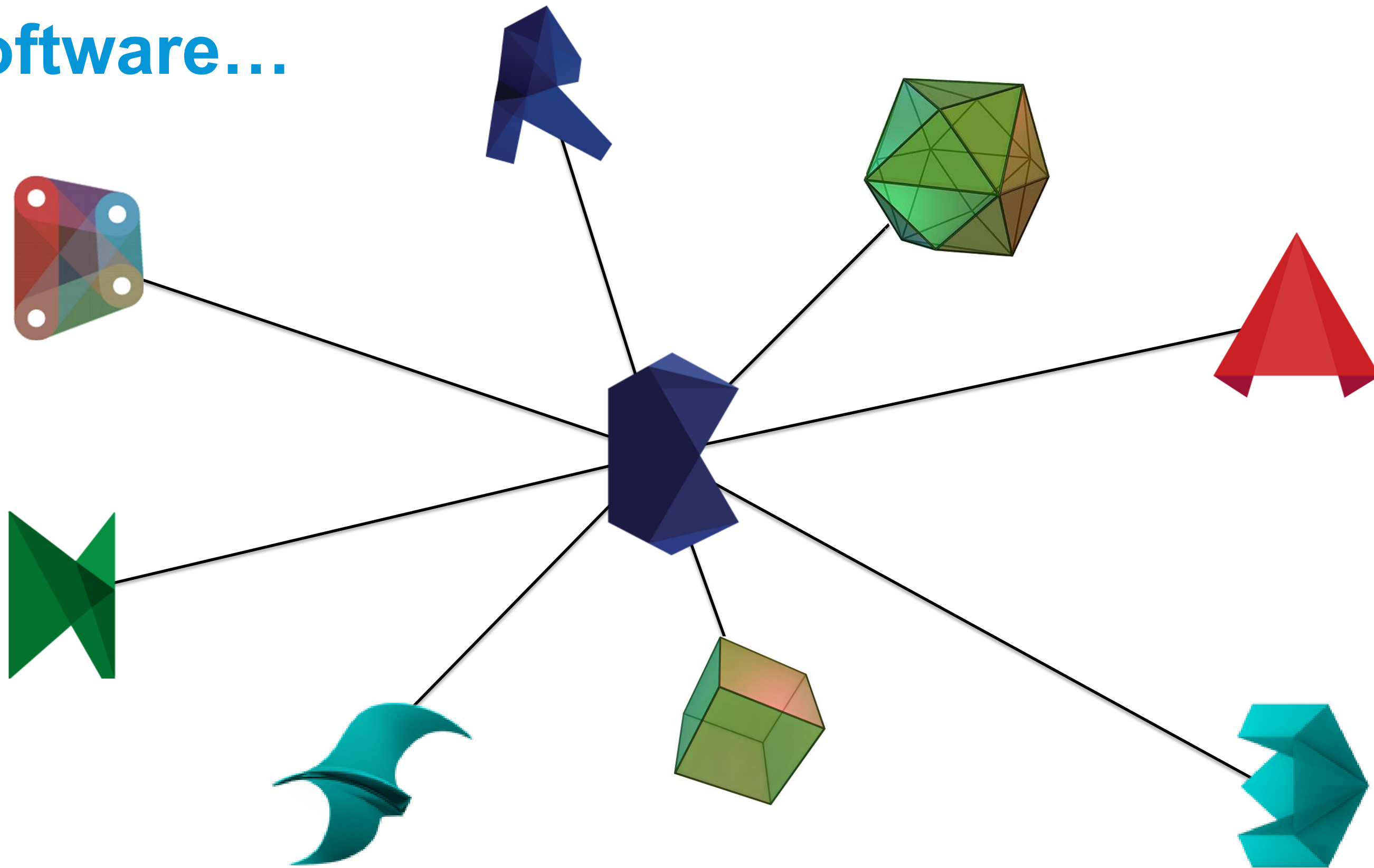


**We believed in DELIM so much, that we
invested into it!**



SOFTWARE

Software...

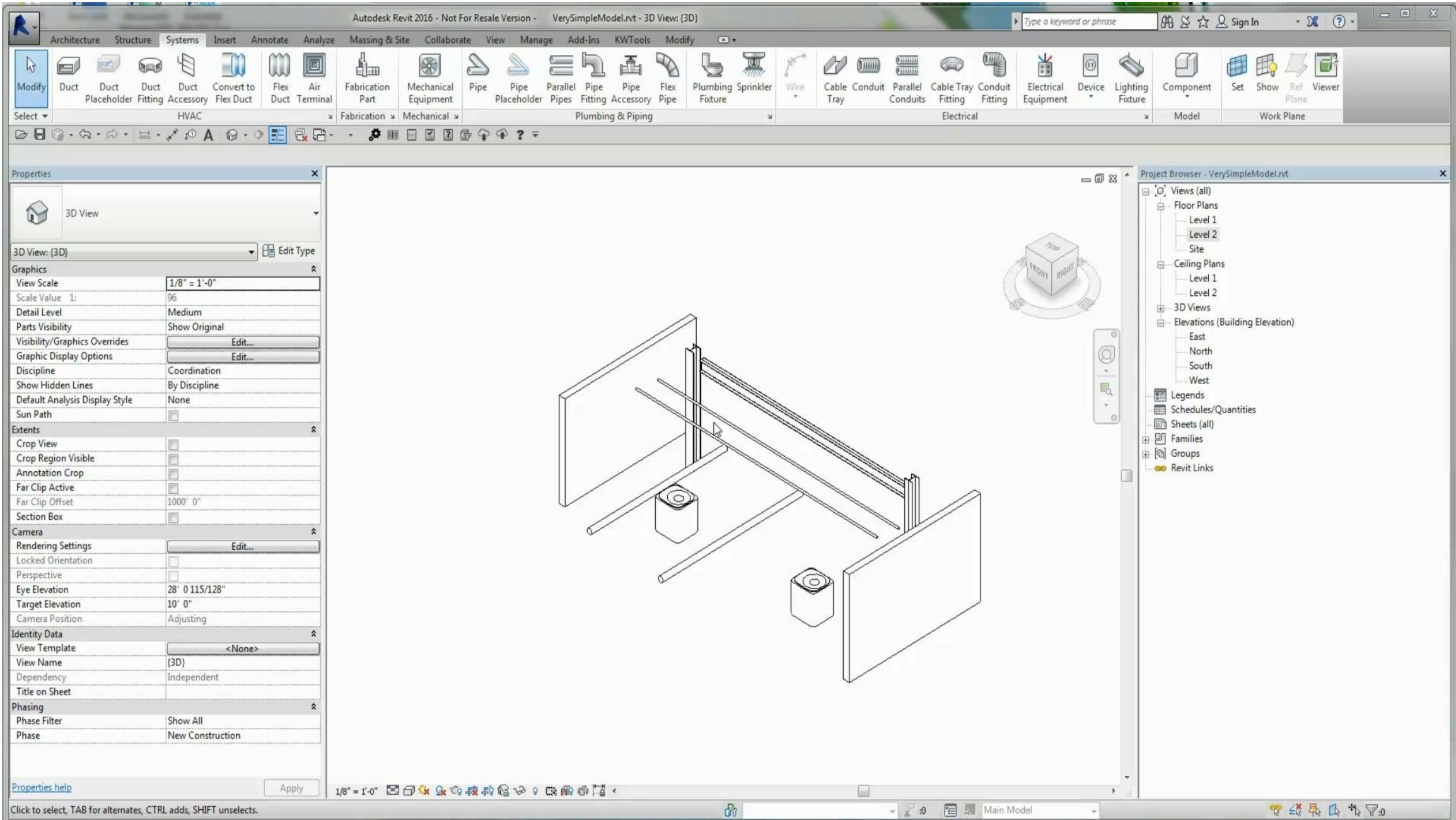


Development Scope

- Reduced data entry,
- Reduced potential for human error,
- Reduced time from project setup start to project work begin,
- Reduced picks and clicks,

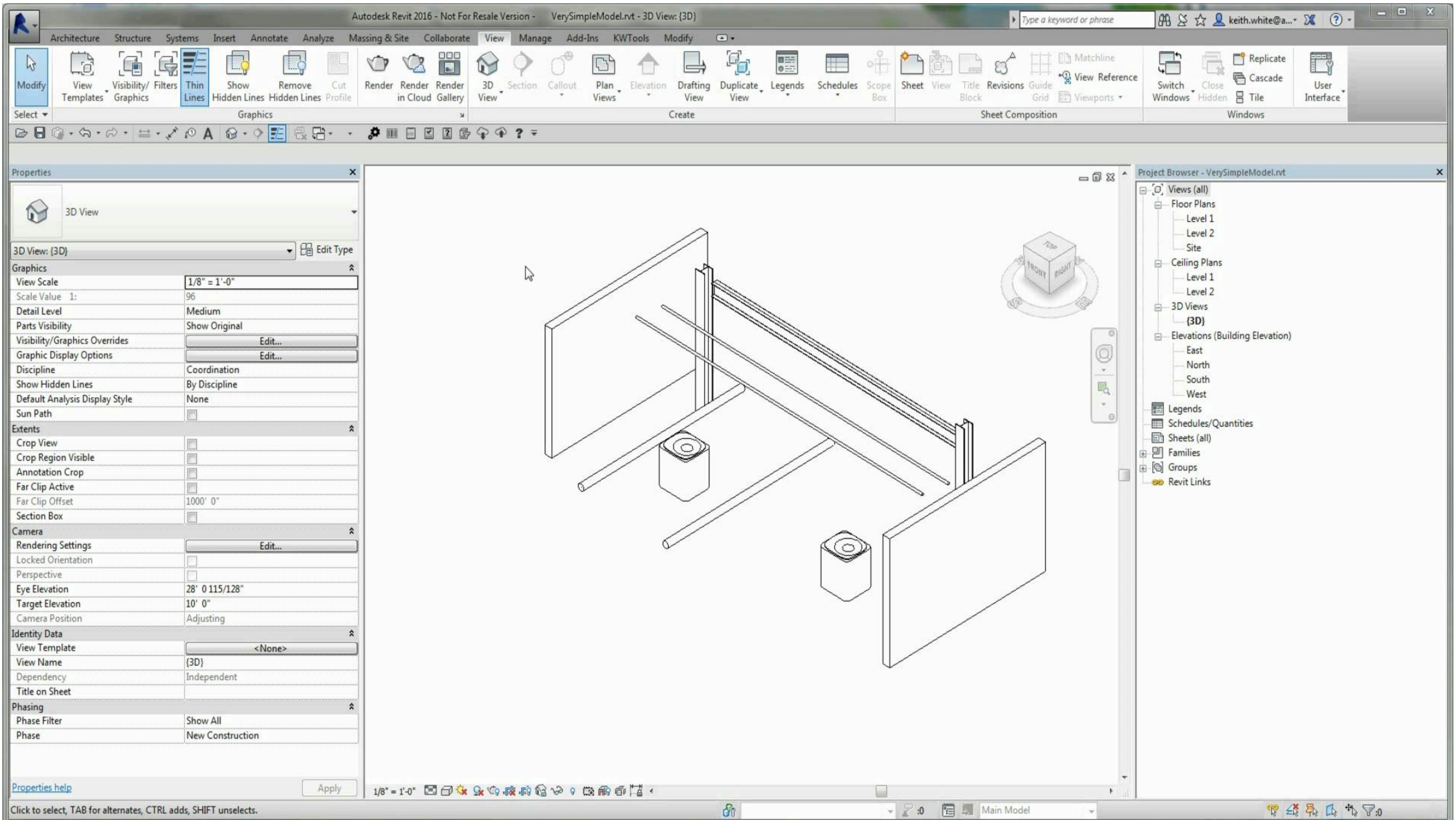


Out of the box...



| hr | min | sec | keystrokes | left button | right button | middle button | double clicks | mousewheel |
|----|-----|-----|------------|-------------|--------------|---------------|---------------|------------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

DELIM Process...



| hr | min | sec | keystrokes | left button | right button | middle button | double clicks | mousewheel |
|----|-----|-----|------------|-------------|--------------|---------------|---------------|------------|
| 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |



Out of Box to DELIM Process improvements...

- **Time = 61%**
Reduction of 1 hr and 14 minutes
- **Keystrokes = 71%**
Reduction of 2582 key presses
- **Left button clicks = 56%**
Reduction of 1898 left clicks
- **Right button clicks = 65%**
Reduction of 66 right clicks



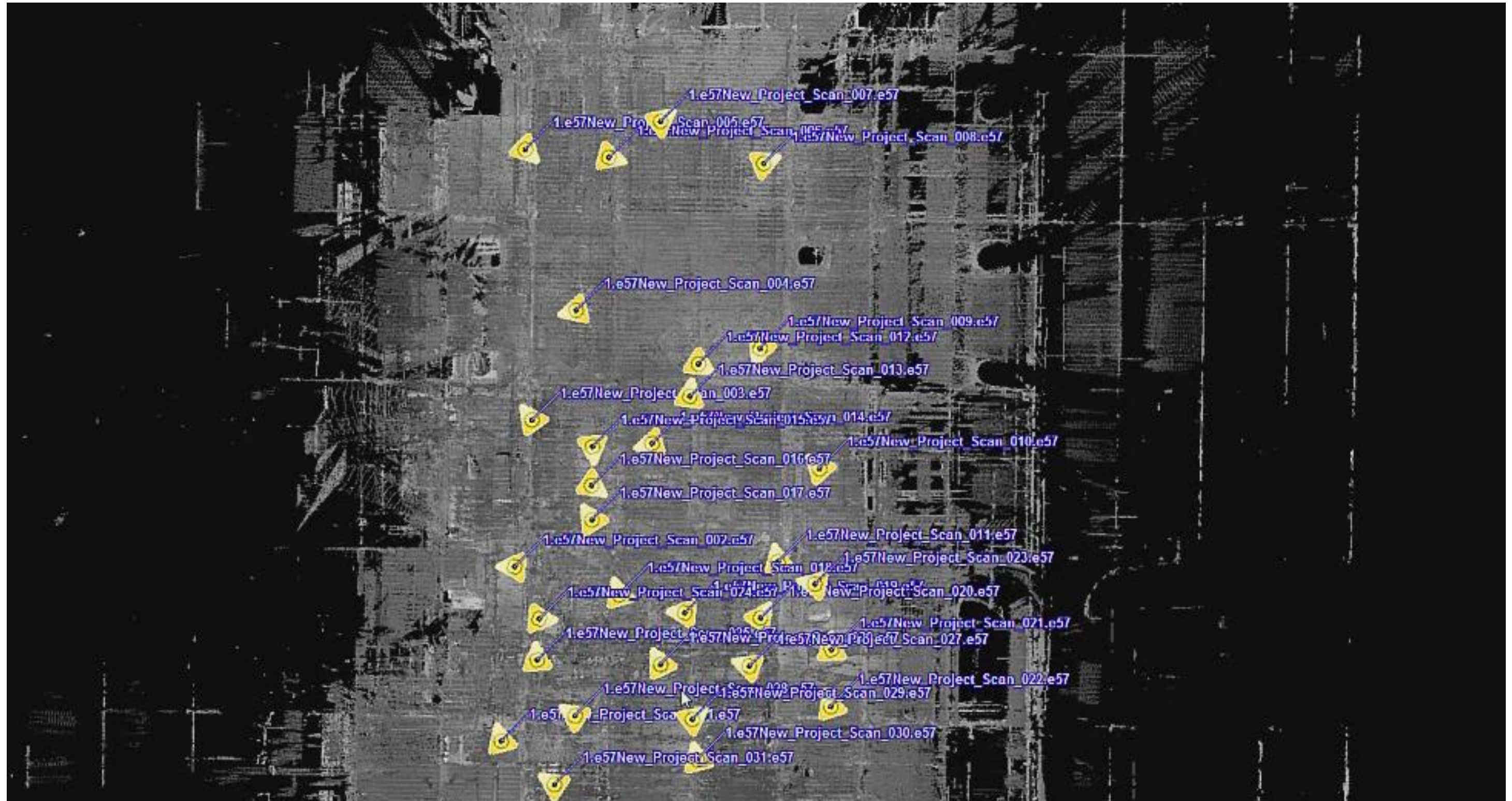
CASE STUDY – *Client X*



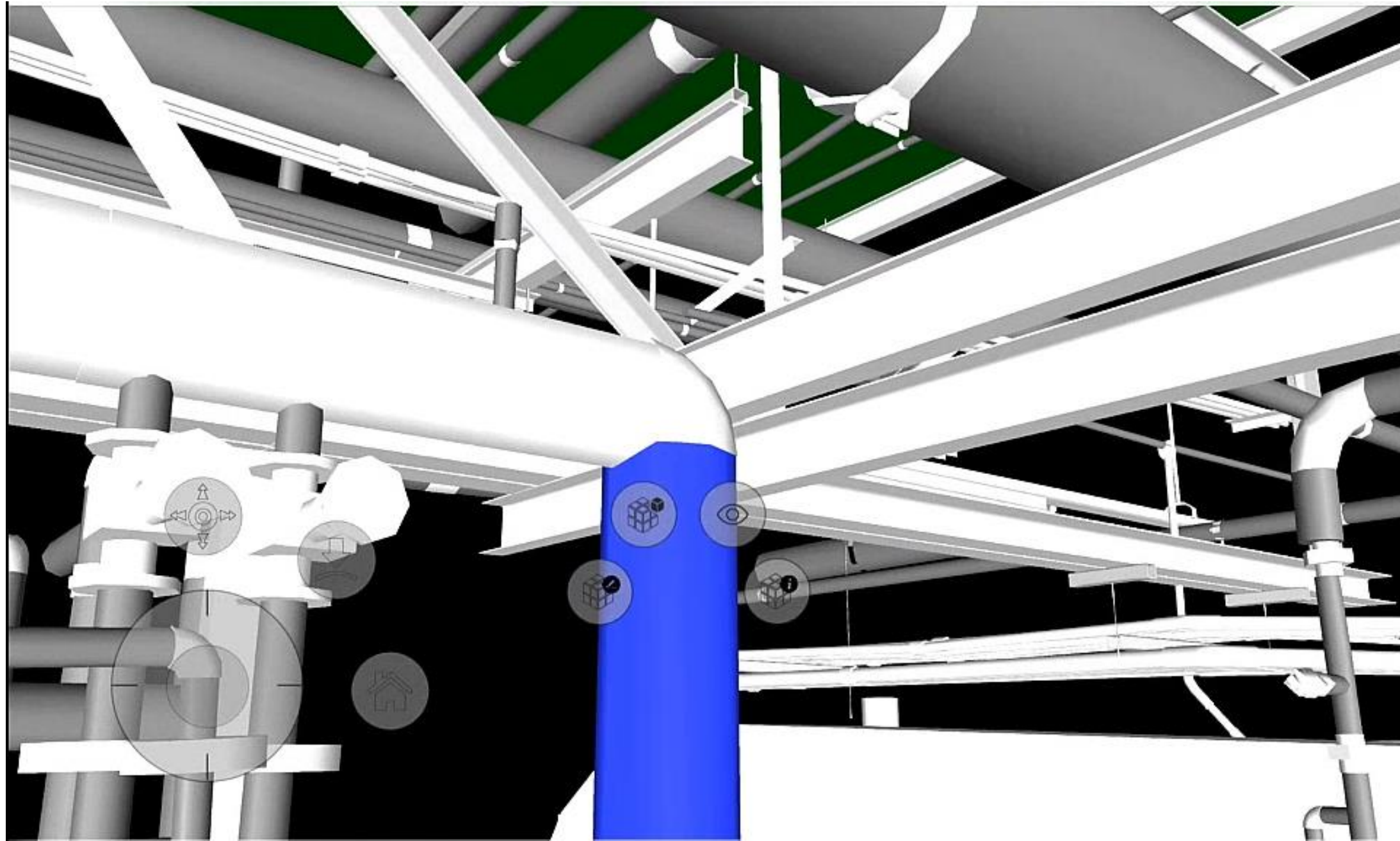
Case Study...



CASE STUDY



CASE STUDY



Profile

Action_06_Removed

Ground Penetration

Hazard_01_Asbestos



Hazard_02_PCB

Hazard_03_Lead Paint

Hazard_04a_Solvent

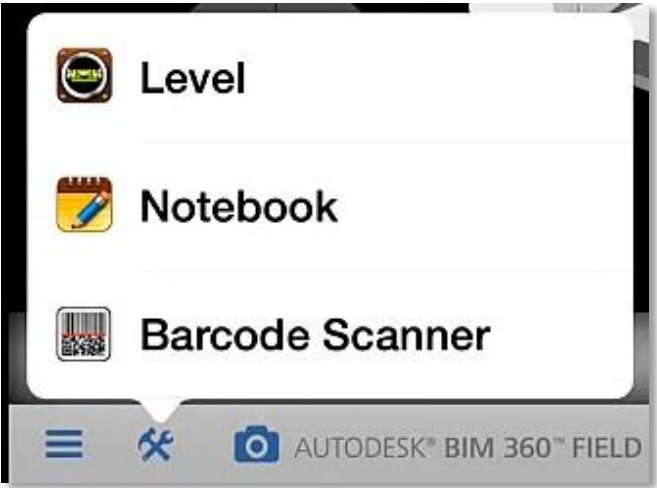
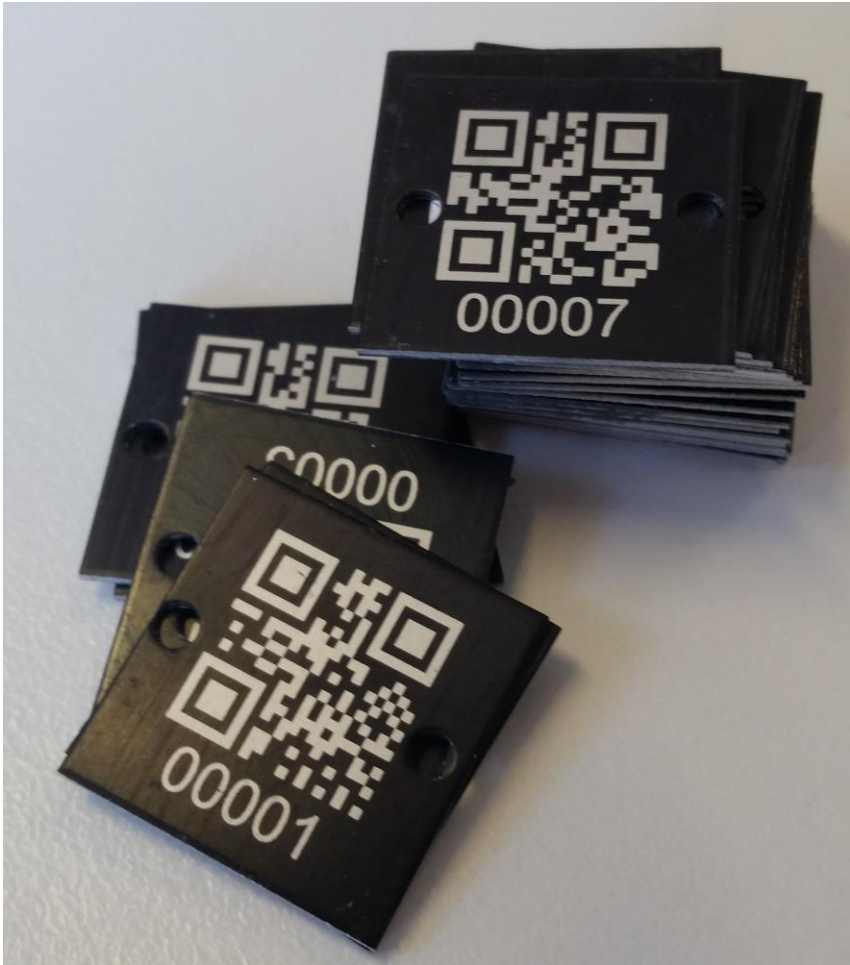
Hazard_04b_Solvent PPM

0

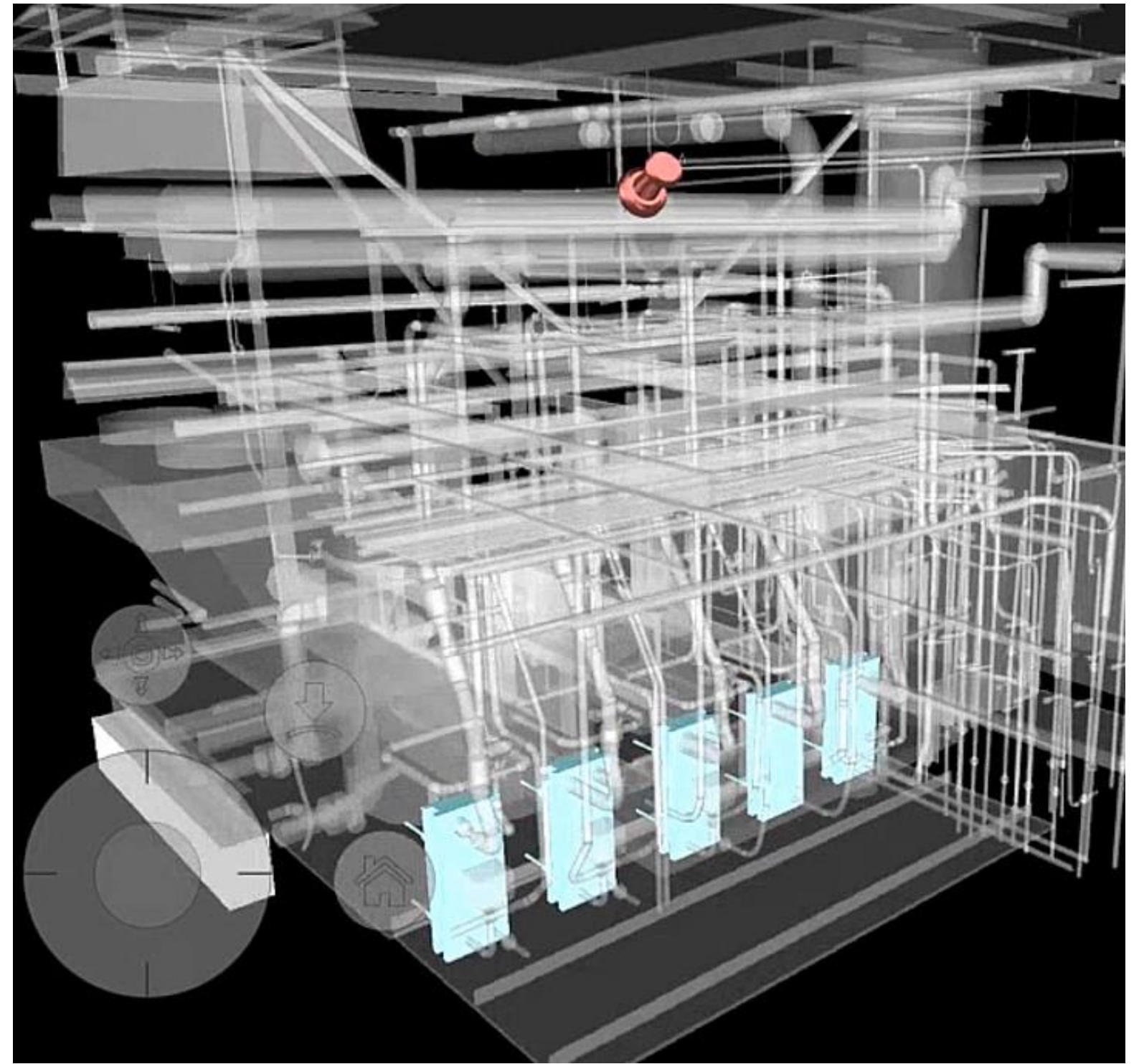
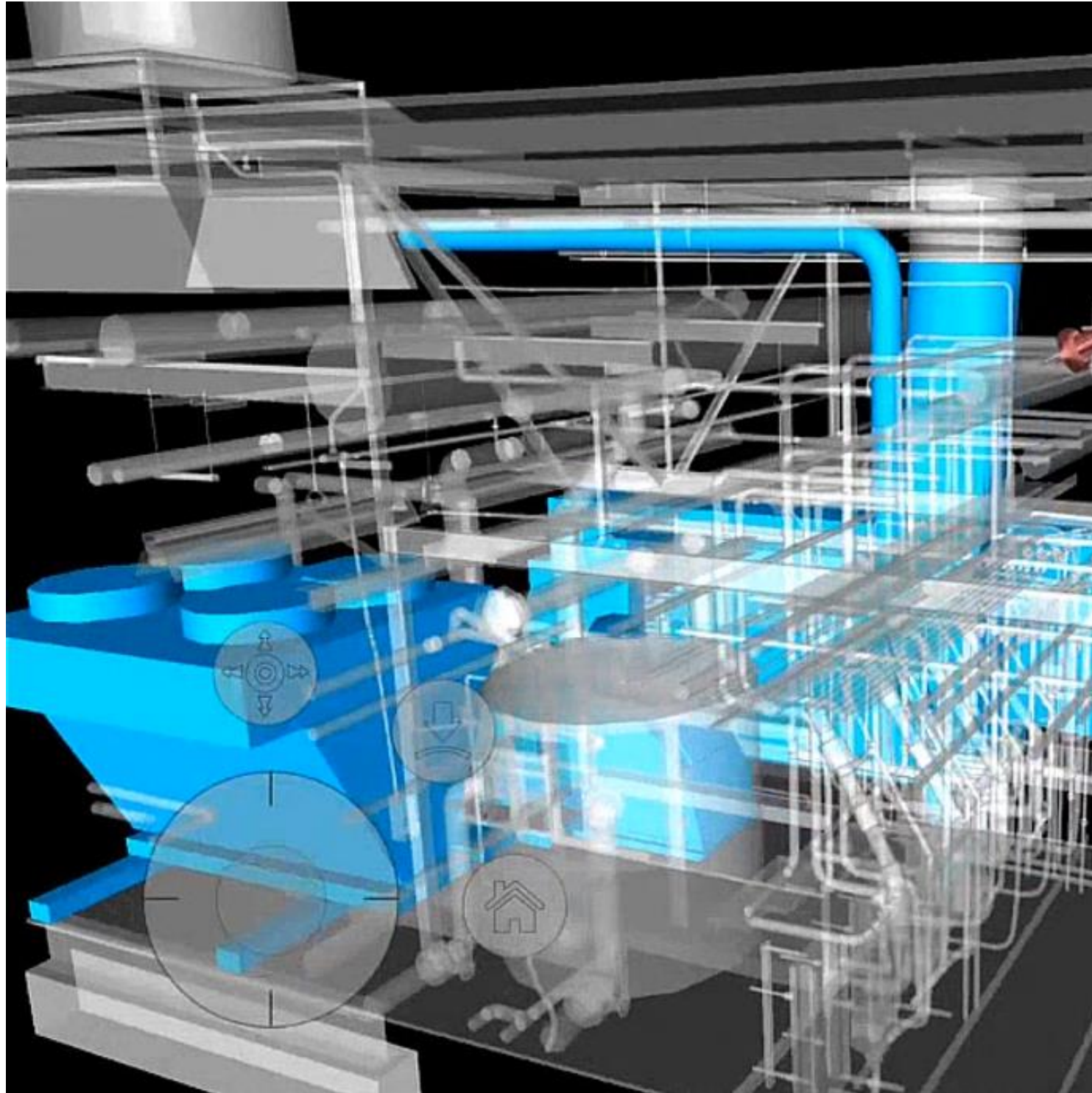
Hazard_05_Hydrocarbon

Hazard_06_Acids

CASE STUDY



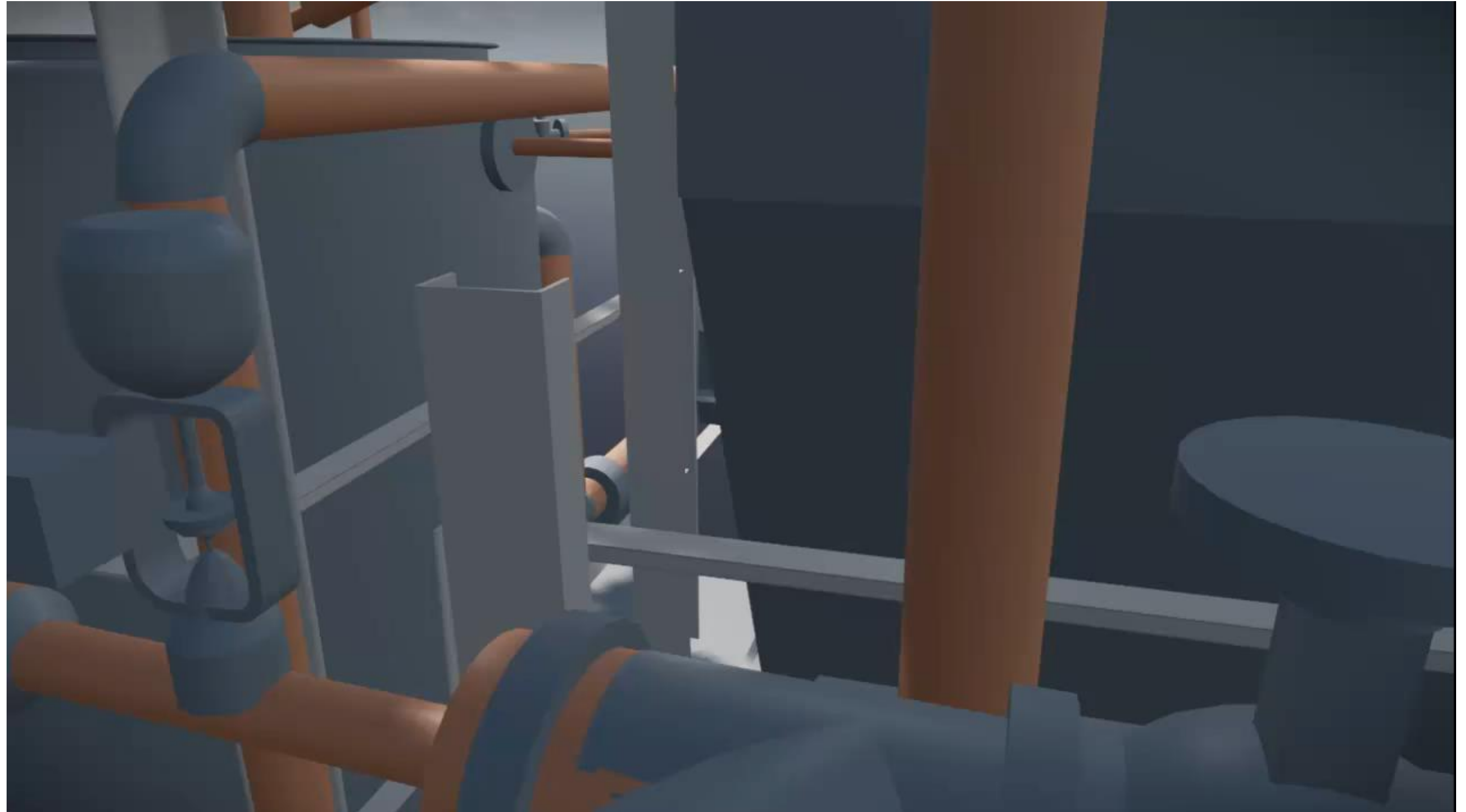
CASE STUDY



CASE STUDY



CASE STUDY



SCAN2BIM



BIM



**Environmental
Hazard
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**Health, Safety
and Scheduling**



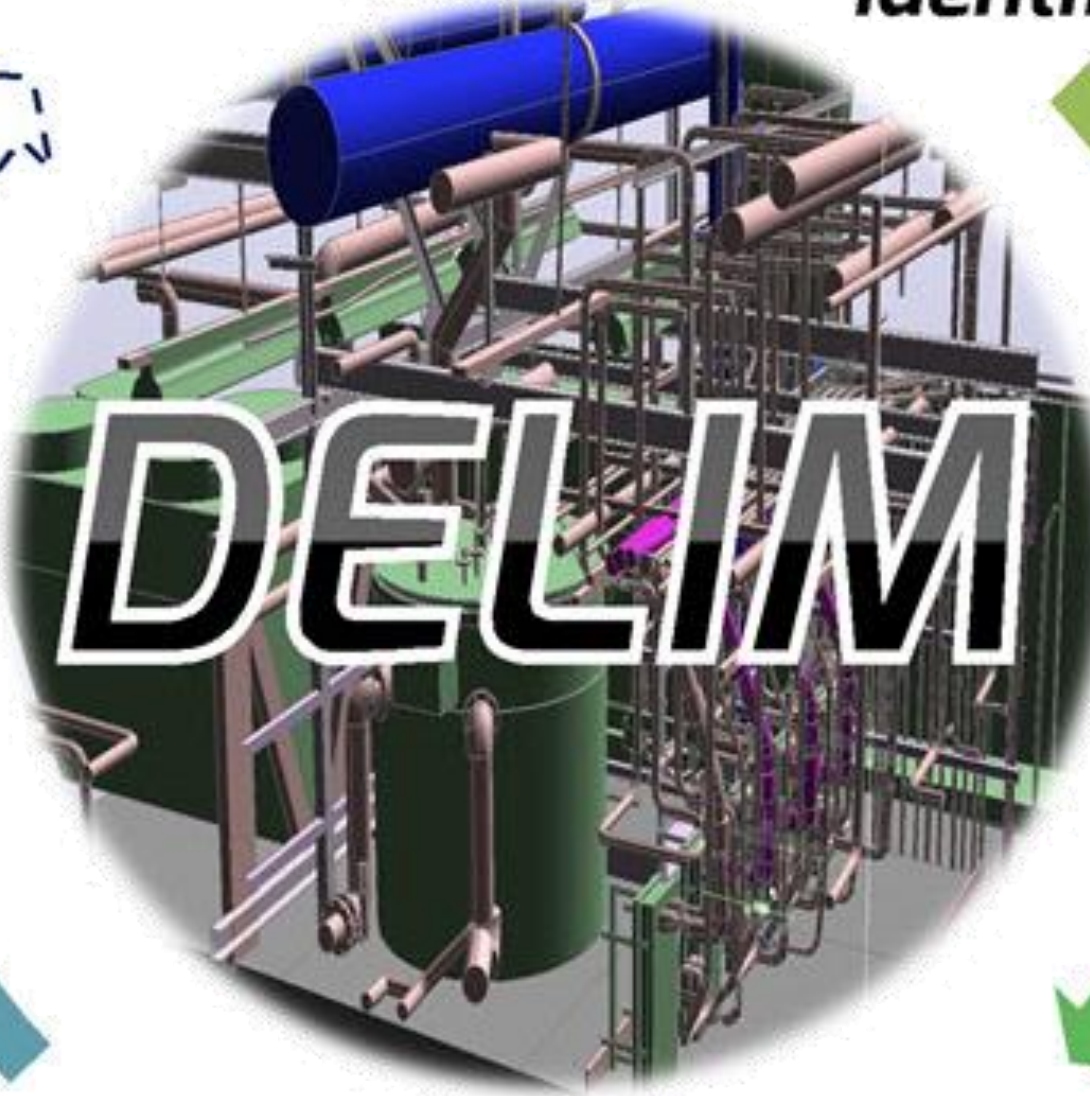
**Maintain
/ Monitor**



Design



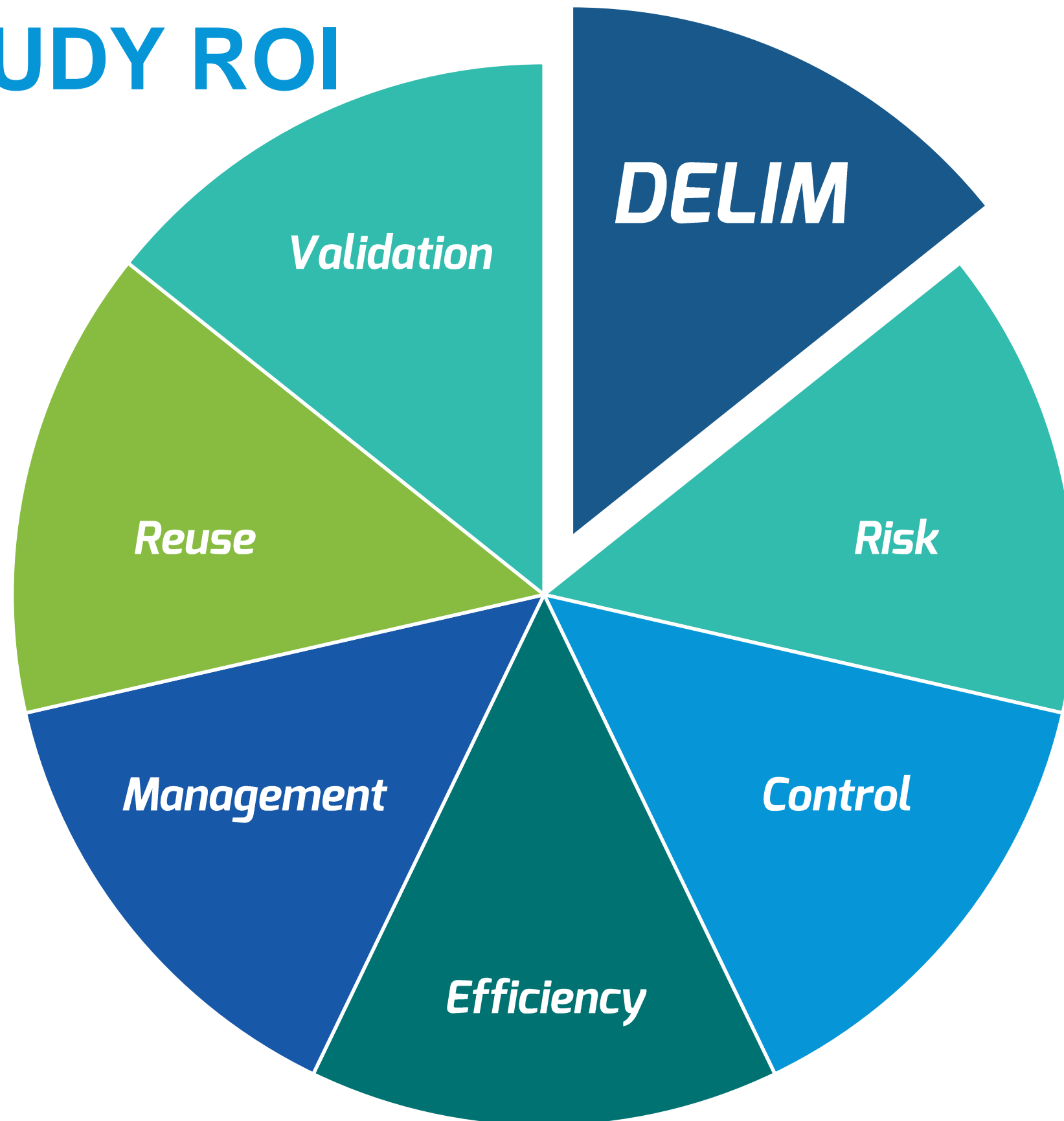
**Demolition /
Remediation**



What does DELIM do for clients?



CASE STUDY ROI



= 10-15%

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Enable facility owners to make better informed decisions based on the best quality data.



Management **3D**
BIM **RISK** **Reporting Risk Management**
Efficiency **Tracking Lifecycle**
Cost **Demolition** **Modelling** **Quantities** **Certainty** **Digital Preservation** **Environmental**
DELLIM
Scanning **Facilities Management** **Scheduling** **Spatial** **Hazards** **Governance** **Contractor** **Cloud** **Hazard ID** **Accountability** **Design** **Accuracy** **Cost Control** **Construction Management** **Scan2BIM**



