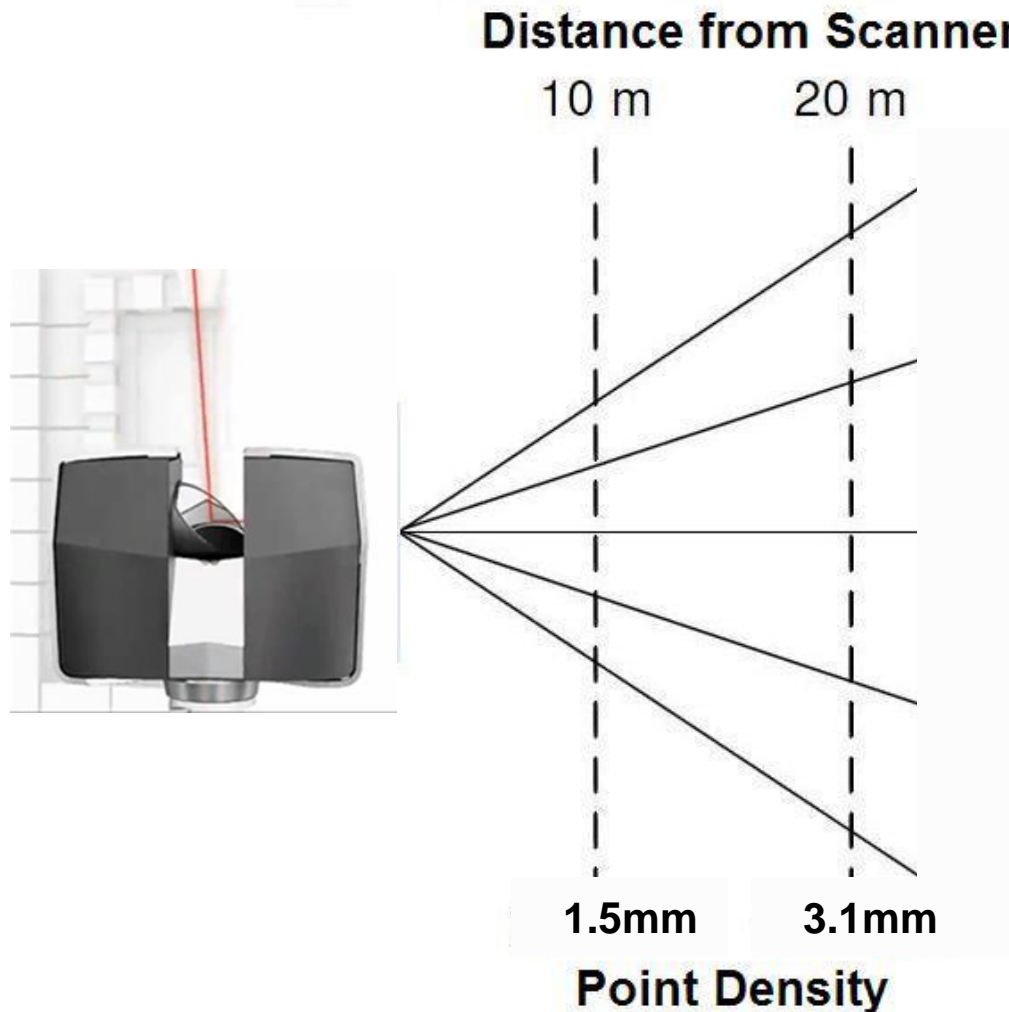




3D Laser Scanning Applications Municipal EMS

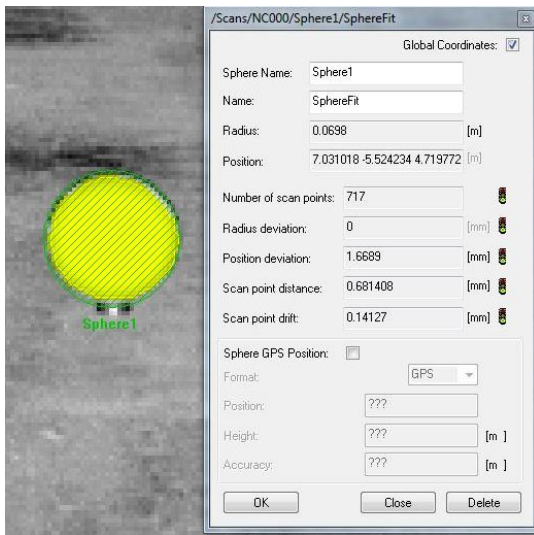
How does 3D laser scanning work?



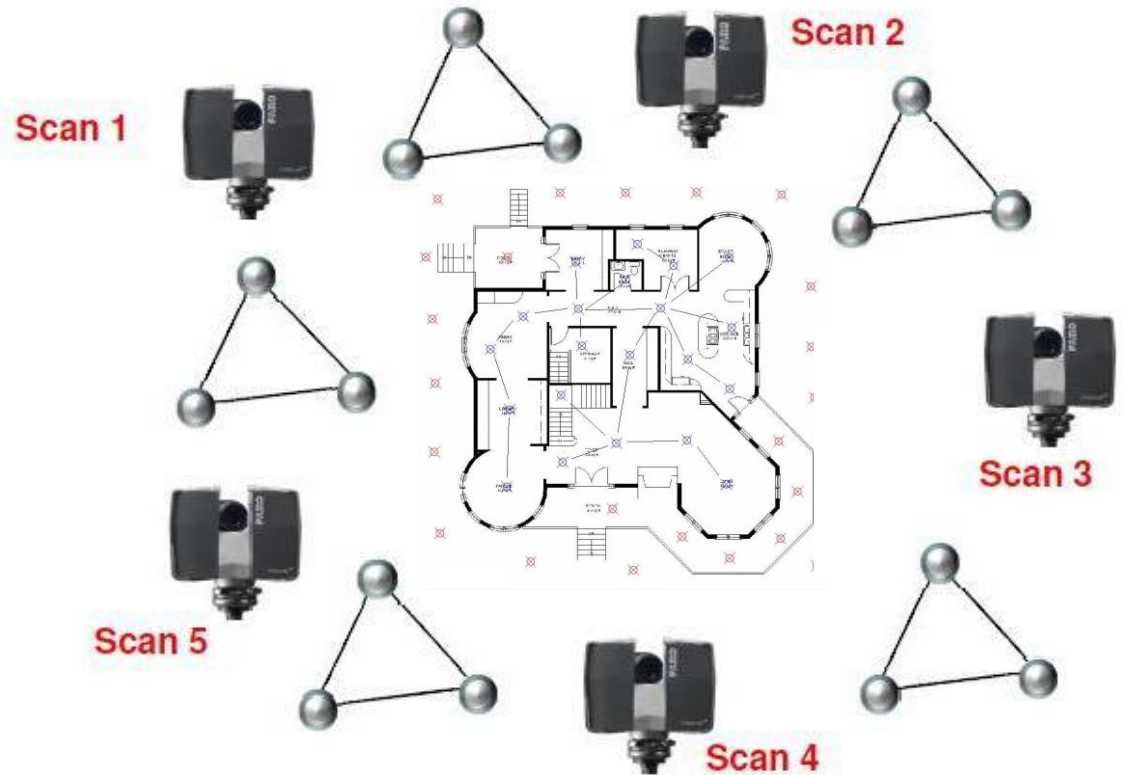
- Capture 669.1 Million points per scan
- Capture points up to 120m from scanner
- Stitching multiple scans together increases point cloud density

How does 3D laser scanning work?

- **Stitching scans together into one point cloud**



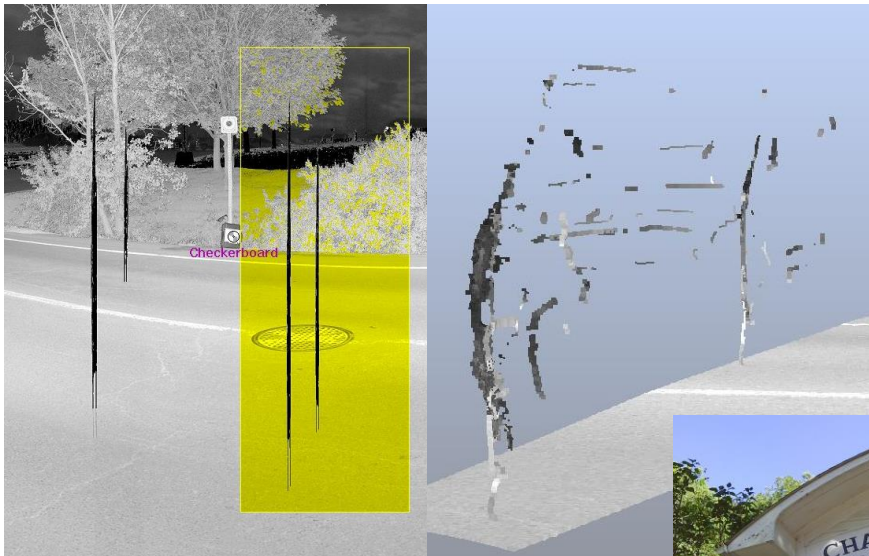
Sphere Target Recognition



Stitch Scans Together Using Targets

How does 3D laser scanning work?

- Point cloud noise



Traffic

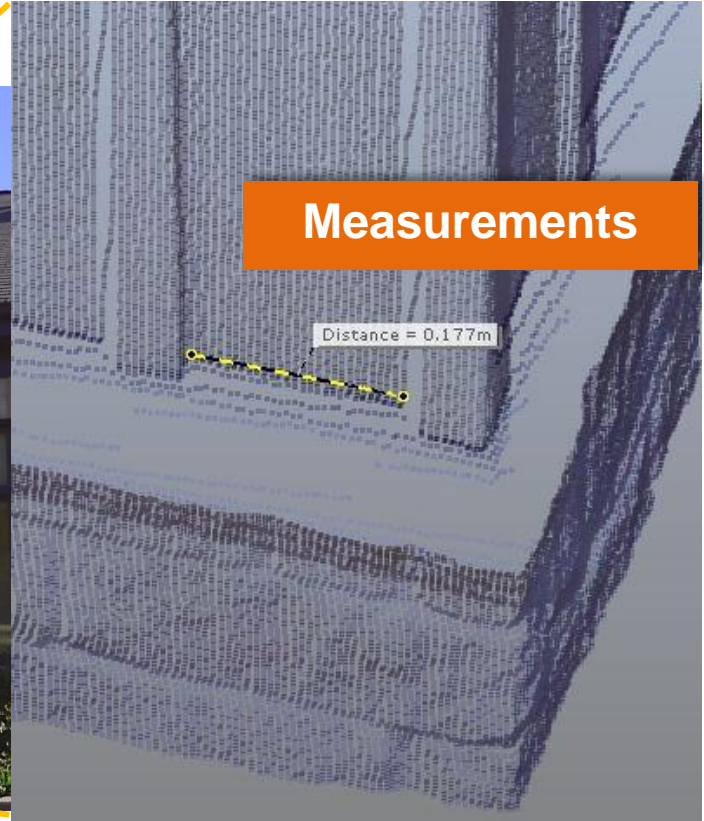
Reflective and Glass Distortion



What can you do with a 3D point cloud?

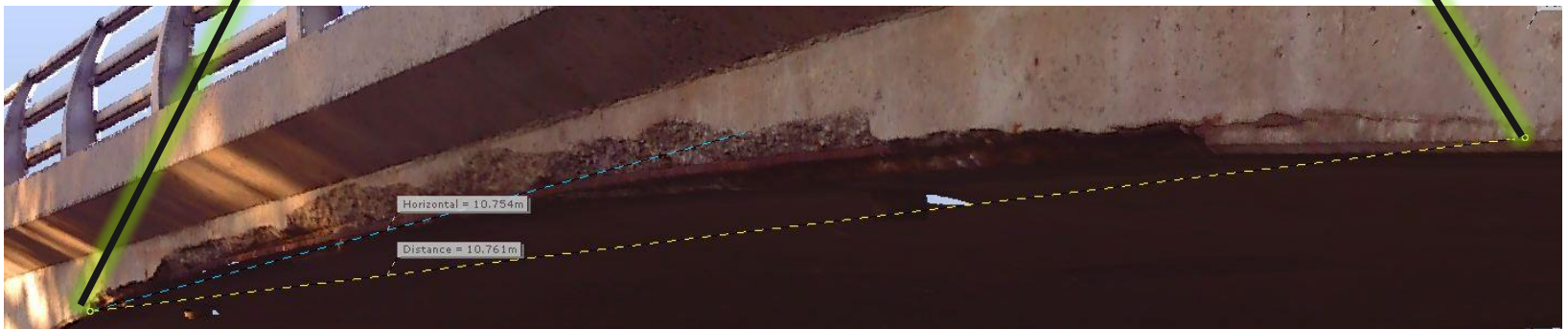


Point Cloud



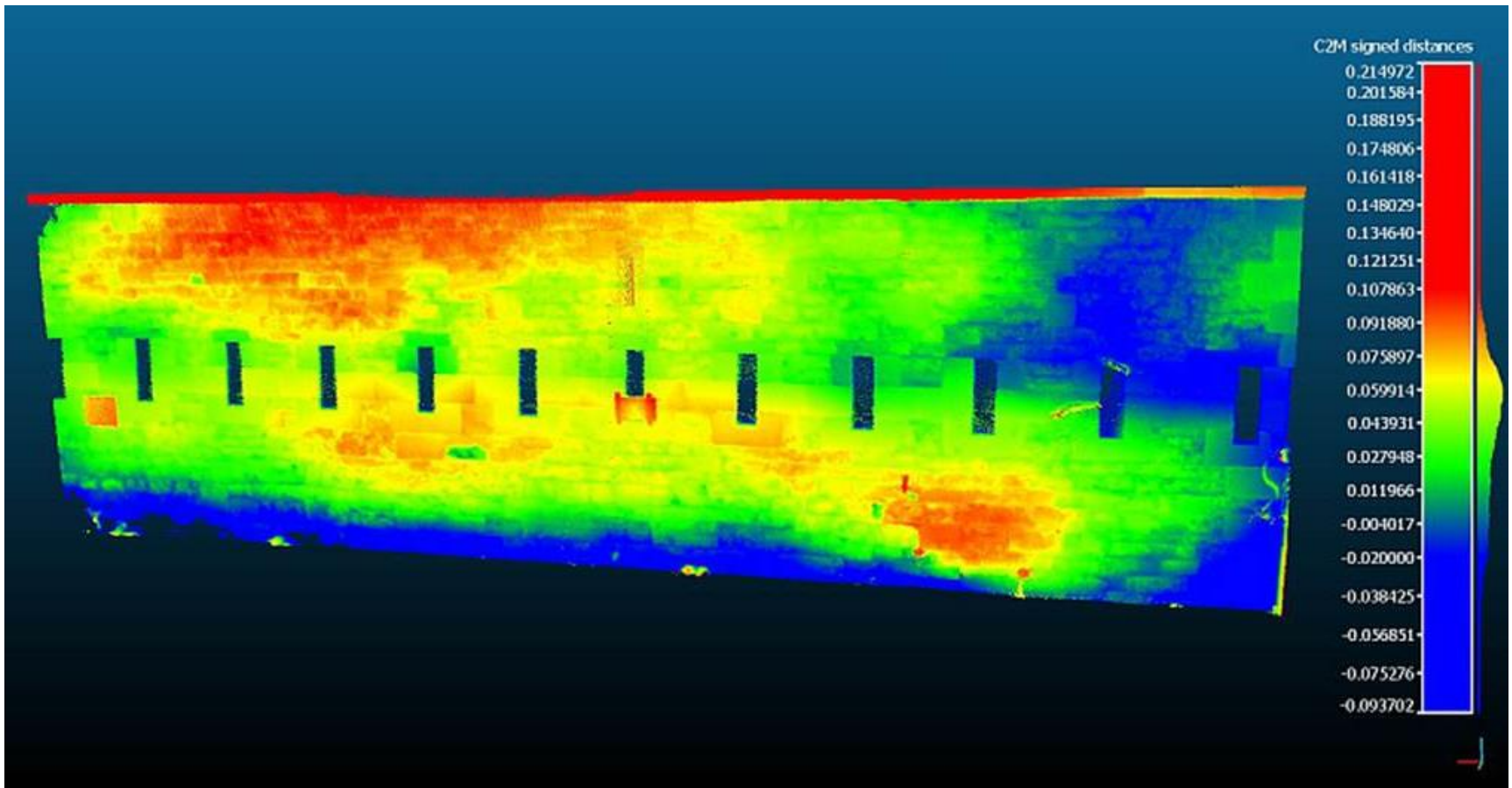
Enlargement

What can you do with a 3D point cloud?



What can you do with a 3D point cloud?

- Analyze point distance from a surface plane or second point cloud.



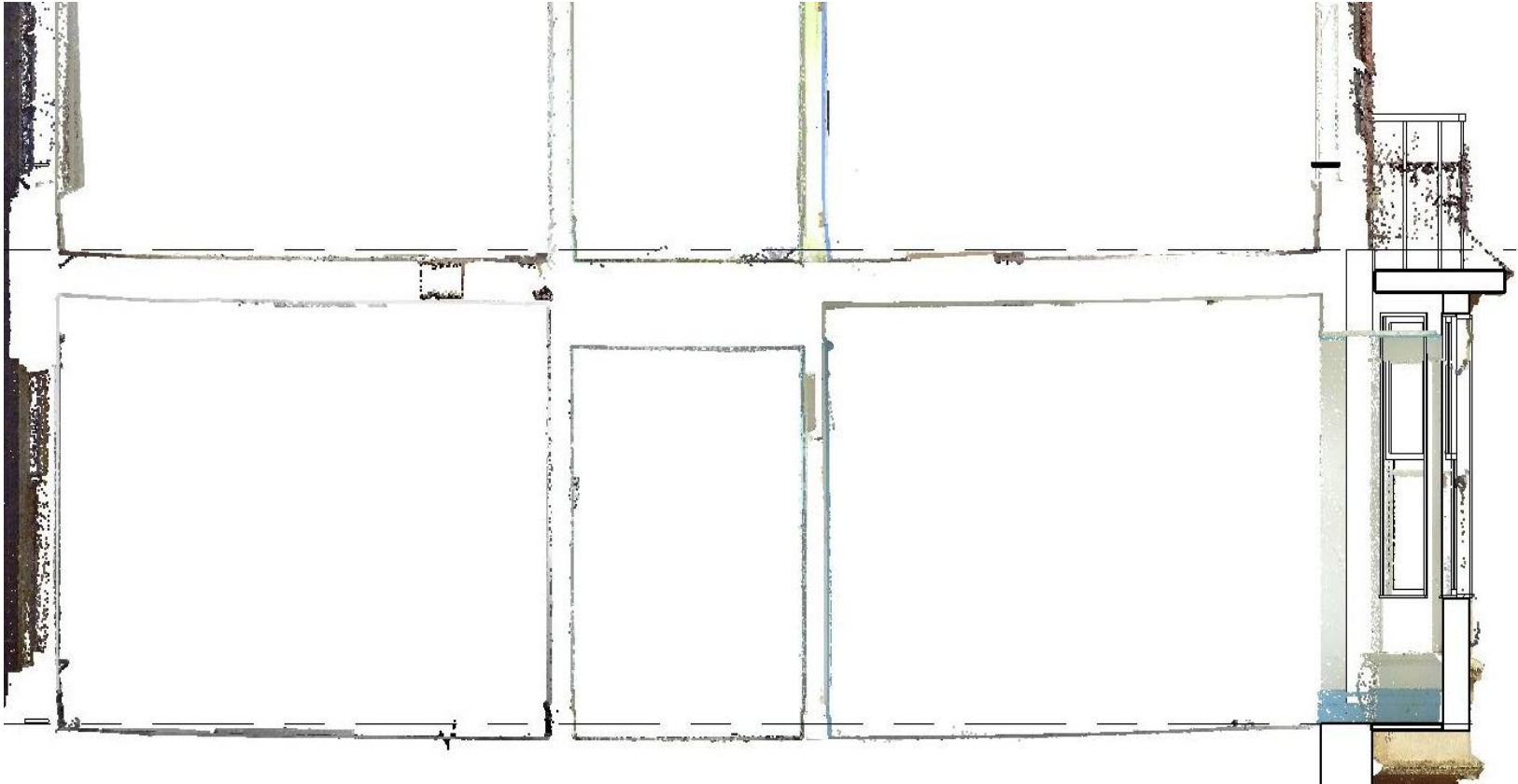
What can you do with a 3D point cloud?

- Reduce risk of injury by operating scanner remotely in hazardous environments
- Capture information in complete darkness



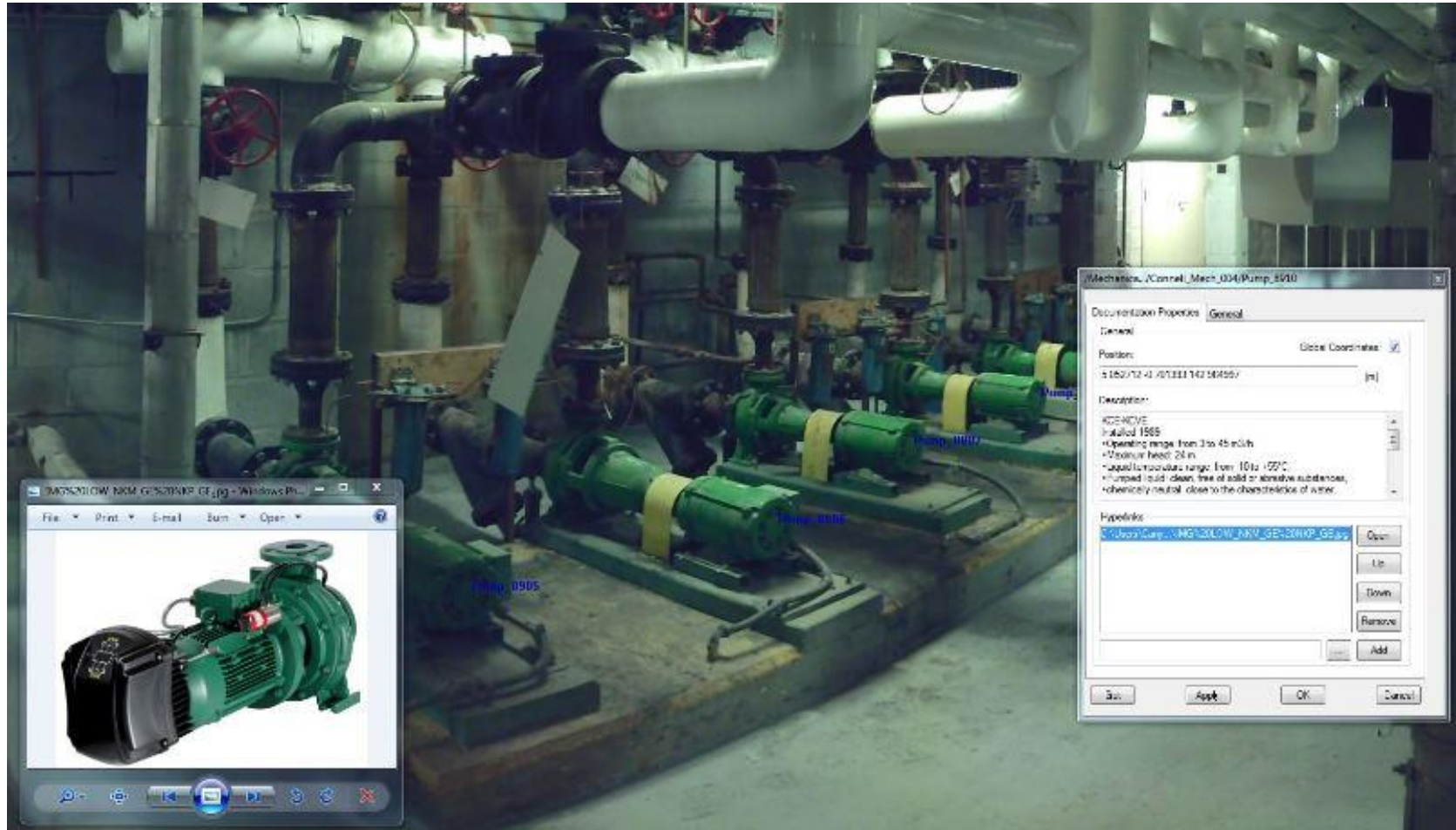
What can you do with a 3D point cloud?

- Identify and analyze structure concerns



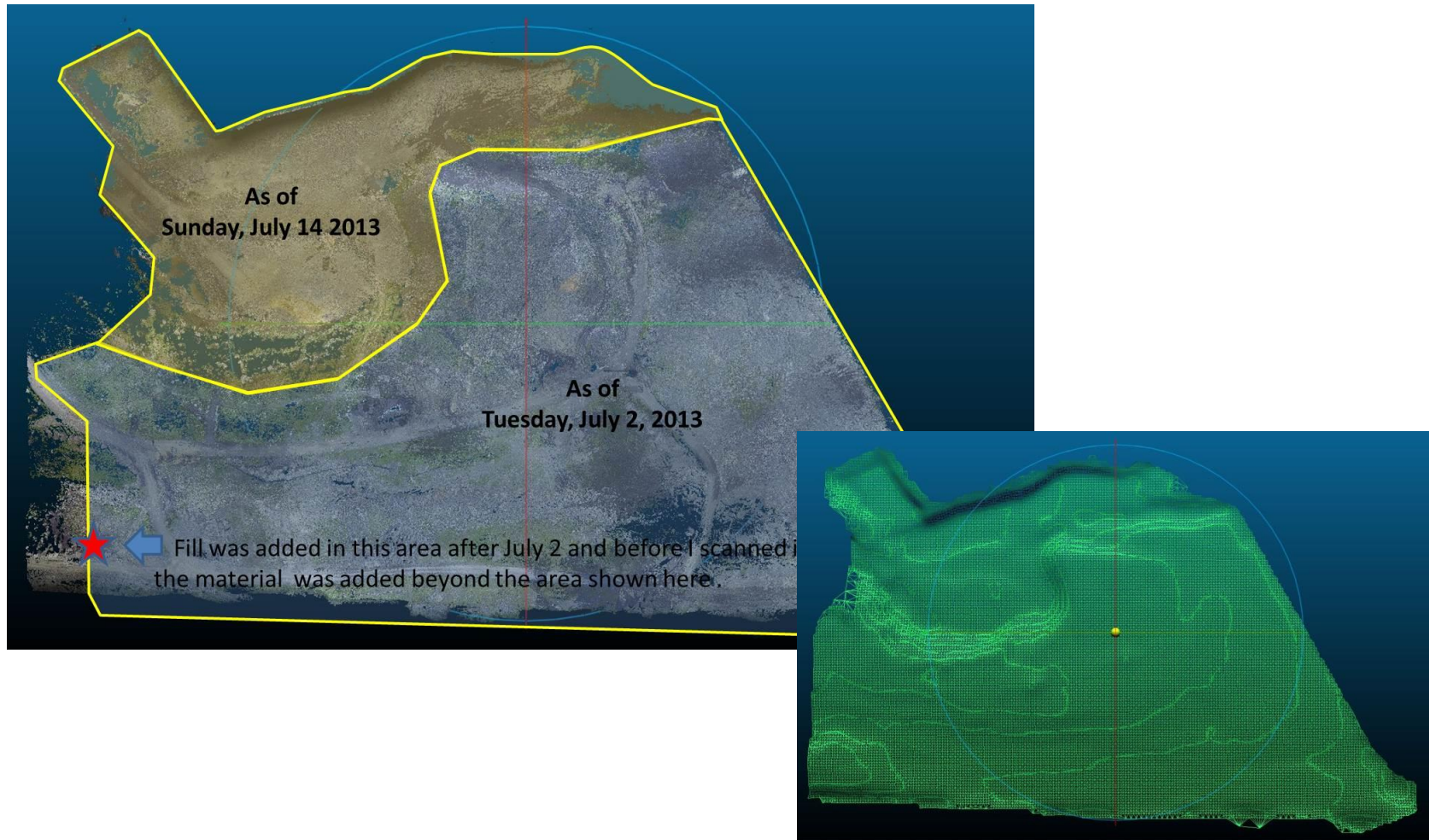
What can you do with a 3D point cloud?

- Identify location of mechanical and hazardous objects



What can you do with a 3D point cloud?

- Terrain and volume calculations



What can you do with a 3D point cloud?



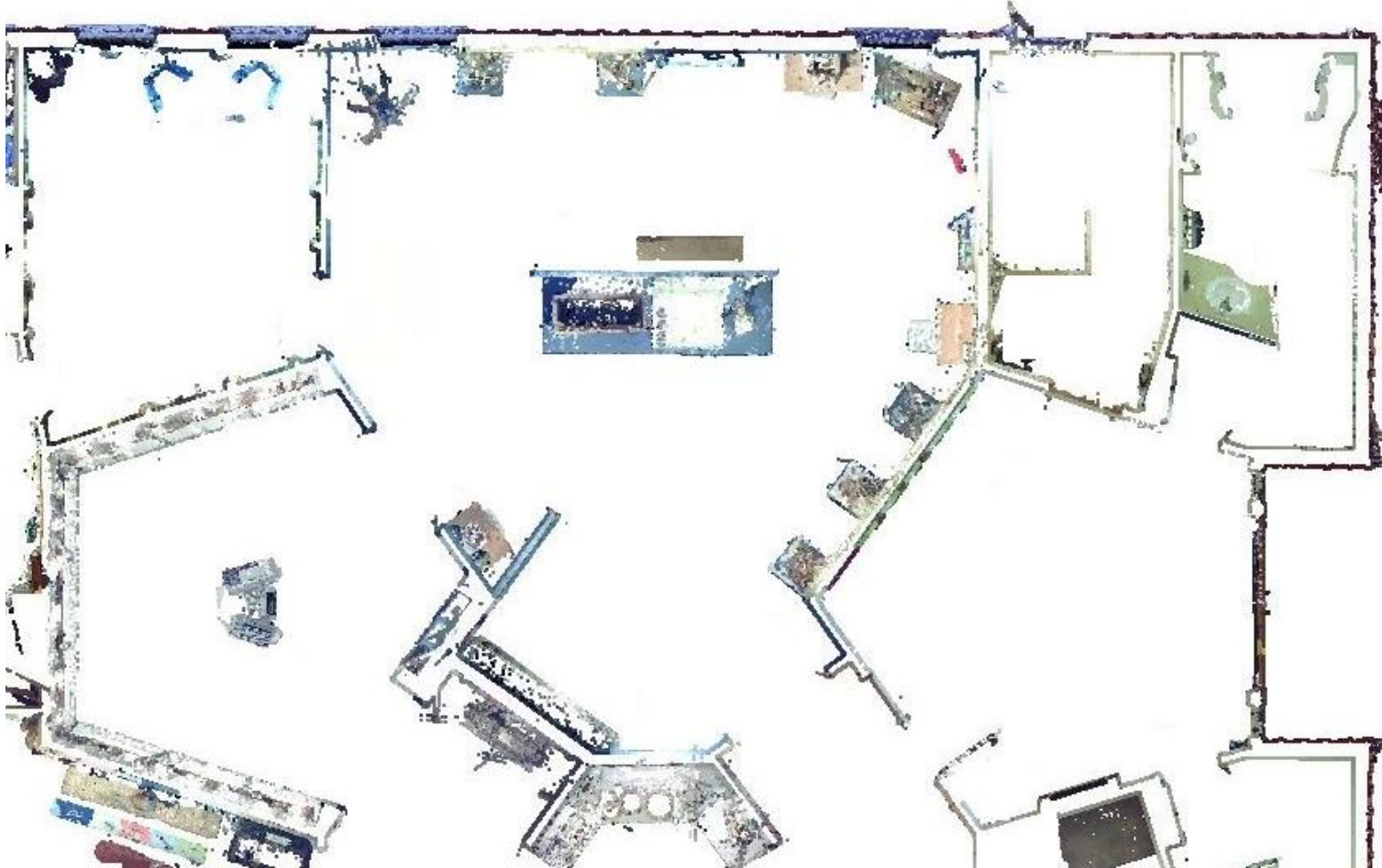
How do you create a BIM from Point Cloud data?

- Create a BIM – Establish levels



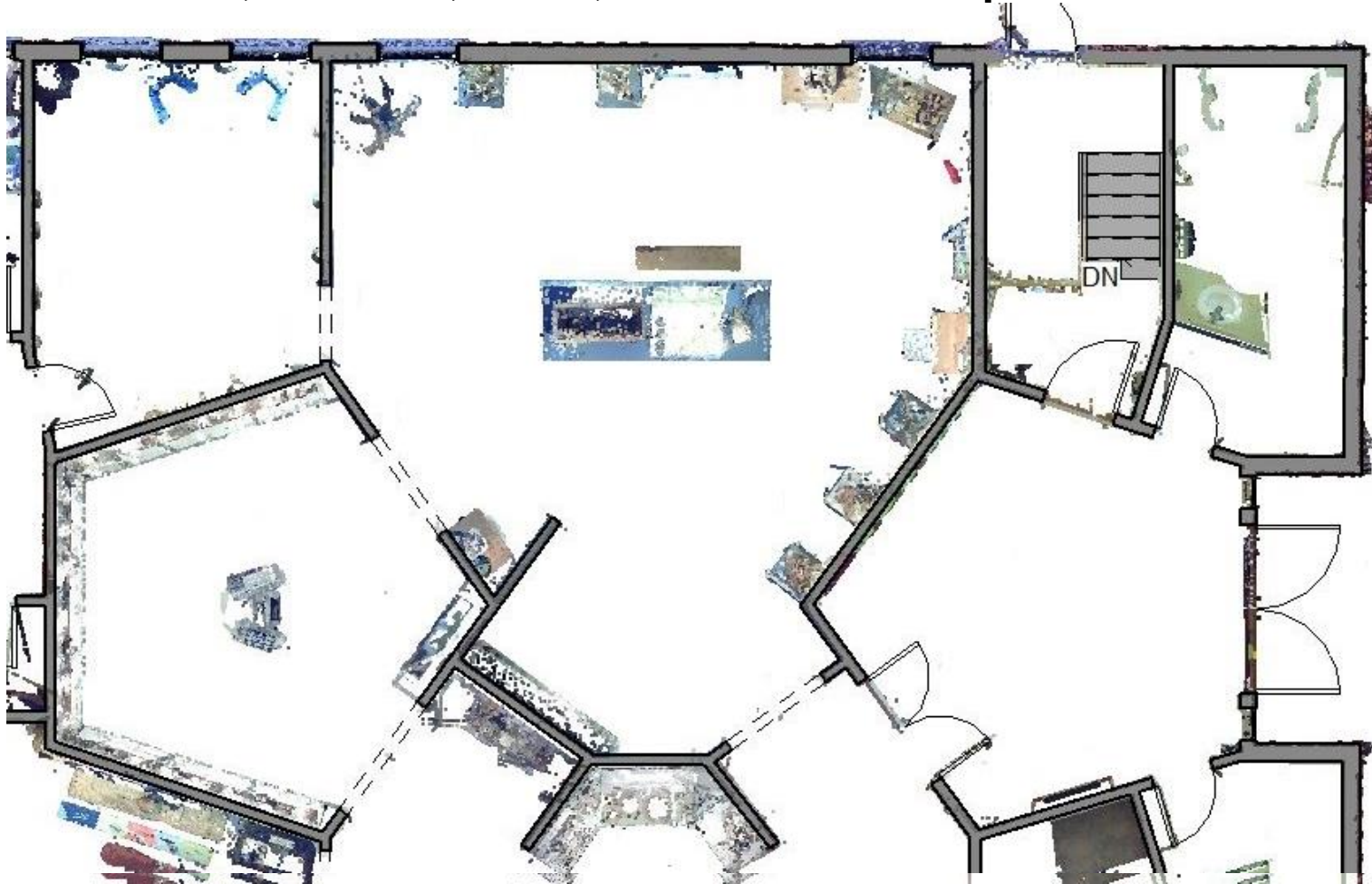
How do you create a BIM from Point Cloud data?

- Trace walls, windows, doors, etc. in Revit from point cloud



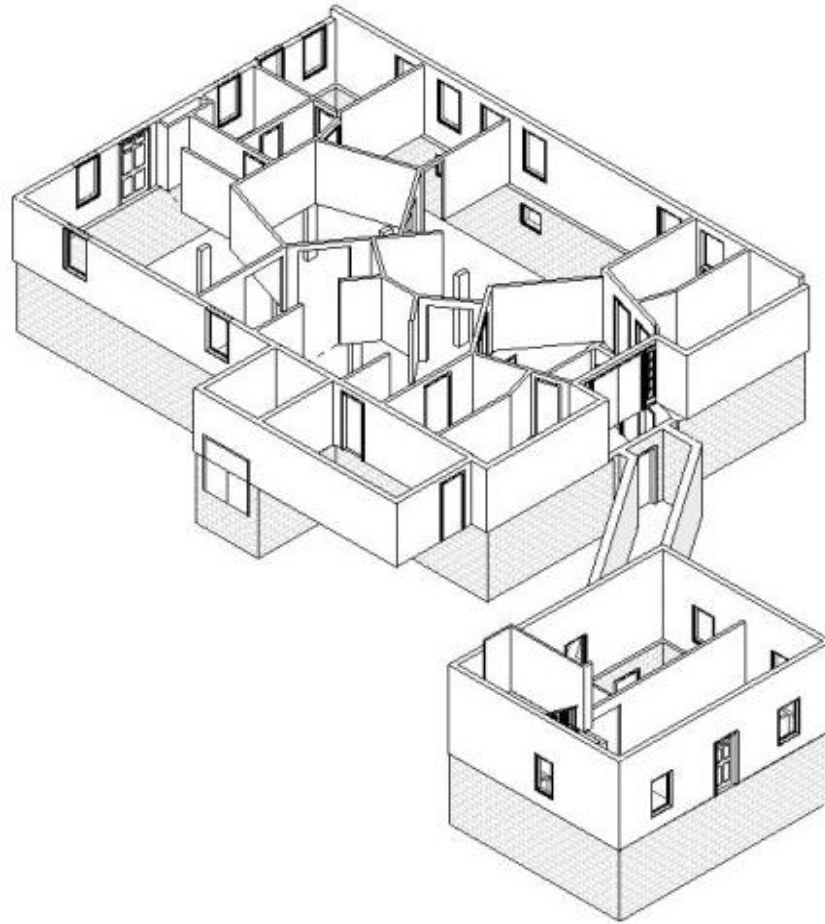
How do you create a BIM from Point Cloud data?

- Trace walls, windows, doors, etc. in Revit from point cloud



How do you create a BIM from Point Cloud data?

- Trace walls, windows, doors, etc. in Revit from point cloud



What can you do with BIM?



- Contract Management
- Asset Inventory
- Condition Assessment
- Space Use Analysis
- Building Performance Analysis
- Accessibility Analysis
- EMS

Point Cloud

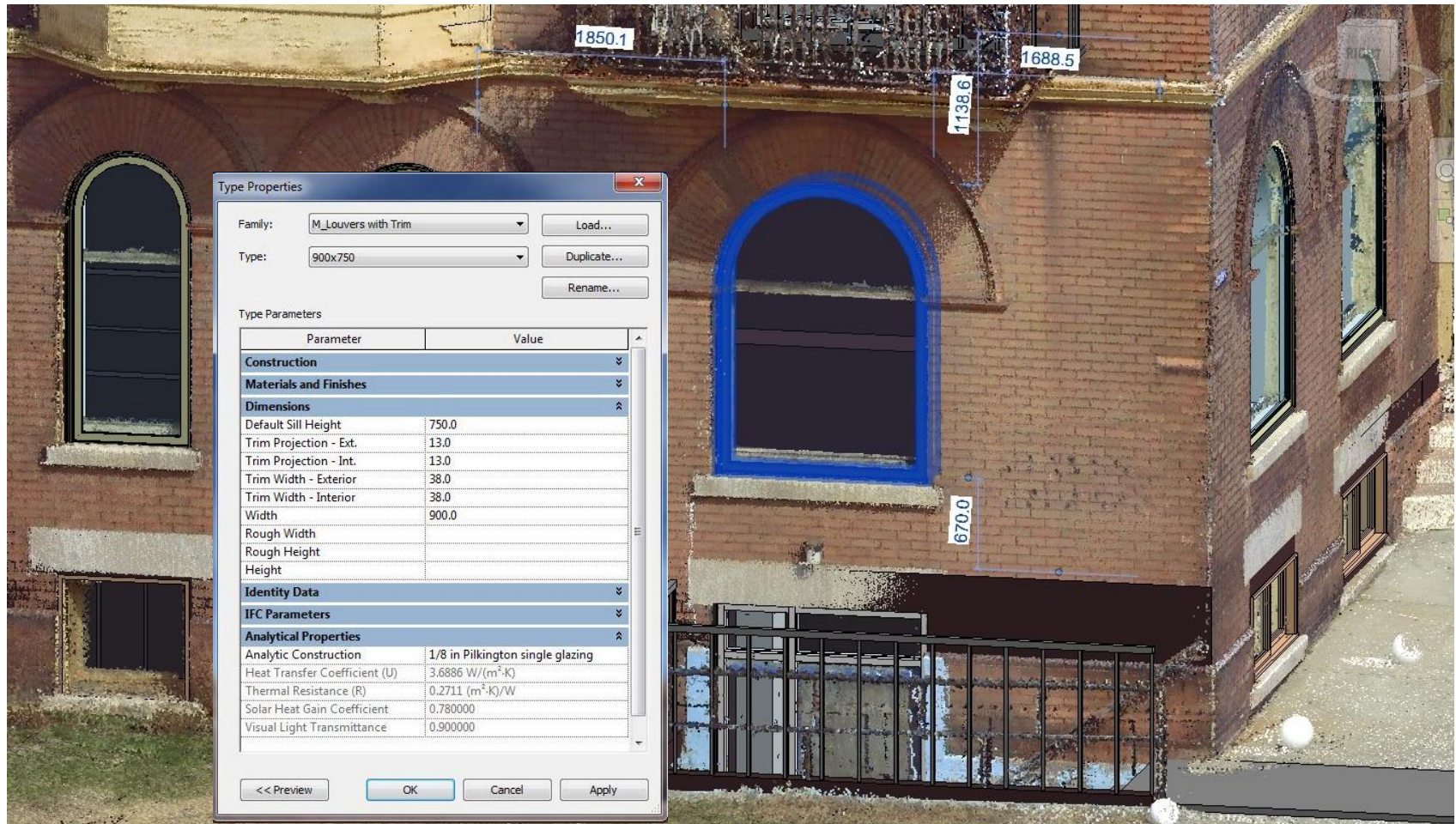


BIM



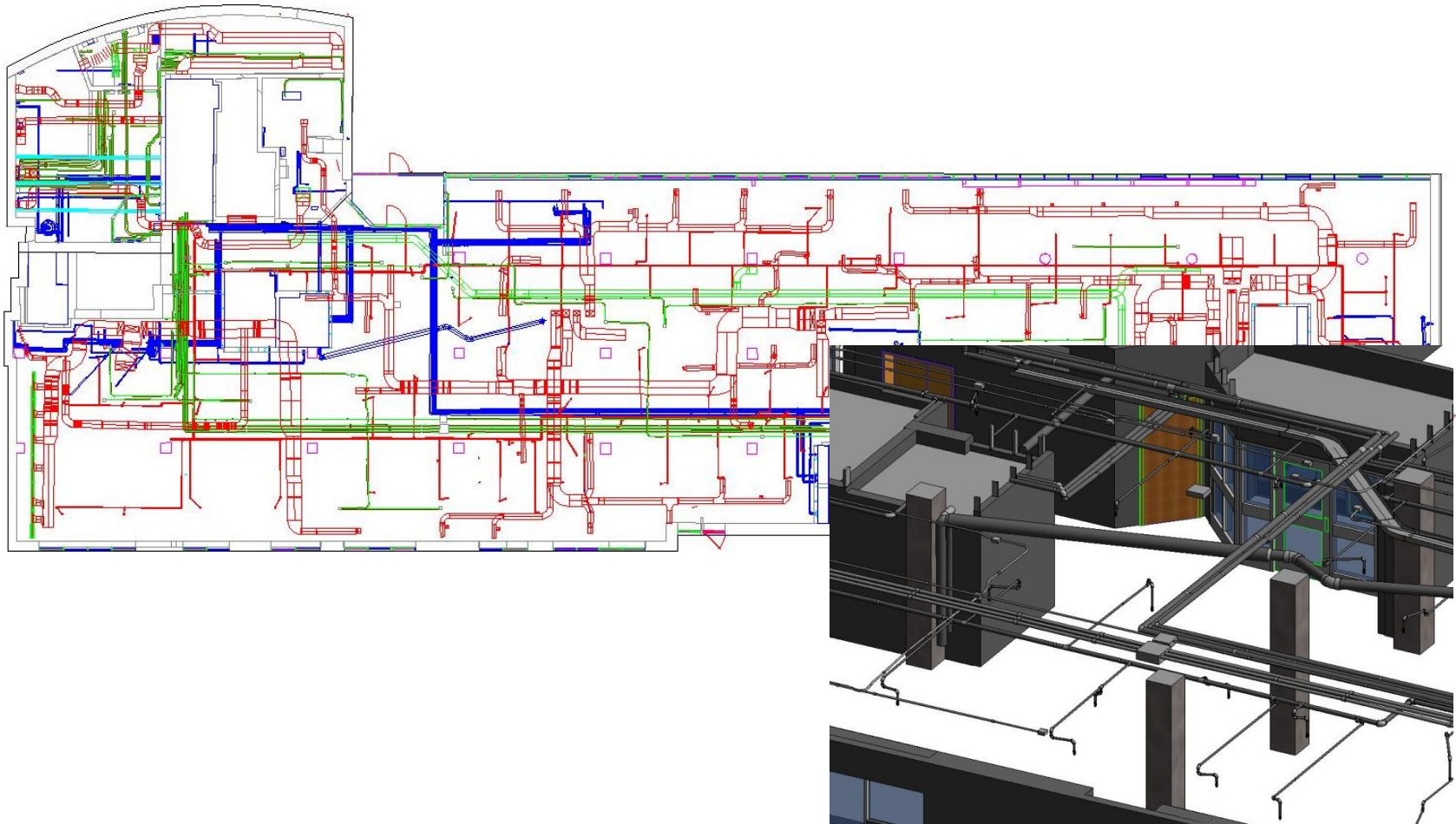
What can you do with BIM?

- Analyze data related to 3D objects



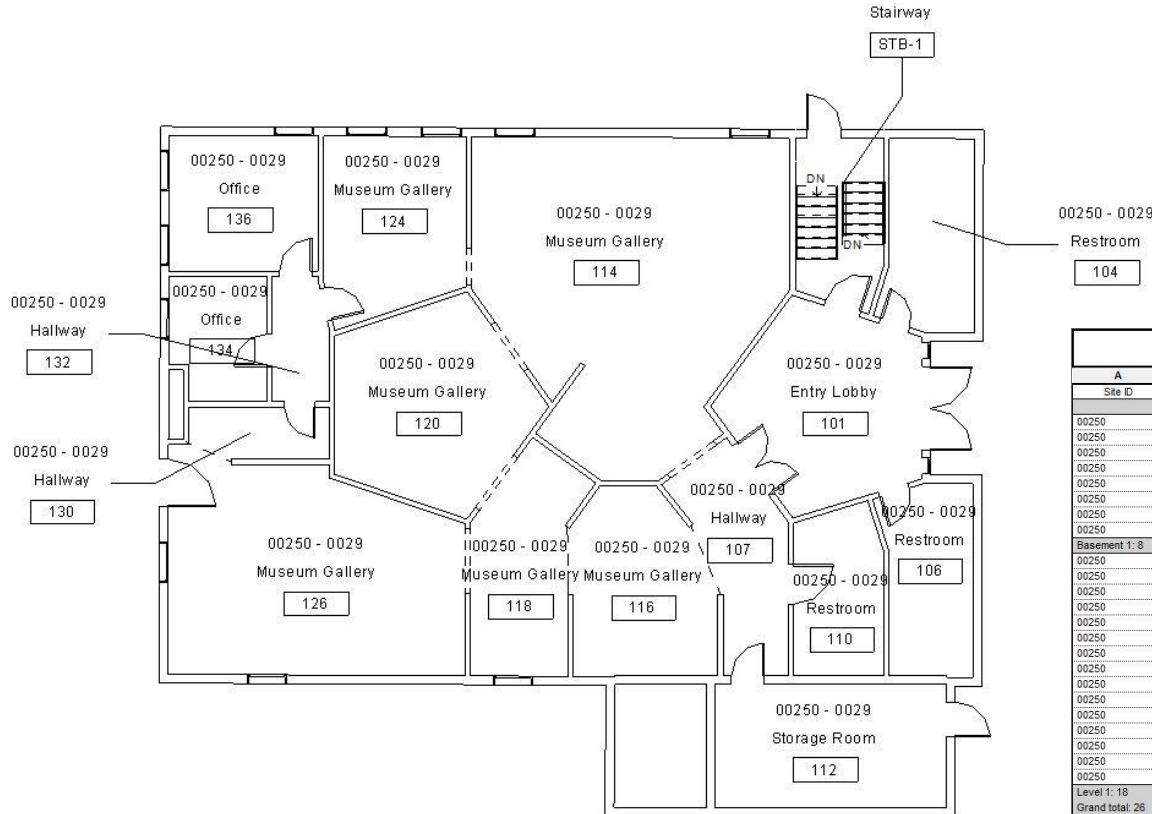
What can you do with BIM?

- Capture and perform mechanical system analysis



What can you do with BIM?

- Assign room numbers and space use and spatially relate to resources and furnishings



<Building 0029>					
A	B	C	D	E	F
Site ID	Building ID	Space use	Room Number	Area	Level
00250	0029	Corridor	B103	19 m ²	Basement 1
00250	0029	Hallway	B101	17 m ²	Basement 1
00250	0029	Mechanical Ro	B105	9 m ²	Basement 1
00250	0029	Stairway	STB-B1	7 m ²	Basement 1
00250	0029	Stairway	STA-B1	9 m ²	Basement 1
00250	0029	Storage Room	B107	24 m ²	Basement 1
00250	0029	Storage Room	B113	171 m ²	Basement 1
00250	0029	Work Space	B109	19 m ²	Basement 1
Basement 1: 8				275 m ²	
00250	0029	Entry Lobby	101	20 m ²	Level 1
00250	0029	Hallway		9 m ²	Level 1
00250	0029	Hallway	107	11 m ²	Level 1
00250	0029	Museum Galler	118	13 m ²	Level 1
00250	0029	Museum Galler		30 m ²	Level 1
00250	0029	Museum Galler	120	21 m ²	Level 1
00250	0029	Museum Galler	126	36 m ²	Level 1
00250	0029	Museum Galler	114	53 m ²	Level 1
00250	0029	Office	134	7 m ²	Level 1
00250	0029	Office	136	12 m ²	Level 1
00250	0029	Restroom	110	9 m ²	Level 1
00250	0029	Restroom		20 m ²	Level 1
00250	0029	Stairway	STB-1	9 m ²	Level 1
00250	0029	Storage Room	112	18 m ²	Level 1
00250	0029	Wall Cavity	100	1 m ²	Level 1
Level 1: 18				289 m ²	
Grand total: 26				544 m ²	

What can you do with BIM?

- Integrate BIM with GIS and into 3D visualization



What can you do with BIM?

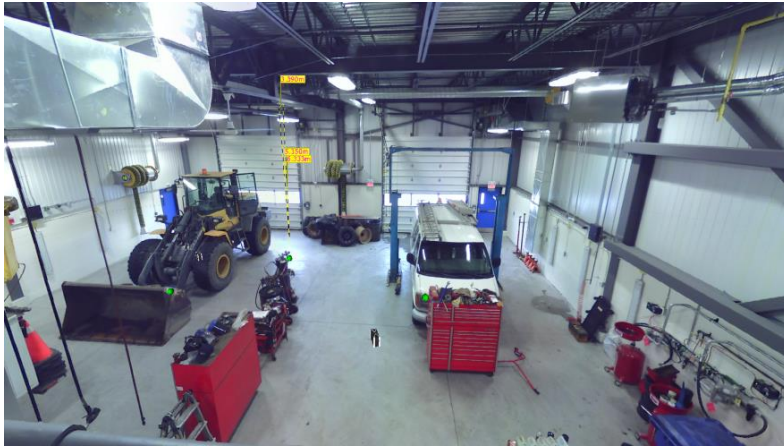
- Real time 3D emergency response systems



3D Laser Scanning Applications



Summary



Asset Inventory

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scott.mckeever@canyonlogics.com

www.canyonlogics.com



Dam Condition Assessment