Pointfuse

Converting LiDAR Scan Data to X3D Data

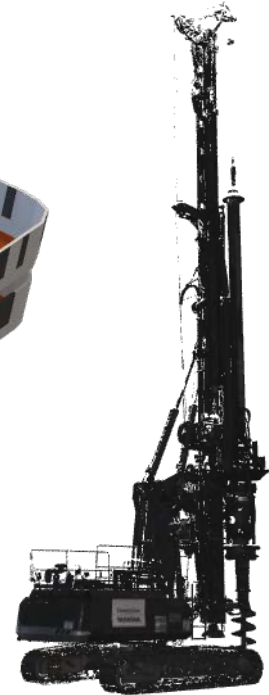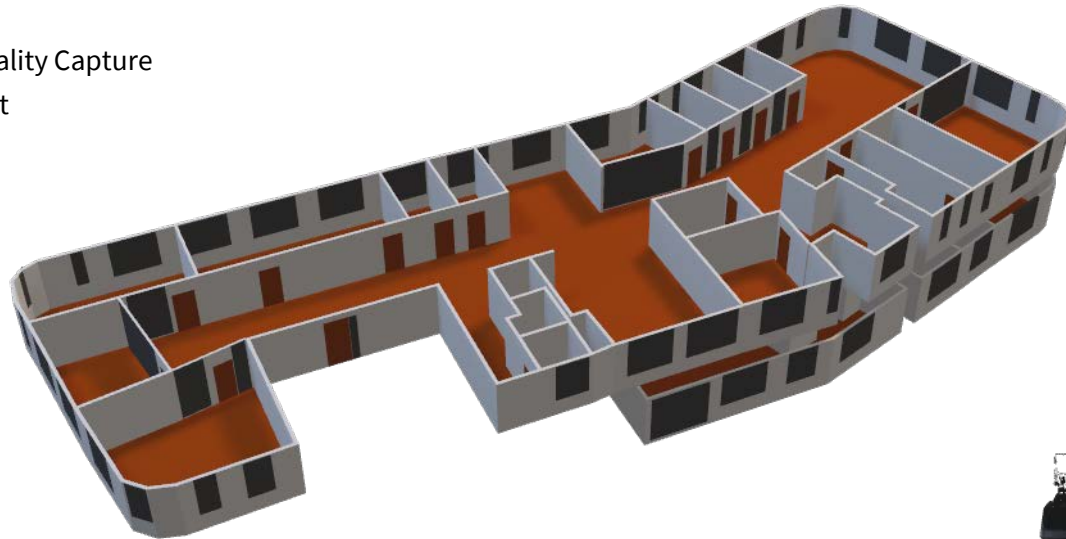Mark Senior

Regional Director

web|3D CONSORTIUM

X3D

Converting LiDAR Scan Data to X3D Data

Agenda

- What's great and not so great about point clouds
- What is Pointfuse?
- Workflows that can benefit
- 'as-built' modeling from Reality Capture
- sBIM for space management
- Visualization

What's great and not so great about point clouds

+

- More coverage than traditional surveying techniques

- Accurate and precise data

- Easy to use hardware that can quickly and efficiently capture an entire site

- Less manual work and trips to jobsite – much of the work can be performed in the office

−

- Large data size that many software packages cannot handle

- In its raw form they lack intelligence

- Requires skill and experience to interpret the right information

- Takes time to process into a usable format

Pointfuse converts point clouds into a more usable format – helping to deliver efficiencies across the whole workflow

web|3D CONSORTIUM

X3D
3D ANYWHERE

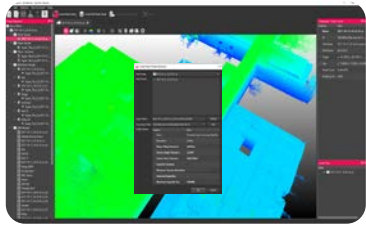# What is Pointfuse?

Overview:

- Middleware software for creating mesh models
- USP is the automatic creation of a segmented mesh model
- Can use any point cloud format: structured or unstructured
- In order 100x smaller file sizes compare to point cloud
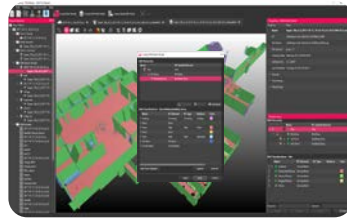- Three main application: **'as-built' modeling – Space Management - Visualization**
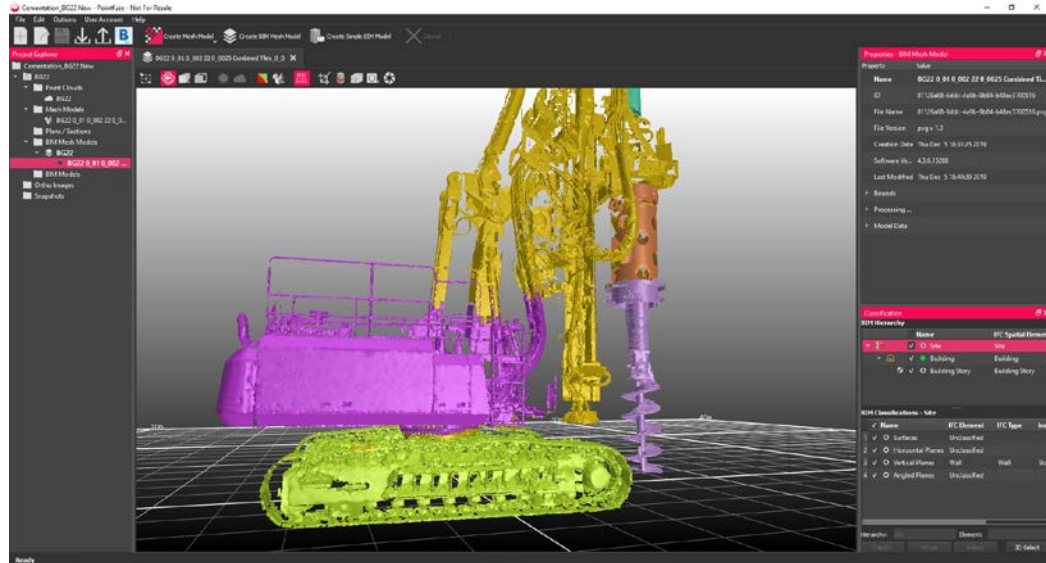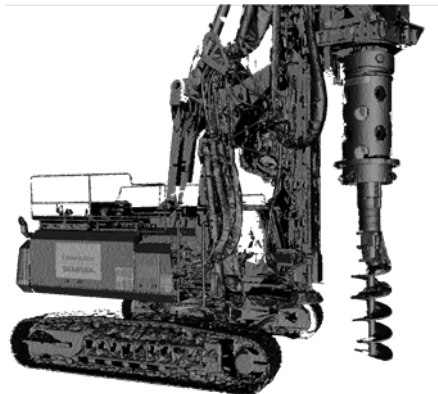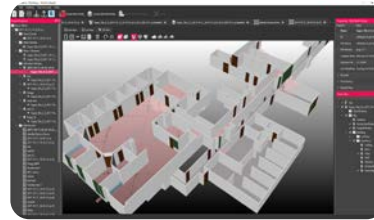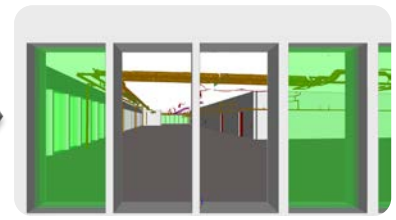
What is Pointfuse?
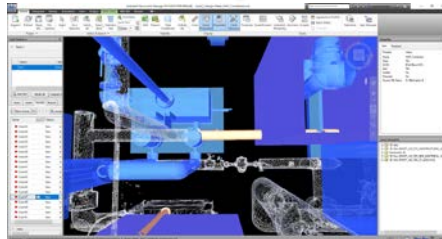
The workflow:

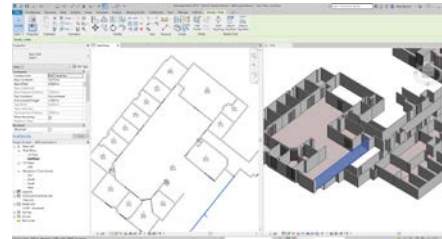| Create Mesh Model | Classify to IFC schema | Paramaterize mesh | Export to X3D |

| 'as-built' modeling | Space Managemnet | Visualization |

'as-built' modeling for Reality Capture?

Key workflows:

- As-built conditions as base geometry for designers
- Accurate as built models for clash detection and verification
- Textured models for use in visualizations, for communication with owners and stake holders.
- Asset ID's with GUID
- Key decision making without visiting site
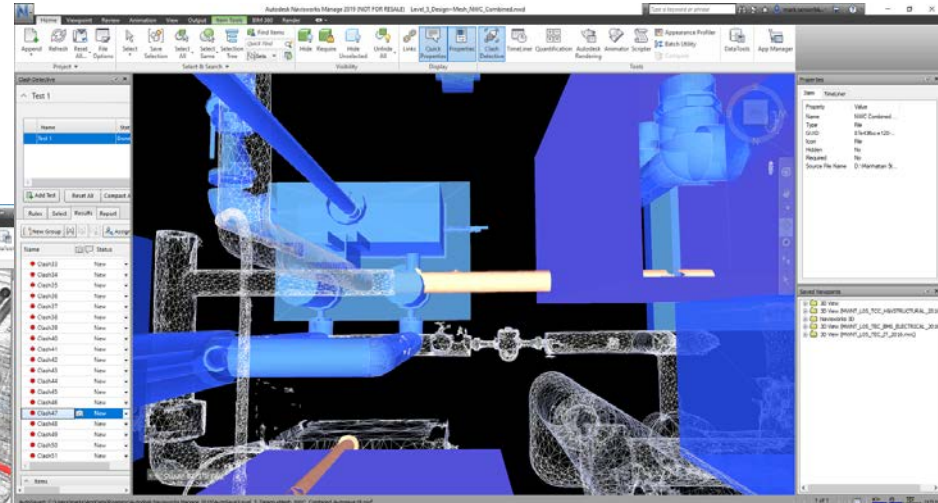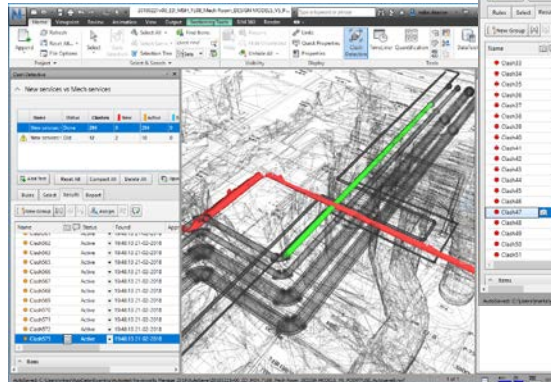
sBIM for space management

Key workflows:

- Automatic parametrized walls, doors, windows and floor from mesh

- As quick to derive 3D as 2D compare to traditional techniques

- sBIM can be exported to X3D format

- Automatic PDF model reports in PDF format including floor space, number of rooms, doors, windows and area quantities

- 2D as a by product of the 3D
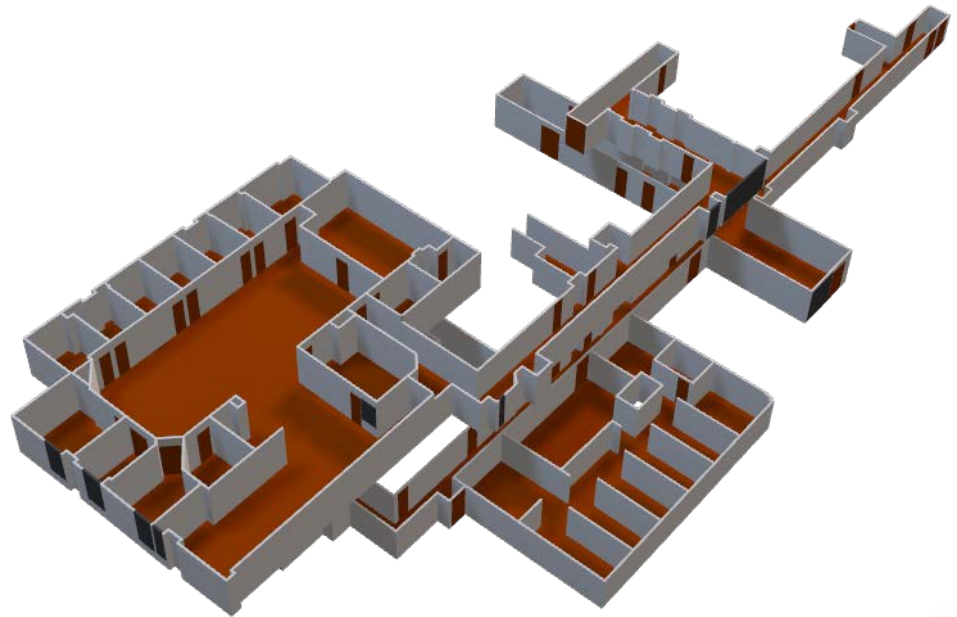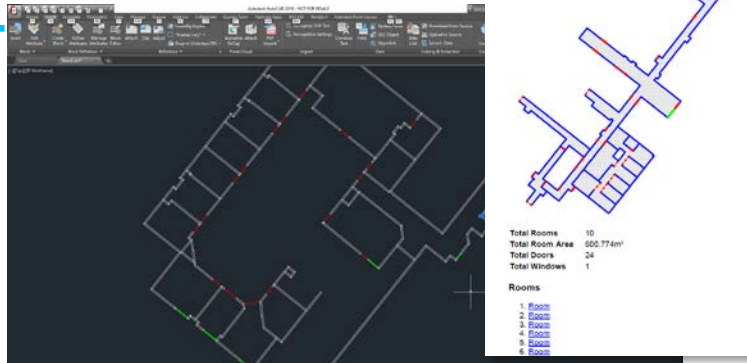
Visualization

Key workflows:

- High quality textures without high density datasets

- Mesh can be easily cleaned to remove objects like people

- Textures can be edited and enhanced

- Segmented meshes can be used with gaming engines like Unity for virtual planning and layout in VR

Thank you