Mapshots

Point Cloud to BIM in no Time
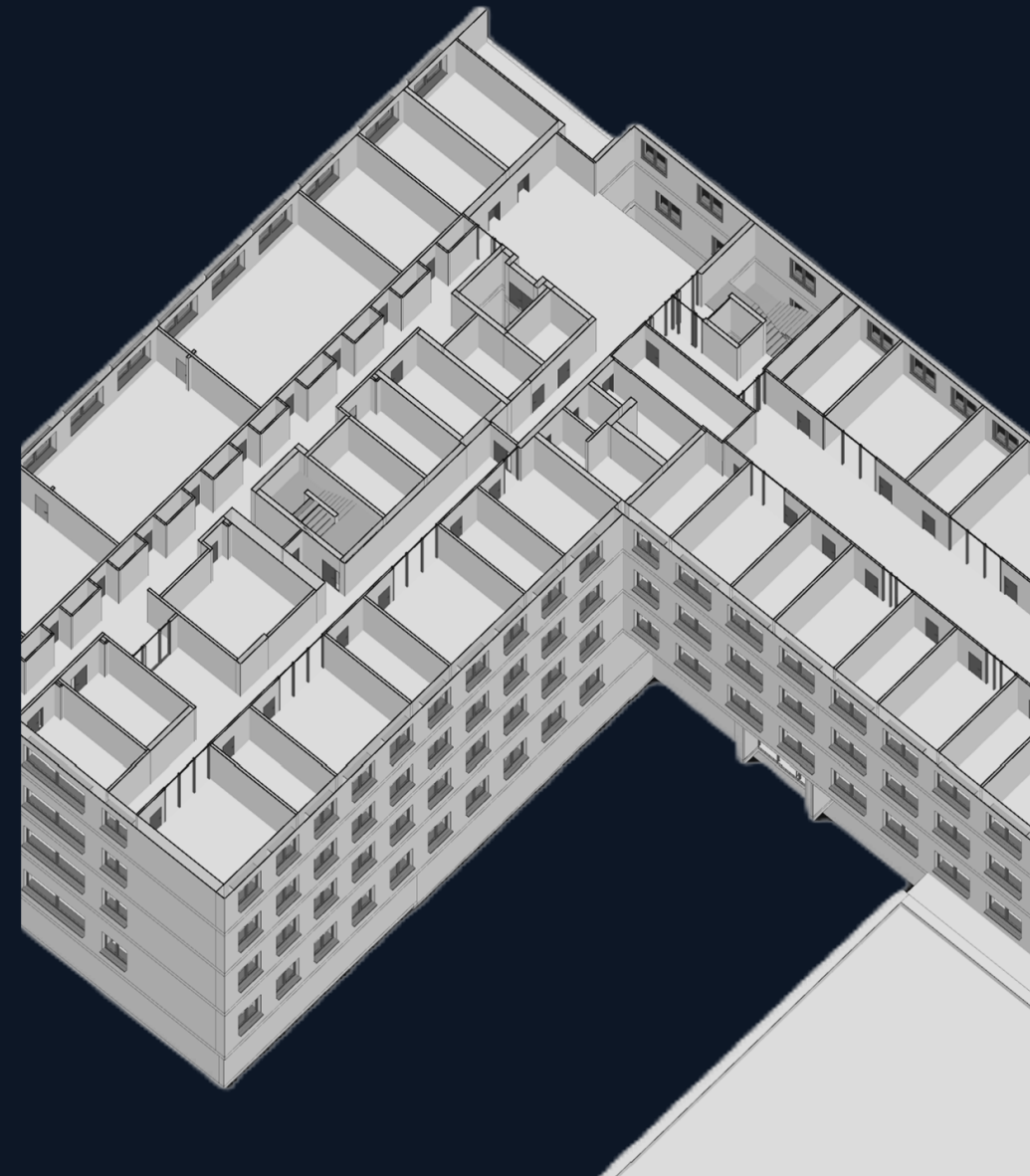
STATUS QUO

PROBLEM

life cycle costs

efficient production processes

Circularity of buildings
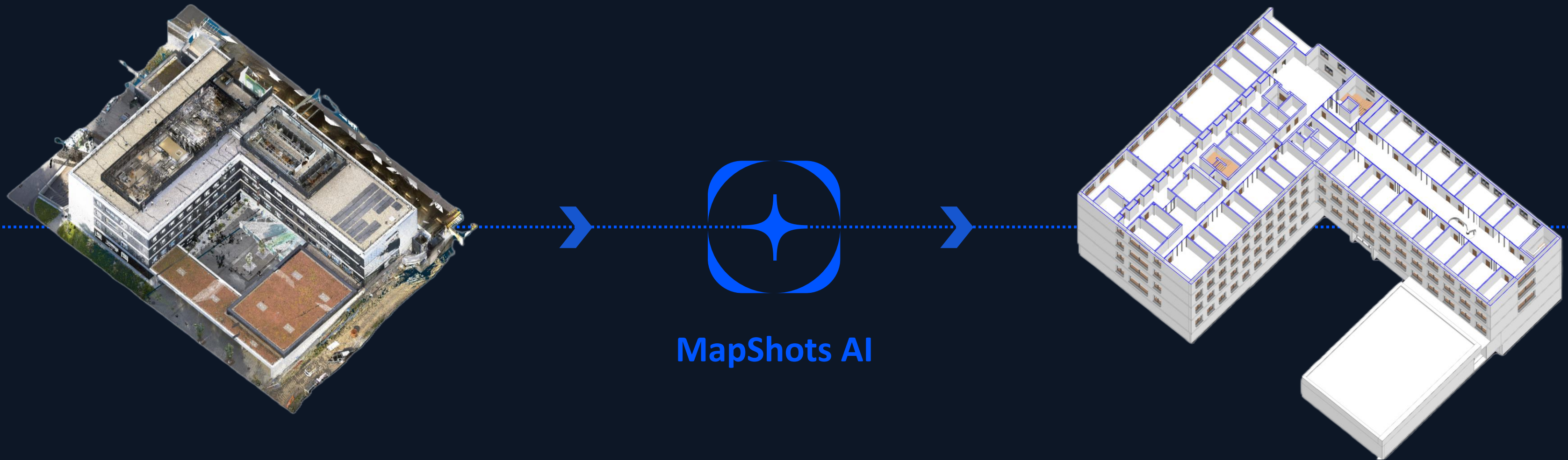
Building/material pass

Dynamic simulations

**IMPOSSIBLE WITHOUT
DIGITAL MODELS**

- **No PLANNING DOCUMENTS (2D or 3D)**

- **unfiltered POINT CLOUDS**

- **MANUAL MODELLING**
  time consuming, error prone, expensive

- lacking **HUMAN RESOURCES**, and **TIME** for planning processes

Mapshots

2

SOLUTION

We use **AI** to **automatically** generate **structured BIM models** (IFC) from **point clouds**.

MapShots AI

SOLUTION

1. Upload Point Cloud

Take it as scanned - No preprocessing required!

Just upload your e57 file

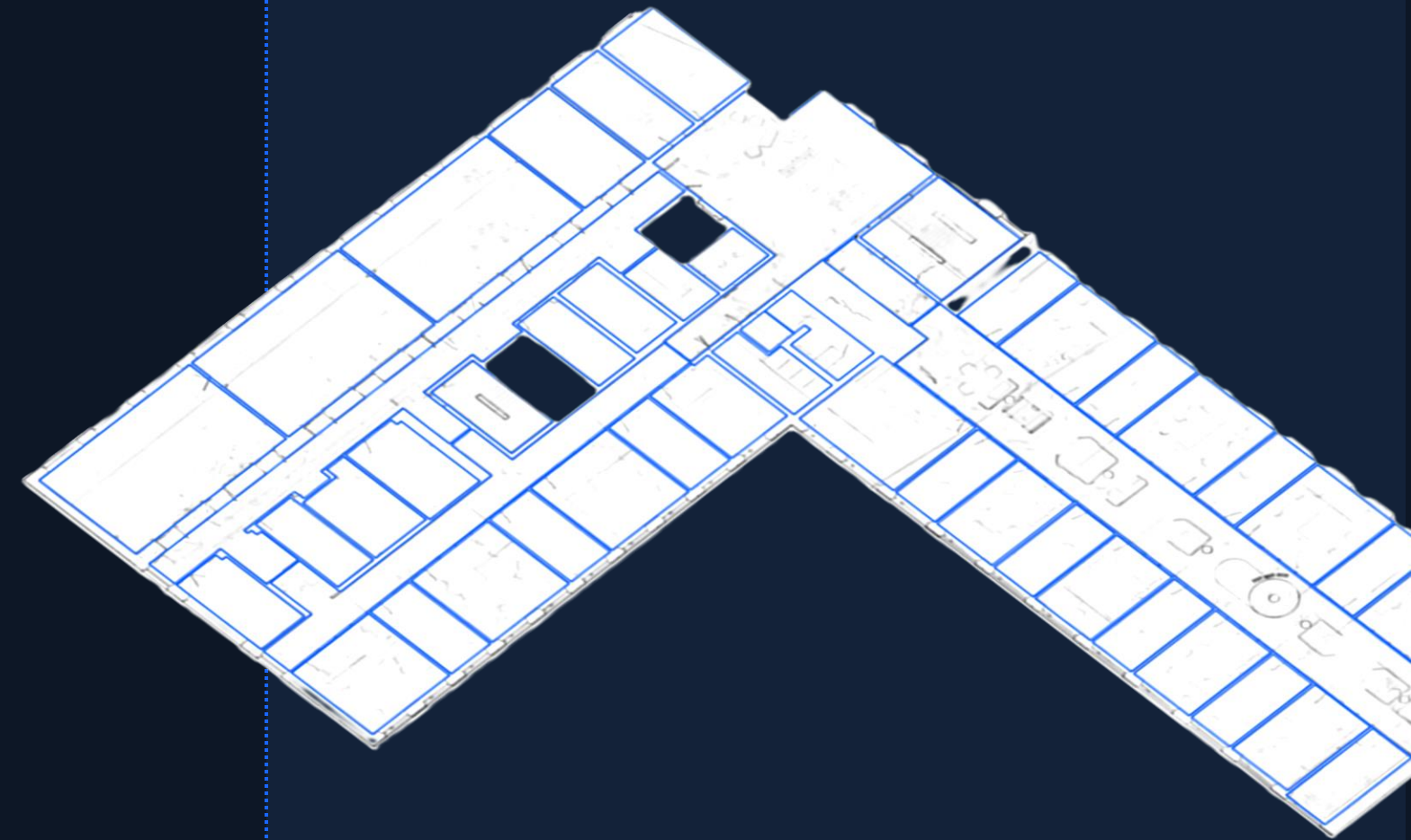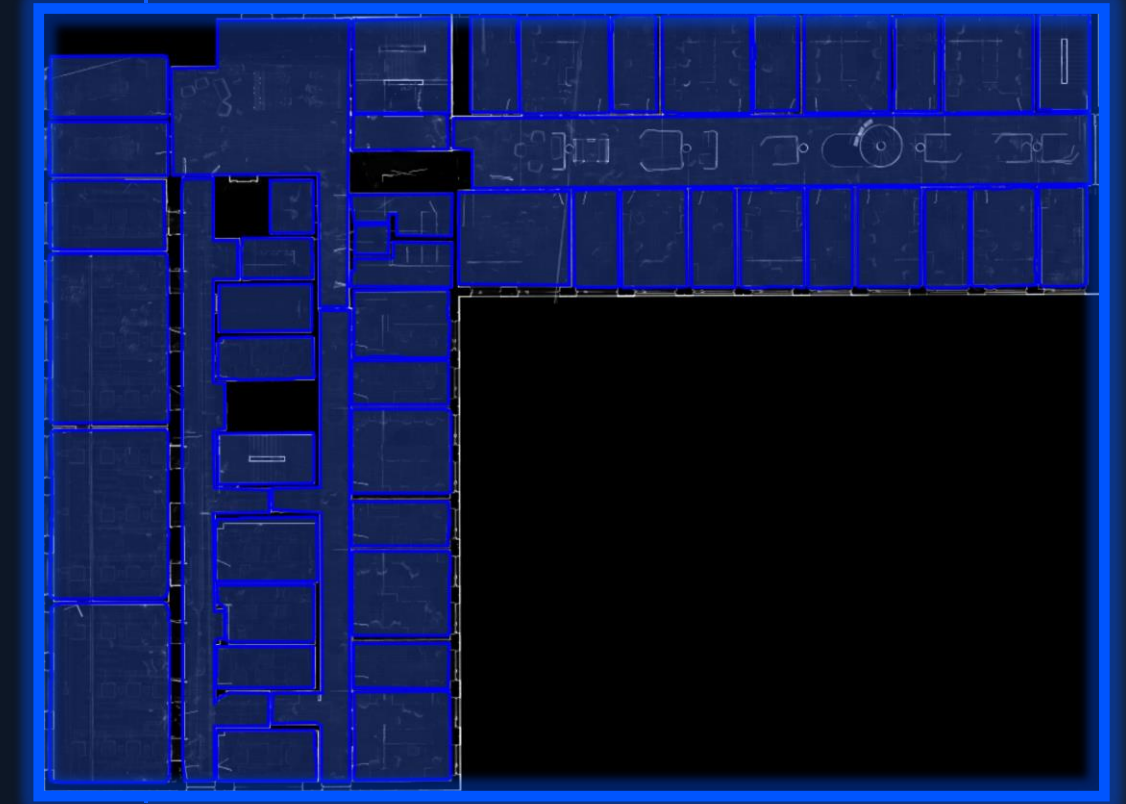## 2. Automated Modelling

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Algorithms & AI

3. Output

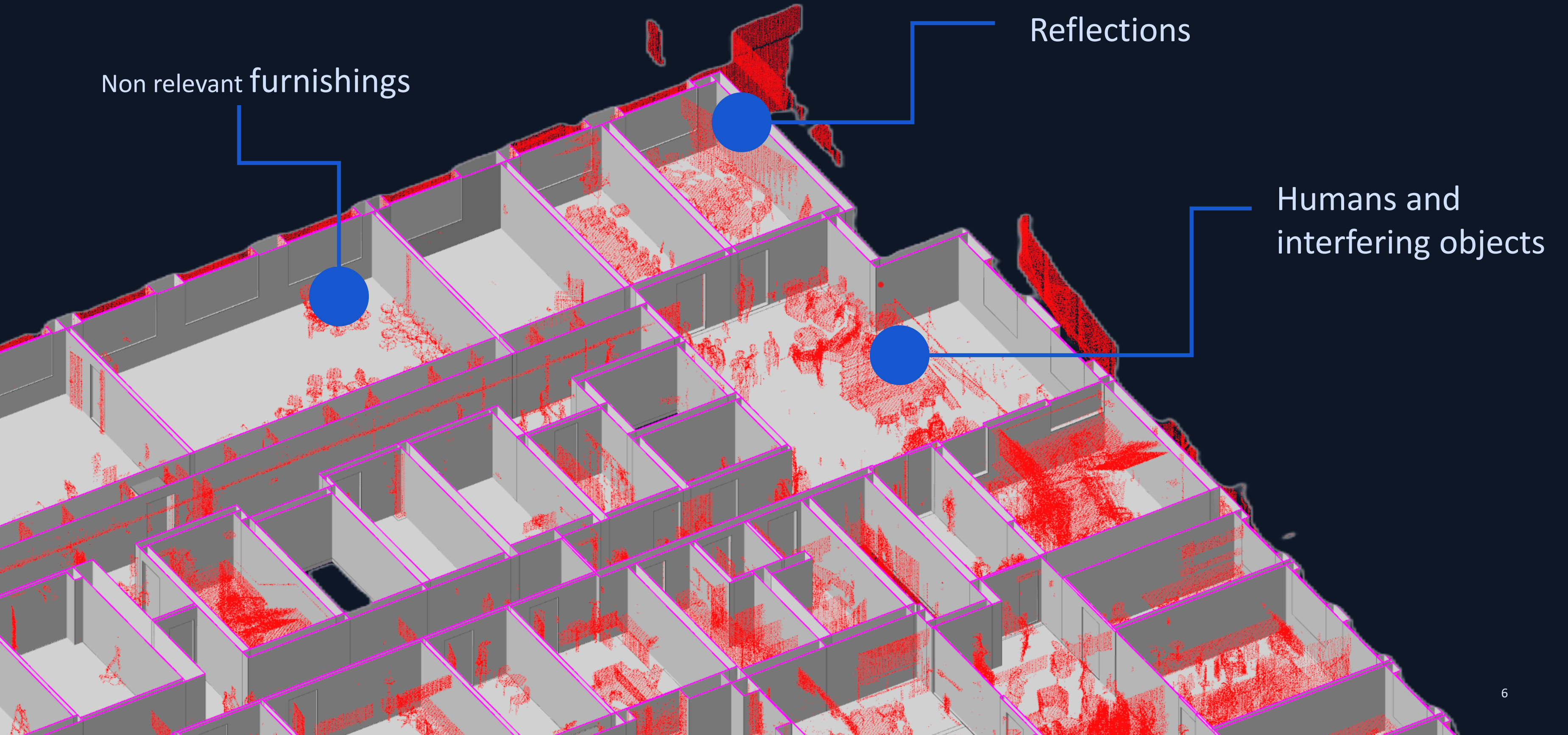**Structured IFC4-file** with

- Storeys, Rooms, Walls, Windows, Doors, etc.)
- Objects with **attributes** (room height, areas, etc.)

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AI

Layout Extraction

- **AI-based analysis** of the point cloud to recognize floor plan layout

- **Algorithmic** optimization to adjust for missing data

- **Highly robust** against furniture, clutter, occlusion and other unwanted objects
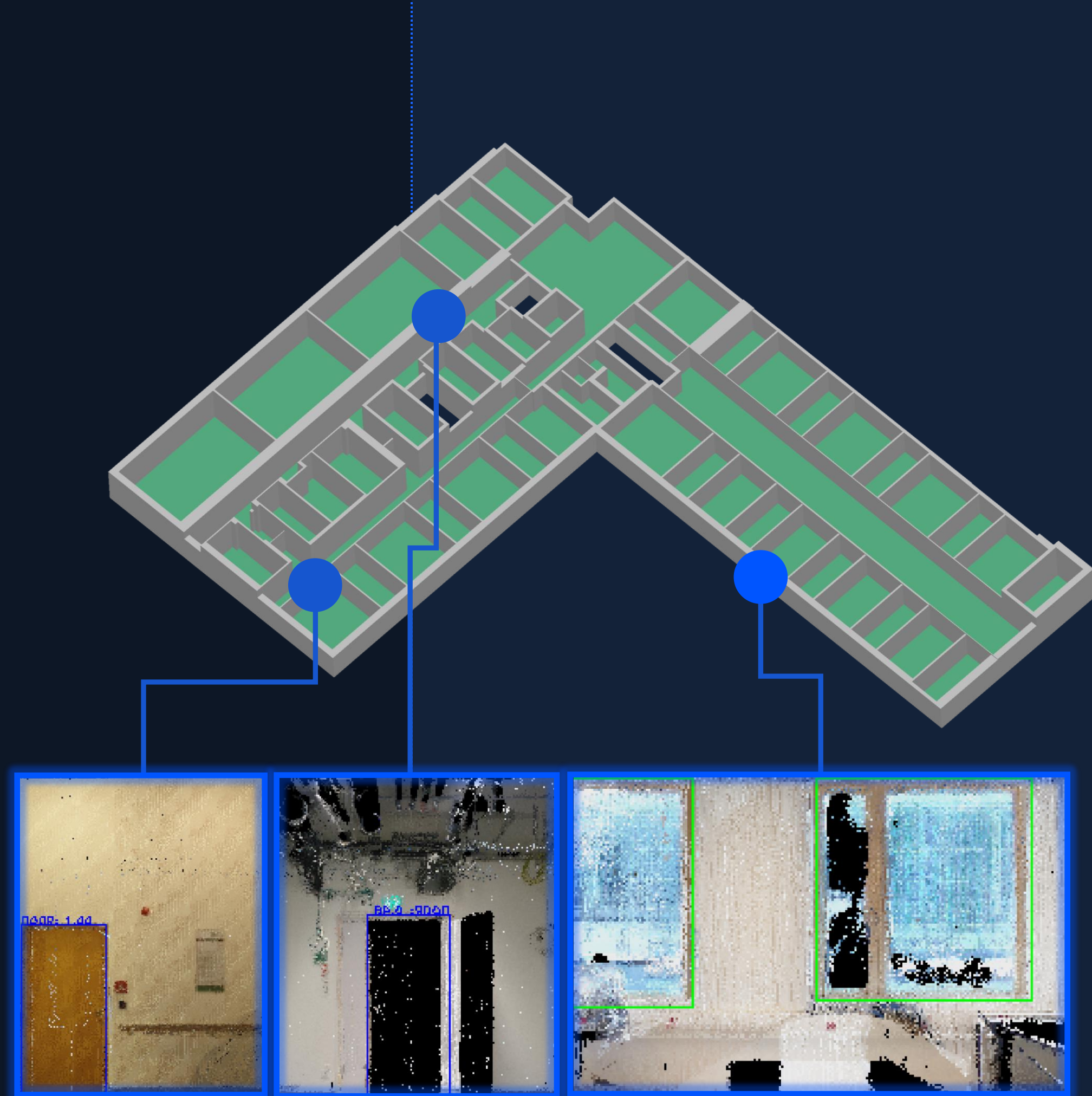
- **Possibility** of manual intervention

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BONUS FEATURE: AUTOMATIC REMOVAL OF...

Non relevant furnishings

Reflections

Humans and interfering objects

AI

Window & Door Detection

- **Neural Network Object Detector** for detecting Windows, Doors and Openings

- RGB or Intensity

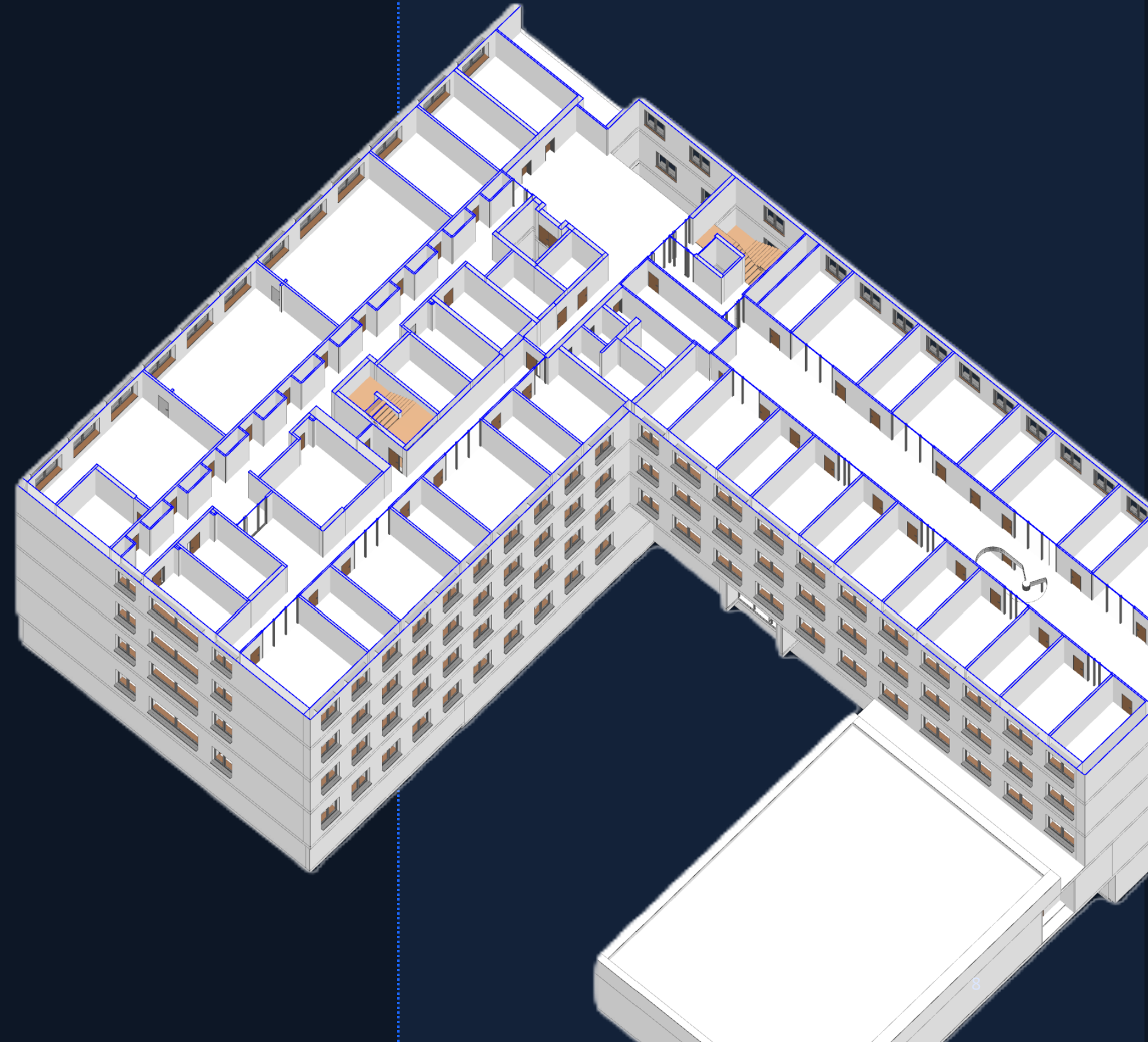- Works **consistently** even when few points are present due to glass surfaces

OUTPUT

Complete IFC-Structure

- **Automatically merge floors** for complete building model

- Contains fundamental **IFC-Classifications**

- Save geometry **information**

Result

- Hierarchical IFC-Modell

- IFC4 and LOG 200

- Interoperable with all common **BIM-Software**
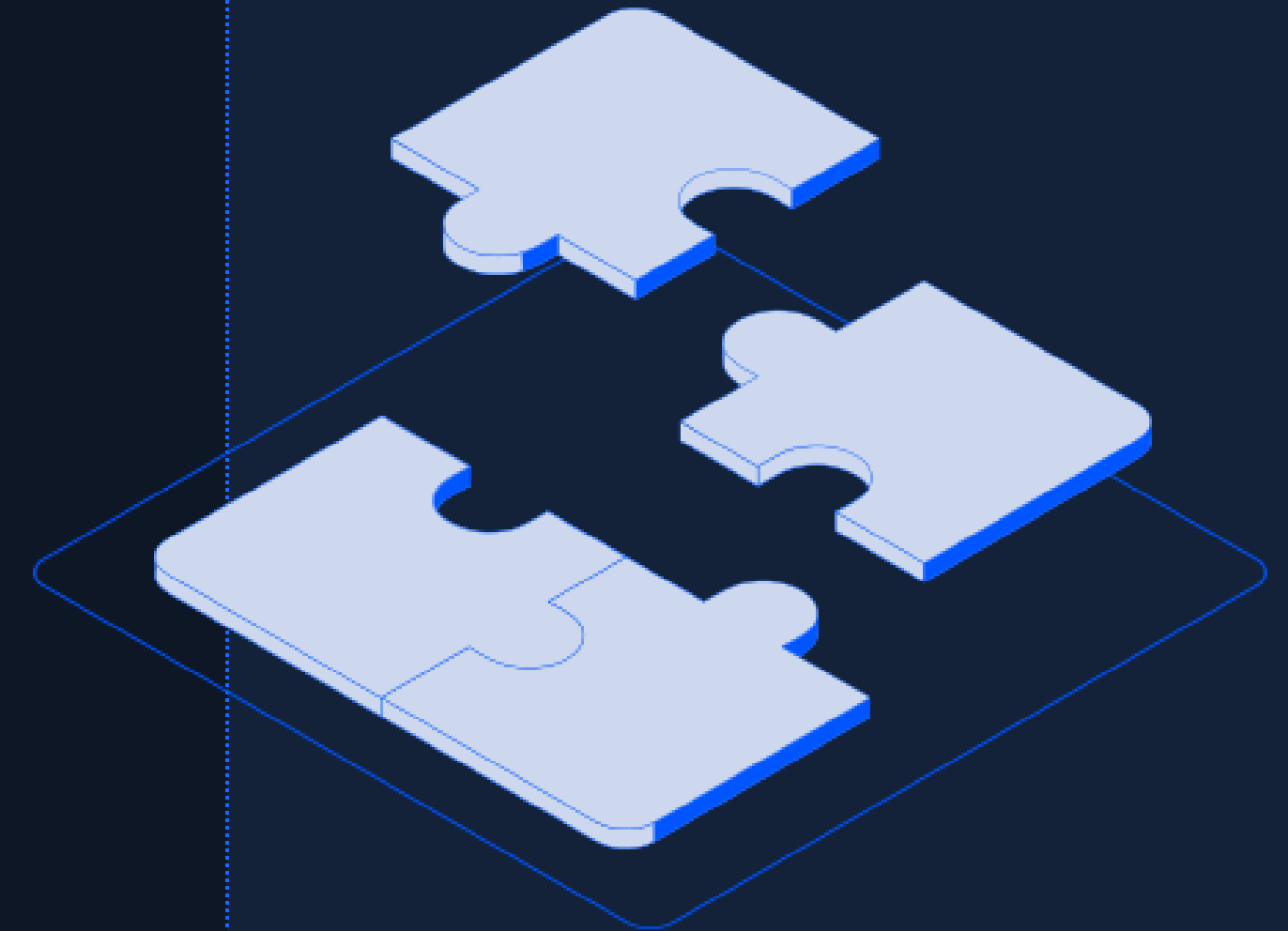
- Automatically processed in a **few hours**

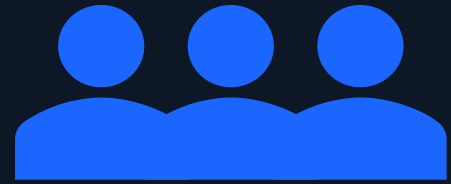**Mapshots**

APPLICABILITY

Generalized Solution

- Our solution can adapt to many different types of buildings
- We have experience with **residential**, **office** and **industrial** buildings

Extendable

- Detection for other building object types can be integrated
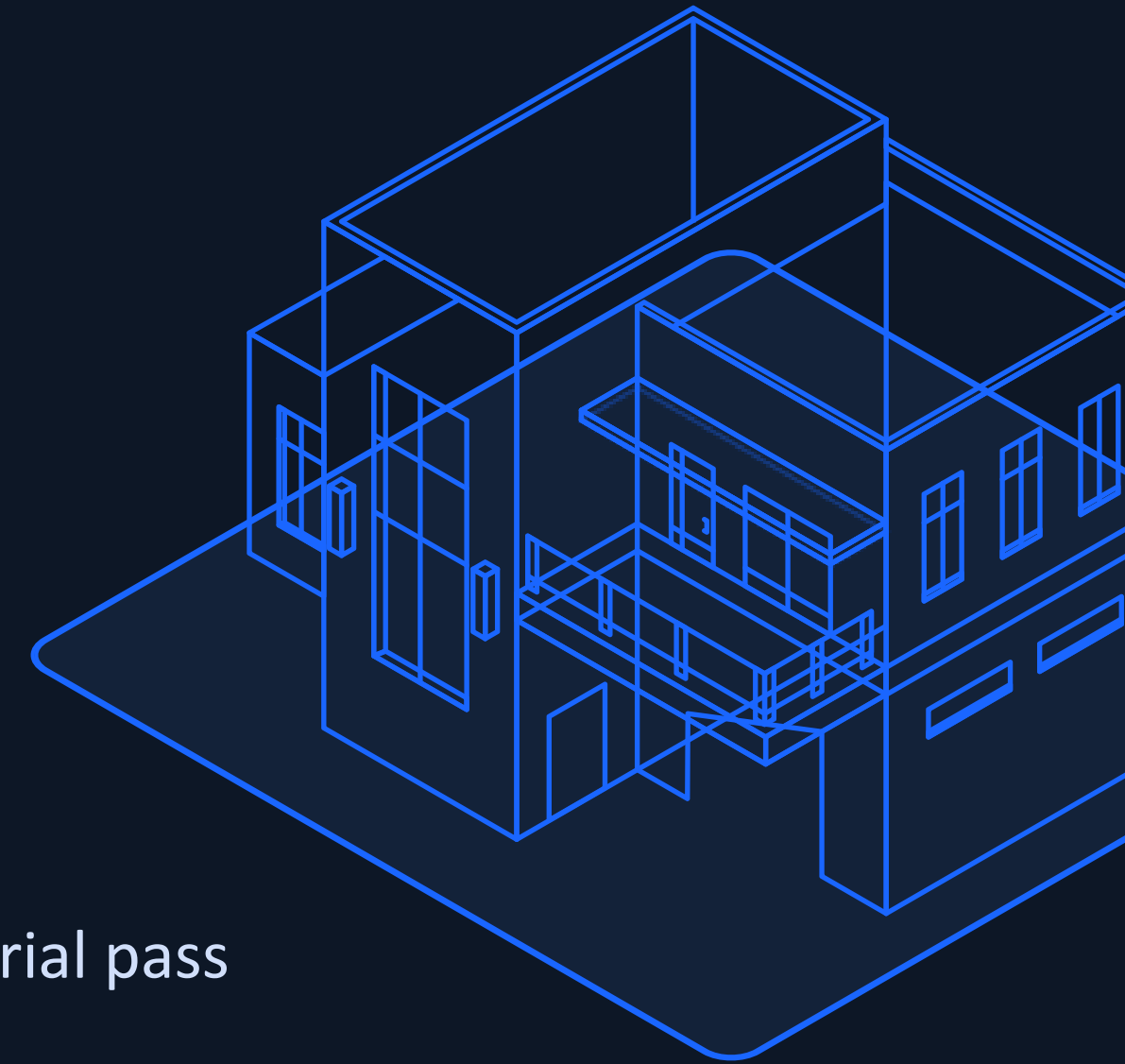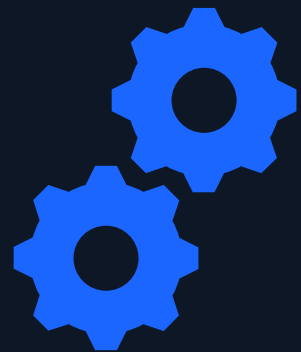- Training the AI with more **specific data** will further increase the accuracy in that area

Mapshots

CUSTOMERS AND USE CASES

Used by...

- Surveyors
- Planers
- Executing trades

- Owners
- Users
- Investors

Is needed for...

- Portfolio Planning
- Defect Documentation
- Basis for Simulation
- Digital Twin

- building / material pass
- Mass calculation
- Rental space calculation

The BIM Modell as Single Source of Truth.

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