NORM3D

3D DATA PROCESSING SERVICES

SCAN2BIM: Time-saving solution for modeling of 3D digital models

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Introduction

This tool is designed to automatically extract the BIM digital model of a building from an analysis of the data contained in the 3D pointcloud (**.rcp, .las, .e57, .ply**).

The quality of the results obtained depends on the precision of the data in the 3D pointcloud.
To have an accuracy of 2cm, a 3D pointcloud with a maximum space of 8mm between points must be provided.

The tool is not going to invent information by itself !
For a wall to be detected, it must already be present in the 3D pointcloud.
Ensure to limit the occultations as much as possible !

To facilitate the interoperability of data, the tool generate the results in a **IFC (IFC2x3)** format that can be completed by any compatible software.

SCAN2BIM solution for 3D digital model reconstruction

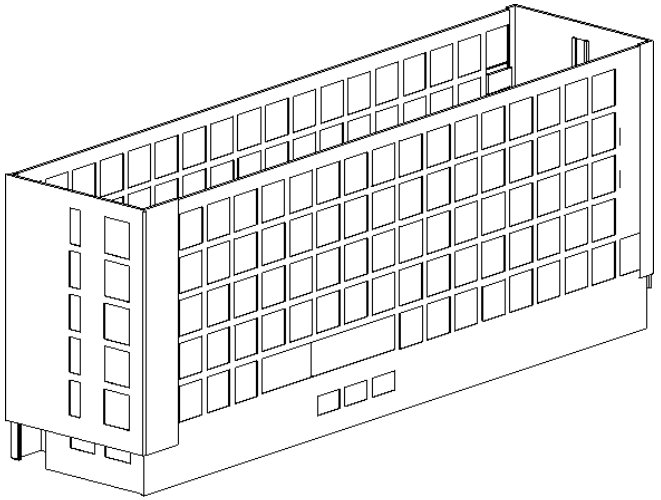
- Service **SCAN2BIM**

3D point cloud

E57
LAS / LAZ
RCP / RCS
PLY ...

E57
LAS / LAZ
RCP / RCS
PLY ...

Digital mock-up



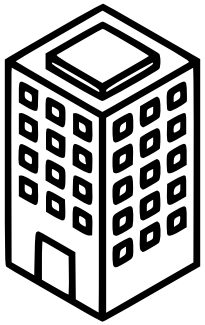
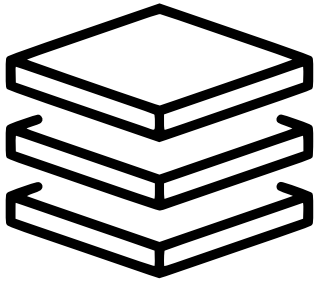
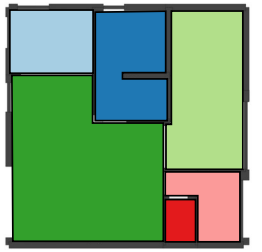
.IFC

SCAN2BIM solution for 3D digital model reconstruction

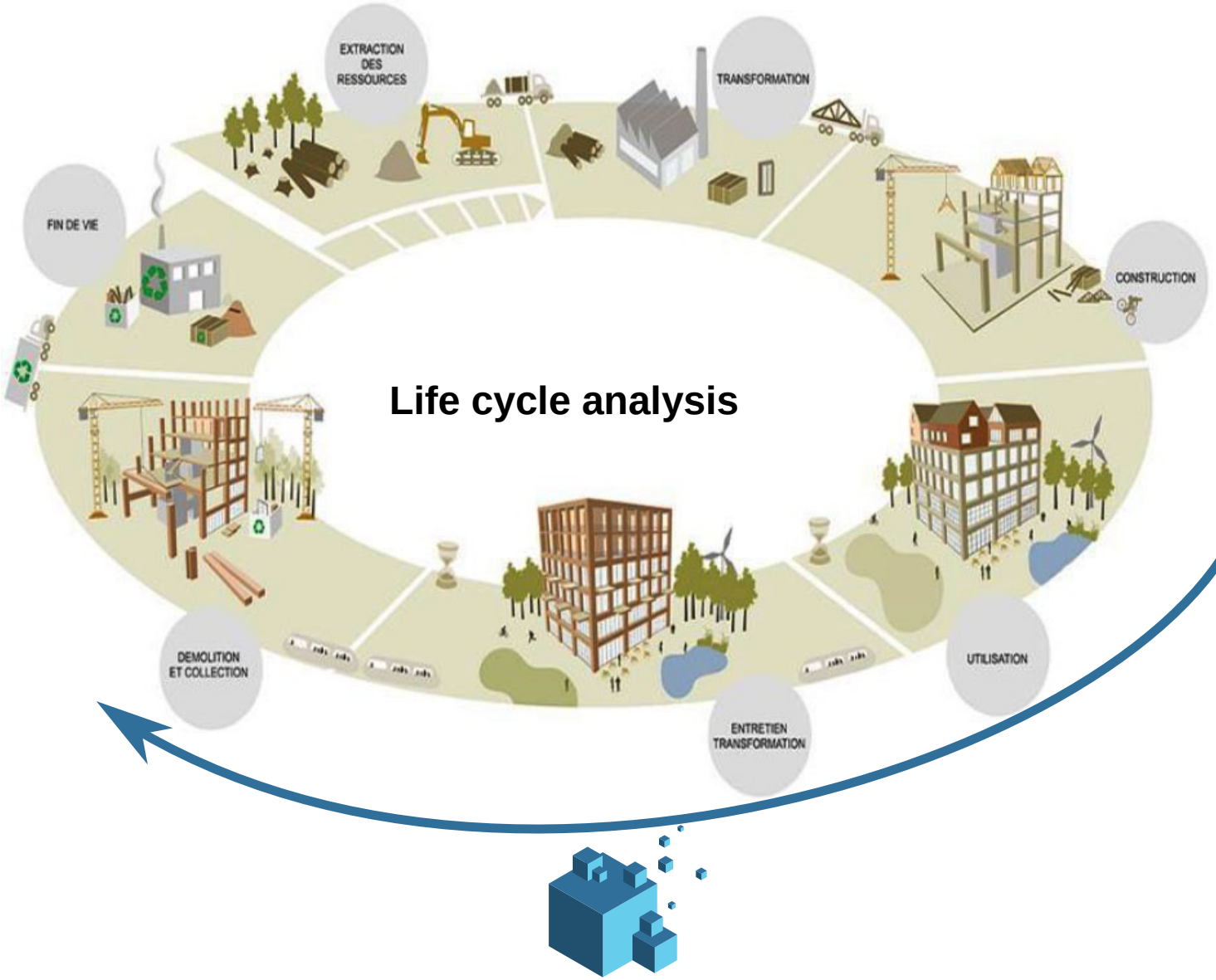
- Industry Foundation Classes (IFC)
- Digital representation of a building
- Interoperable format for BIM software

IfcProject > IfcSite > IfcBuilding > IfcBuildingStorey > IfcSpace



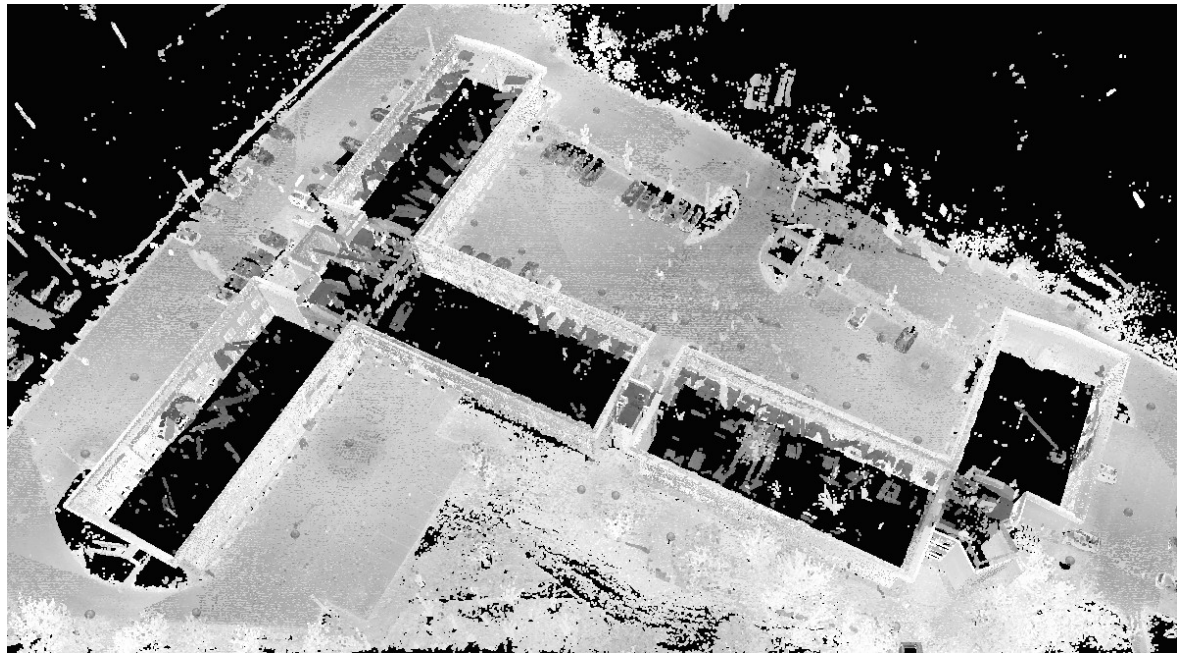
SCAN2BIM solution for 3D digital model reconstruction



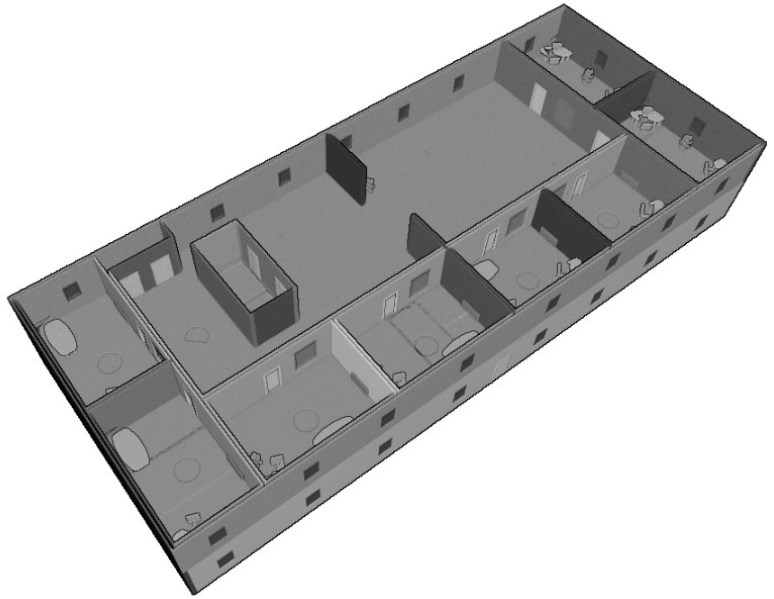
Source: https://www.rfcp.fr/wp-content/uploads/2020/05/%C3%89valuation-du-cycle-de-vie-selon-l%E2%80%99ISO-14000-source-environnement.jpg

Process modalities

Outside



Outside + Inside



For an outside pointcloud, walls that are detected will have a default width of 20cm.
For a pointcloud with an inside part, ensure to process one building at a time.

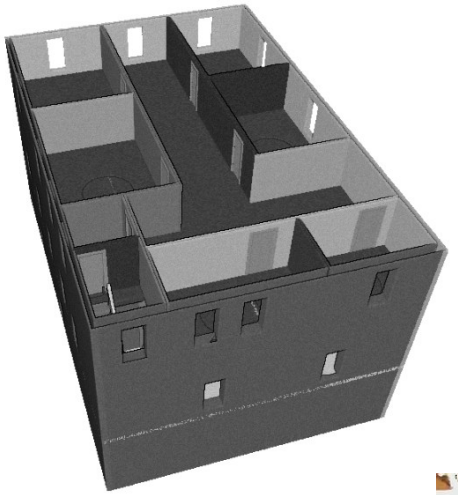
Process modalities

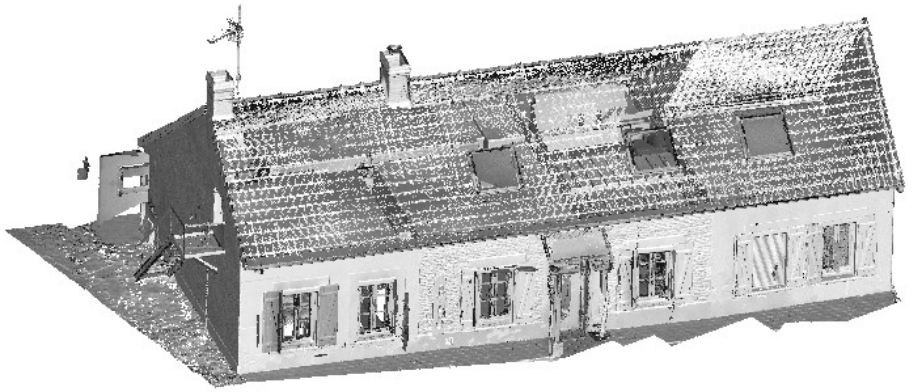
The effectiveness of the process depends on the type of building :

Building : ★★★★★

House : ★★★★

Castle : ★★★





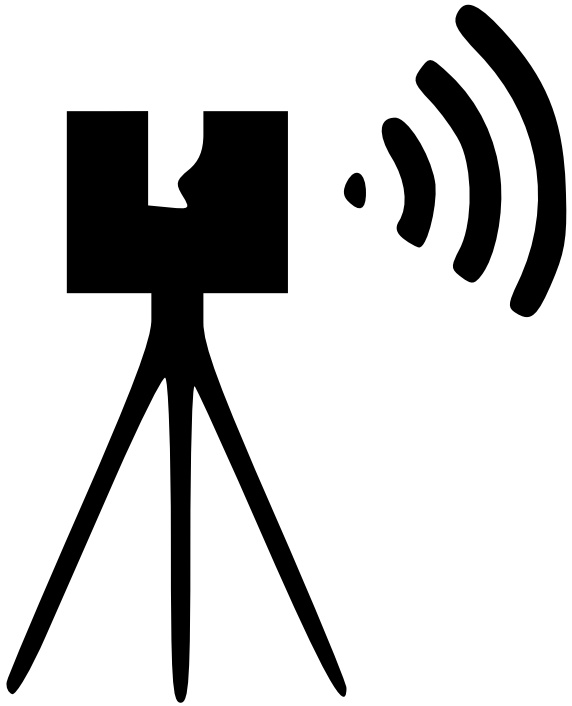
To speed up the process, ensure to keep only the building you want to process.

Process modalities

Recommended configuration for a 3D capture with a static terrestrial laser :

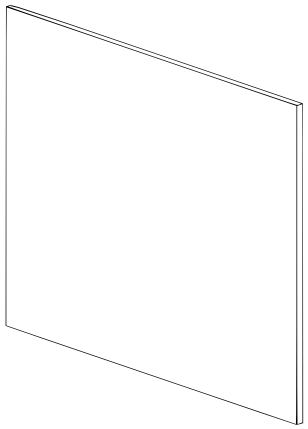
Outside : Image resolution 360 : ~ 10k x 5k pixels
Accuracy at 10m : ~ 3mm

Inside : Image resolution 360 : ~ 5k x 2,5k pixels
Accuracy at 10m : ~ 6 mm

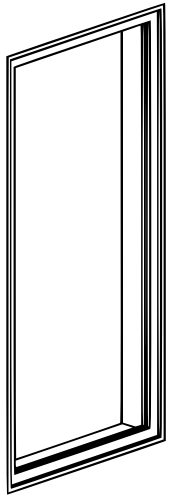


The solution works independently of the capture source of the 3D pointcloud, from the moment the acquisition accuracies are respected.

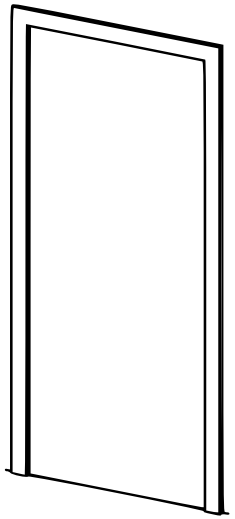
Types of objects detected



Wall

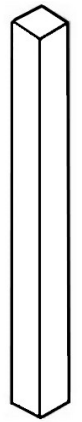


Window

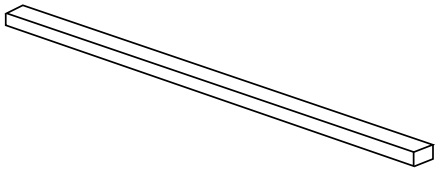


Door

Slab



Column

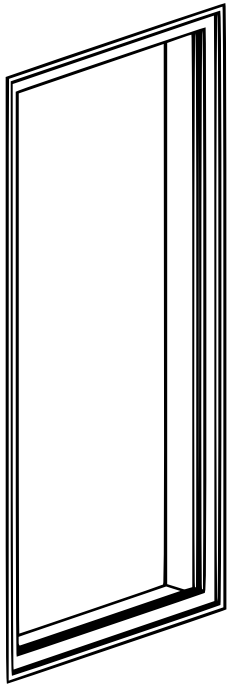


Beam

Roof

Door and window detection

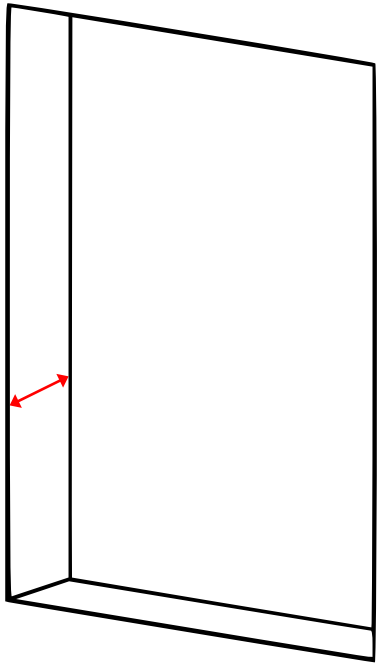
A door or window is detected if the following conditions are fulfilled :



Opening depth ≥ 2cm

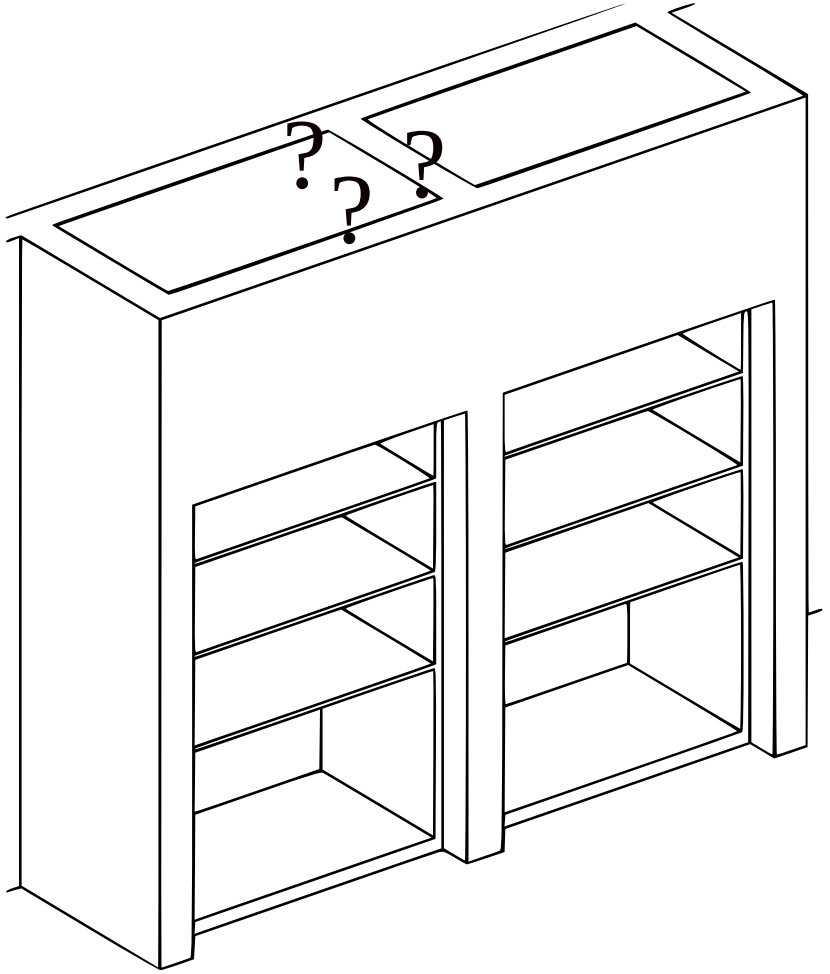
Width [30 cm ; 3m]

Height [30cm ; < 3m]



Occultation

Significant occultation (compartments, isolated corners) generates a lack of information in the 3D pointcloud and can impact the processing results.

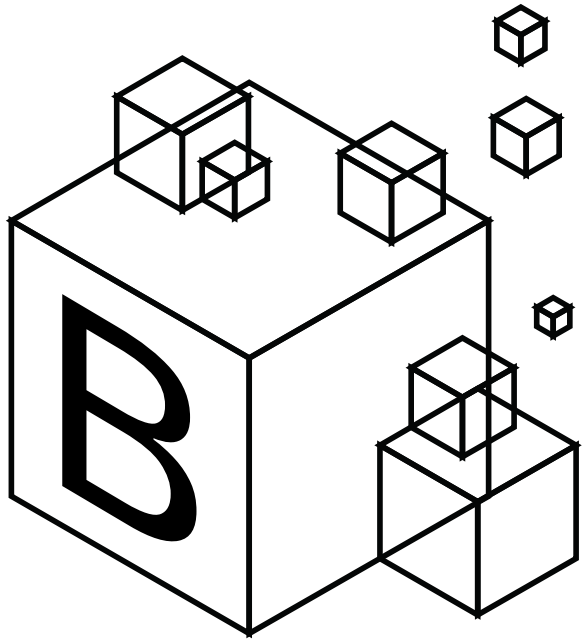


In case of a significant occultation, please complete the results obtained in post-production, with your CAD software.

Checking SCAN2BIM results

NORM3D provides the BIMAQ service for checking 3D digital models.

BIMAQ is launched automatically each time a SCAN2BIM digital model is generated.



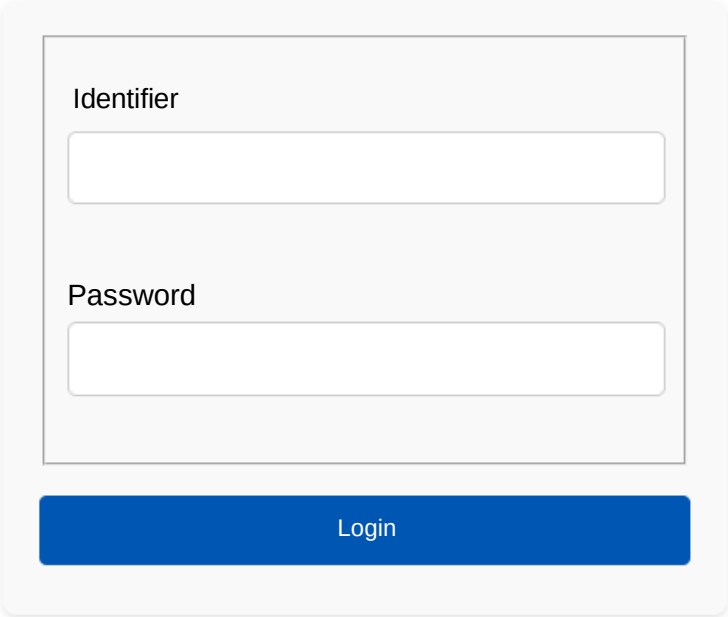
NORM3D platform authentication

Access the NORM3D platform via the following link:https://bim.norm3d.com/

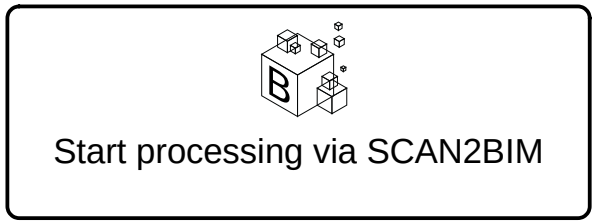
To authenticate, click on the icon 

or access the following link :https://bim.norm3d.com/login

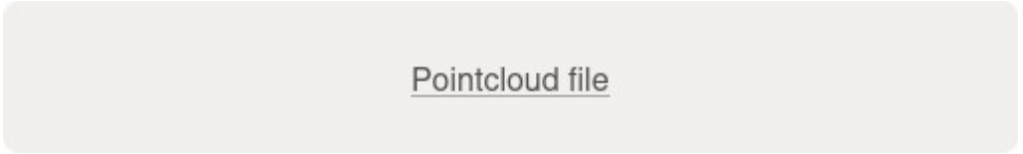
Enter your NORM3D account login and password, then click on the Login button.



Launch NORM3D processing

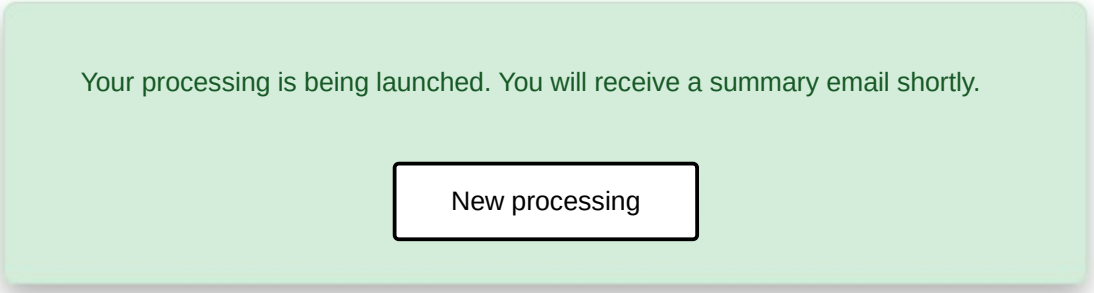
Once authenticated, click on 

to start SCAN2BIM processing.

Click on 

to specify the 3D point cloud to be analyzed.

As soon as the files have finished being uploaded, the following message appears:



Once processing has started, you'll receive an email notifying you that processing has begun.

Solution for modeling of digital model

Processing time varies according the complexity of the point cloud:

~ 2h for a building

Once processing has been completed, you'll receive an email notifying you that processing has been completed. The notification email contains URL links for :

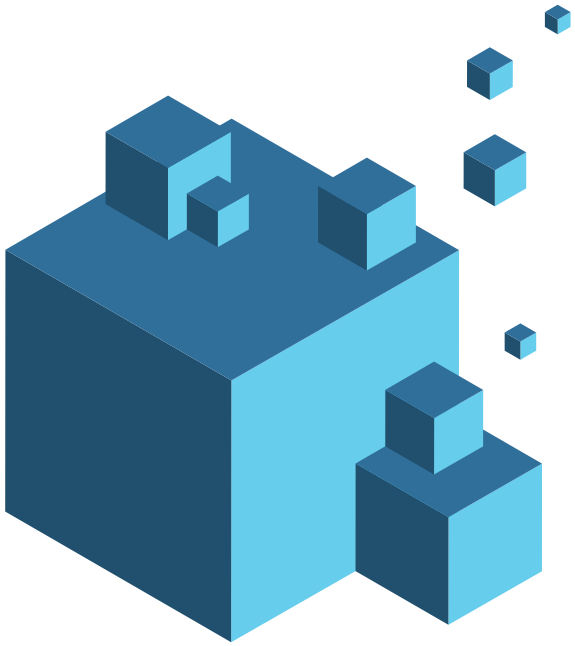
Download .IFC

View BIMAQ results

Download .E57 / .BCF / .XLSX

Find all processing results in your personal space:

Dashboard → Processing list



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