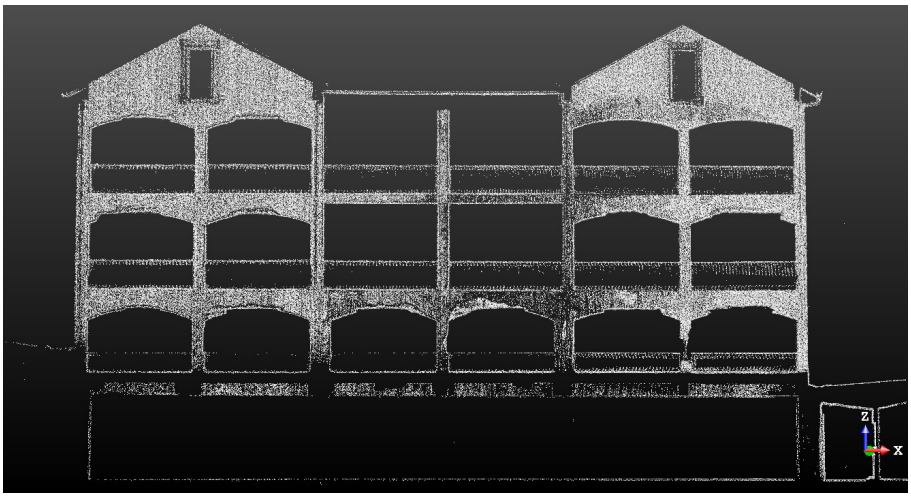
Workflow
Trimble Realworks - ArchiCAD

From the point cloud to parametric 3D modeling for BIM planning

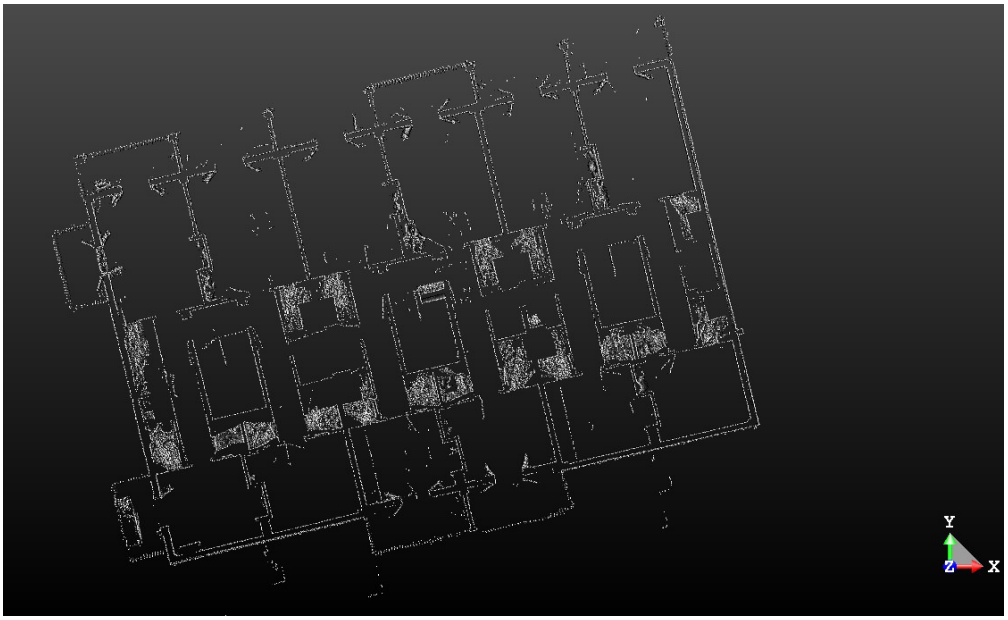
1) Processing in Trimble Realworks

After cleaning the point clouds (eliminating areas and points of no interest), horizontal and vertical building sections are extracted

Building surveyed with TIMMS - point cloud by reflectance

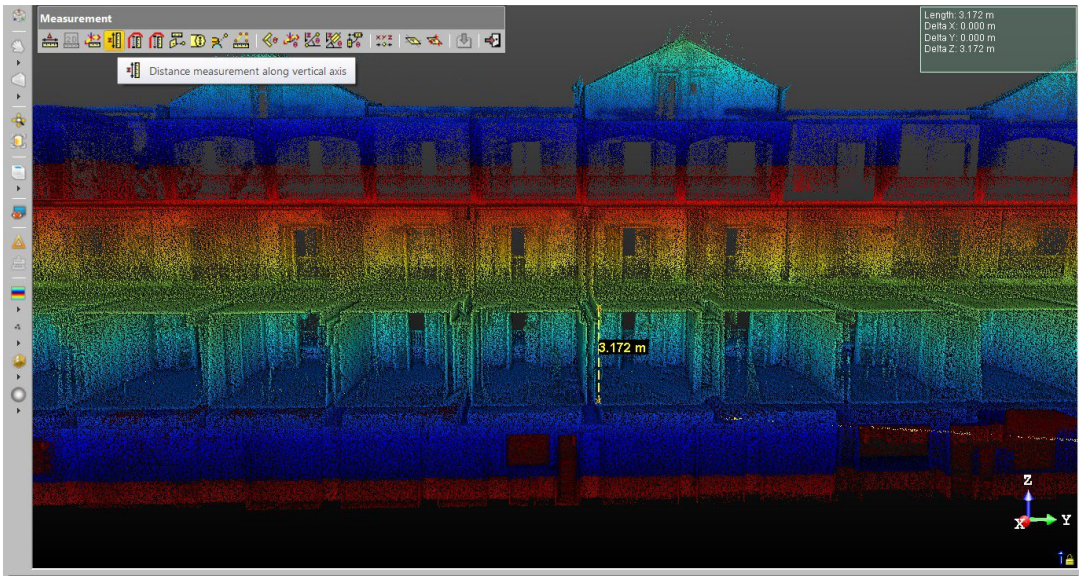


Vertical cross section of the facade - point cloud based on reflectance



Horizontal cross section - point cloud based on reflectance

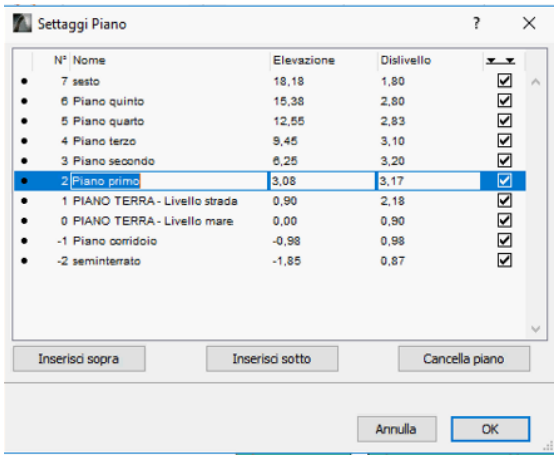
The data is then exported in e57 format (which can be imported to ArchiCAD). In addition, again in Realworks, the vertical distances between the extradoses/upper surfaces of the slabs of the individual floors are measured.



Measurement of vertical distances between the upper surfaces

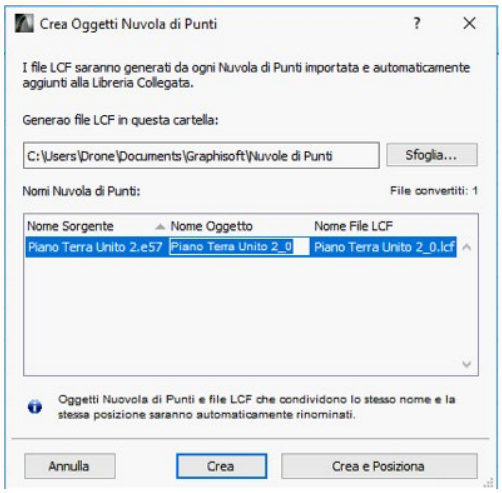
This operation is important for defining the floors in ArchiCAD.

2) Processing in ArchiCAD V.19



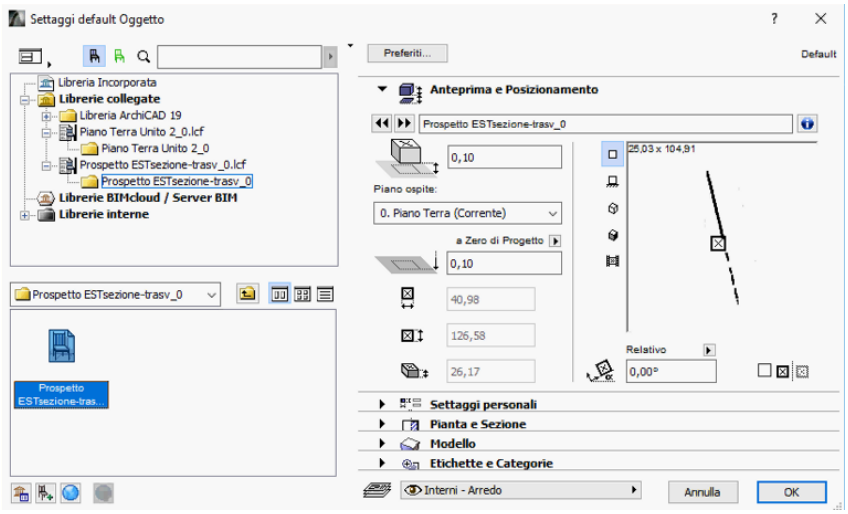
Setting the floors in ArchiCAD before importing the clouds

Cloud cut-outs are then imported to ArchiCAD.

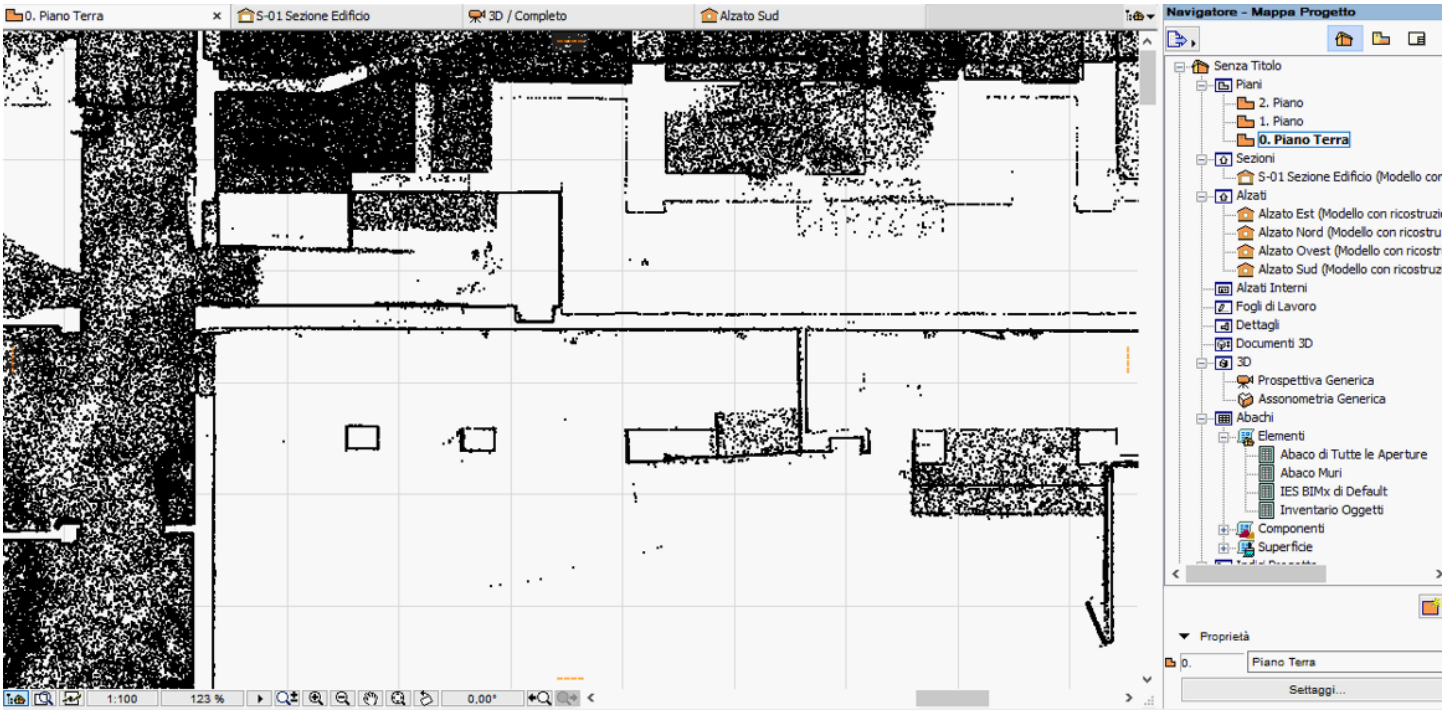


Importing point clouds

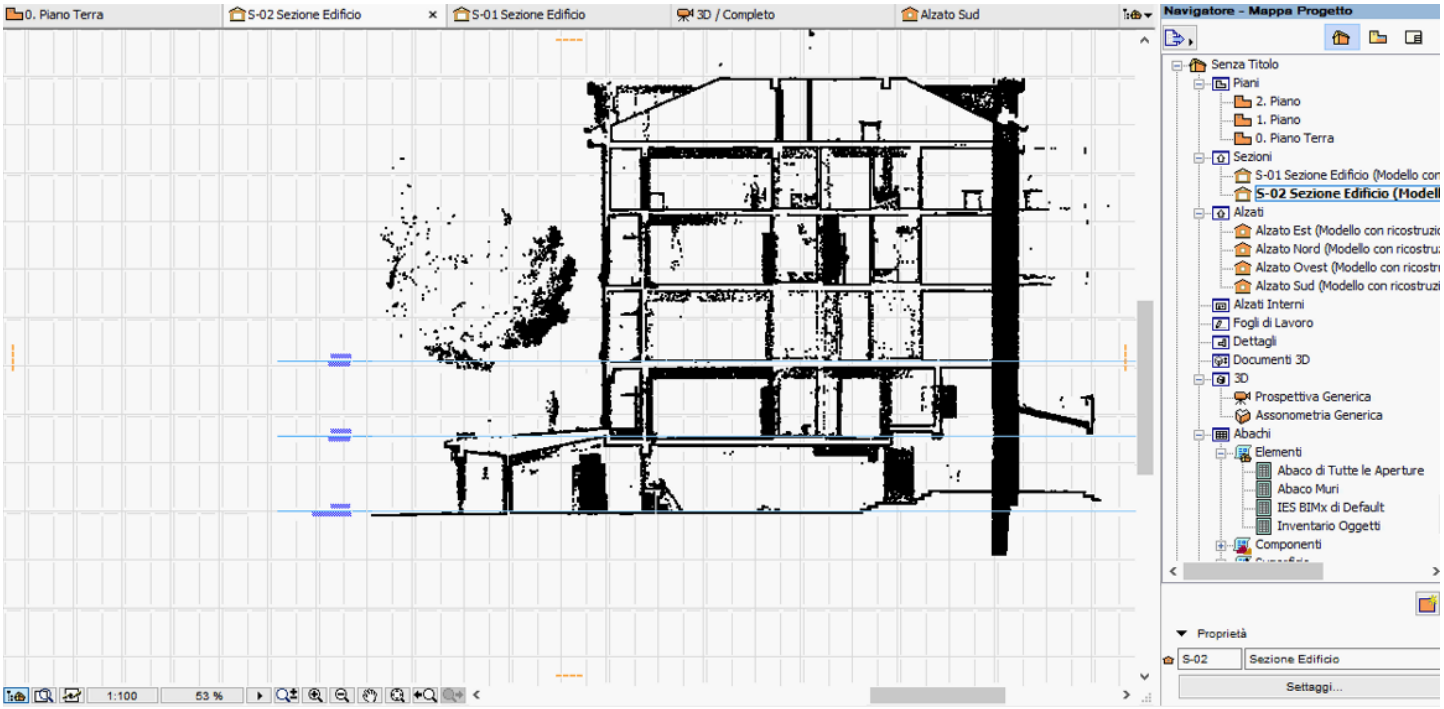
The files are treated as objects:



Importing point clouds as objects



Horizontal cross-section view of point cloud in ArchiCAD



Vertical cross-section view of point cloud in ArchiCAD - checking, along one section, of the levels relating to the upper surfaces

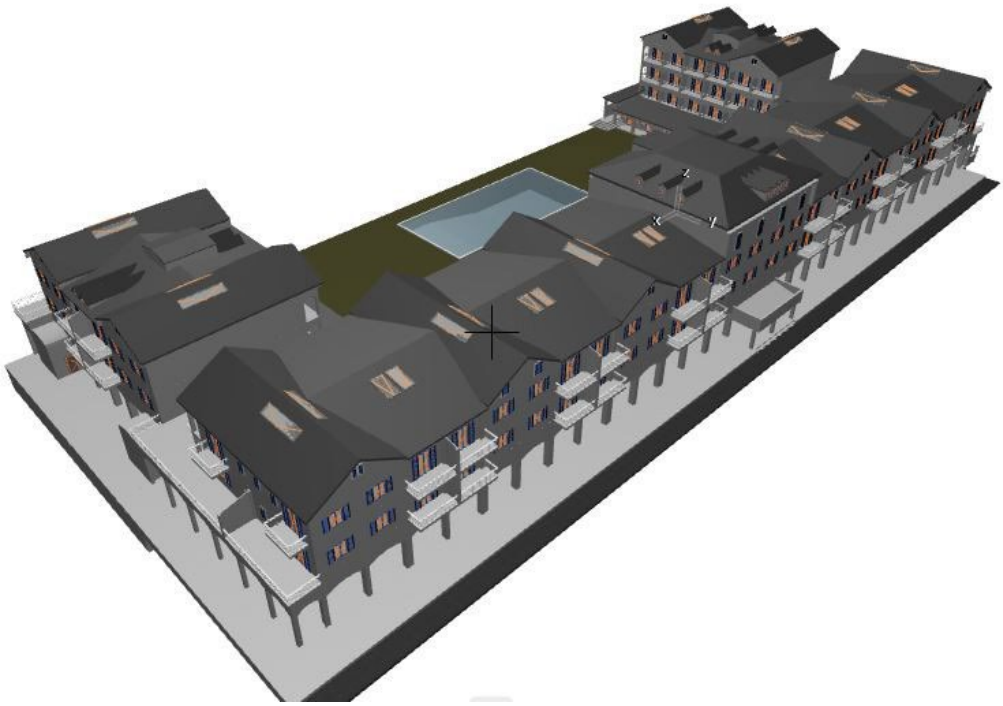
Then the ArchiCAD controls are used for 3D modeling and possible parametrization for BIM planning.

Creation of first 3D elements in ArchiCAD

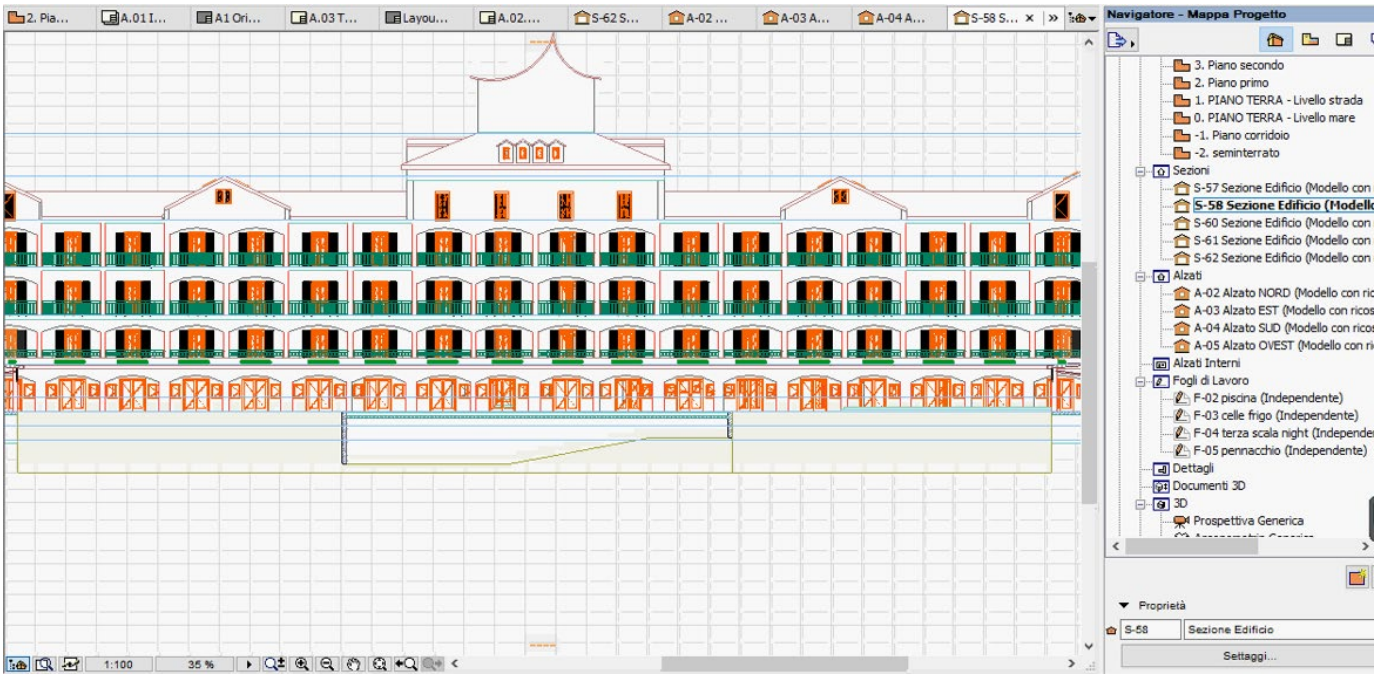
TIMMS & UAV point clouds (roofs) based on reflectance

3D model in ArchiCAD

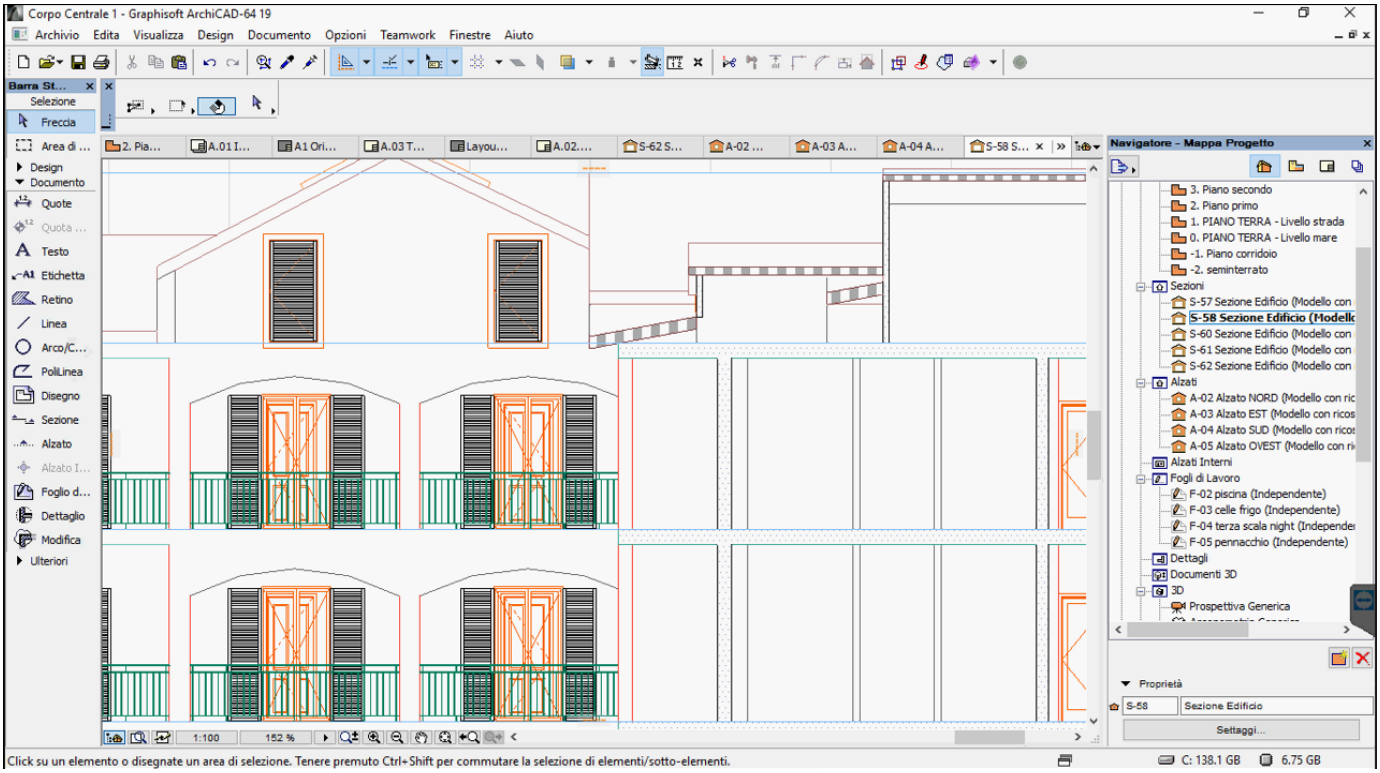
Point cloud based on reflectance



3D model in ArchiCAD



Cross section view in ArchiCAD



Cross section view in ArchiCAD - detail

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