UNIVERSITY OF TWENTE.

3D4EM UC MEETING

JUNE 2017

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PROGRESS

NOV 2016 – JUN 2017

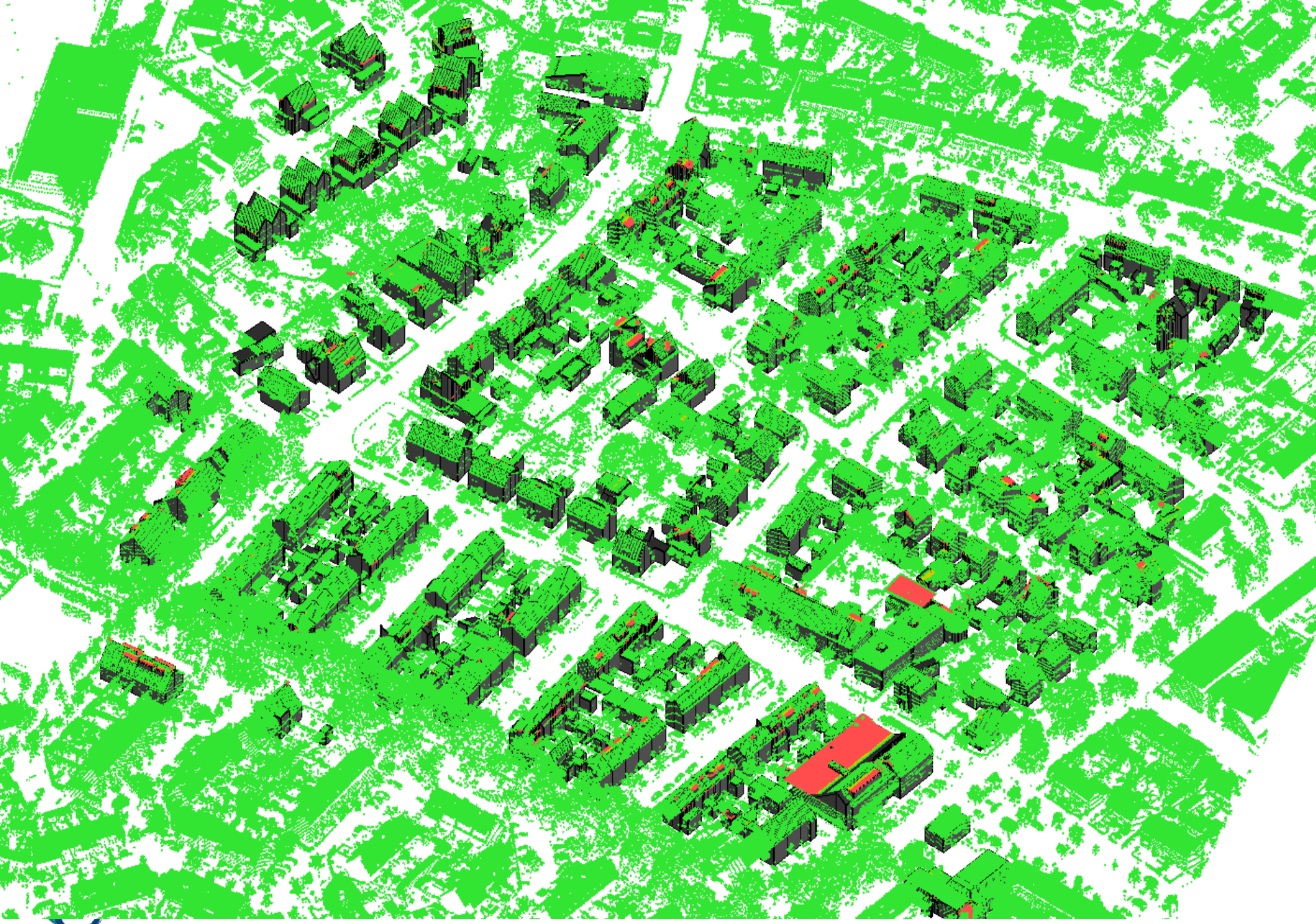
- Nov 2016 – Feb 2017
  - Software delivered 20th January
  - Contract Biao untill 31 January.
  - Tools, codes and manual put on Github Feb 7:
  - https://github.com/Soudeel/3D4EM-LoD2buildingmodels
  - Tested on 5 datasets from Kadaster;
  - Tested by Kadaster;

- Feb 2017 – now
  - Tested by Geodan, TUD-GRSL; Discussions with Geodan & TUD on improvements of software
  - Feedback Kadaster is pending

MORE INFORMATION ON THE TOOLS

- Batchfile structure: file names of map data and point cloud data to be entered;
- Output: 3D shape & quality indicators

	Open source	Lastools	FME
Selection of point cloud data			Select laser points within building polygons
Removing double points		Lasduplicate	
Conversion of laz/las to laser format	laz2xyzlaser	Las2txt, ascii2laser	laz2xyzlaser
Convert map to asci format	shp2pcm		
Segment point clouds into planar patches	growsurfaces		
LoD2 creation	3DBuilding		
Converting 3D models to 3D shapes	pcm2shp		
Evaluate 3D models	Evaluate3DBuilding		

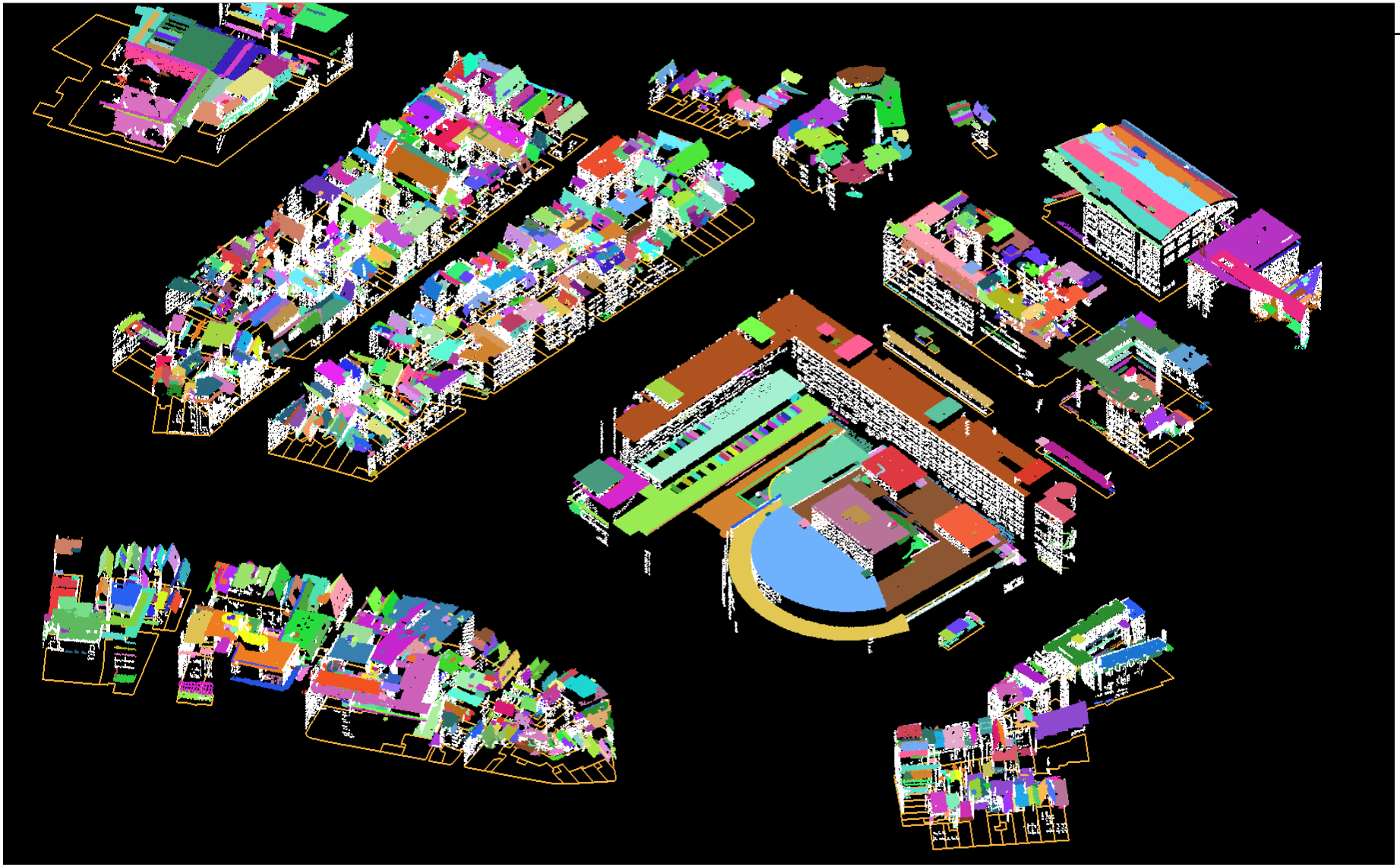


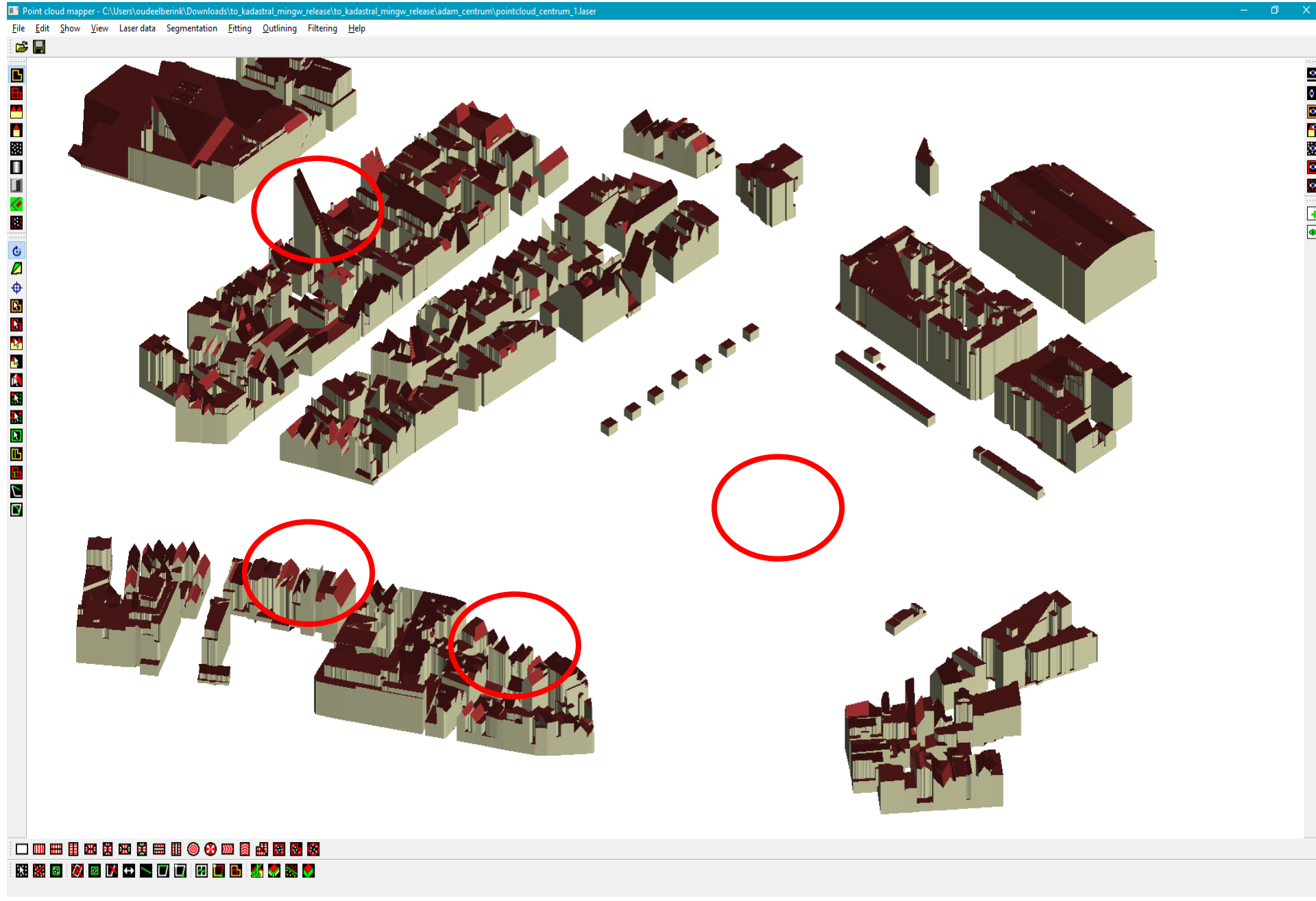
DURING DISCUSSIONS WITH GEODAN AND TUD

- Building models may appear noisy
- Process may crash (a.o. when points are stored double)

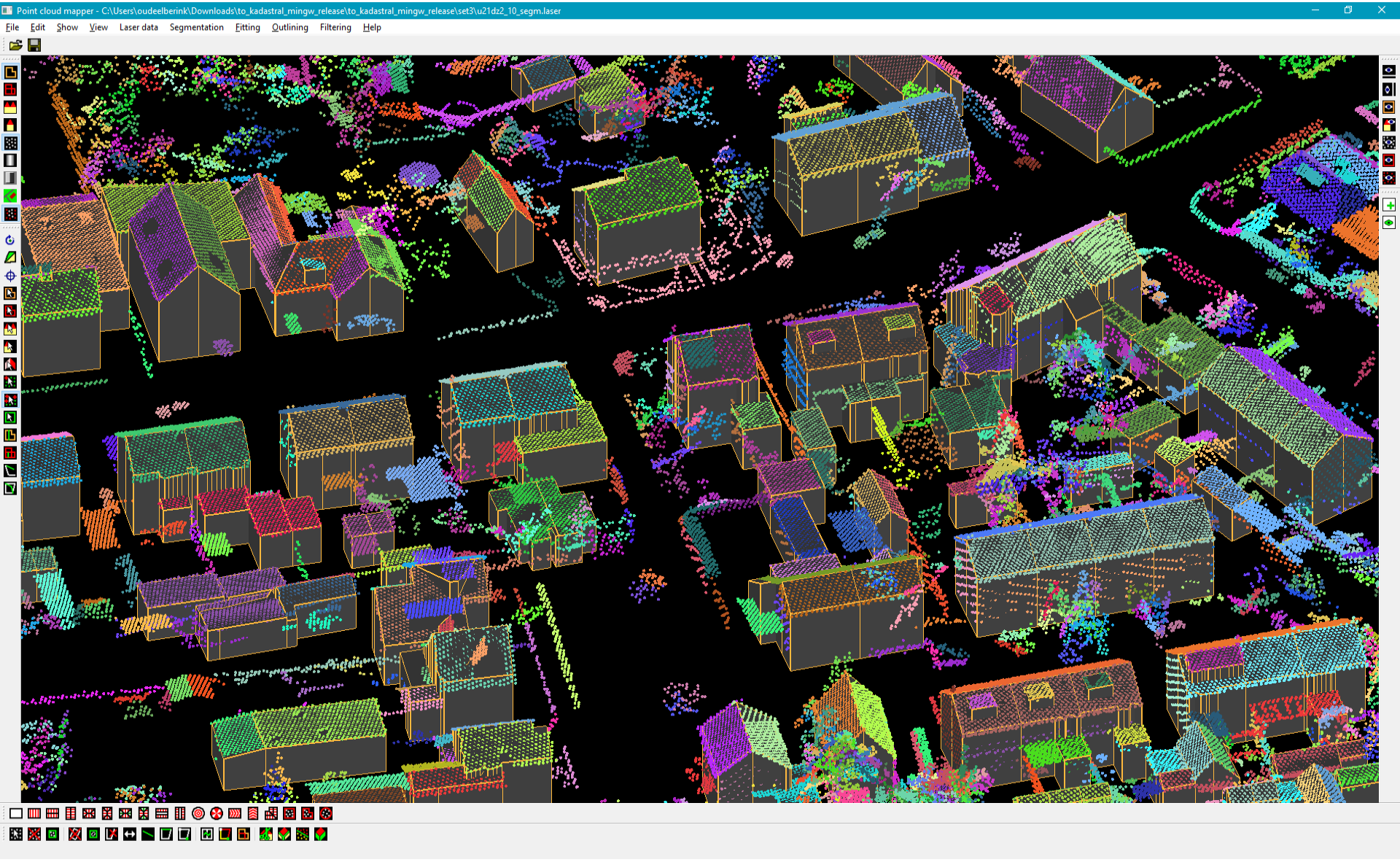
- Two new programs:
  - Laz2xyzlaser (a.o. removes double points)
  - Segmentation_keeproofs
    - Filter step based on local planarity and inclination

NOISY INPUT -> NOISY OUTPUT

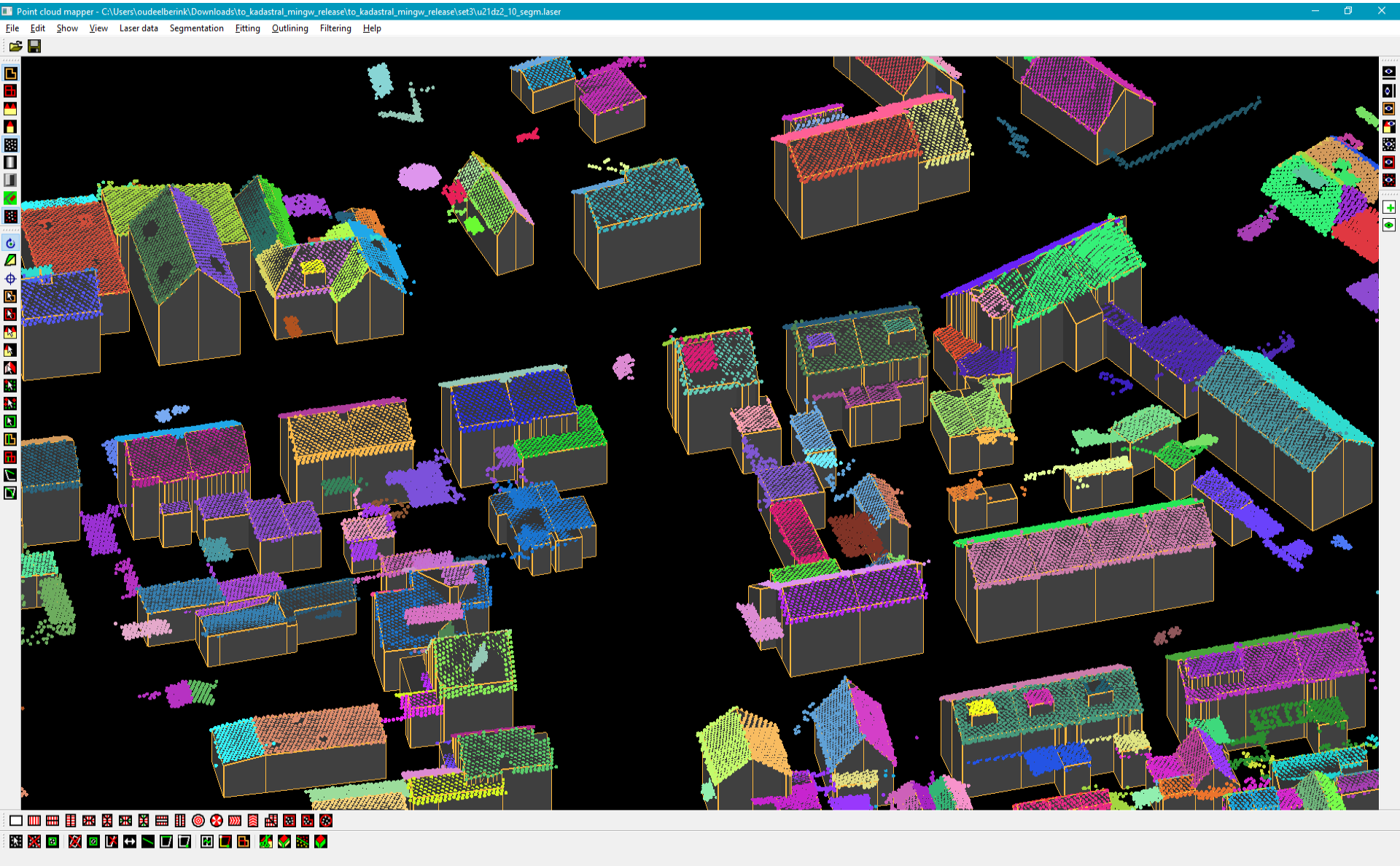



Point cloud mapper - C:\Users\oudeelberink\Downloads\to_kadastral_mingw_release\to_kadastral_mingw_release\adam_centrum\pointcloud_centrum_1.laser
File
Edit
Show
View
Laser data
Segmentation
Fitting
Outlining
Filtering
Help

PLANAR SEGMENTS



PLANAR SEGMENTS ON PLANAR POINTS



CONCLUSIONS

- Contentwise:
  - Complex source codes, easy tools;
  - 3D Models can be generated automatically;
  - Not perfect, but quality indicator directs to incorrect buildings

- Processwise:
  - Disappointing for many
  - Damaged relations instead of strengthened
  - Wish to close it in satisfactory way for all