Group project:
Real-Estate 3D Plotting

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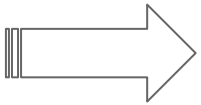
A Quick Introduction

The goal ?

`Address`  

A Quick Introduction

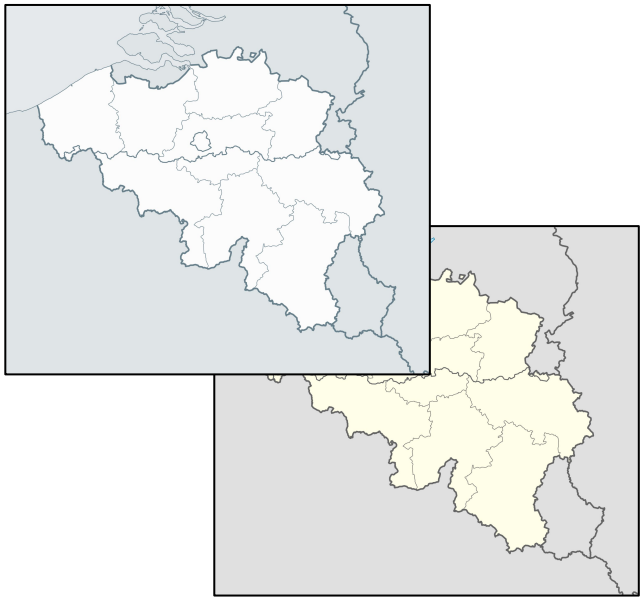
How ?

A Quick Introduction

How ?

Data Structure

Satellite Maps



[**Source:** geopunt.be]

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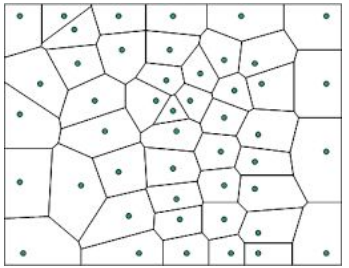
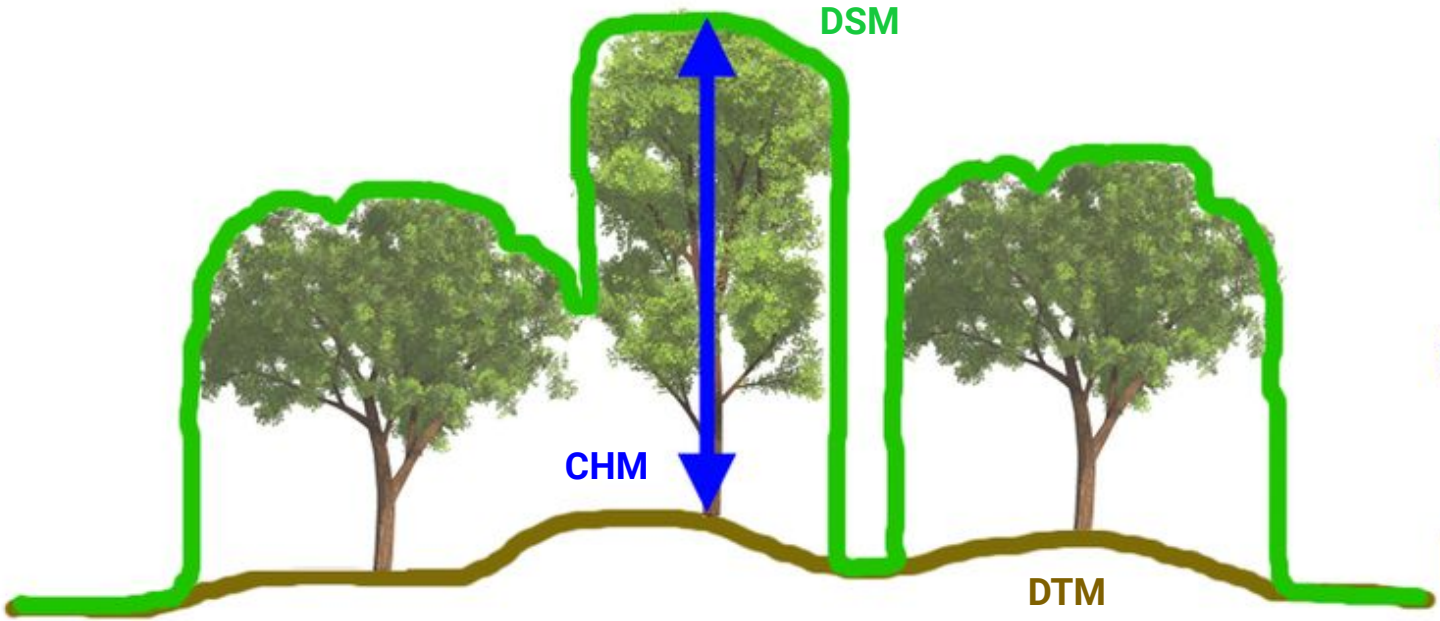
Polygons (plots)

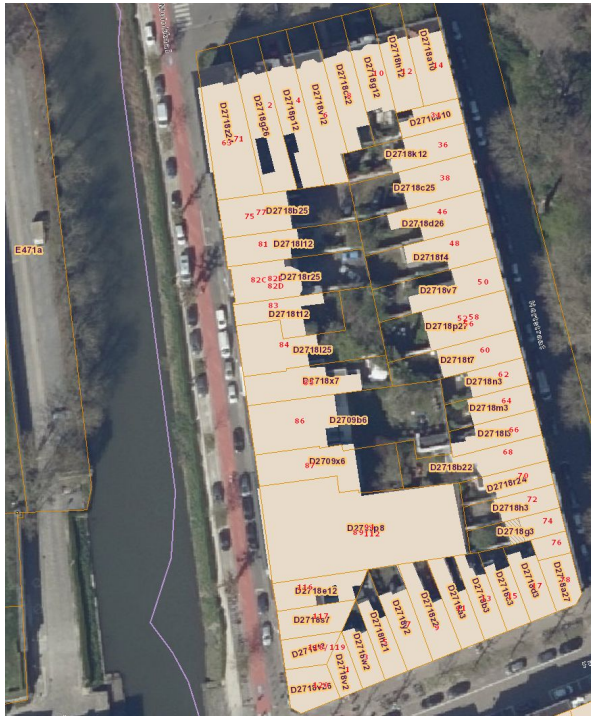


[**Source:** eservices.minfin.fgov.be]

Satellite Maps

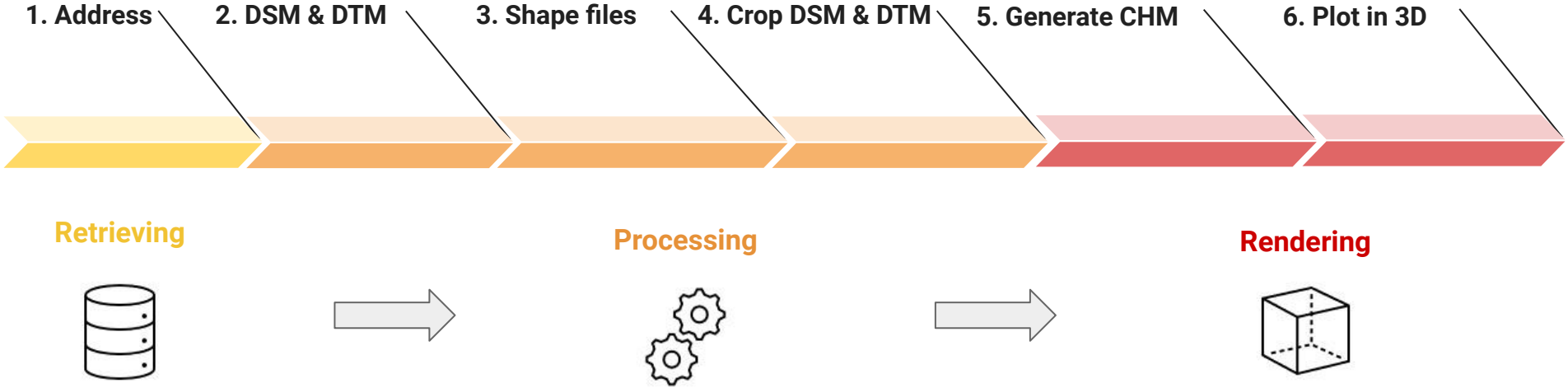


Polygons



Official cadastral dataset (ReBu/CaBu)

Project workflow



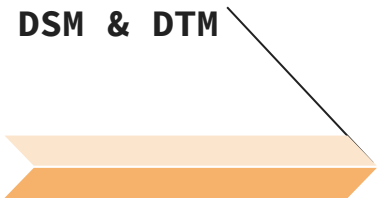
Step 1

Find x,y in L72

Input: Address -> “Sint-Pietersplein 9, Gent 9000”

Output : (104994.91, 192612.04)

Step 2



Find the file

Input: Coordinates (104994.91, 192612.04), folder path

Output : ‘22’ ↔ DHMVIIDSMRAS1m_k22.tif

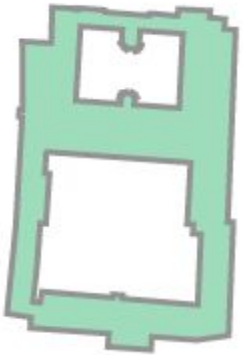
Step 3

Shapefile

Find the polygon

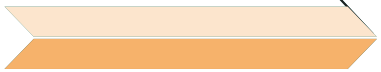
Input: Coordinates (104994.91, 192612.04), CaBu/ReBu

Output: POLYGON ((104977.493 192652.718, 104979.279 19...



Step 4

Crop DSM & DTM

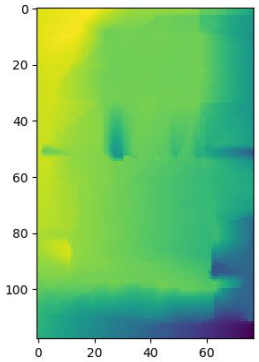


Bounds and shape

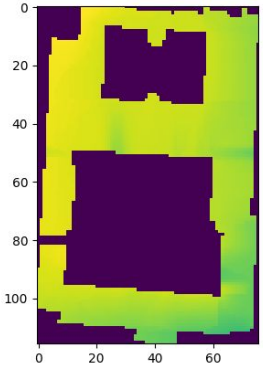
Input: Bounds, tif index, polygon coordinates, shape cut

Output: Cropped DSM and Cropped DTM

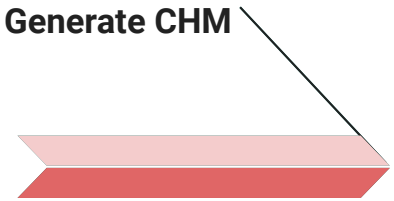
Bounds crop on DTM



Shape crop on DTM



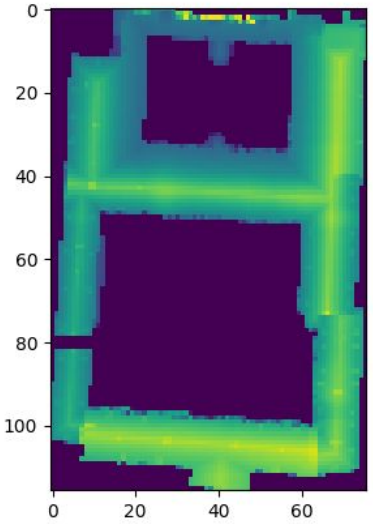
Step 5



CHM = DSM – DTM

Input: Clipped DSM , Clipped DTM

Output: Canopy Height Model (CHM)



Step 6

→ Let’s go LIVE !

What We Offer

→ Customizable Jupyter Notebook

→ High-quality documentation / instruction of use

→ Clean & optimized code

→ **A high-quality 3D plot under 5 seconds**

Conclusion

Challenges

New Data & Libraries

Memory Leaks

Data availability

Project requirements

Solutions

Documentation & Teamwork

Code Optimization

Use of Offline Data

Discussions & Client Input

Conclusion

What's next?

Setting up a server (Database + API)

Communicating with stakeholders

Why we decided to create a documentation ?

Thank you