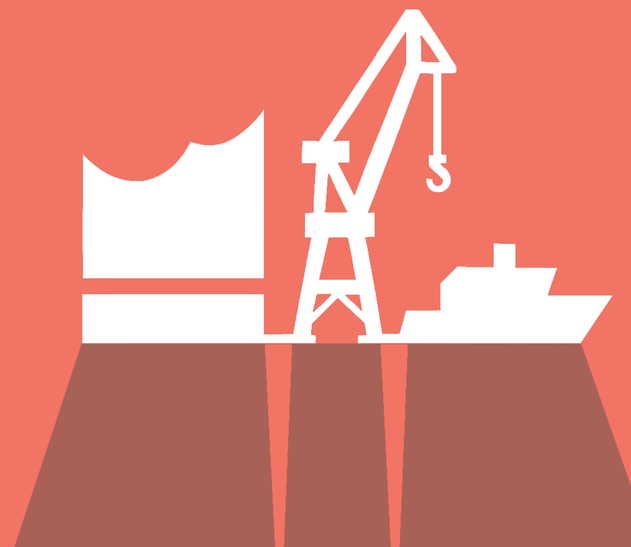
Shadow Forecasting Using Publicly Available City Models and Data

Presented by Yanik Recke at *code.talks 2026*



Context

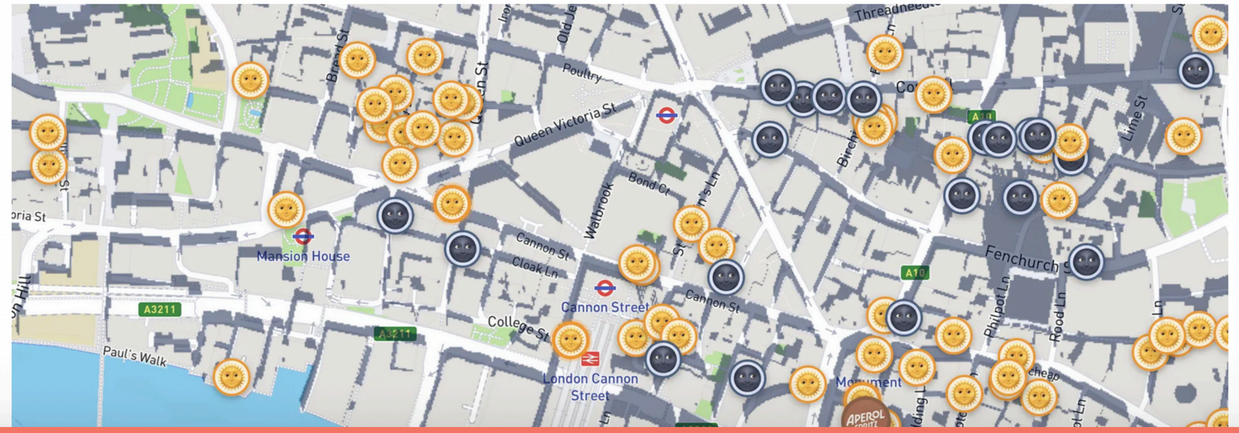
A useful new UK pub map shows which boozers are currently in the sunshine

Sunseekr helps you find all the sunniest outdoor spots in real time – and you can now download it as an app on your phone



Written by Amy Houghton
Contributing writer
Friday 22 August 2025

Share



https://www.timeout.com/uk/news/a-useful-new-uk-pub-map-shows-which-boozers-are-currently-in-the-sunshine-082225

Research & Previous Work

Per Liedman

About
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@liedman@mastodon.social
@liedman
perliedman

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so.

Ok, how?

Reading about “Solen i stolen”, I thought that someone actually implemented this idea, and it felt like an interesting challenge to figure out how they might have done it, now that I knew it was certainly possible. In retrospect, this probably says something about my approach to problem solving, since I didn’t even try to find a solution until I thought someone else had already proven it was doable (which they in fact hadn’t); I’ll save that thought for another blog post.

As anyone with a fair interest in computer graphics, I knew enough about **ray tracing** to figure out that the solution lies in tracing the sun’s light rays backwards from the pub or restaurant’s location, to see if it hits another object before reaching the sun; if it does, there’s no sun light there, and if it doesn’t, it might be the perfect spot for you.

Data sources

To do this, we need to know what objects that might be between a location and the sun, and where they are located. In a city environment, shadows are typically cast from buildings, in some cases from terrain like hills, and of course from a combination of them.

https://www.liedman.net/2014/06/25/sunshine/

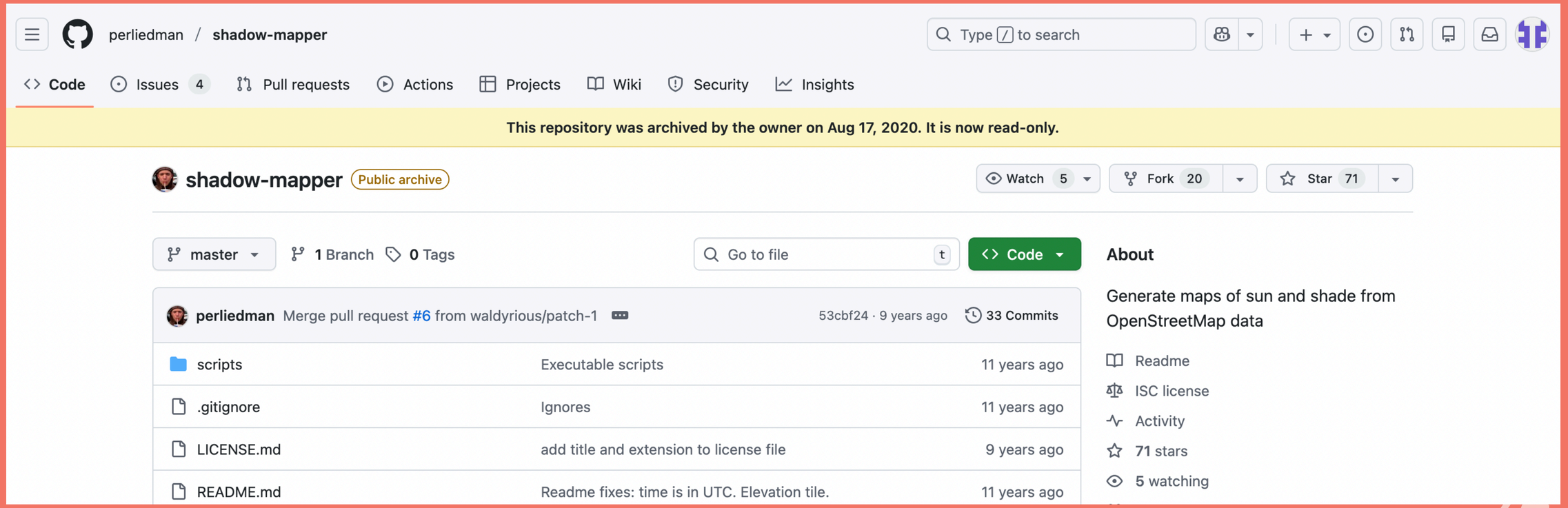


Plan

1. Get the relevant data from Hamburg (Buildings, terrain, …)
2. Create a height map with that data
3. Use Per’s shadow-mapper project to generate the shadows
4. Build a frontend / app to display the shadows

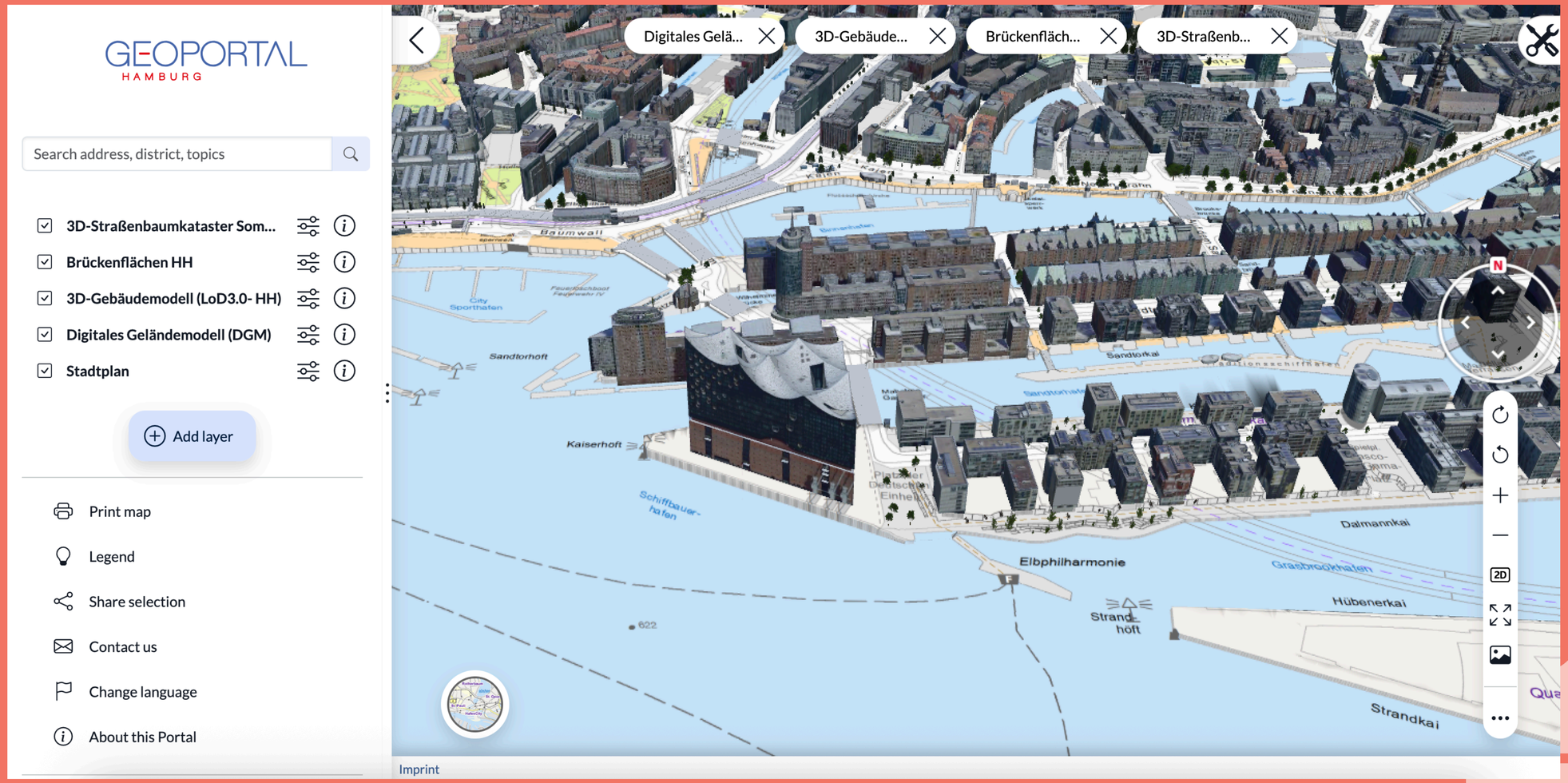


Problems

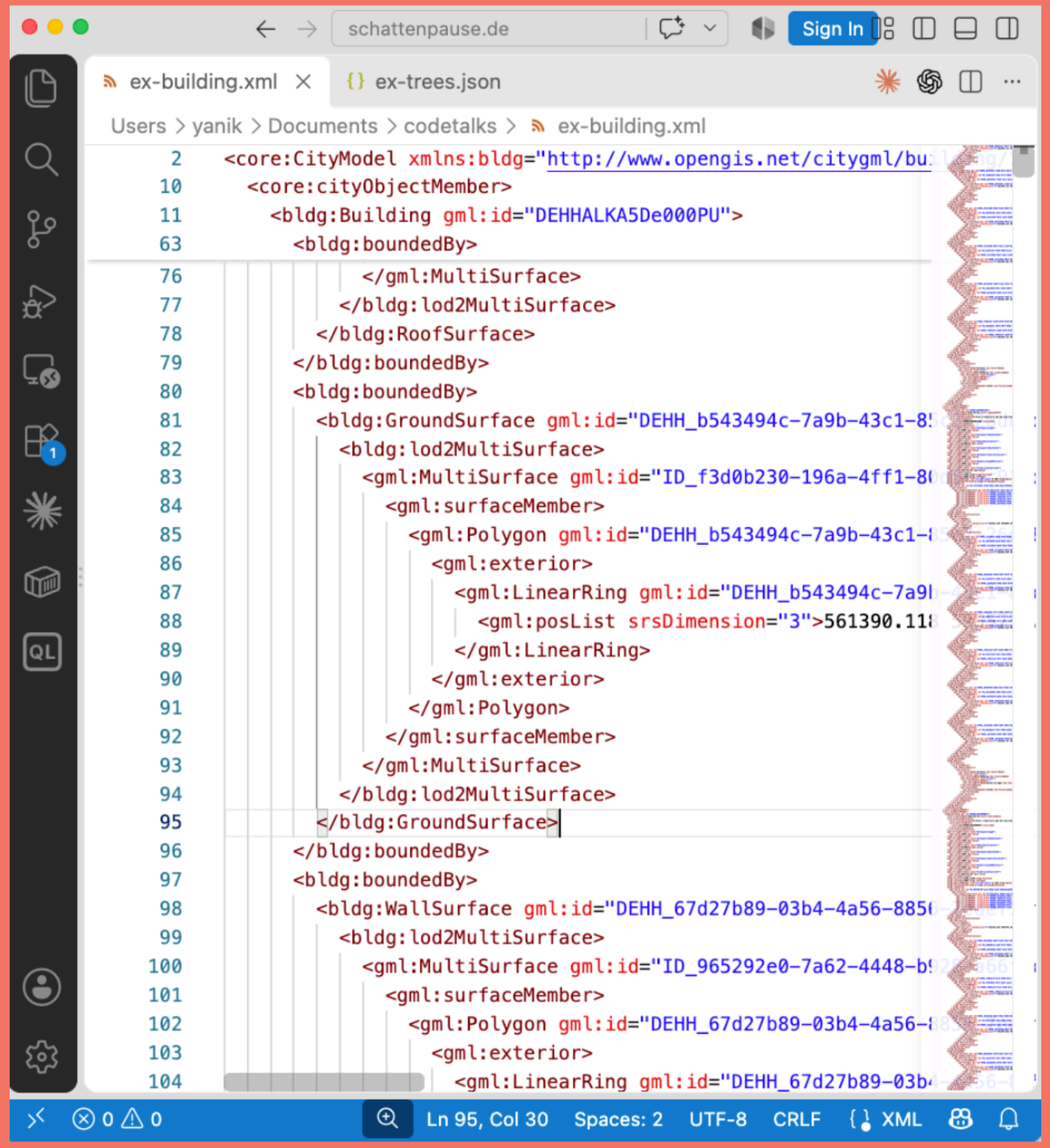


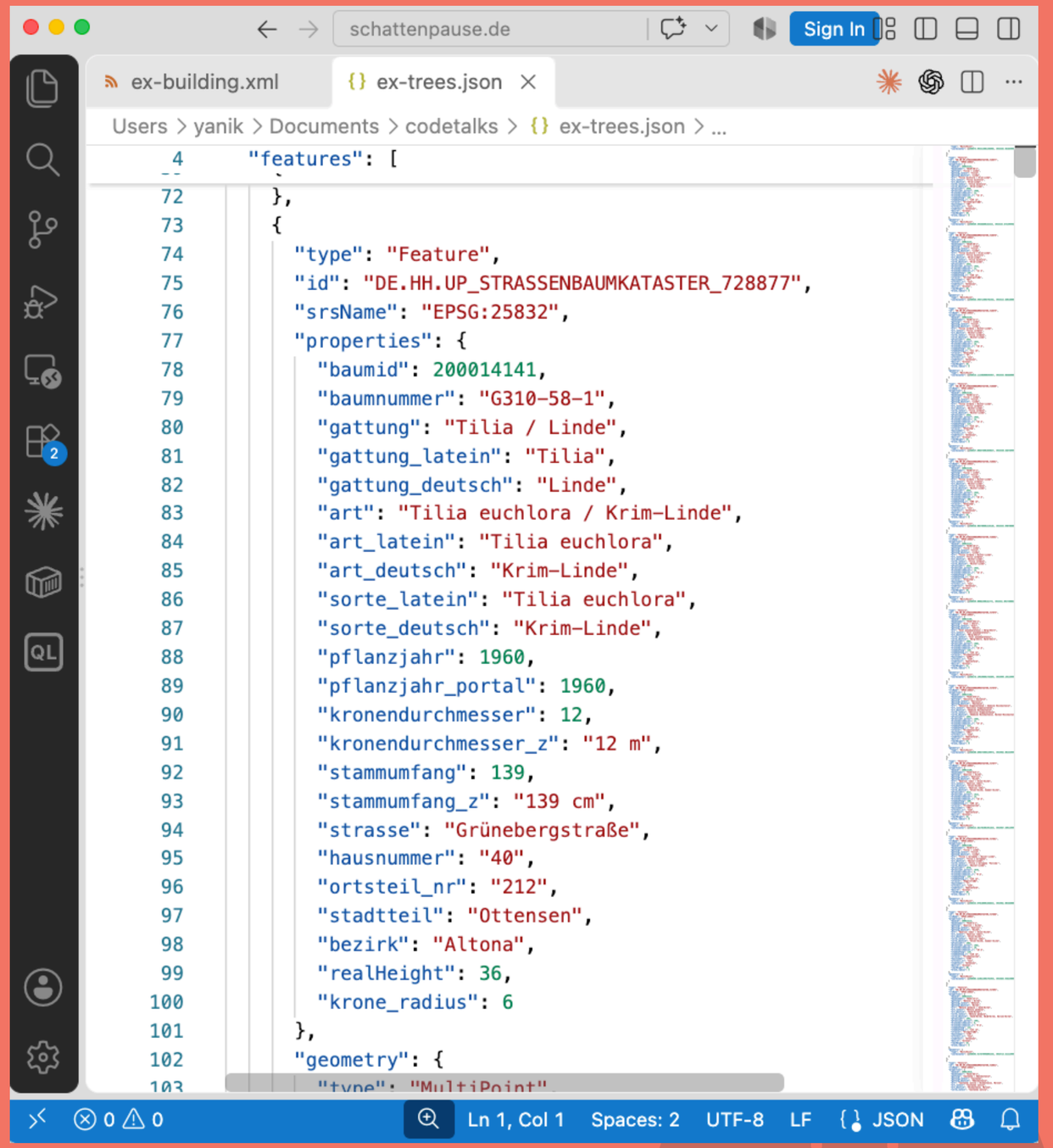
https://github.com/perliedman/shadow-mapper

Getting the Data

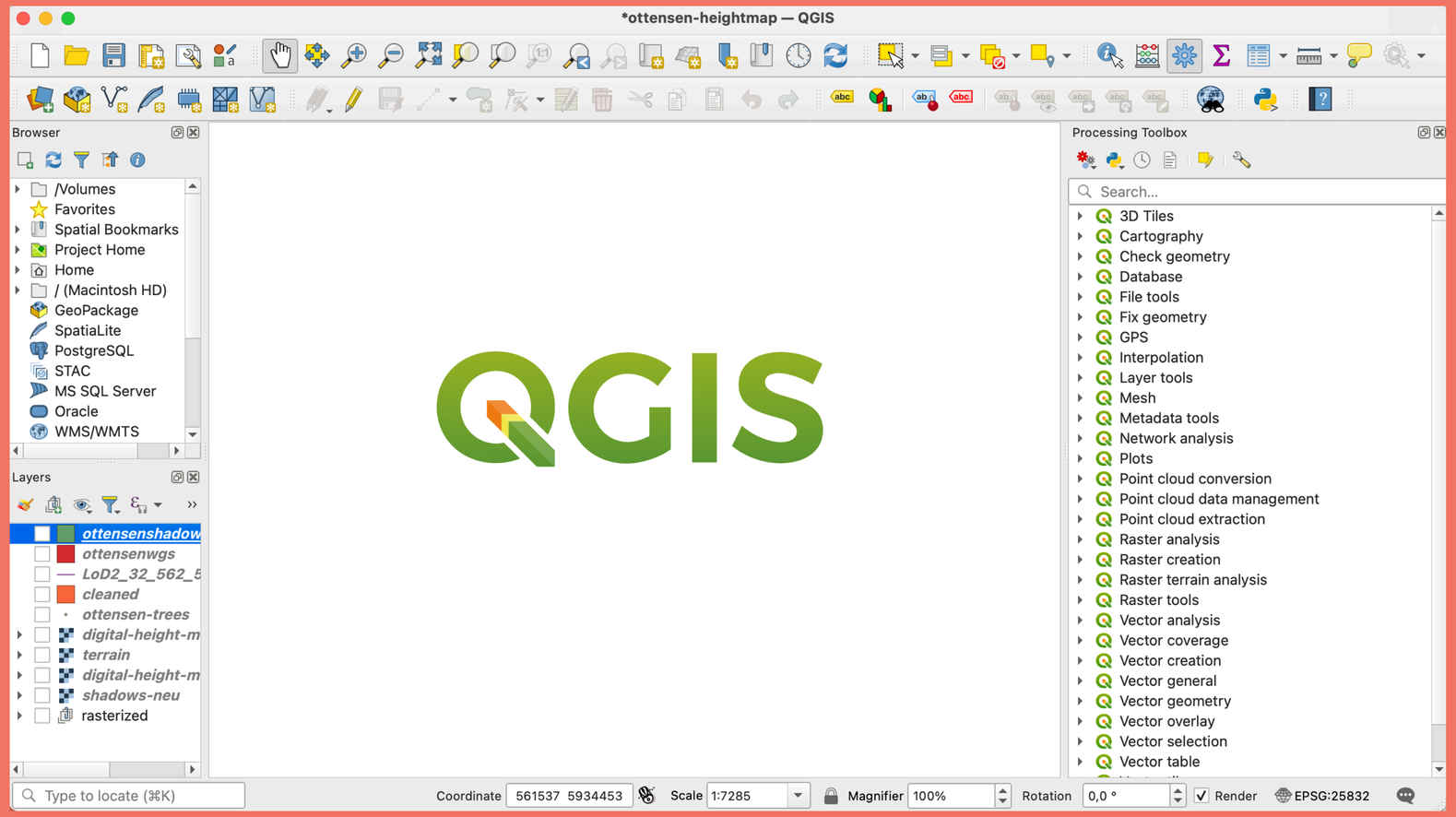


https://geoportal-hamburg.de/


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ex-trees.json
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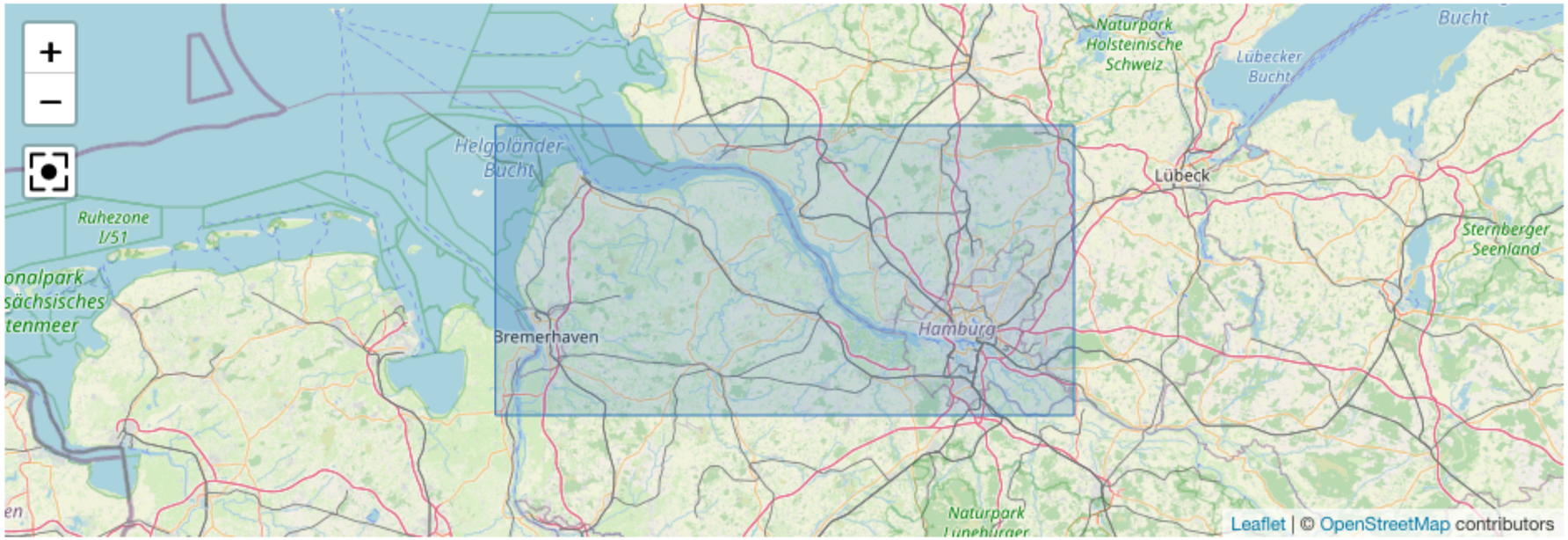
Geographic Information Systems (GIS)



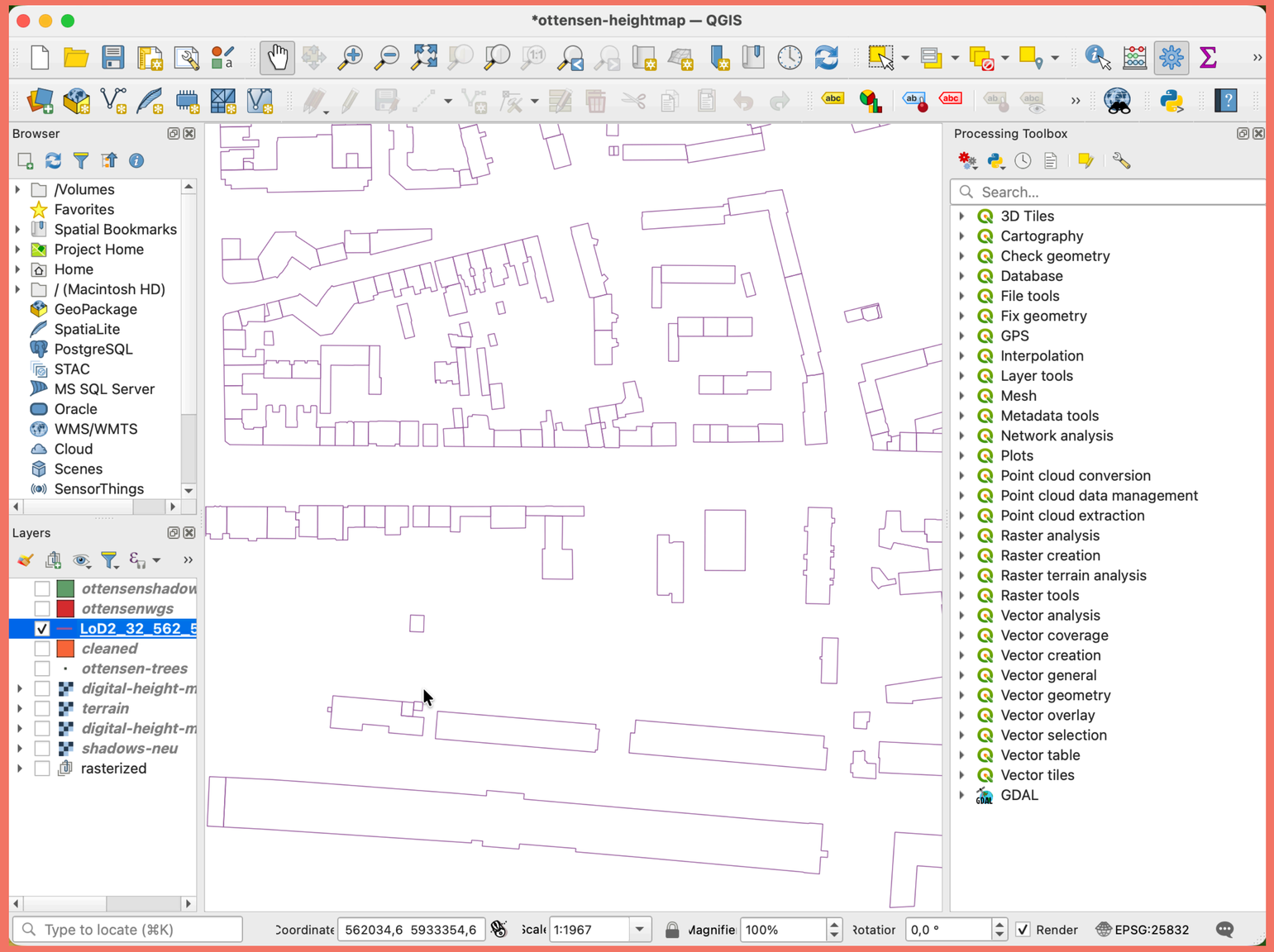


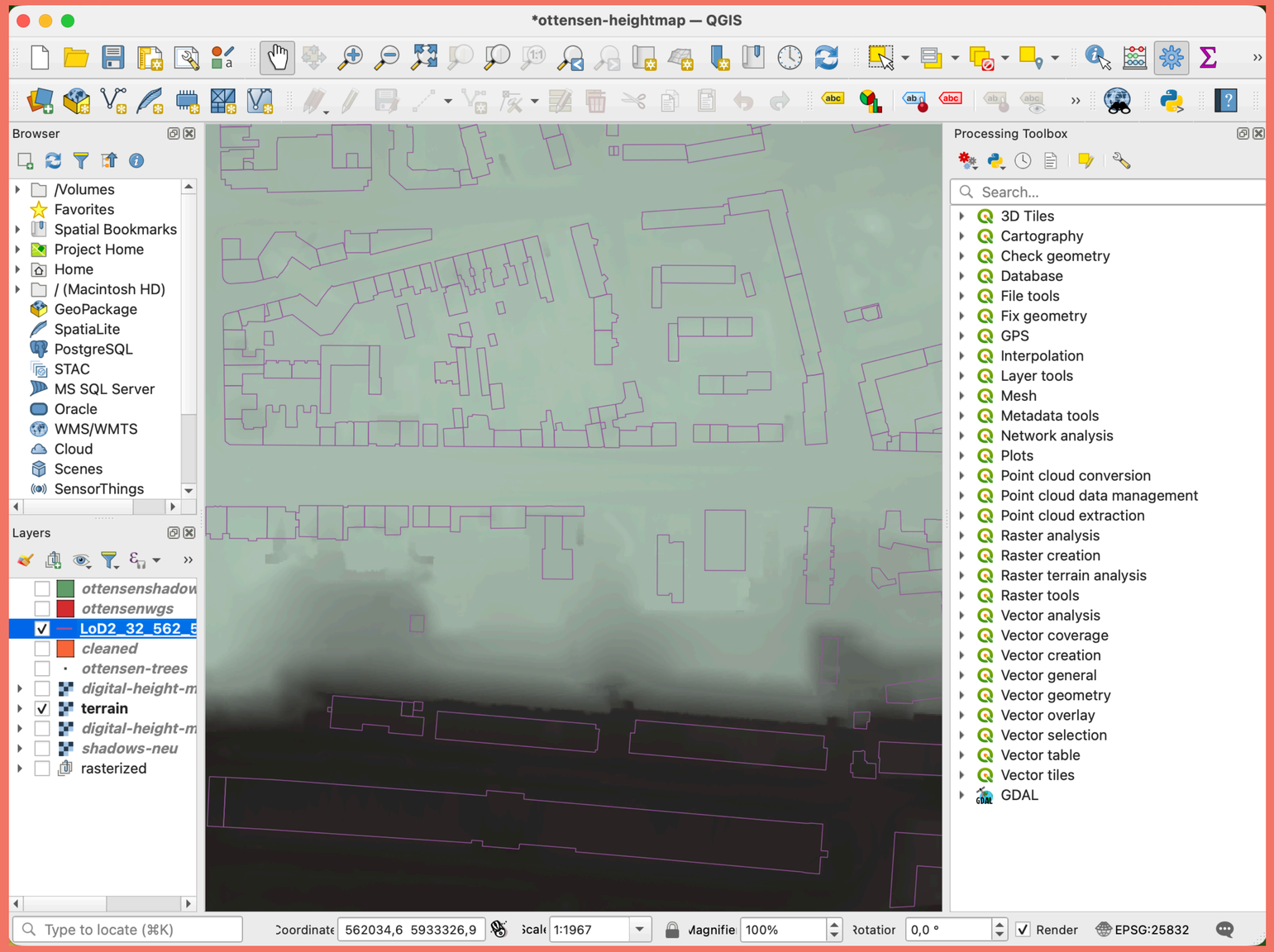
Preparing the Data

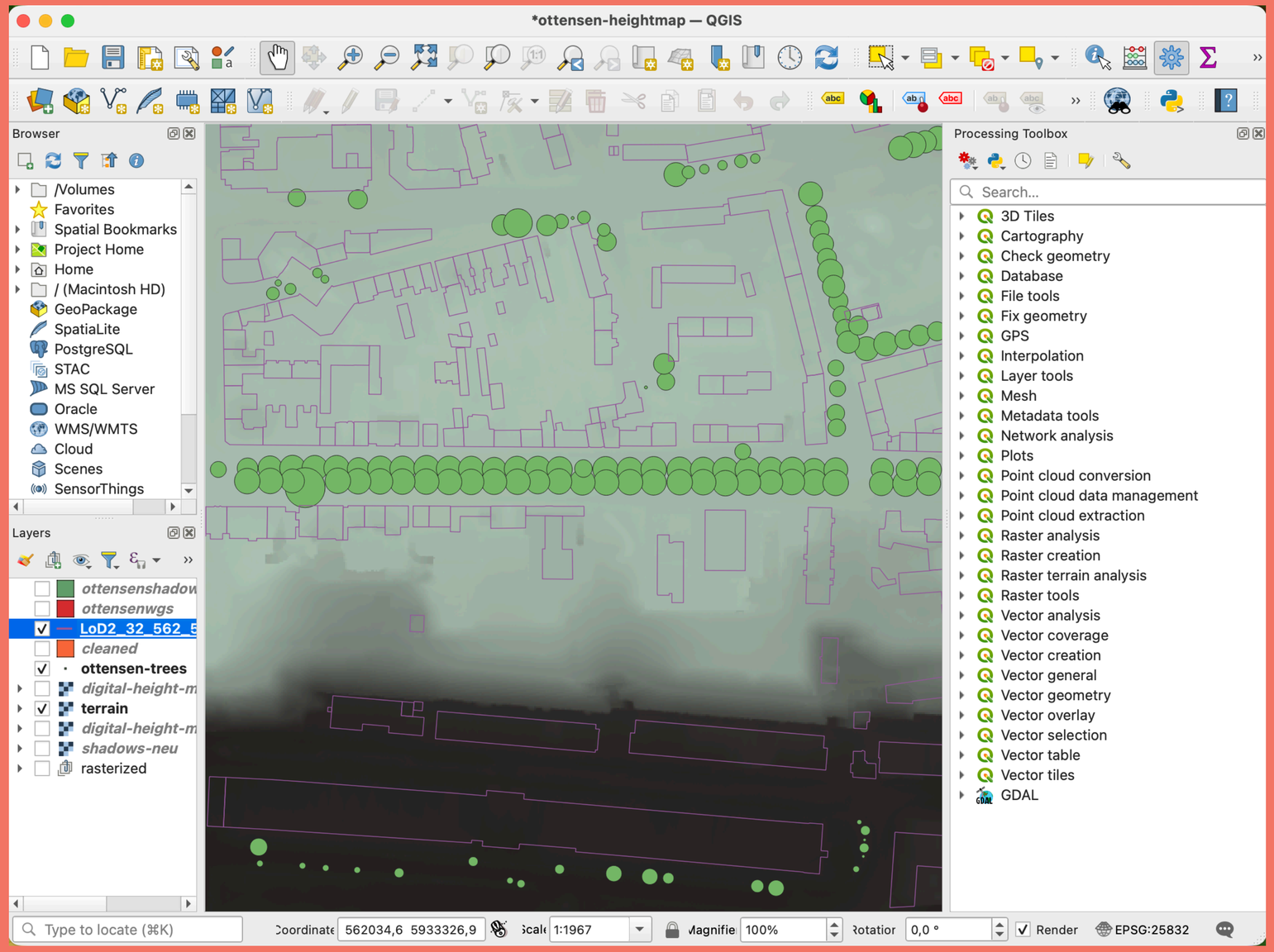
Raumbezug



https://metaver.de/search/dls/service/4E1EE3EF-4E5B-4607-B6AD-6D950C6A9134


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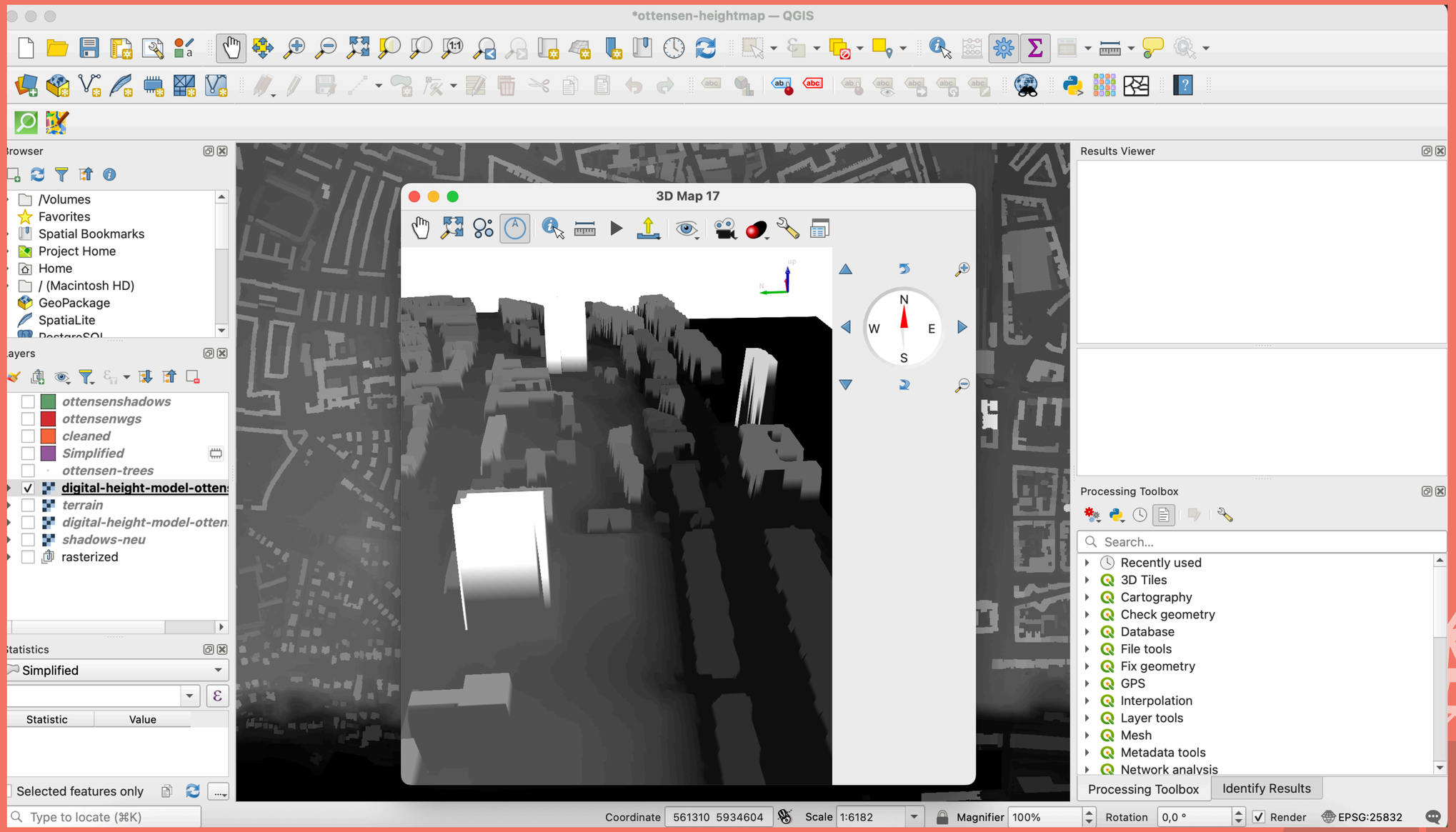

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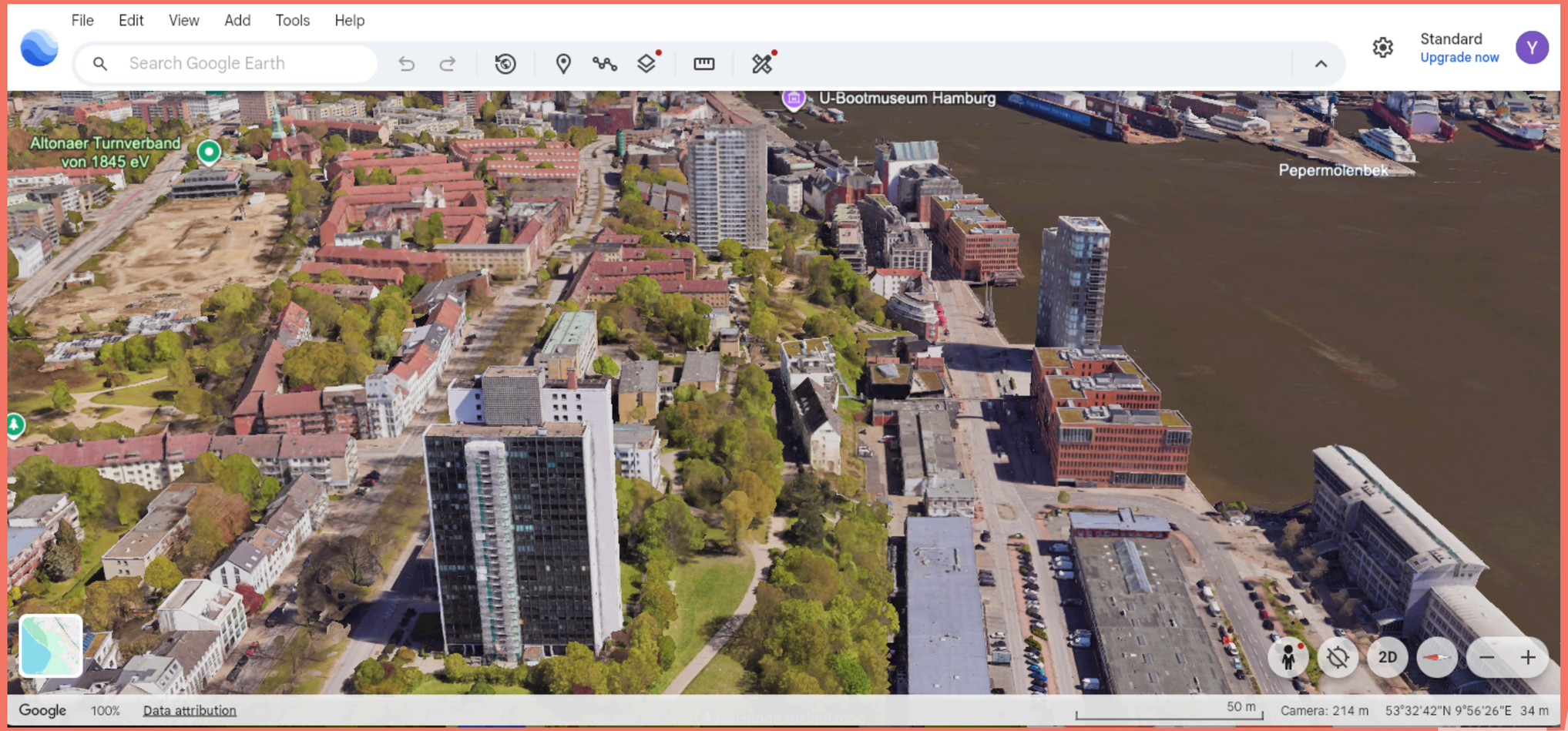
Preparing the Data



Preparing the Data

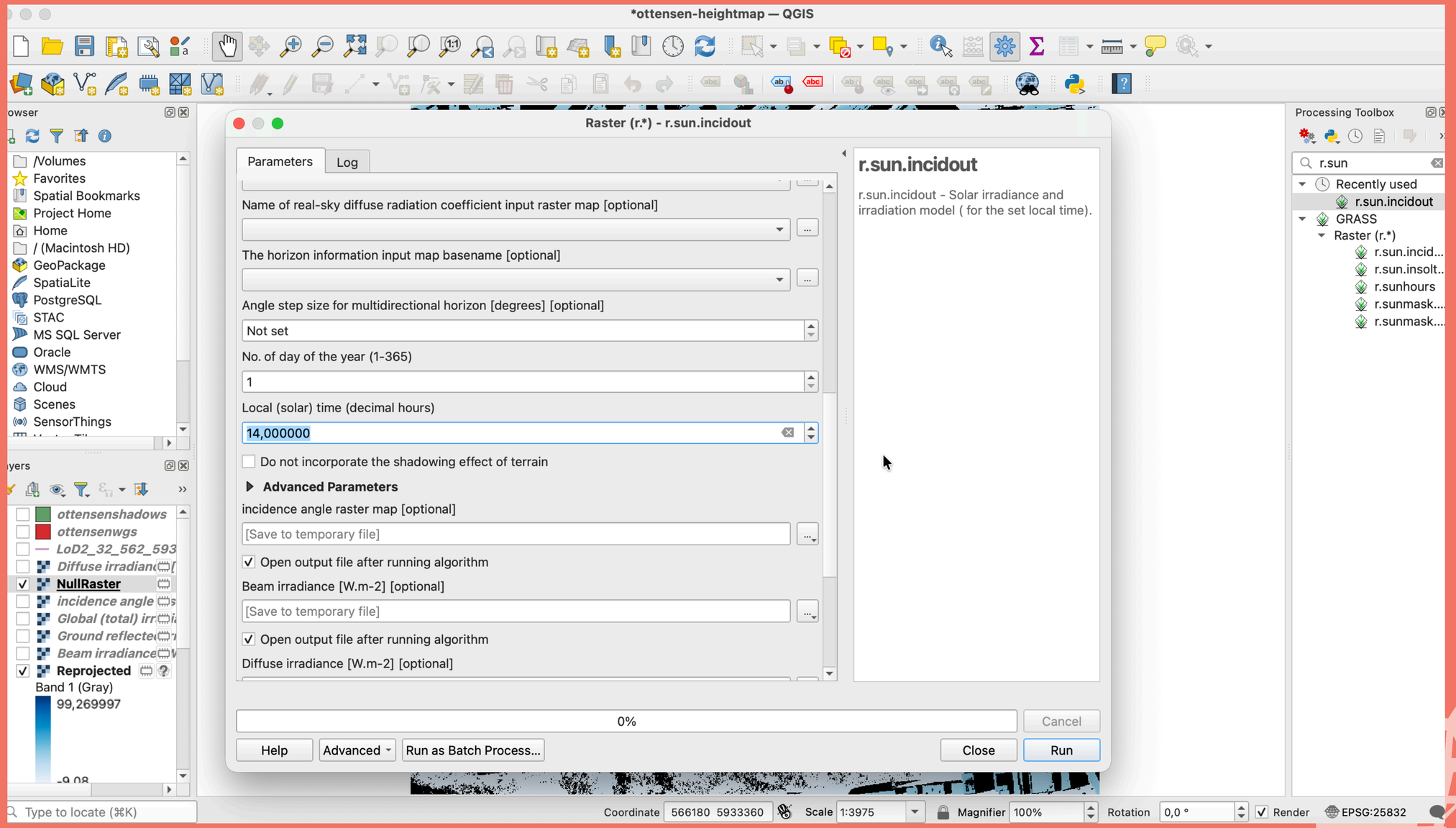


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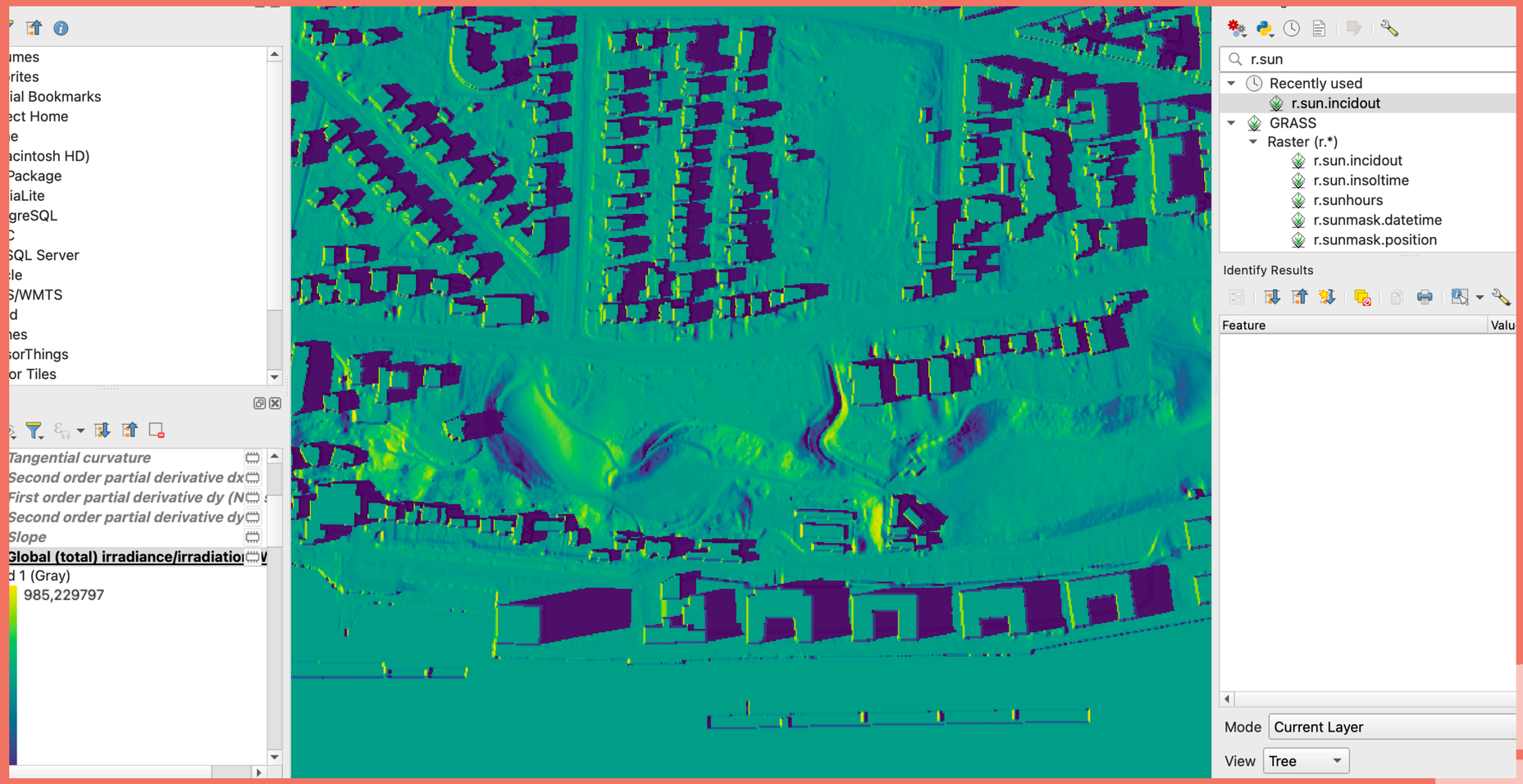


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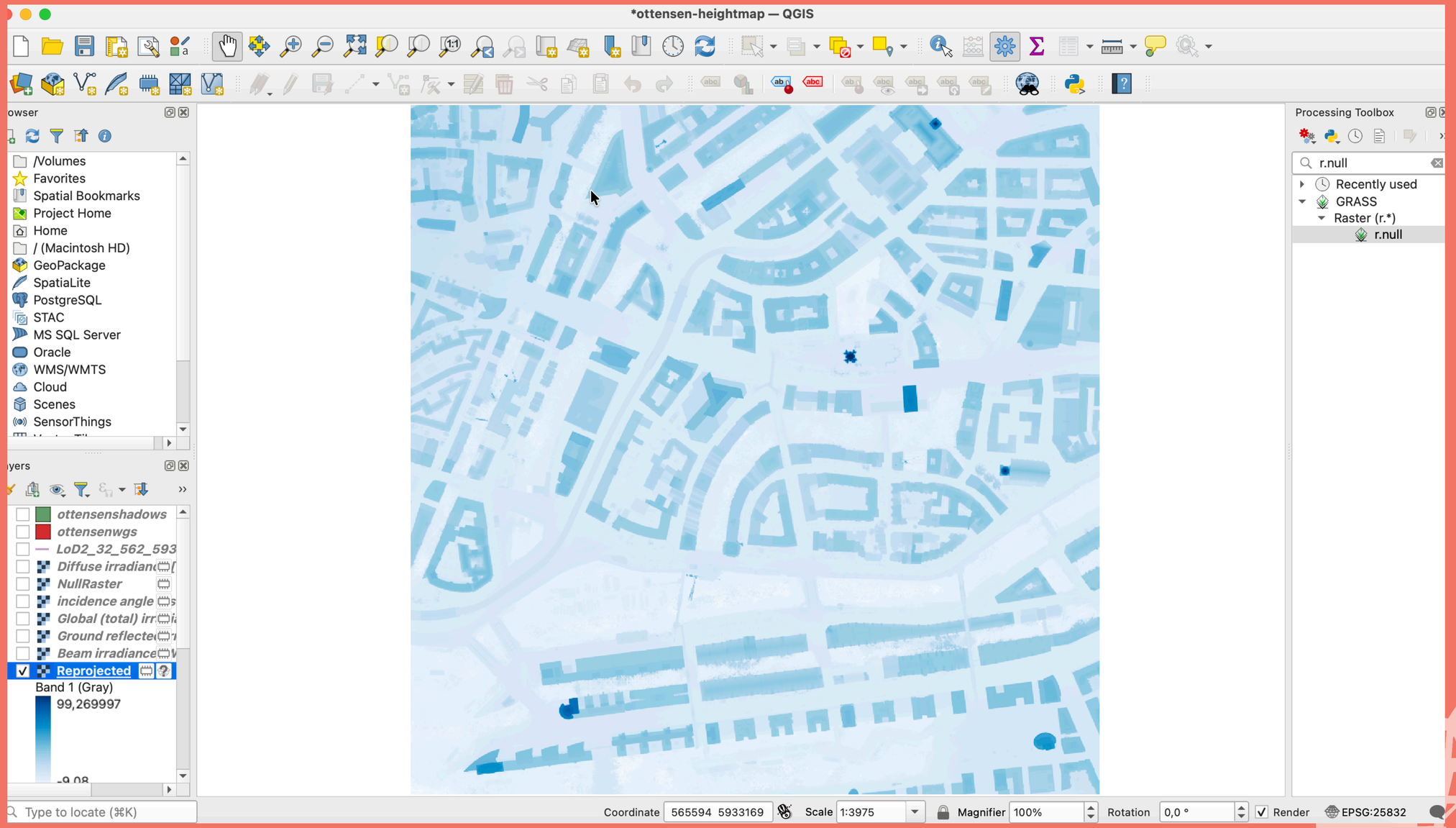

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Open output file after running algorithm
Diffuse irradiance [W.m-2] [optional]
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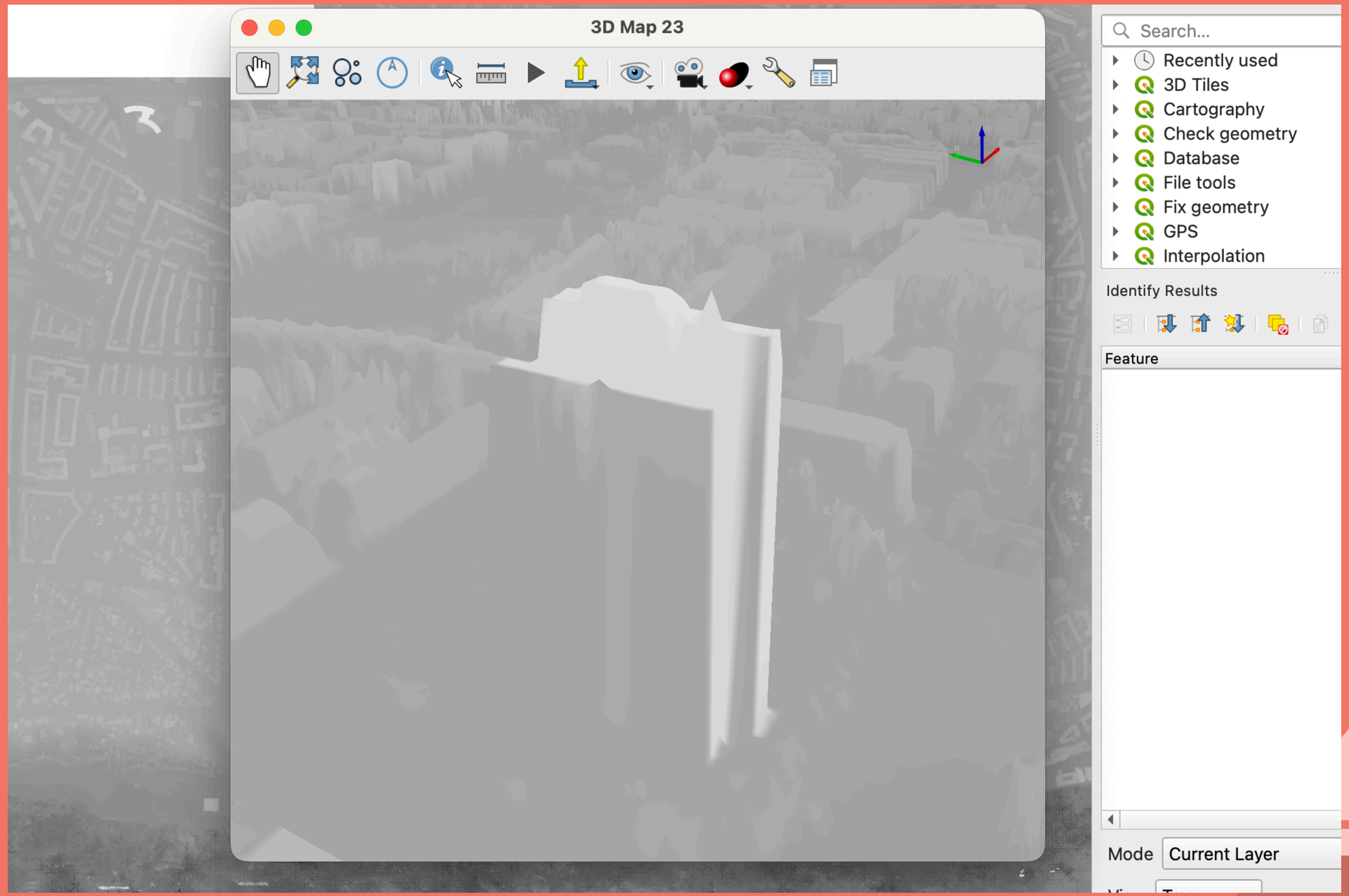
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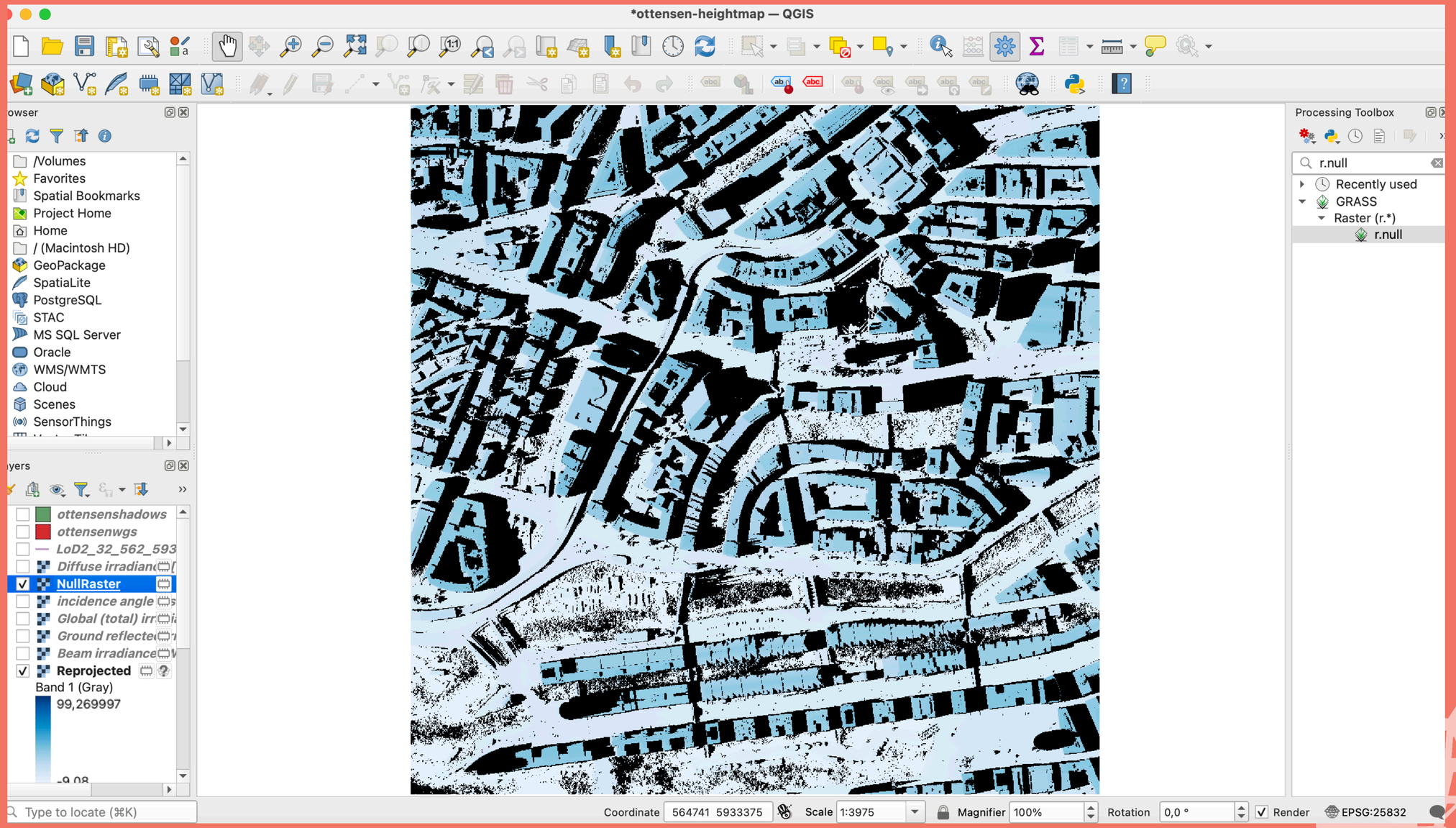
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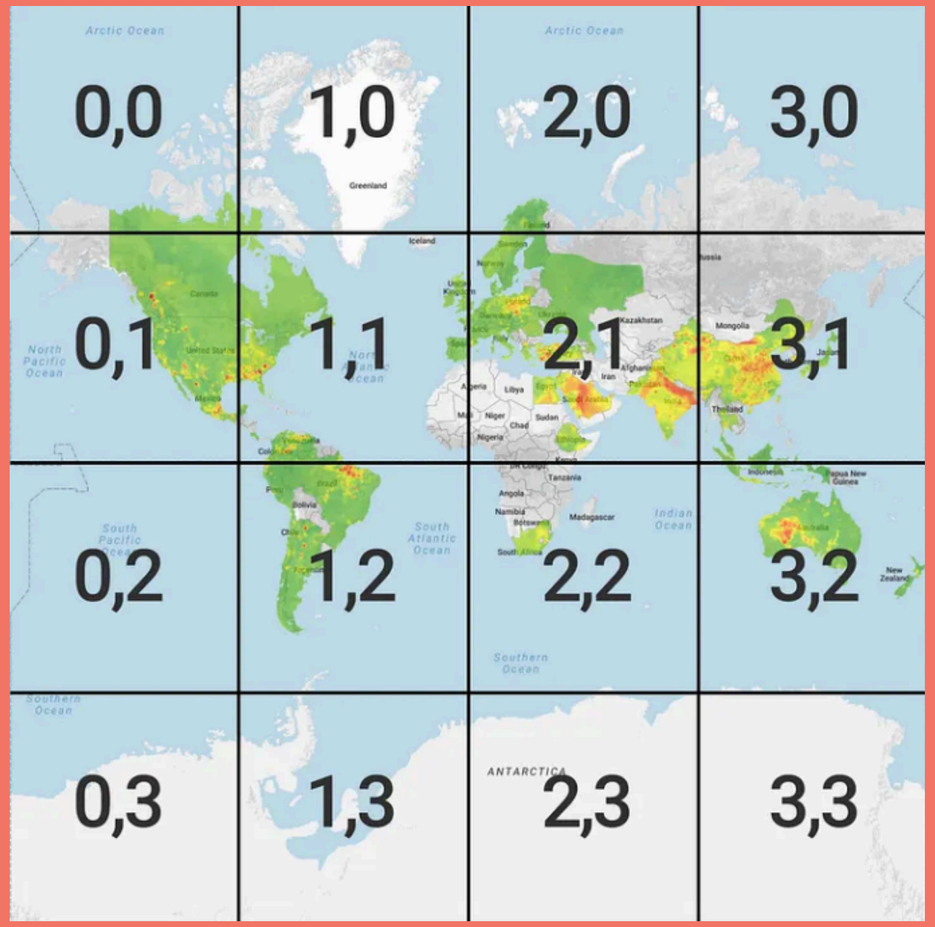

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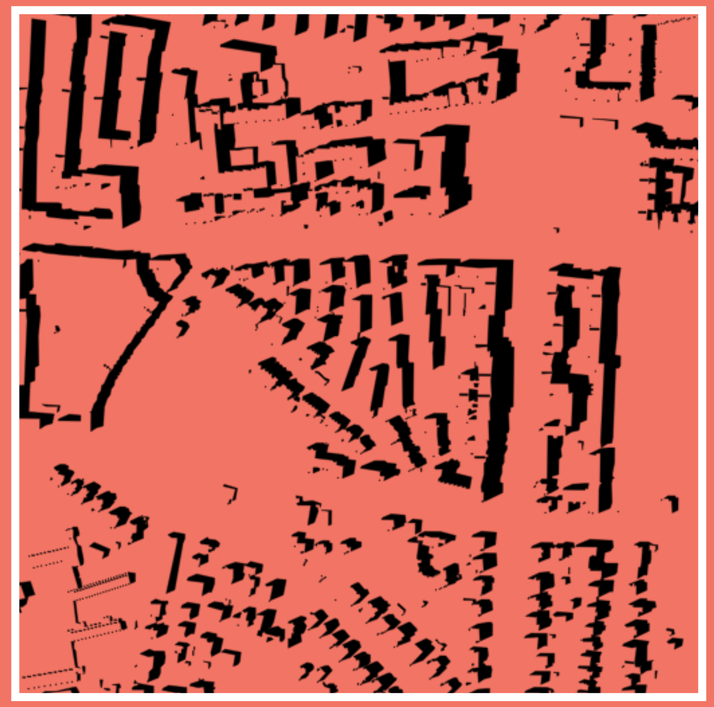

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Technical Details





https://medium.com/keyrus-mobile/a-story-of-maps-and-tiles-af57df3b8c60

Interesting Datasets

1. Public air pump stations for bicycles
2. IoT registry Hamburg
3. Drinking water stations
4. Directory of all Hamburg clubs
5. Hidden potentials in Hamburg’s inner city
6. Digital height model Hamburg (LiDAR flyover)

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