

OpenStreetMap

What is that and how can I contribute?

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1 Imagine...

2 Applications

3 What is this?

4 The data

5 Contributing to OSM

6 Editors

... you want to use a map

- up to date
- complete streets, paths, cycleways, ...
- routable (car, bicycle, foot, ...)

... constantly changing areas

Example:
Construction of A7

(Hamburg-Stellingen, Germany)

... unusual use cases

- hiking or trekking
- travel by (motor) boat
- search POIs by accessibility (e.g. for people with limited mobility)

... you want to print/show maps

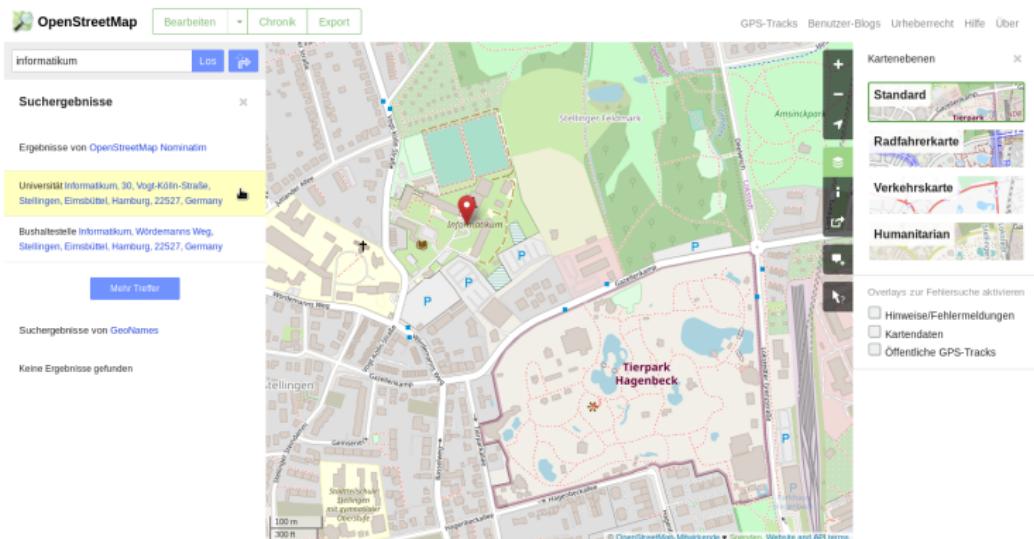
- route to weddings/birthday/party/...
- in presentations
- in commercial uses
 - ▶ software
 - ▶ bus/train stop
 - ▶ public city map

... there's a free map

And yes, it exists:

OpenStreetMap

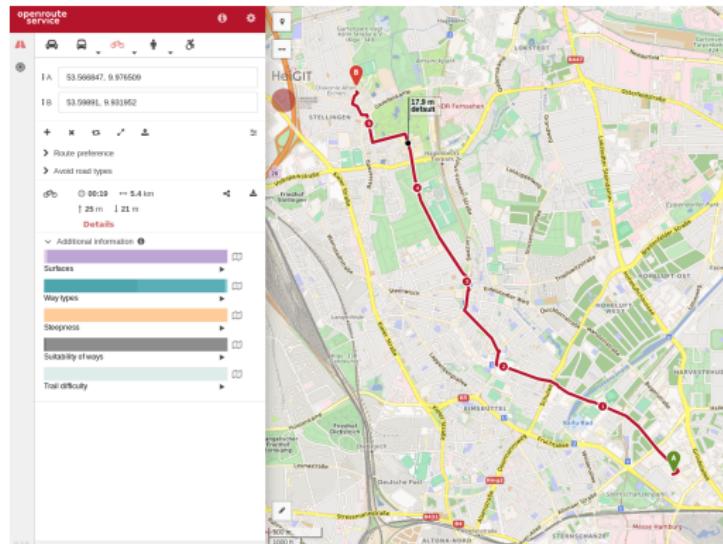
OpenStreetMap website



<https://osm.org>



OpenRouteService



<https://maps.openrouteservice.org>



OpenTopoMap website



<https://opentopomap.org>

OpenStreetMap Wiki

Main page Discussion Read View source View history Search OpenStreetMap Wiki

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[Other languages — Help us translate this wiki!](#)

Welcome to OpenStreetMap, the project that creates and distributes free geographic data for the world. We started it because most maps you think of as free actually have legal or technical restrictions on their use, holding back people from using them in creative, productive, or unexpected ways.

[More about OpenStreetMap](#) | [How to contribute](#) | [Where to get help](#)

Use OpenStreetMap

Using OpenStreetMap

- Browse our world map!
- Check the ready-to-use products for your mobile device, your desktop computer or the web services
- [...more on using OpenStreetMap](#)

Contribute free map data

Beginners' Guide

- Browse the map feature documentation
- Browse the Mapping projects
- [...more on contributing map data](#)

Software Development

Develop and use the Platform

- Use OpenStreetMap for your software
- Contribute to the OpenStreetMap software

Image of the week Event Calendar

- free¹ project collecting **free accessible** geodata
- open database for geodata
- ODC-ODbL
 - ▶ OpenDataCommons Open Database License
 - ▶ Ersetzt CC BY-SA 2.0 (share alike & attribution)

¹free as in freedom

Motivation

Why has OpenStreetMap been created?

- proprietary maps old and faulty
- focus on cars and traffic
- no access to raw data
 - ▶ error correction not possible
- Google Maps *not directly evil* – but **not free**
- license problems with (nearly) all map service providers

History

- 2004 – OSM founded
- 2006 – release JOSM-Editor
- 2006 – first map rendered with Mapnik
- 2007 – TIGER data import USA started
- 2008 – TIGER data import USA finished
- 2009 – API 0.6 (still latest version)
- 2009 – cooperation with Wikipedia
- 2010 – Bing Imagery allowed usage for OSM
- 2013 – 1 mio. registered users
- 2016 – Maps.me app enabled edits

Statistics



https://wiki.openstreetmap.org/wiki/File:Osmdbstats1_users.png, 2019-05-25

Imagine...
ooooo

Applications
oooo

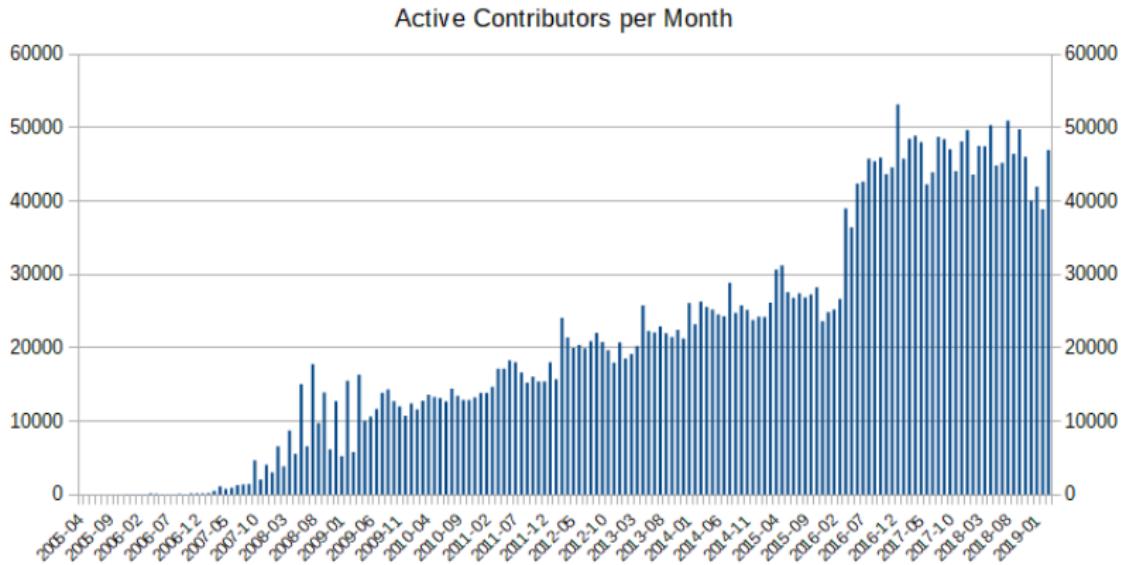
What is this?
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The data
oooooo

Contributing to OSM
oooooooo

Editors
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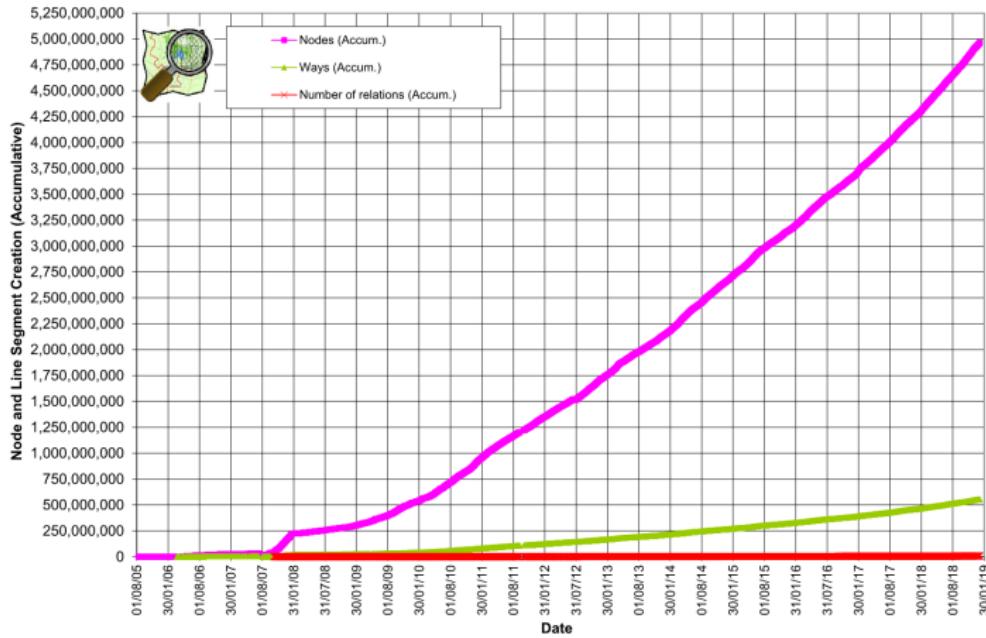
Statistics



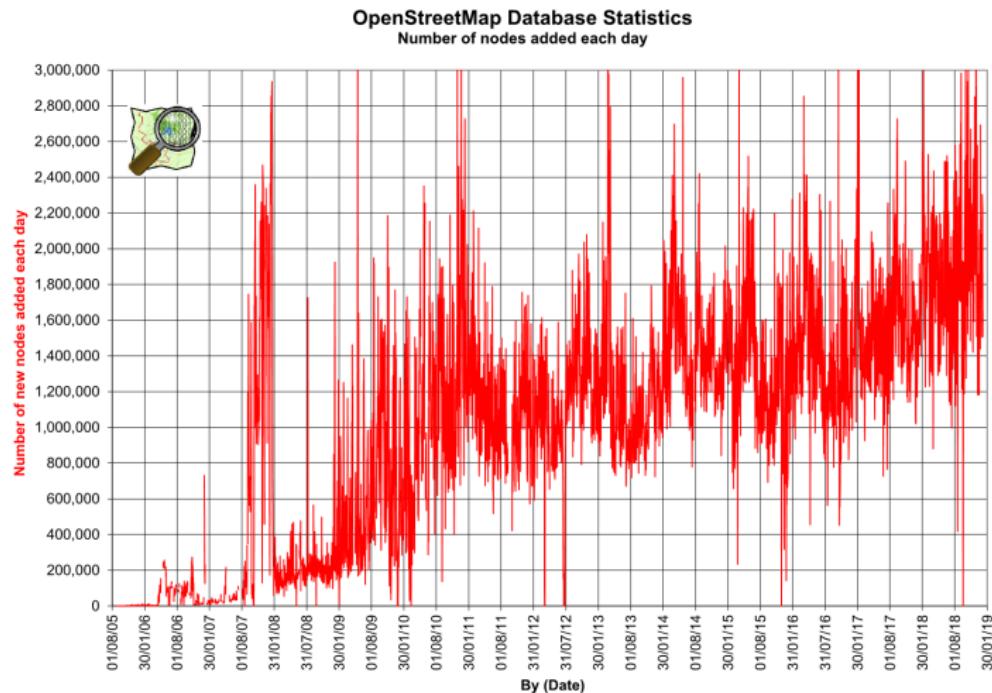
https://wiki.openstreetmap.org/wiki/File:Active_contributors_month.png, 2019-05-25

Statistics

OpenStreetMap Database Statistics
Node, Way and Relation Creation

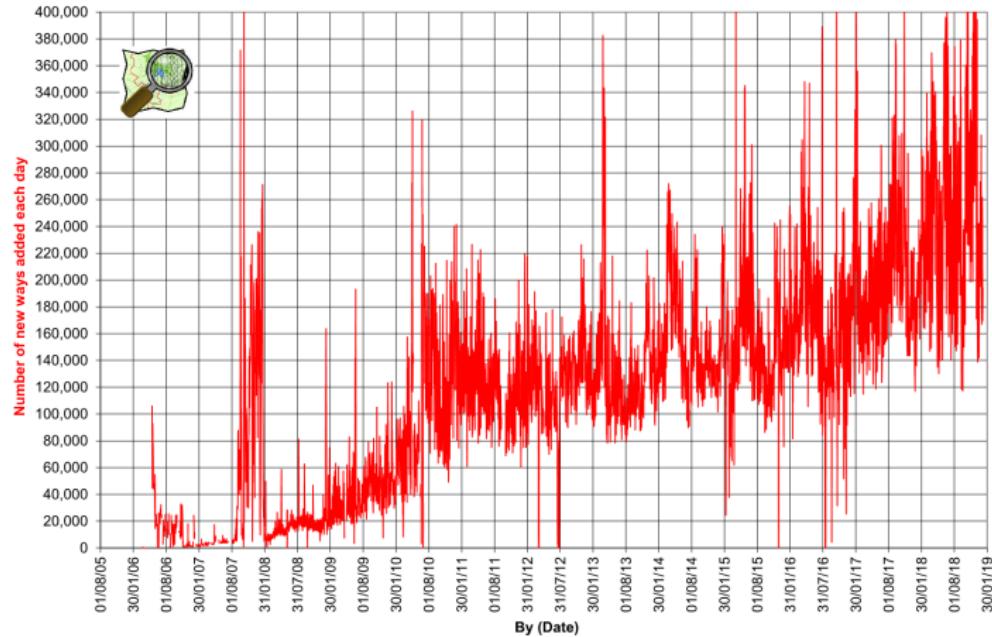


Statistics



Statistics

OpenStreetMap Database Statistics
Number of ways added each day



Community

What is done?

- developing software and tools
- actual mapping
- creating and maintaining documentation
- doing public relations activities

Community

How is it done?

- going outside collecting information
- using imagery services
- meet other mappers
- participating in a mapathon

1 Imagine...

2 Applications

3 What is this?

- Motivation
- History
- Statistics
- Community

4 The data

- Geometries
- Tags

5 Contributing to OSM

- Trace aerial imagery
- Go outside
- Report errors

Imagine...
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Applications
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What is this?
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The data
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Contributing to OSM
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Editors
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Geometries

■ Socialize

6 Editors

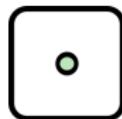
- iD
- JOSM



Geometries

Node

- single location on map



(1)

amenity=telephone
covered=booth



(1) https://wiki.openstreetmap.org/wiki/File:Red_telephone_box_-_geograph.org.uk_-_919348.jpg.

2019-05-25

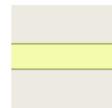
Geometries

Way

- line on map
- 2-2000 points per way



highway=secondary



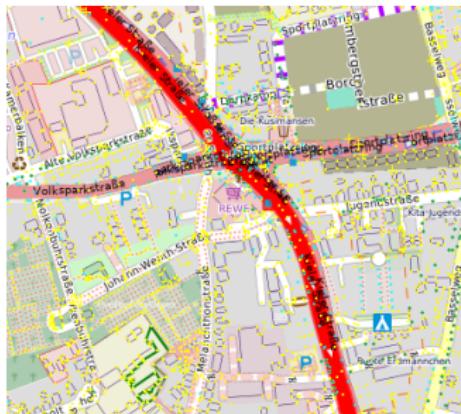
(1)

(1) <https://wiki.openstreetmap.org/wiki/File:Meyenburg-L134.jpg>, 2019-05-25

Geometries

Relation

- combination of ways (e.g. to a bus route)



`type=route
route=bus
name=MetroBus 4
ref=4
from=Wildacker
to=Brandstwiete`

Geometries

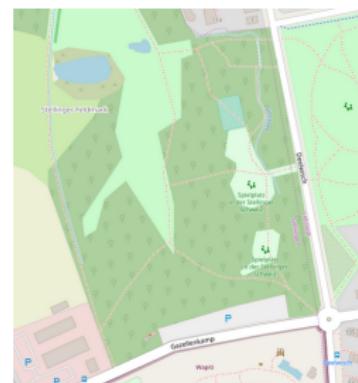
Area

- basically a closed way with special tags

landuse=forest
leaf_type=broadleaved



(1)



(1) https://commons.wikimedia.org/wiki/File:Stellinger_Feldmark_ESE_01.JPG 2019-05-25

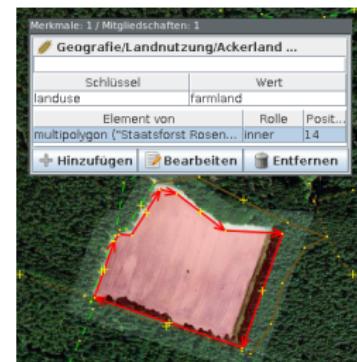


Geometries

Multipolygon

- basically a polygon with polygons inside
- role inner and outer

landuse=farmland



(1) Microsoft©BingTM Maps Platform; (2) Microsoft©BingTM Maps Platform inside JOSM editor



Tags

- free tagging system
- unlimited amount of tags
- consider conventions (s. wiki)

format	notation	example
normal	key=value	highway=service
multiple values	key=v1;v2	amenity=library;cafe
namespace	key:namespace=value	addr:housenumber=42

Trace aerial imagery



(1) Microsoft©BingTM Maps Platform from JOSM editor

Go outside

Surveying

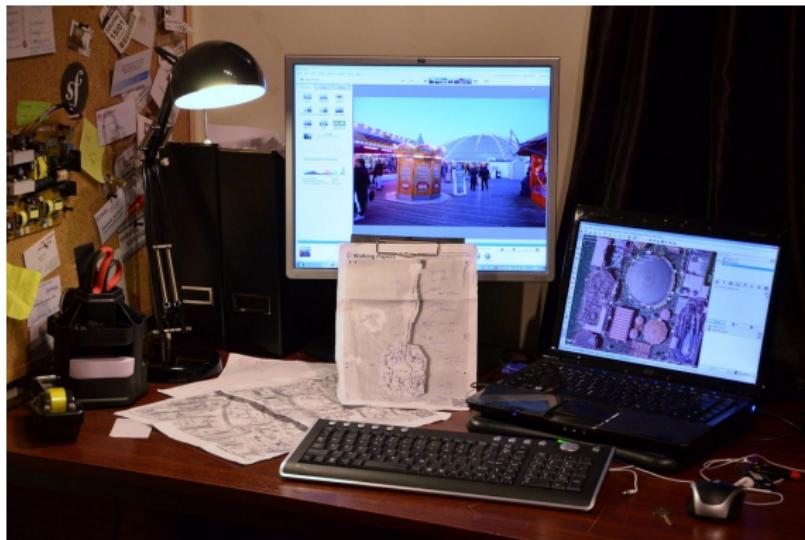


(1)

(1) https://en.wikipedia.org/wiki/File:Motion_X_GPS_and_OSM.jpg, 2019-05-25

Go outside

Mapping

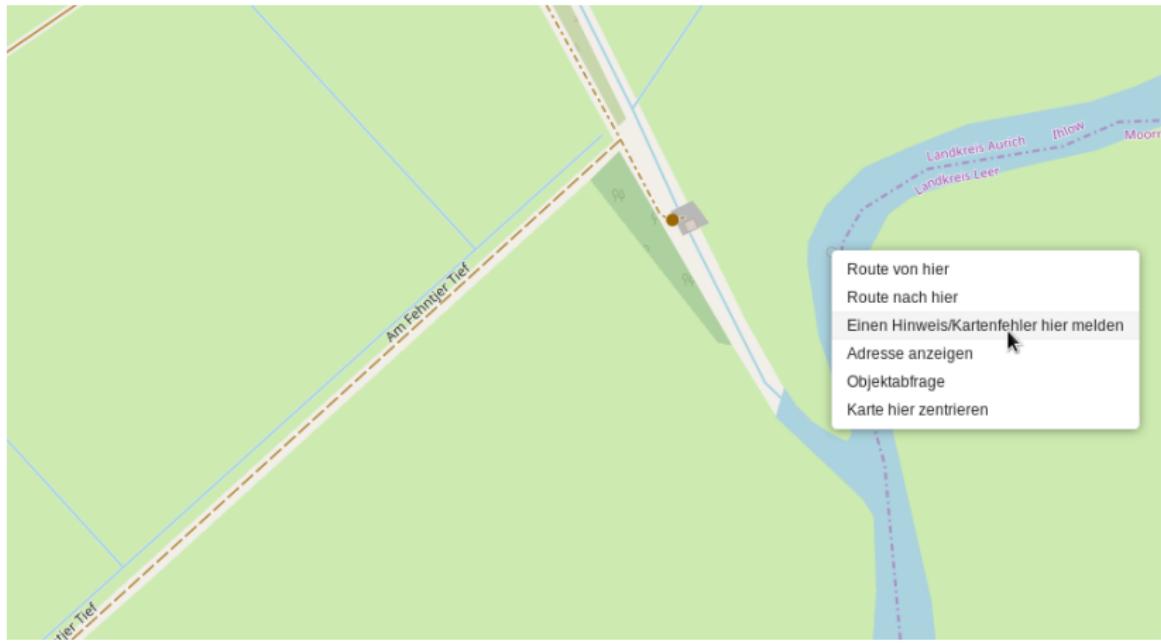


(1)

(1) https://en.wikipedia.org/wiki/File:Adding_data_to_OSM_after_mapping_Brighton_Pier.jpg.

2019-05-25

Report errors



Report errors

Unerledigter Kartenfehler Nr. 1610297 ×

Beschreibung

Pumpwerk im fahrwasser?

Erstellt von Anonym vor 6 Monate

Dieser Hinweis enthält Kommentare von anonymen Benutzern, die unabhängig geprüft werden sollten.

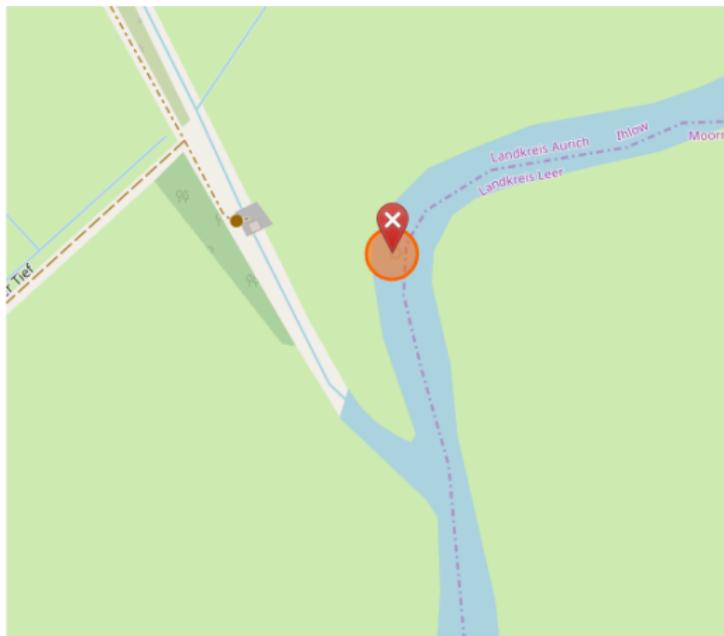
Diesen Hinweis melden

Kommentar von hauke-stieler vor 11 Tage

Kommt mir auch seltsam vor. Für mich sieht das nach Fehler aus und kann meinewegen gelöscht werden. Vielleicht war das eigentliche Pumpwerk daneben gemeint?

Erledigt

Kommentar



Report errors



Report errors

Unerledigter Kartenfehler Nr. 1770846 ×

Beschreibung

Diese Schule hat den Standort gewechselt, dieses Gebäude gehört zum Friedrich-Ebert Gymnasium

Erstellt von Anonym vor 17 Tage

Dieser Hinweis enthält Kommentare von anonymen Benutzern, die unabhängig geprüft werden sollten.

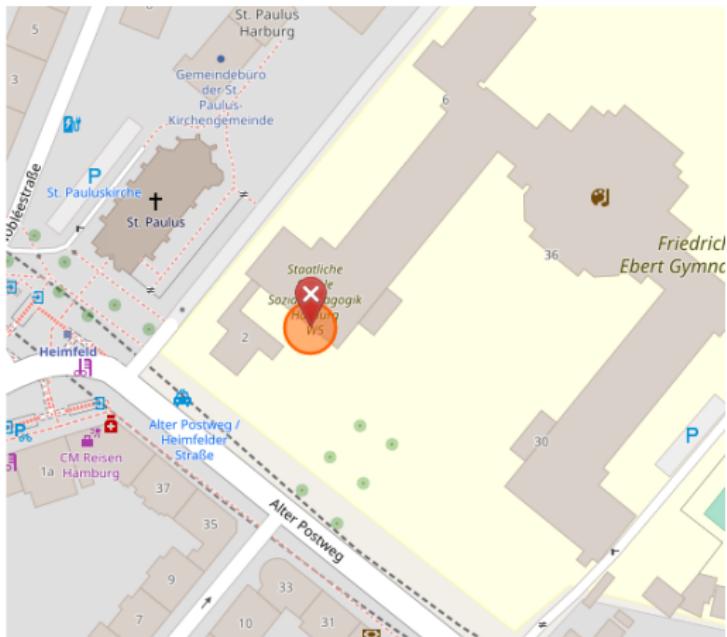
[Diesen Hinweis melden](#)

Kommentar von [ma-rt-in](#) vor 4 Tage

Weißt du auch wohin die sind?

Erledigt

Kommentar

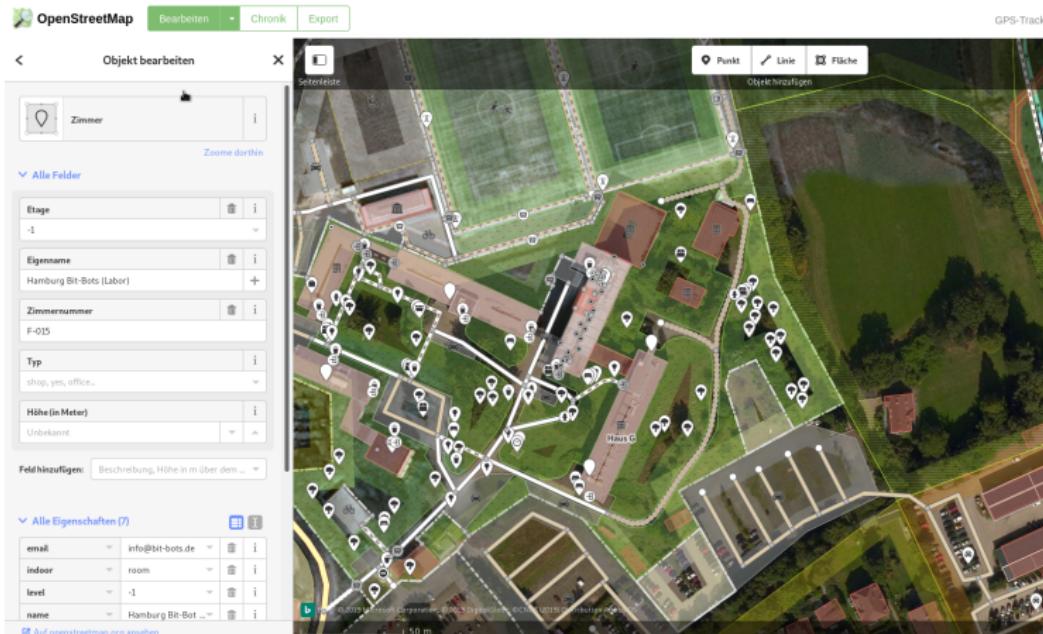


Socialize



(1)

(1) https://wiki.openstreetmap.org/wiki/File:20110407_osm_stammtisch_hl.jpg, 2019-05-25



<https://www.openstreetmap.org/edit>



JOSM

