

INDOOR MAPPING

Using OsmlnEdit and indoor=

#OpenStreetMap

#TechTransThai
#MappingThailand

About me

Hello, I'm Pongpeera Wongprasitthiporn.
I'm a student at KMITL interested in free software,
decentralization, open data and open standards.

I run the TechTransThai Community which is involved
in localizing apps, crunching BOINC projects and
contributing data to various open data platforms
such as OpenStreetMap and Mozilla Common Voice.

I can also do things like DevOps, Linux system
administration, UI design, content creation and some
coding.

I'm seeking a full-time position, available from April 2025.



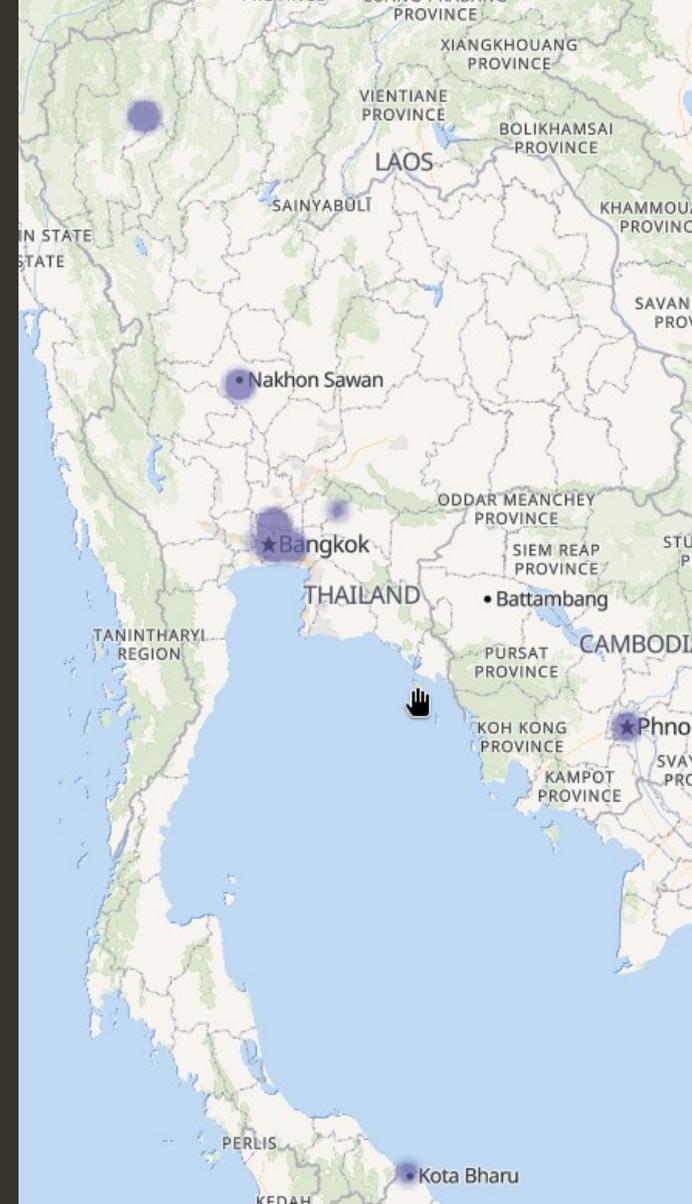
Indoor mapping?

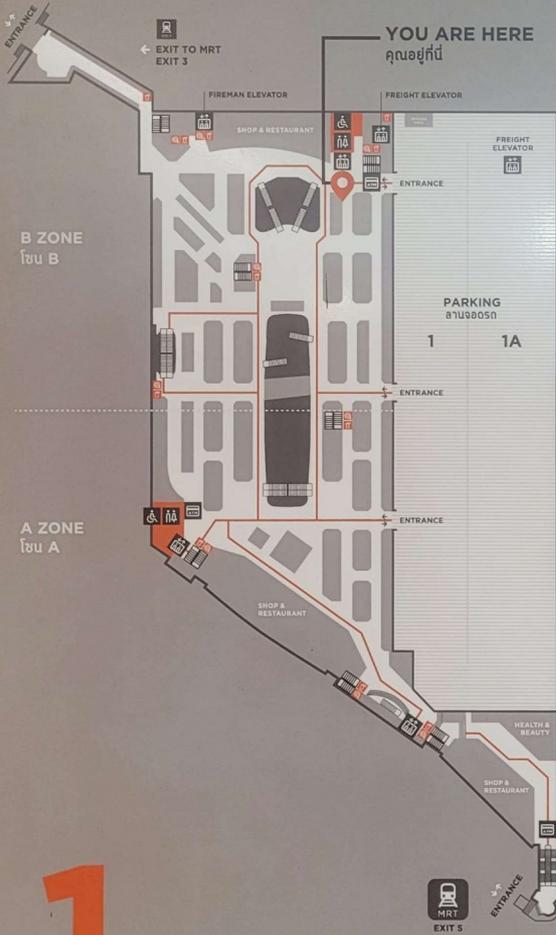
For OpenStreetMap, indoor mapping is about collecting indoor data such as floors, rooms, elevators, stairs and other features of a *public* building.

Indoor data, when made public, can be useful in many circumstances, from simply helping visitors find amenities (such as toilets) to aiding rescue teams in emergency situations.

There are very few locations in Thailand that have this type of data, as shown on the right.

Image from indoor= (indoorequal.org)





- 6** EVENT HALL
พื้นที่จัดประชุม และ กิจกรรมอื่น ๆ
Coming soon!
- 5** EDUCATION ZONE
HEALTH & BEAUTY ZONE
VINTAGE ZONE
สถานบริการศึกษา
สุขภาพ และ ความงาม
แฟชั่นวีเทจ
- 4** RESTAURANTS
THE MEN
VINTAGE ZONE
ร้านอาหาร
แฟชั่นสุภาพบุรุษ
แฟชั่นวีเทจ
- 3** CASUAL & PARTY DRESS
ชุดกีวาร์น และ ชุดราตรี
- 2** ACCESSORIES
BAGS & SHOES
BANKS
เครื่องประดับ
กระเป๋า และ รองเท้า
ธนาคาร
- 1** EXIT TO MRT
STREET FASHION
ทราเชียน สตรีไฟว์
สตรี แฟชั่น
- G** FAST FOOD
UMD DEPARTMENT
ร้านอาหาร ฝากจัดซื้อ
ของขึ้นชื่อ (ได้พาร์ทเมนท์)
UMD DEPARTMENT
- B** FOOD COURT
MOBILE & IT
SERVICES
SUPERMARKET
ซูเปอร์มาร์เก็ต (สตรีท ฟู้ด)
มือถือ และ โดκι
บริการต่างๆ
ซูเปอร์มาร์เก็ต

Collecting data

Before proceeding, we'll need floor plans of the *public* building we're going to work on.

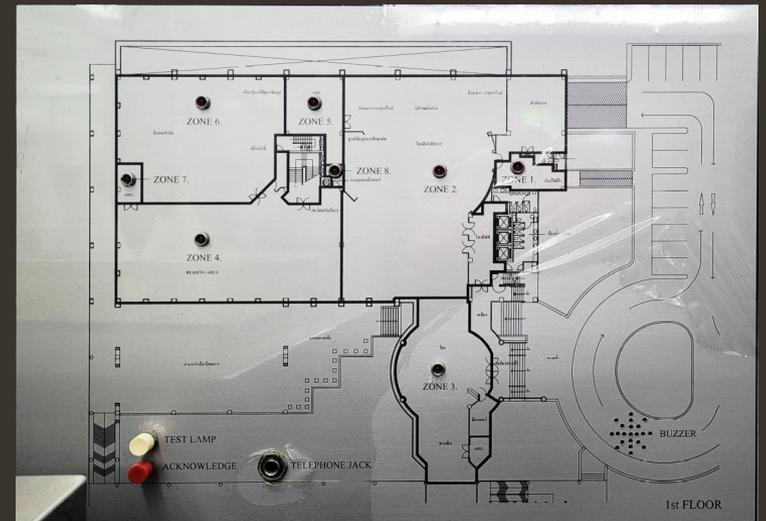
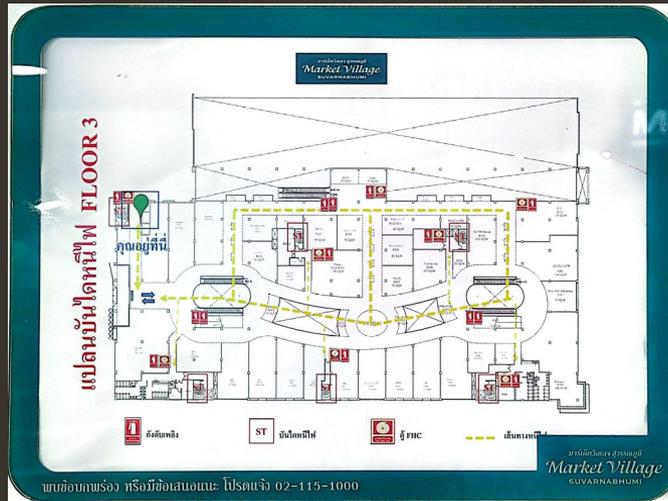
We can find the floor plans/building map for each floor by looking around inside the building, mostly near elevators, escalators or fire hose cabinets.

To make the images easier to work with, I recommend cropping/de-skewing with apps like CamScanner or Microsoft Lens.

An example building map for 1st floor of Union Mall, post-processed with CamScanner, is shown on the left.

1

More floor plan examples

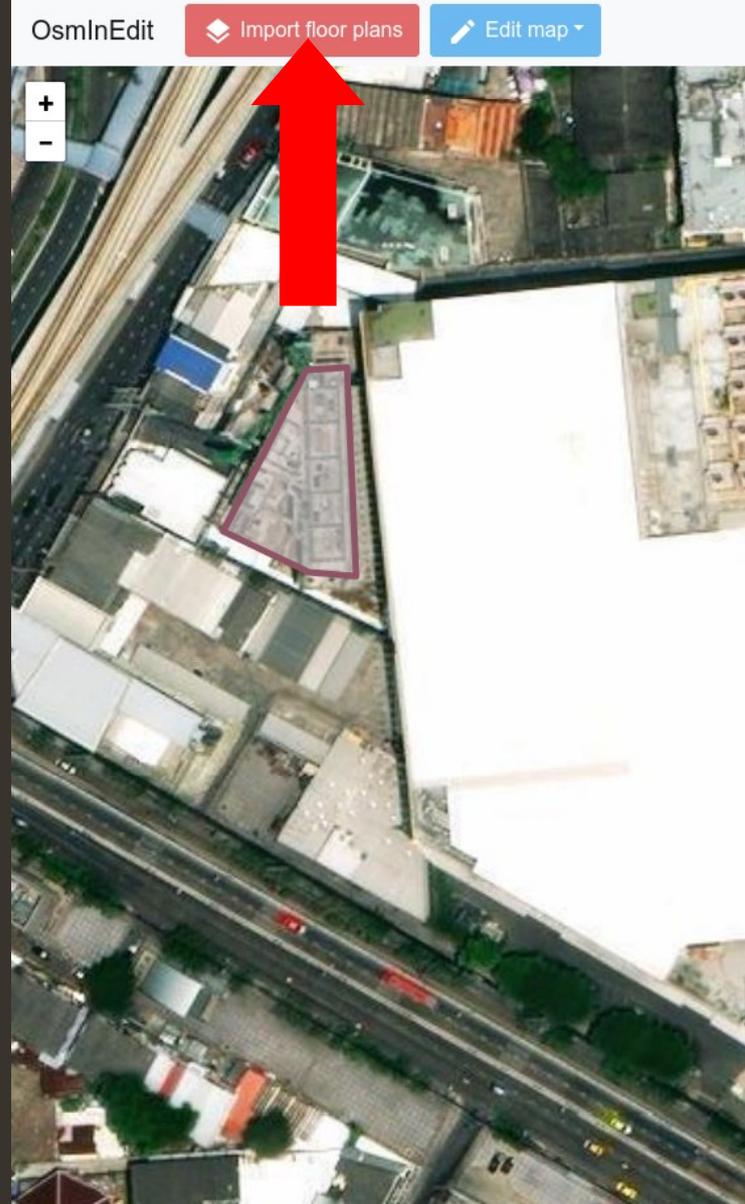


Import floor plans

Now that we already have the floor plans, we're going to use the tools available at:

<https://osminedit.pavie.info>

Adjust your view to a building you'd like to work on and hit the "Import floor plans" button.



Floor plan

Drag and drop your images here (or click to open file browser)

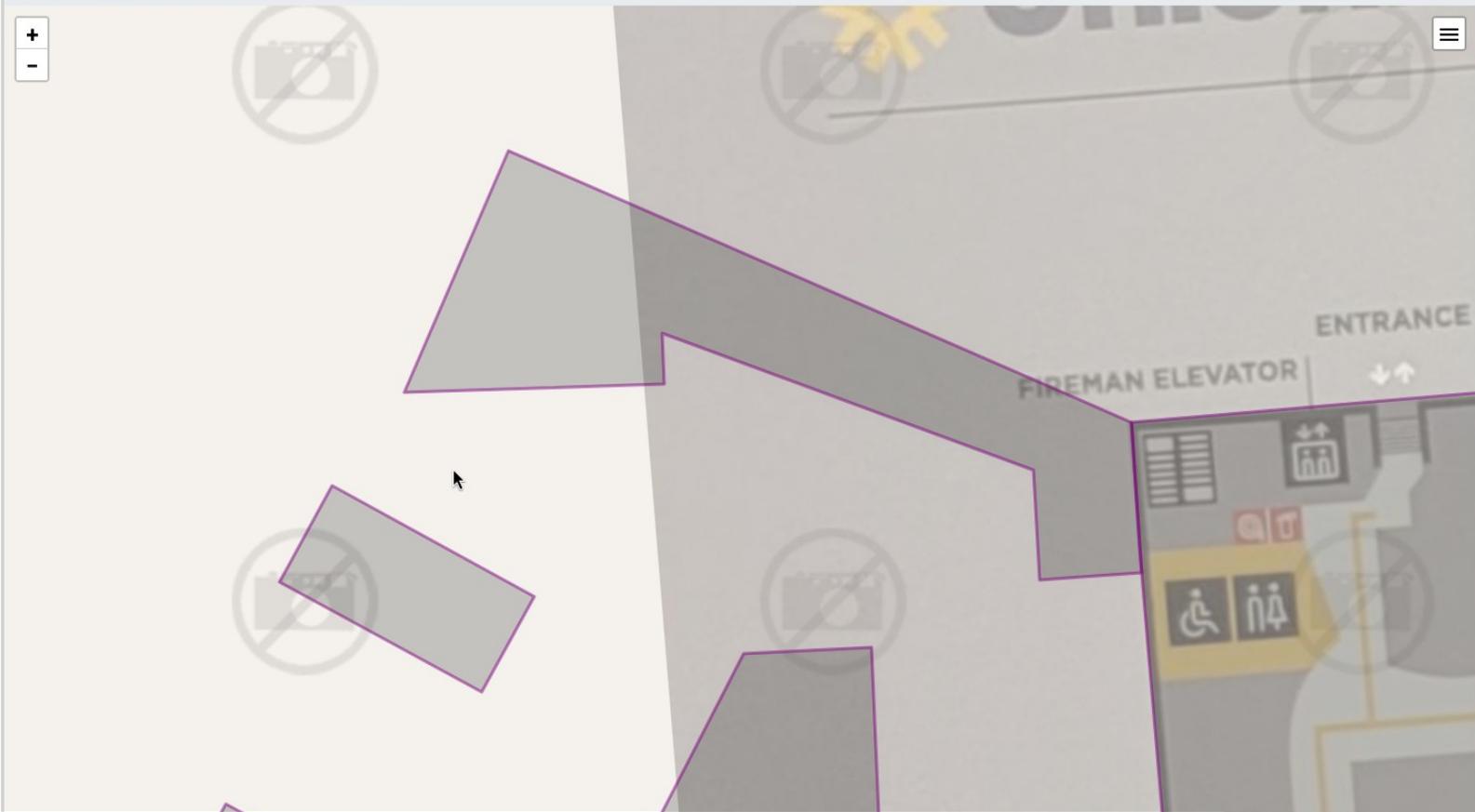
Supported formats: JPEG, PNG, Imagery JSON

 f12	2
 f10	0
 f11	1

     X Delete this plan

  Preview Save (33)

+
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For some imagery providers, there is no aerial imagery at very high zoom levels.

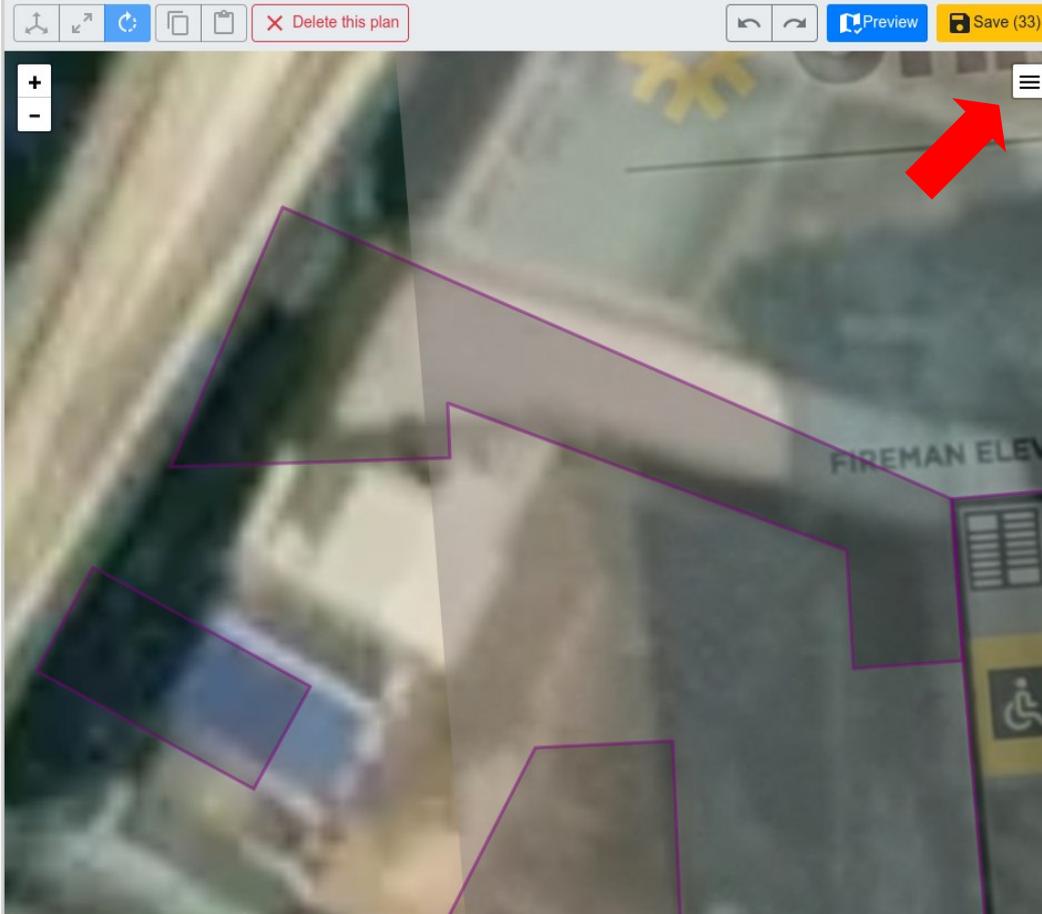


Floor plan

Drag and drop your images here (or click to open file browser)

Supported formats: JPEG, PNG, Imagery JSON

  f12	2
  f10	0
  f11	1



Imagery

Background **Overlay**

Opacity 100%

- Bing Maps Aerial
- Esri World Imagery (Clarity) Beta
- Mapbox Satellite
- OpenAerialMap Mosaic, by Kontur.io
- OpenStreetMap (Standard)
- Cambodia, Laos, Thailand, Vietnam, Malaysia, Myanmar bilingual
- CyclOSM
- OpenStreetMap (Basque Style)
- OpenStreetMap (Breton Style)
- OpenStreetMap (Occitan Style)
- OpenTopoMap
- Stamen Terrain
- Thunderforest Outdoors
- eox.at 2018 cloudless
- eox.at 2019 cloudless
- eox.at 2020 cloudless

In this case you can switch to another imagery provider. Keep in mind the new imagery may not align with existing data!

Union Mall



Edit features



New building



Preview

Save (3)

Name

Union Mall

Type of building

retail

Total height (in meters)

Number of overground levels (roof excluded) ?

6

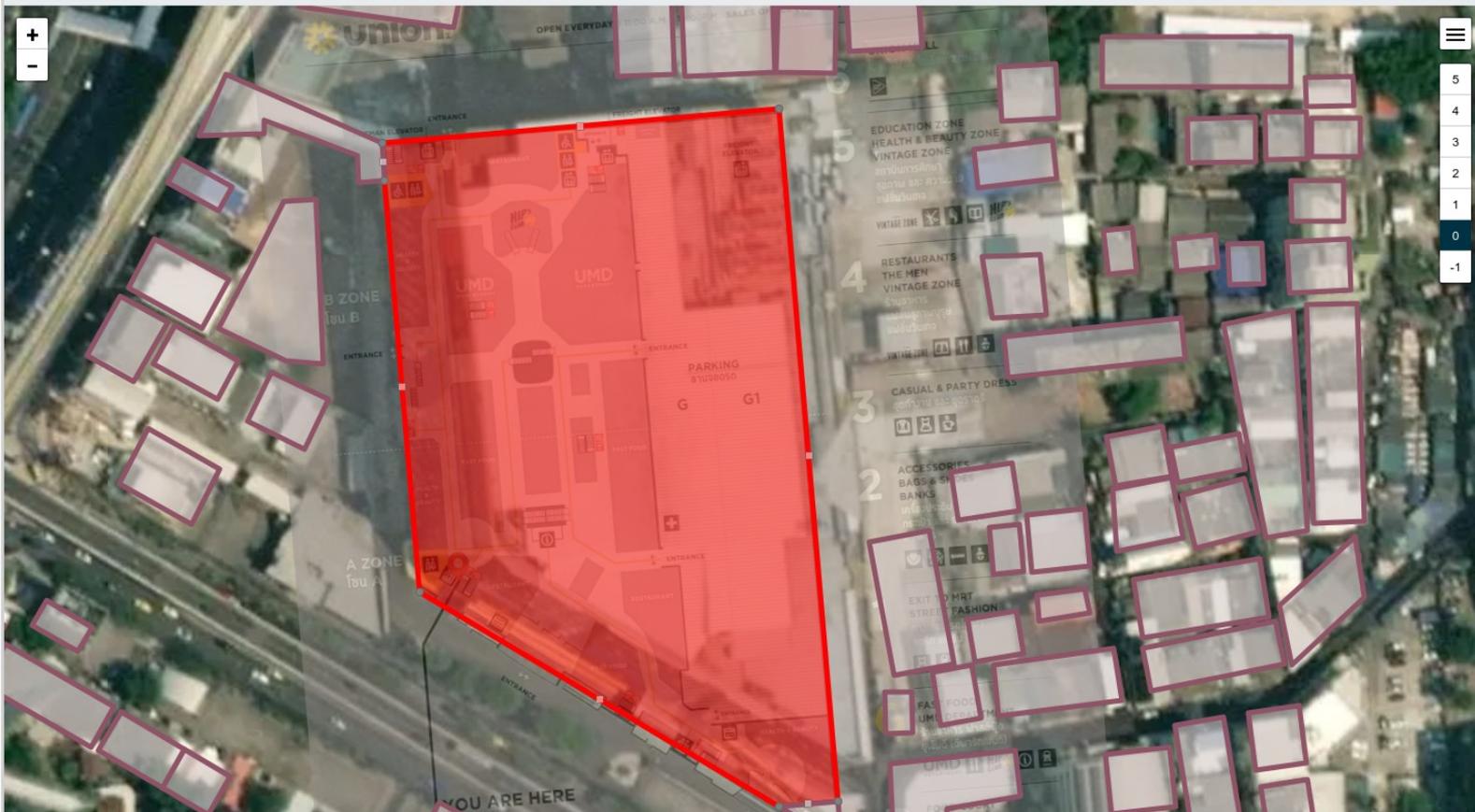
Number of underground levels ?

1

Number of levels under roof ?

building	retail	×	i
name	Union Mall	×	i
name:en	Union Mall	×	i
name:th	ยูเนียน มอลล์	×	i
shop	mall	×	i
wikidata	Q7885824	×	i
wikimedia_commons	Category:Union Mall	×	i
wikipedia	en:Union Mall	×	i
building:levels	6	×	i
building:levels:underground			

+



Go to Edit map > Edit building and fill out number of levels. Notice the floor selector on the top right corner that just showed up.

Level 1

This level doesn't have a precise floor outline defined yet.

Use the whole building footprint

Draw this floor outline

Copy level 0

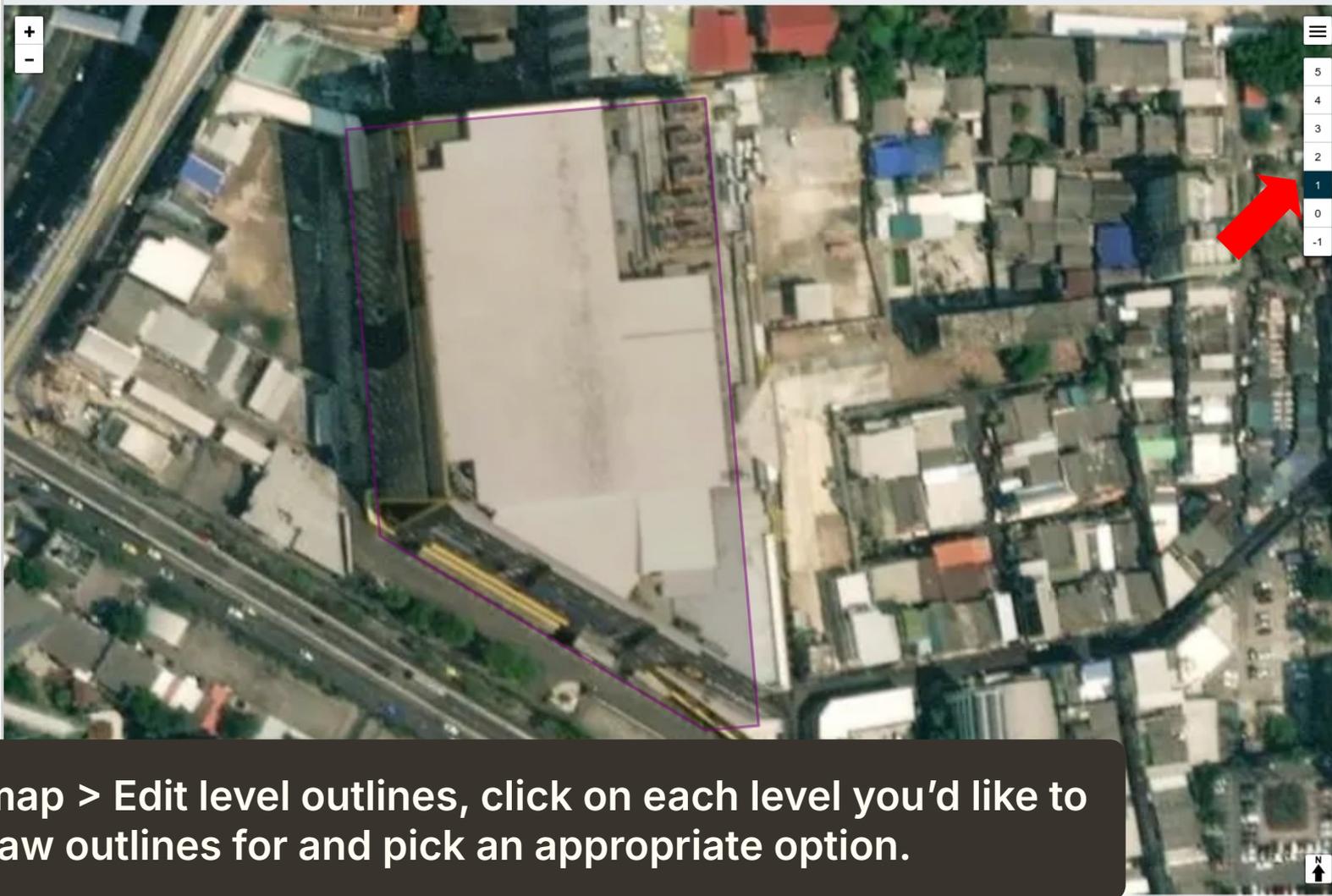
New upper level

New below level

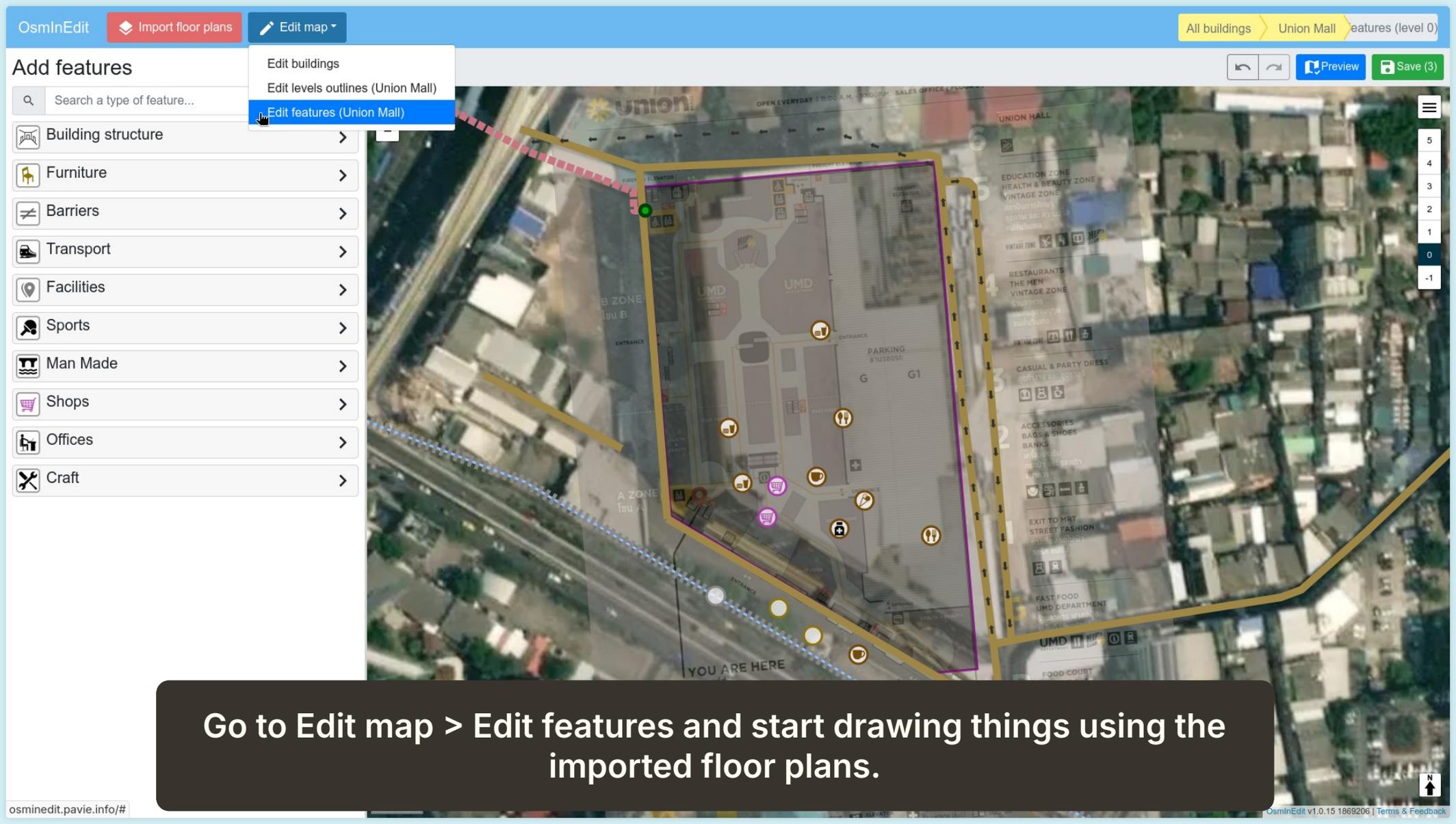


Preview

Save (3)



Go to Edit map > Edit level outlines, click on each level you'd like to draw outlines for and pick an appropriate option.



- Edit buildings
- Edit levels outlines (Union Mall)
- Edit features (Union Mall)**

Add features

Search a type of feature...

- Building structure >
- Furniture >
- Barriers >
- Transport >
- Facilities >
- Sports >
- Man Made >
- Shops >
- Offices >
- Craft >

Go to Edit map > Edit features and start drawing things using the imported floor plans.

Add features

 Toilets/Restrooms Tomb Attraction Elevator Town Hall Tower Tailor Ticket Tobacco Toys Tiler Staircase Stop Position Strip Club Stonemason Motorcycle Dealer Antiques Optician

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5

4

3

2

1

0

-1

Let's add a toilet by searching for toilets



Add features

Please select how you want to represent your feature.

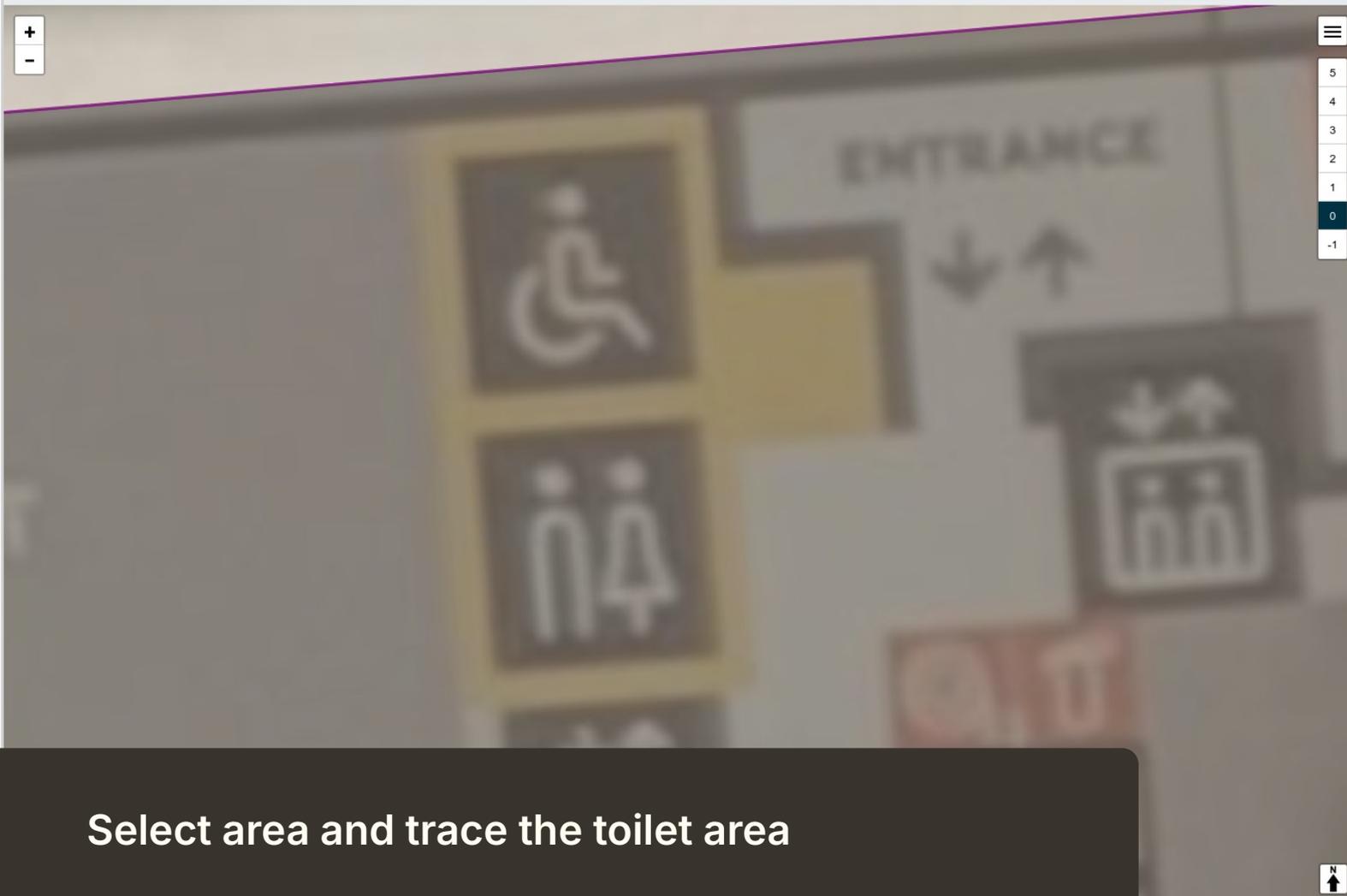
**Point**

For small features (size less than 2 meters)

**Area**

For wide features (surface of more than a few m²)

Cancel



Select area and trace the toilet area

New feature



Usage **Structure**

Toilets/Restrooms

Access rights
[Dropdown menu]

Type
[Dropdown menu]

Usage Position
[Dropdown menu]

Diaper
[Dropdown menu]

Fee
[Dropdown menu]

Wheelchairs
[Dropdown menu]

Description
[Text input field]

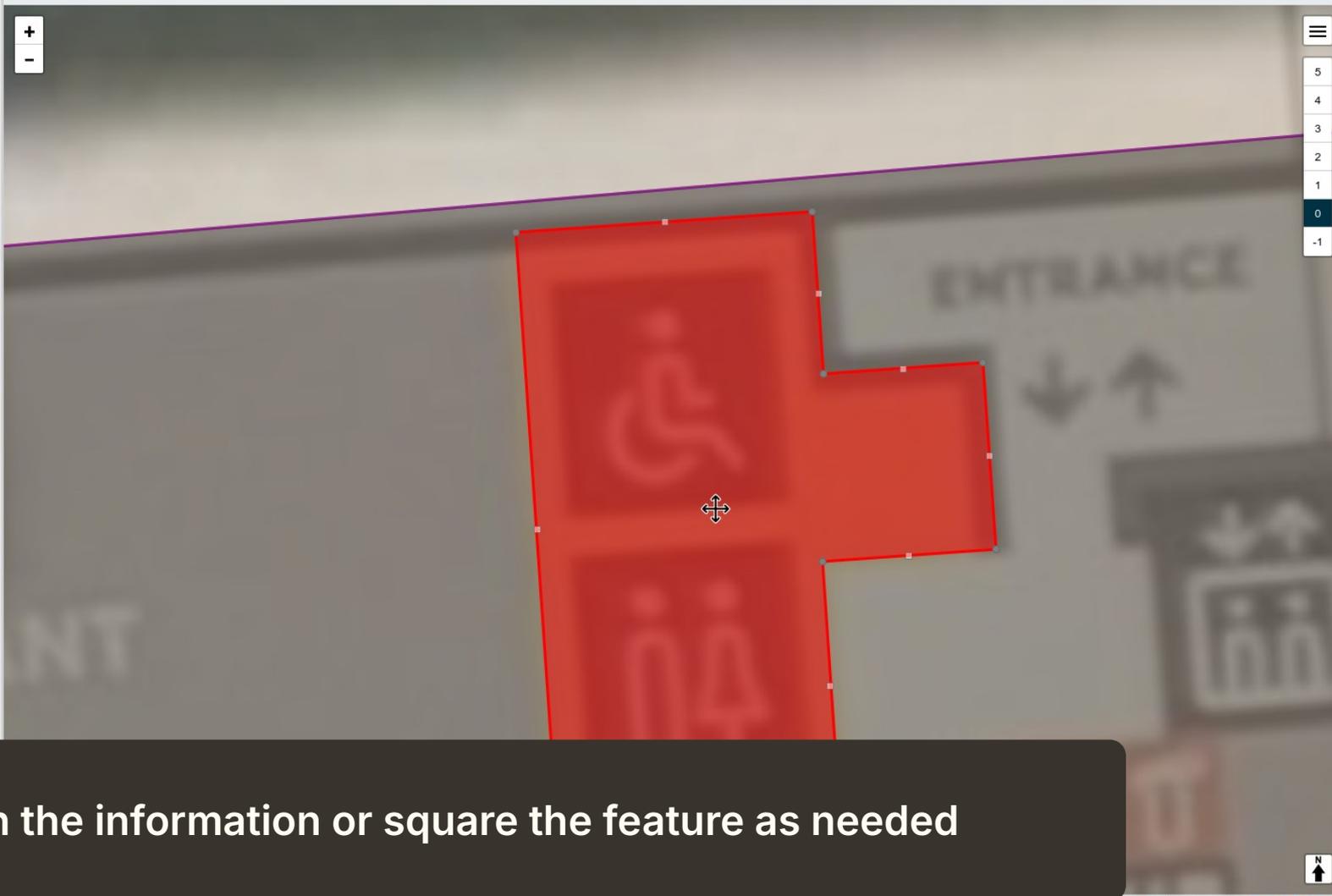
Operator
[Text input field]

Drinking Water
 Unknown

Female
 Unknown

Male
 Unknown

Unisex



Fill in the information or square the feature as needed



New feature



Usage

Structure

Room

Type of room



Access



Name

Reference

level	0		
amenity	toilets		
indoor	room		

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5

4

3

2

1

0

-1

In the structure tab, select Room and hit Done.



Add features

 Toilets/Restrooms Building structure > Furniture > Barriers > Transport > Facilities > Sports > Man Made > Shops > Offices > Craft >   Preview  Save (7)

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5

4

3

2

1

0

-1

The toilet is ready, let's preview it on indoor=.



Preview rendering



GeoJSON, osm or IMDF (zip) file



Since the preview is now looking good, let's send changes to OpenStreetMap.

0

Send changes to OpenStreetMap

Changeset comment

Sources ?

 I would like someone to review my edits

Send

Cancel

Changeset tags

comment	Add floors in Union Mall	x	i
imagery_used	Bing Maps Aerial;Mapbox ...	x	i
source	survey	x	i

+

Your edits

Union Mall

ชั้น G

Room, Toilets/Restrooms

node/-1

node/-2

node/-3

node/-4

node/-5

node/-6

node/-7

node/7892829313

Since the preview is now looking good, let's send changes to OpenStreetMap.



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☰



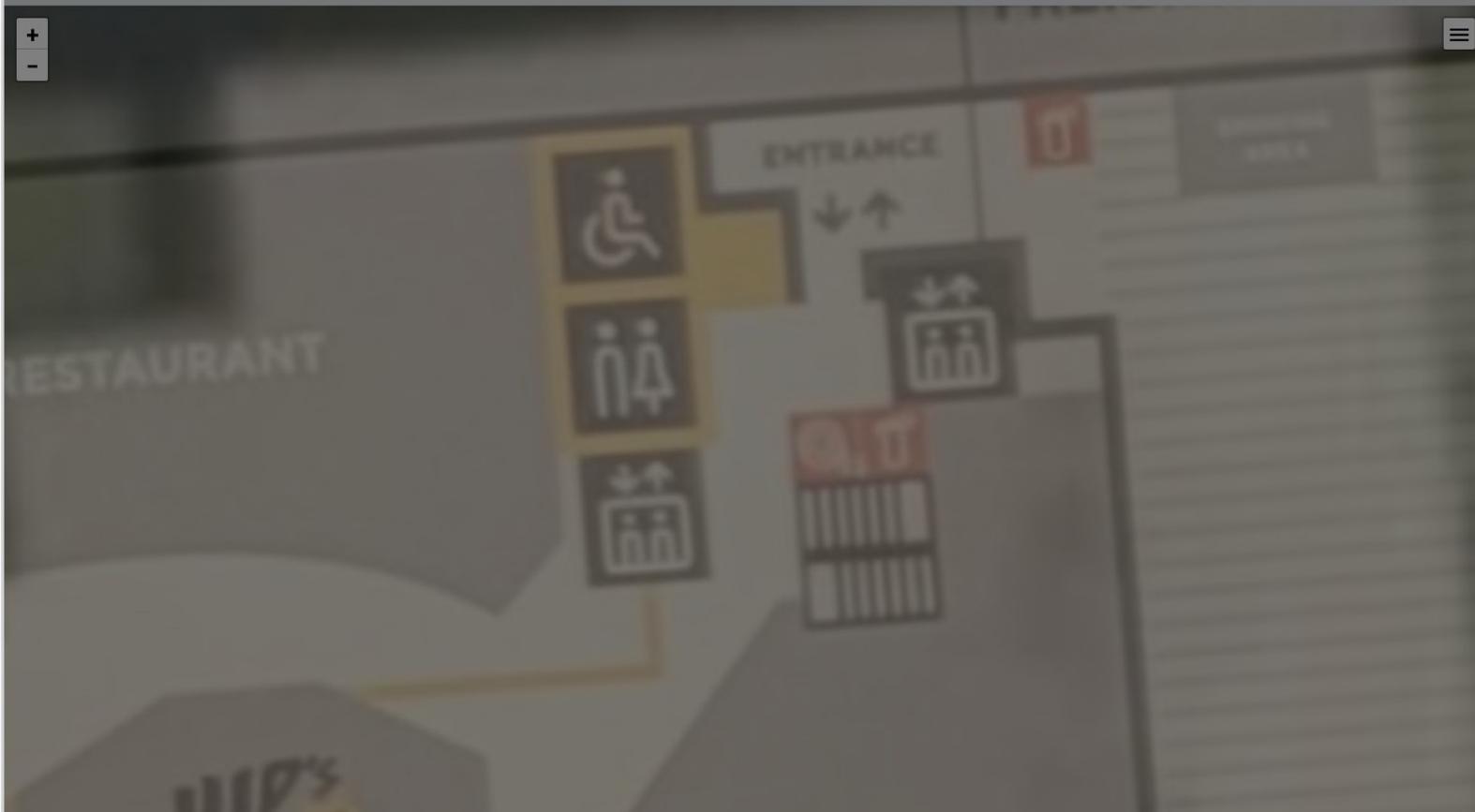
Send changes to OpenStreetMap

✓ Thanks for your contribution !

🔍 See your changes on OpenStreetMap

🖋️ Go back to editing

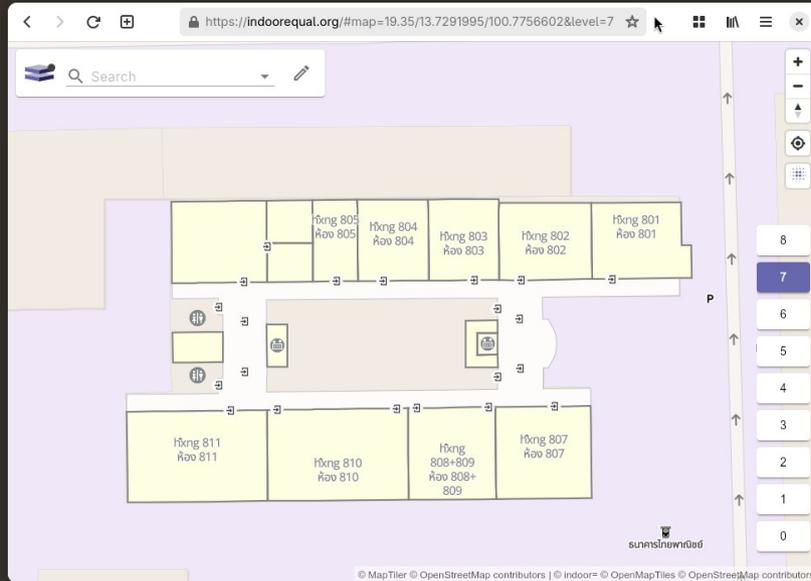
↶ ↷ Preview Save (7)



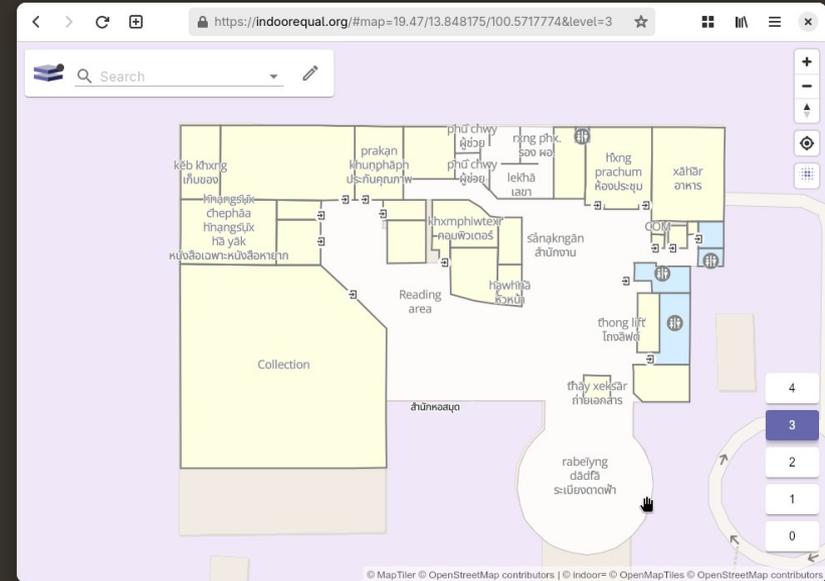
Since the preview is now looking good, let's send changes to OpenStreetMap.

Visualizing results

Apart from previewing, indoor= can also be used to view indoor features of an existing building.



KMITL ECC Building



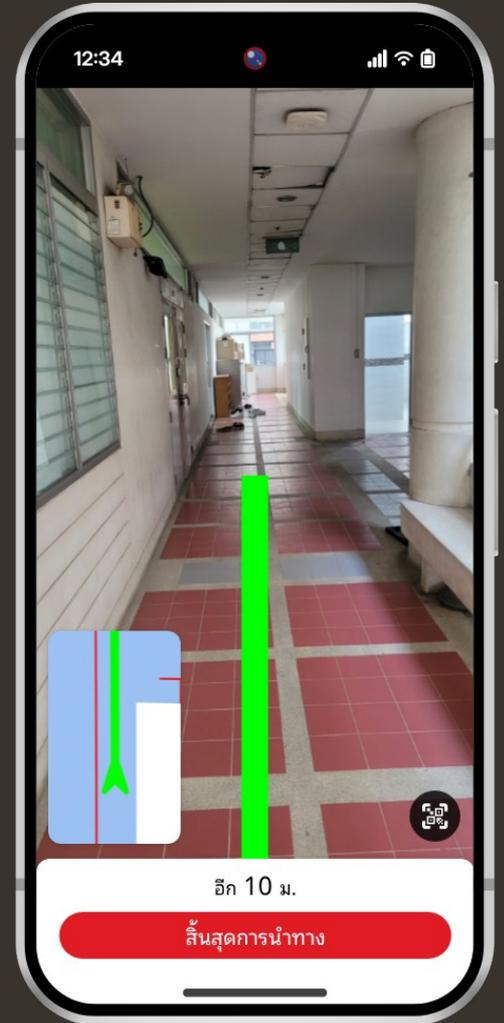
Kasetsart University Learning Center

Recap+

Indoor building data, when made public, can be useful in many circumstances, from simply helping visitors find amenities (such as toilets) to aiding rescue teams in emergency situations.

I demonstrated the process of acquiring the floor plans, adding the features using OsmlnEdit and using indoor= to preview and visualize the data.

Since my graduation project is about AR for indoor navigation, which uses indoor data from OpenStreetMap (See picture on the right). What if we could use make use of indoor data inside complex shopping malls so we could stop getting lost in there?



Thank you!

Feel free to check out more cool stuff I made below



TechTransThai



My website