



# Humanitarian OpenStreetMap Team

## Mapping on the Humanitarian OpenStreetMap Tasking Manager

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## **Introduction (please read carefully)**

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### *What is OpenStreetMap and the Humanitarian OpenStreetMap Tasking Manager?*

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OpenStreetMap (OSM) is an online tool for creating and sharing maps. As “the Wikipedia of Maps” anyone can edit OSM – it can be understood as Google Maps which is open, editable, non-commercial, freely downloadable and is “owned” by the contributors and users. Because it is owned by the global community of an ever-growing number of contributors (there were 6 million contributors globally in February 2020), it is in many cases more detailed than commercial maps, especially in areas which are of limited commercial interest. Its open nature also allows local contributors to add detail based on *their* knowledge of the territory while enabling rapid response large-scale mapping by drawing on its global pool of millions of contributors.

The HumanitarianOpenStreetMap Tasking Manager is the online platform created by the Humanitarian OpenStreetMap Team (HOT) for coordinating mapping in response to humanitarian and development needs. The purpose of the tool is to divide a mapping project into smaller tasks that can be completed rapidly with many people working on the same overall area. It shows which areas need to be mapped and which areas need the mapping validated.

This approach allows the distribution of tasks to many individual mappers in the context of emergency or other humanitarian mapping scenario. It also allows monitoring of the overall project progress and helps improve the consistency of the mapping.

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### *Purpose of this manual*

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The purpose of this training manual is to guide you through the signing-up process of OpenStreetMap and the Humanitarian OpenStreetMap Tasking Manager. Although it can be used as a standalone document, it is intended as manual to accompany a guided mapping training session (in-person or virtual).

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## *Requirements*

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- ✓ **Skills:** Basic computer skills are necessary, such as using the mouse and signing up for an email account online; however, this should not prevent anyone from participating. People who do not possess these skills will be provided with adequate assistance by more experienced users that will enable them to contribute during the mapping marathon (“mapathon”).
- ✓ **Technical requirements:** a computer; a mouse (if available); stable internet connection with enough bandwidth for displaying imagery.
- ✓ **Time:** About 10 minutes for signing up.

# 1 Create an OpenStreetMap Account

The first step to start mapping on OpenStreetMap is to create an OpenStreetMap (OSM) account. Please go to the following link (or copy paste it into your browser): <https://www.openstreetmap.org/user/new>. Click “sign up” in the top right corner of the page (Figure 1).

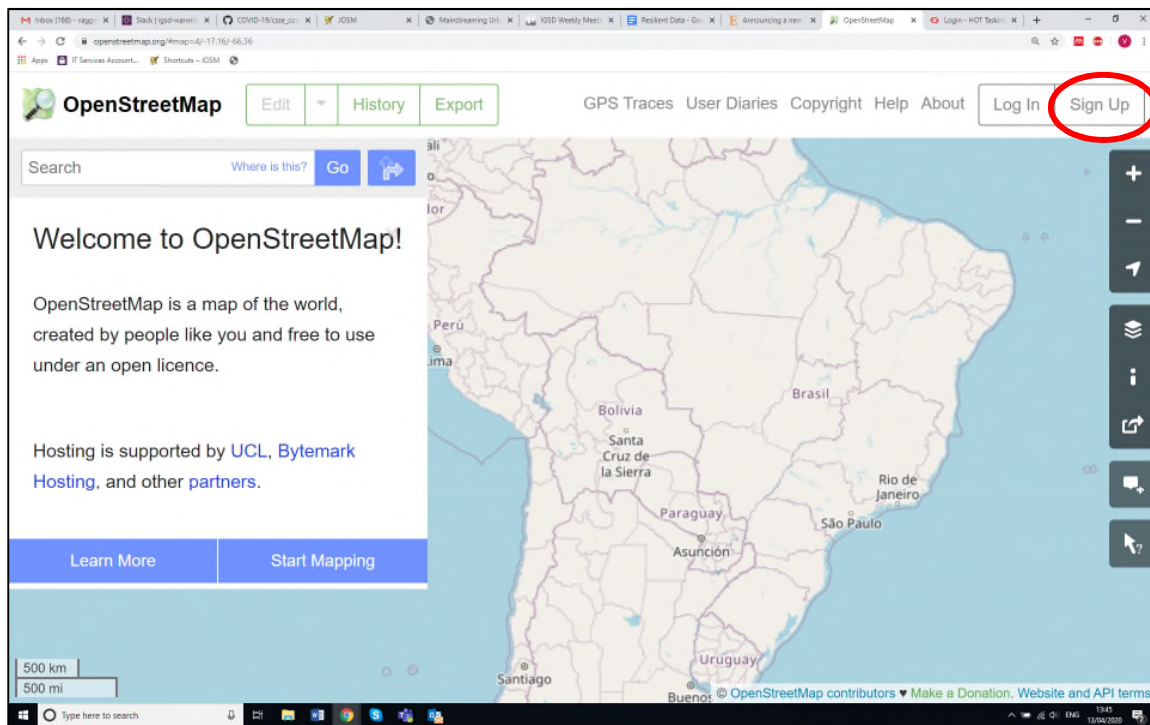


Figure 1: Sign up to OpenStreetMap.

There are five fields on this page that you need to fill in to register an account with OSM (Figure 2). To complete the fields follow the next steps:

- ✓ Enter your email address in the first two fields.
- ✓ In the third field, enter the username that you would like to have. This could be anything distinctive to you but be aware that in some cases the username you choose might be already taken by another user and you would need to choose another one.
- ✓ Enter a new password in the fourth and fifth fields. It does not need to be the same as the password for your email.
- ✓ Make a note of your OSM username and password. You will need it to log in later on.
- ✓ After you have completed all the fields, click “Sign Up” at the bottom of the page.

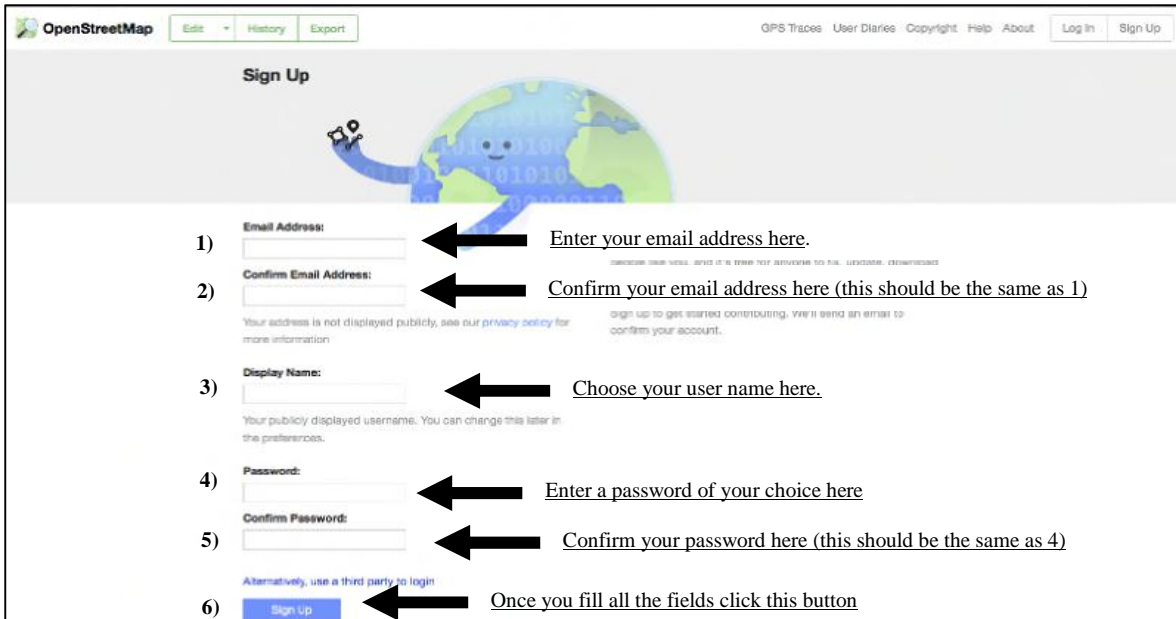


Figure 2: Insert your details to create an account in OpenStreetMap

After you click the “Sign Up” button, you will be asked to agree to the Contributor Terms and OSM Terms of Use. Please click on the three tick-boxes as indicated below and click “continue” to proceed (Figure 3).

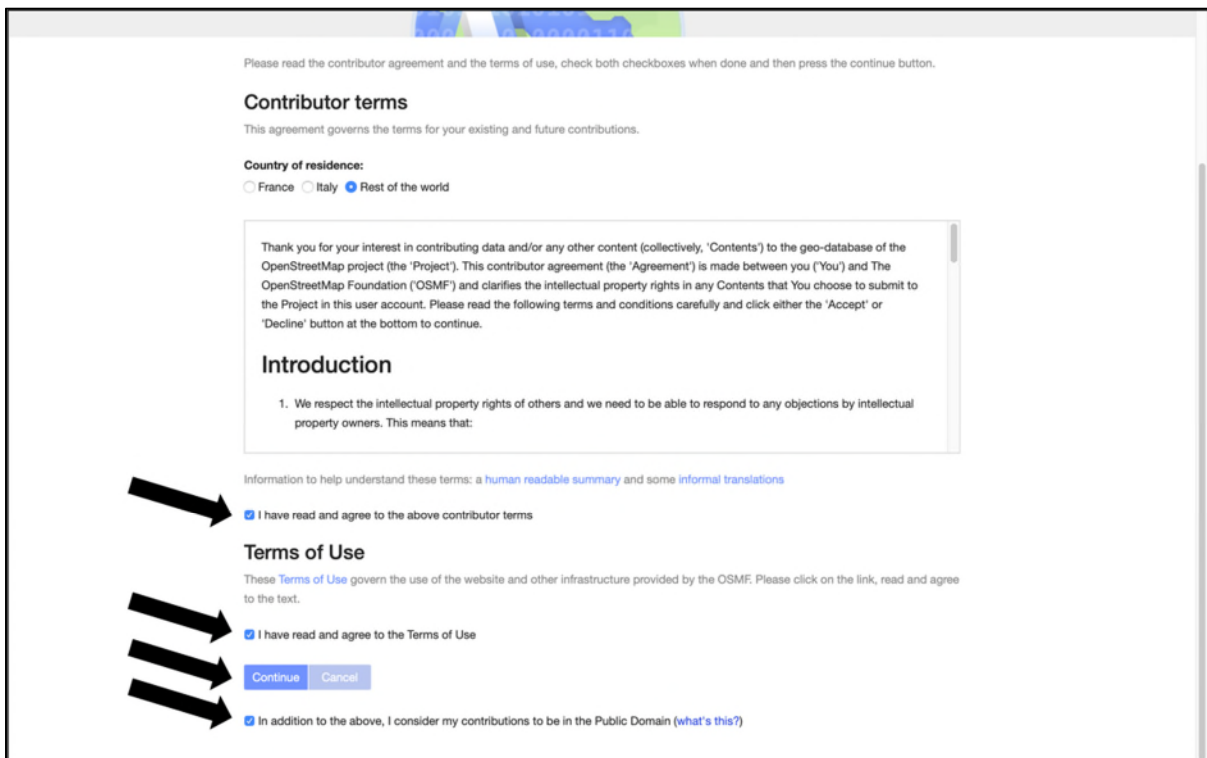


Figure 3: Confirming the Contributor Terms and agreeing to the Terms of Use

Now you need to confirm your account. **This is a very important step.** To do that follow the next steps:

- ✓ Open a separate window or tab in your internet browser, and navigate to your email. If everything was successful with your registration, you should see an email from OSM in your inbox.
- ✓ Open the email. It should look like Figure 4.
- ✓ Click on the link that is identified in Figure 4.
- ✓ If everything went well, you should have an OSM account.

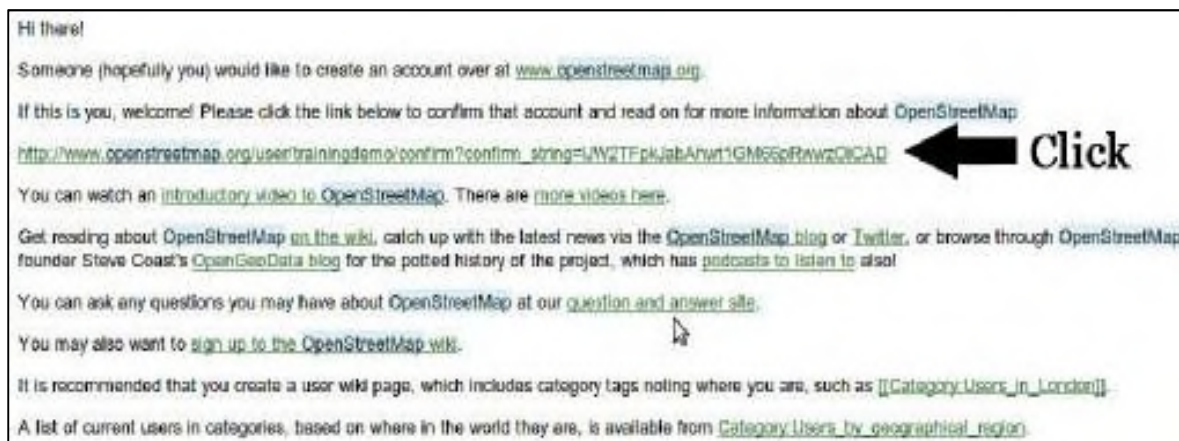


Figure 4: Email from OSM to confirm your new OSM account

- ✓ A new tab or window will open and you will be asked to read OSM community concepts (such as community openness). Click on “Start to Map”.  
On the OpenStreetMap home page, click “log in” in the top right corner. Enter your OSM username and password and click ‘Login’.
- ✓ You should now be logged in and you should see your username in the upper right corner of the page (Figure 5).

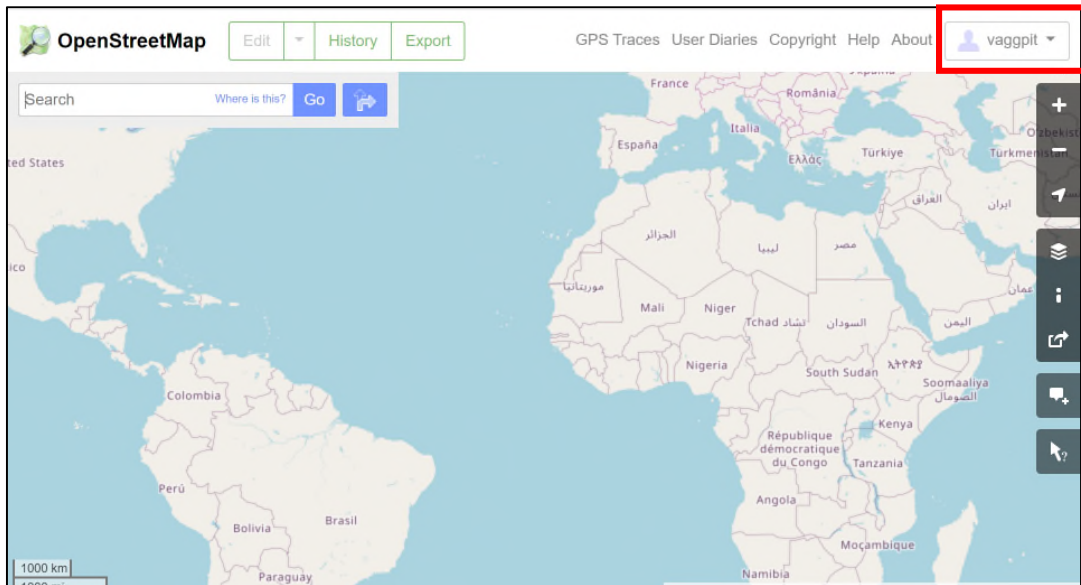


Figure 5: Your username in OSM

## 2 The practice walkthrough

Once logged in, click on “*Edit*”, then on the help icon at the bottom of the menu on the right (see Figure 6). If the “*Edit*” button is not clickable, zoom into the map until it becomes clickable.

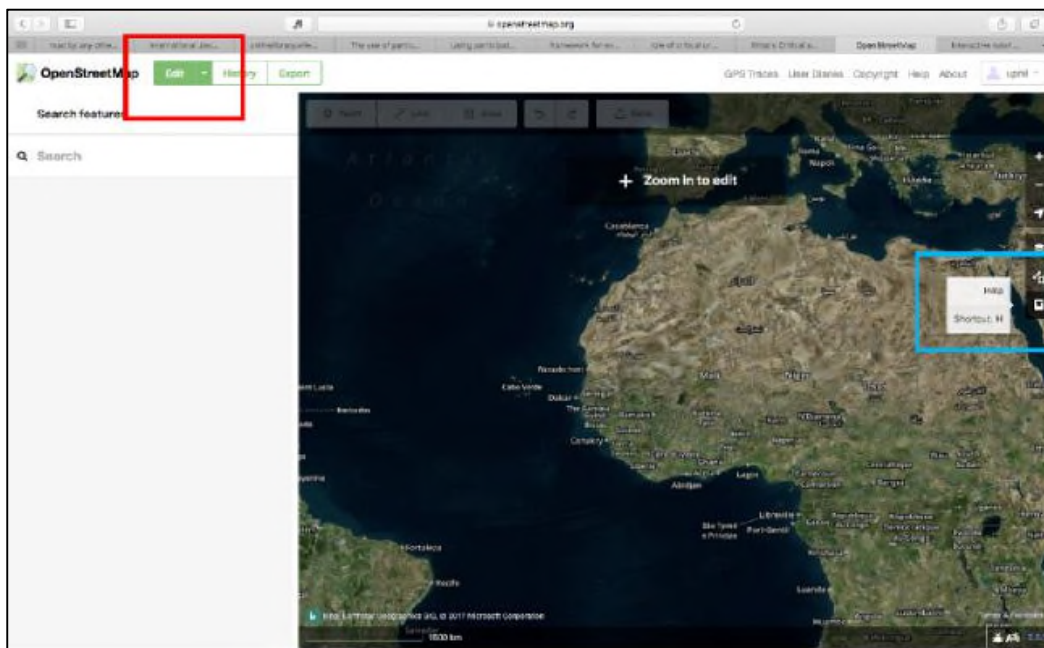


Figure 6: Choose edit to start the mapping

On the expanded help menu select the “*Start the Walkthrough*” button (see Figure 7). This will result in the browser window to switch to the walkthrough training mode with sample imagery (Figure 7).



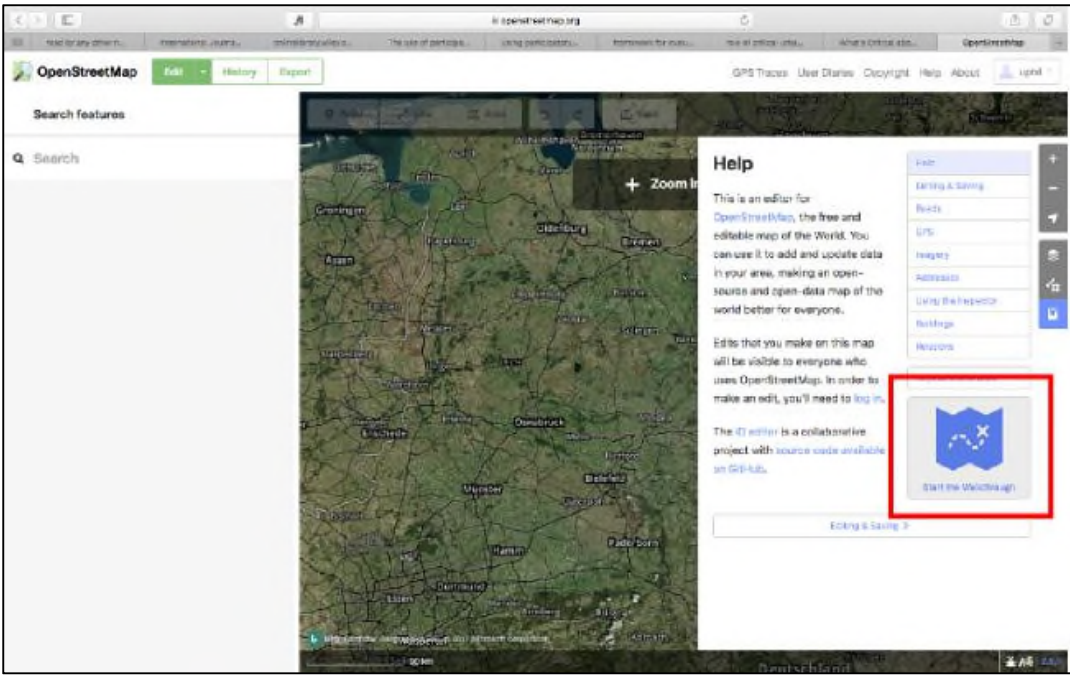


Figure 7: Select the walkthrough

Follow the instructions, by first reading the text and clicking the mouse as requested by the dialogue box, to test the mouse is working (Figure 8).

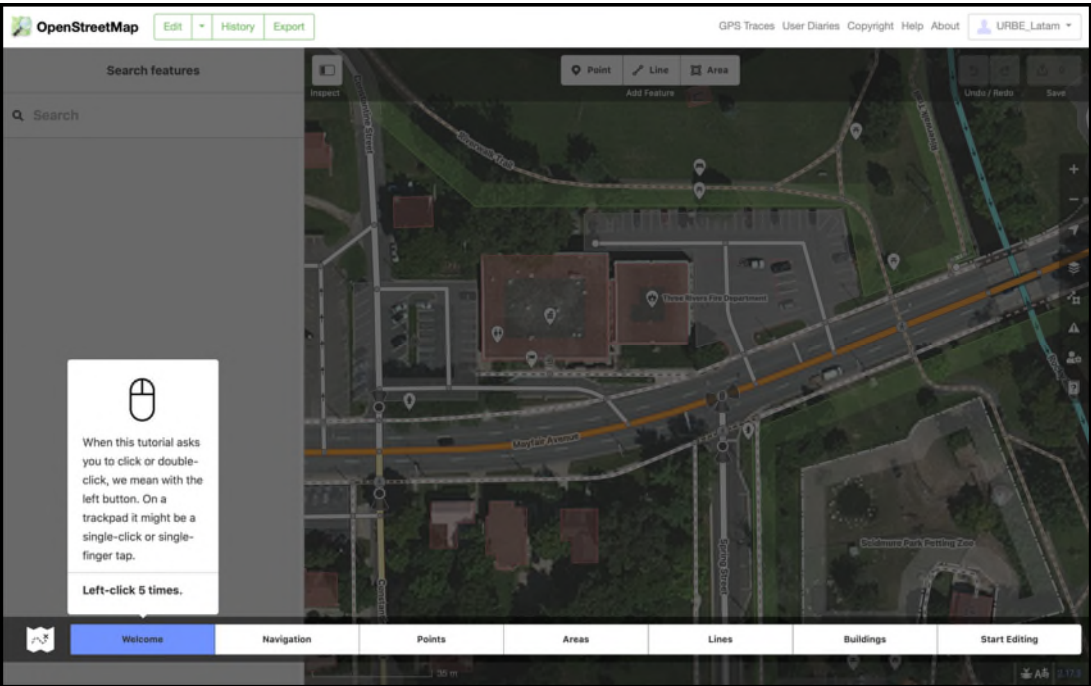


Figure 8: Testing the mouse

The rest of this tutorial follows the interactive walk through that should now be on the screen. It will focus mainly on the sections as described on the screen: navigation, points, areas, lines, buildings, and start editing. The tutorial menu is highlighted in Figure 9.

If at any point during the walkthrough you make a mistake or are stuck, you can go back to the beginning of the respective section by simply clicking on the section in the tutorial menu.

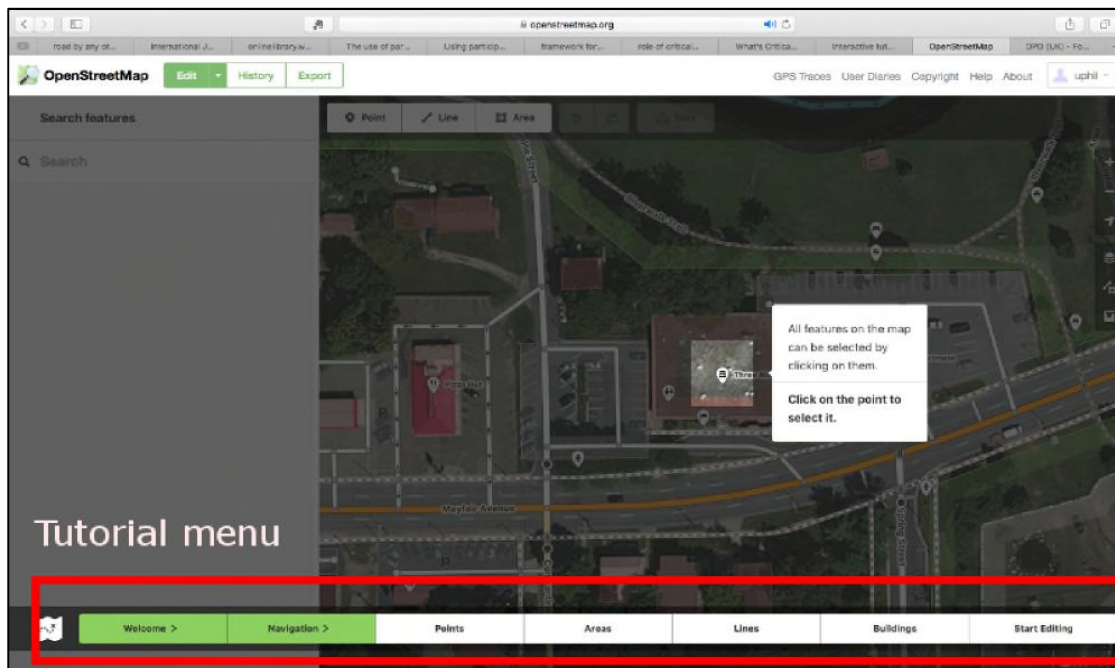


Figure 9: Tutorial menu

## 2.1 Navigation

The first step of the tutorial is the 'navigation' part. Click on the "Navigation" tab of the tutorial (Figure 9) and follow the next steps:

- **Dragging the map:** drag the map by holding down the left mouse button and moving the mouse the left. You can also use the arrows on the keyboard to move the map; just make sure the "Num Lock" button in your computer (if there is one) is off.
- **Zooming:** Zoom in or out by scrolling with the mouse wheel or pressing +/- keys in your keyboard, or clicking on the +/- buttons on the top right of the screen.
- **Inspecting different features:** read the displayed text and click on the button to go to the next when done. Click on the point as indicated by the tutorial. This opens up the features editor on the left panel of the map. The features editor contains the geographic information about the individual feature that is active. Once finished, you can close the features editor by clicking the "x" on the top right corner (Figure 9).

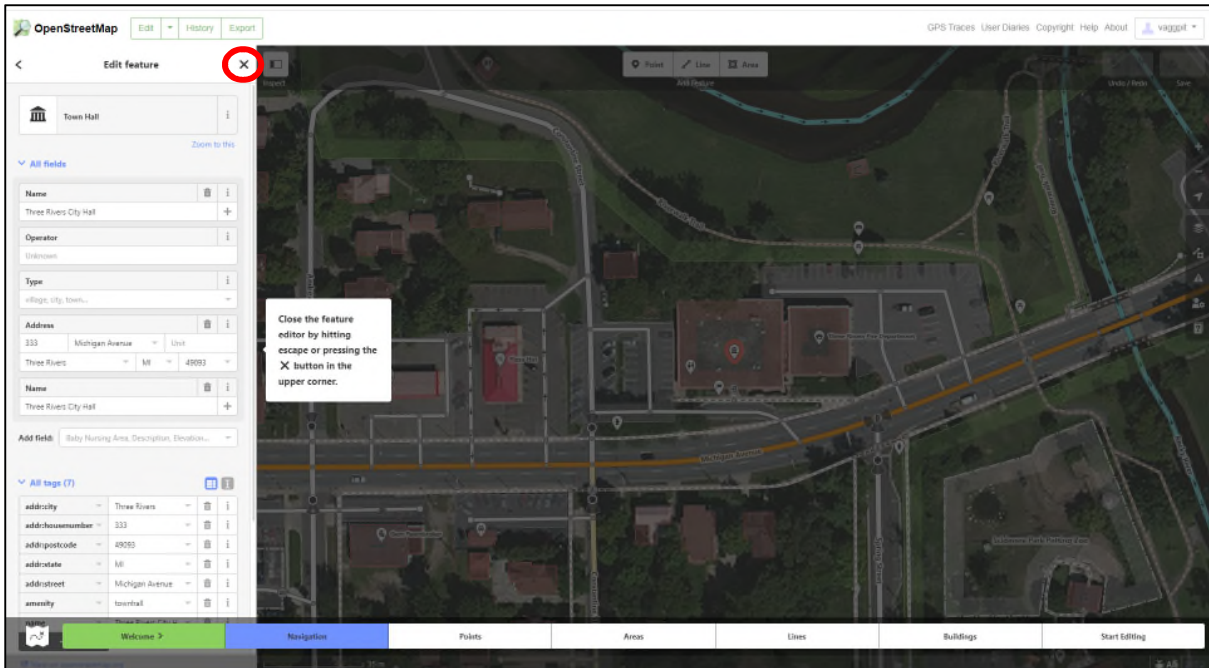


Figure 10: Exit features and select points

## 2.2 Points

Once you finish the navigation section click the “*Points*” tab of the tutorial panel at the bottom and Select the “**Point**” button on the top left corner of the map, as indicated in the tutorial. (Figure 11).

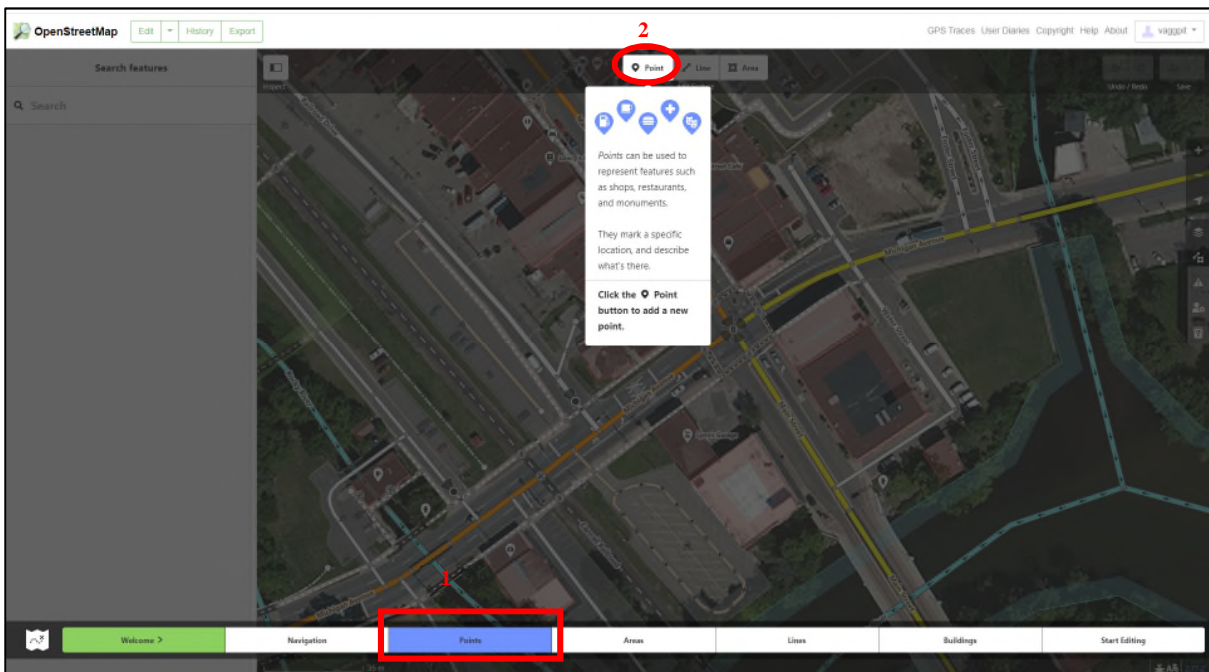


Figure 11: Select point

To complete the exercise, follow the next steps:

- ✓ To add a point position the mouse cursor at the feature on the map where the point should go. Left click to drop the point onto the feature (Figure 12).

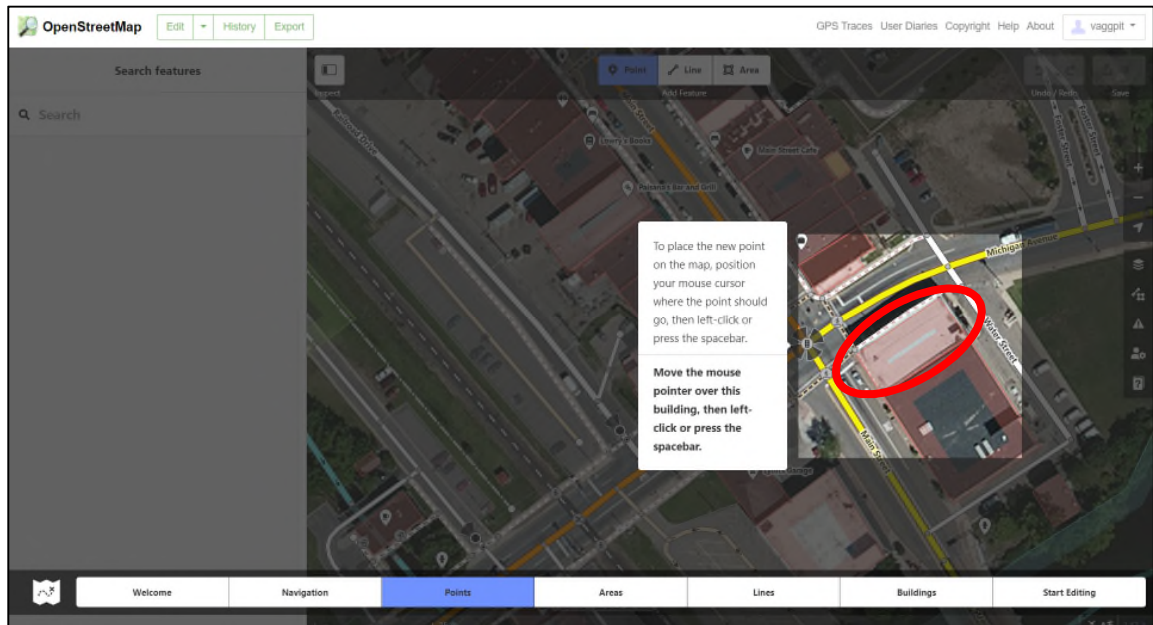


Figure 12: Add a point

- ✓ After dropping the point pin onto the feature, the feature (the rectangular building in this case), needs to be tagged. This is done by typing a keyword into the search field (Figure 13).

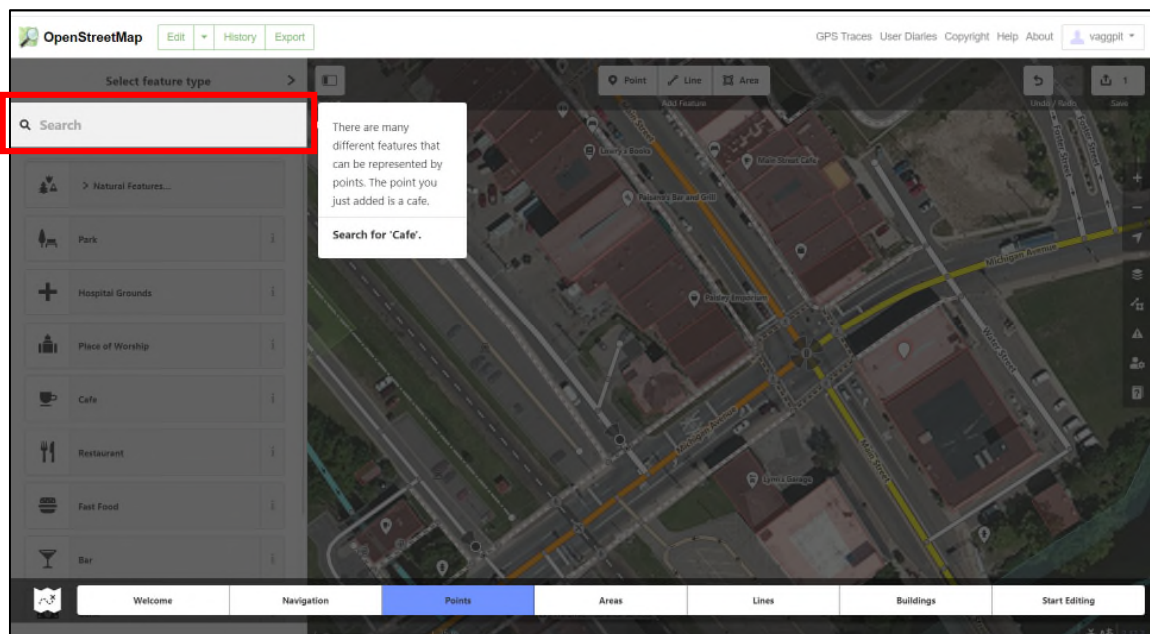


Figure 13: Search for the tag

- ✓ Once you have selected the most suitable tag for the feature (cafe in this case) you can add more details in the fields on the left (if you know them). When you finish click on the ✓ button to confirm the tag (Figure 14).

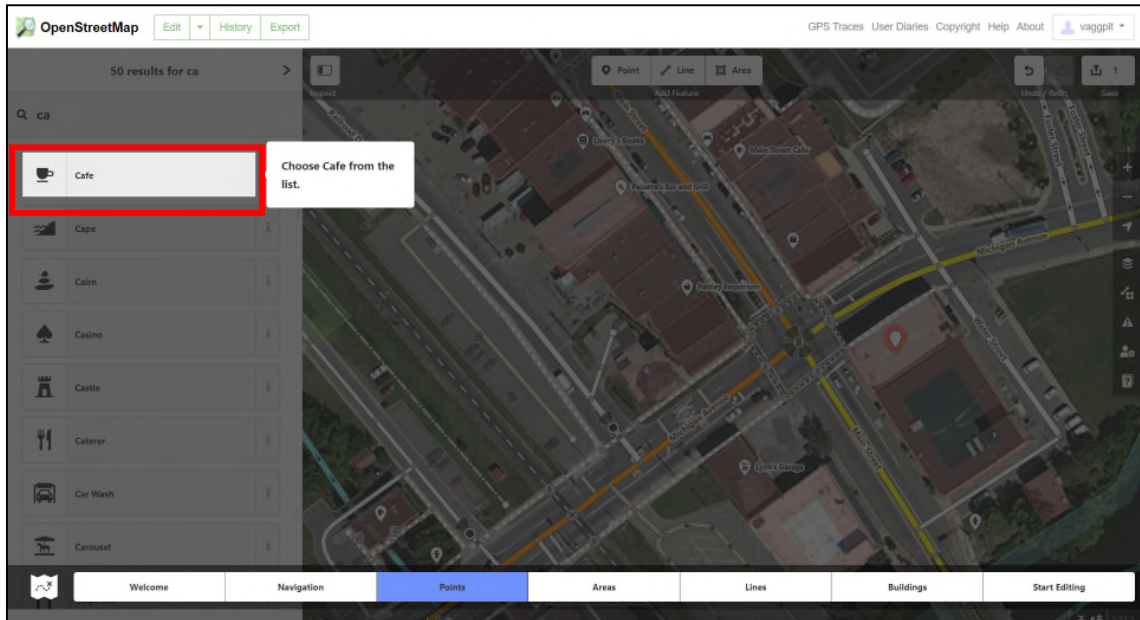


Figure 14: Choose the correct tag

- ✓ If you find a feature on the map of which you are sure that its details need to be changed, click on it. You will then be able to amend the details in the form on the right side. When you finish click on the button to ✓ finalise the tagging (Figure 15).

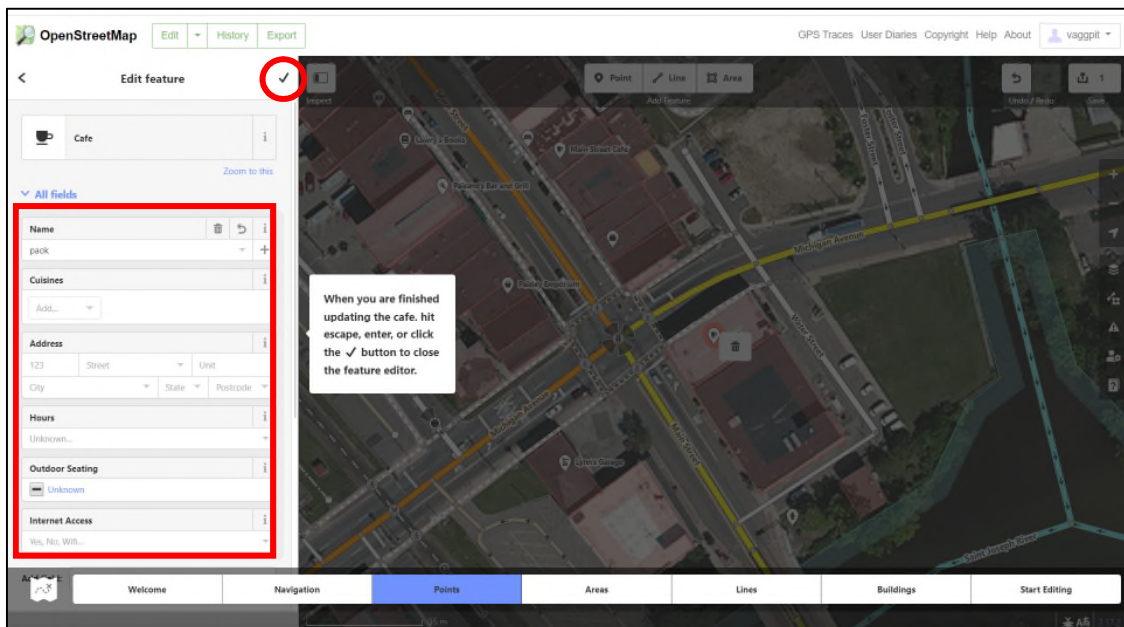


Figure 15: Add/change details in your point

- ✓ To delete a point right click on it, then click the “Delete” button on your keyboard (only if you are absolutely sure) or right click on the point and choose the ‘bin’(Figure 16).

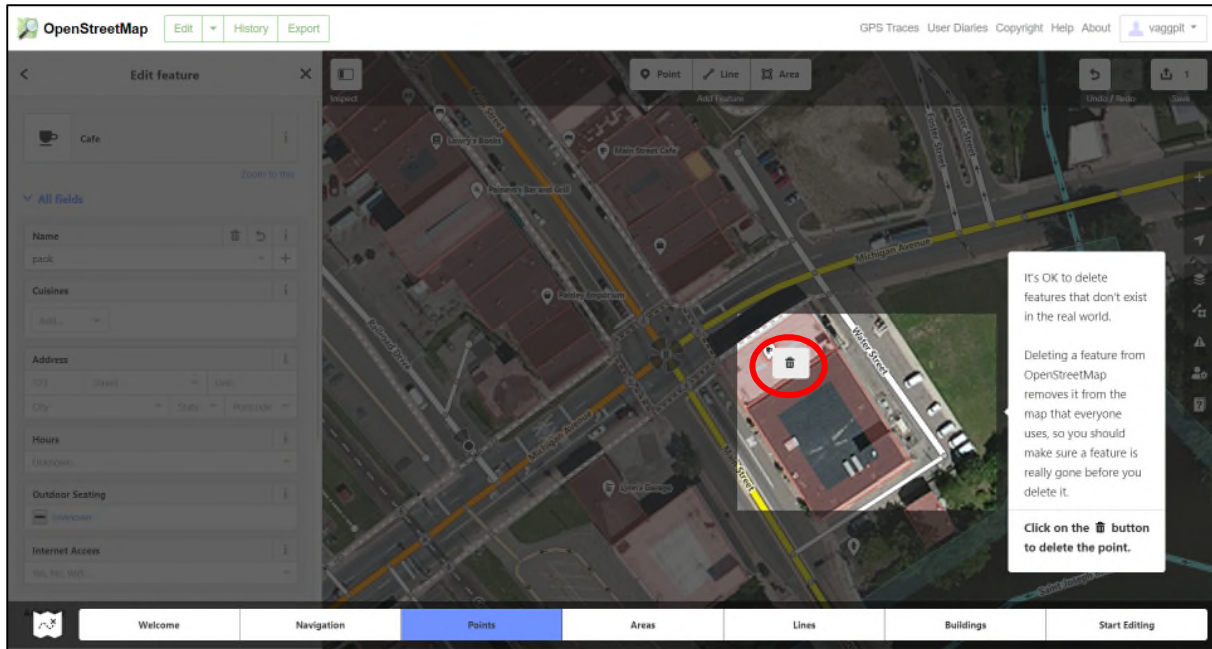


Figure 16: Deleting a point

Please note that the “point function” demonstrated in this section should only be used for features that you are mapping and of which you know their use. In this training exercise, the example is a cafe, but it could also be another point of interest, such as a community centre, a church, a football pitch or a health centre.

### 2.3 Areas

The next part of the walkthrough is focused on mapping ‘areas’ on the map. An area in OpenStreetMap may refer to any type of land-cover shown as a circle, rectangle or any other polygon, including buildings, lakes, sport facilities parks etc. To add an area “Area” button in the tutorial menu (Figure 17).

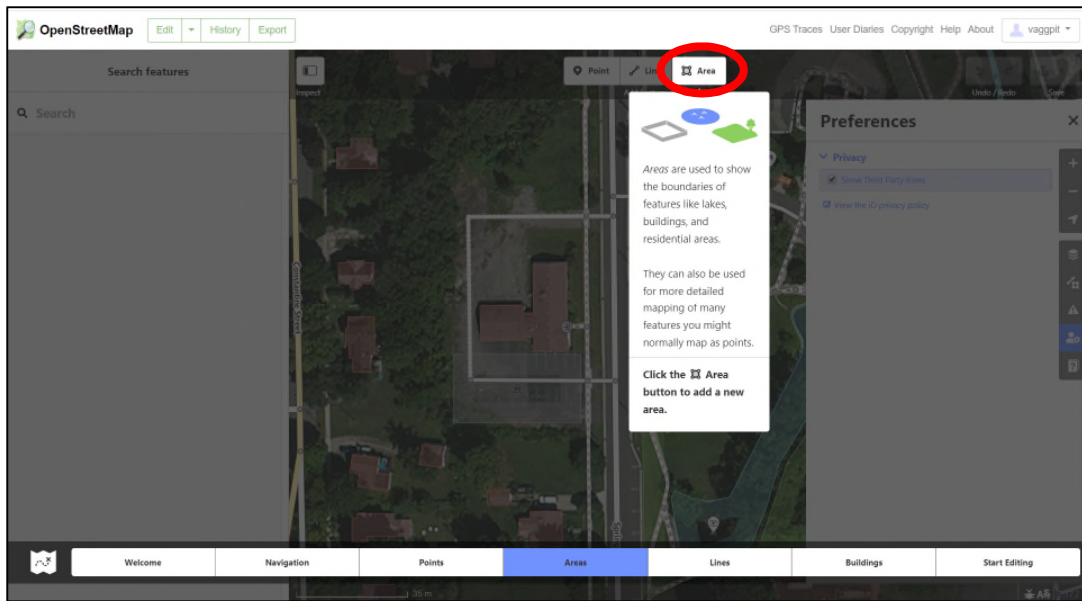


Figure 17: Select the area feature for mapping

Then you will be asked you to add a playground to the map. To draw the polygon click once at the corner where you want to start tracing and continue tracing the outline of the feature by clicking every time you want to mark a corner. Double-click once you arrived at the last corner to stop tracing. Now the feature will need to be tagged with a geographic description. The procedure is similar to the one followed for tagging a point and described above. In short, type in a keyword in the search field on the left and clicking on the tag that best describes the feature as shown in Figure 18 (in this case playground).

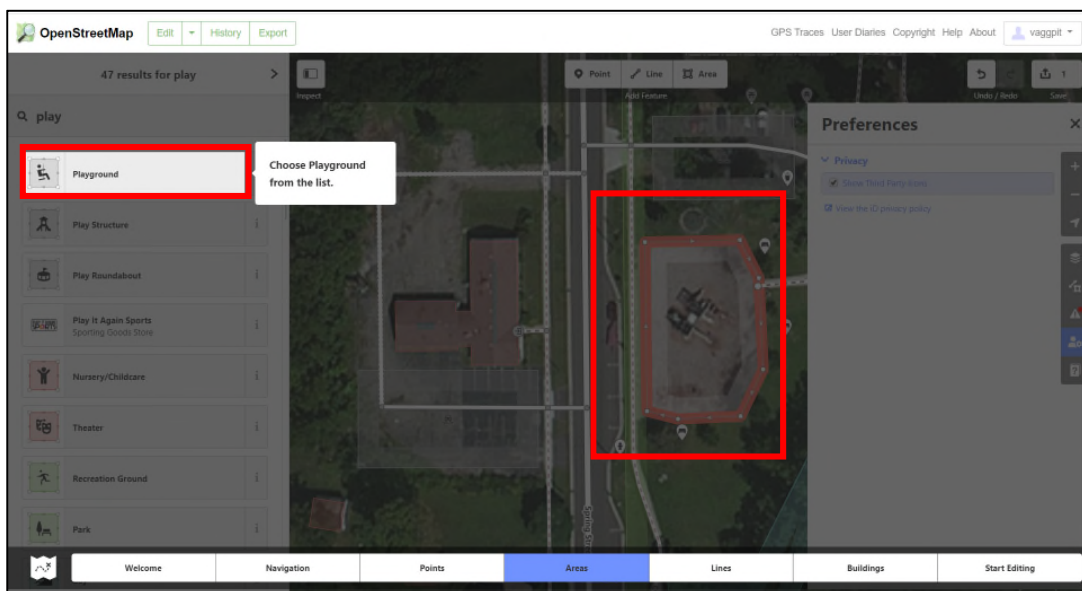


Figure 18: Mapping and tagging an area

## 2.4 Lines

Another element to map in OpenStreetMap is the ‘line’. Lines are mostly used to map roads, rivers, railways or similar linear features. To add a line, click on the “*add line*” button in the tutorial menu (Figure 19).

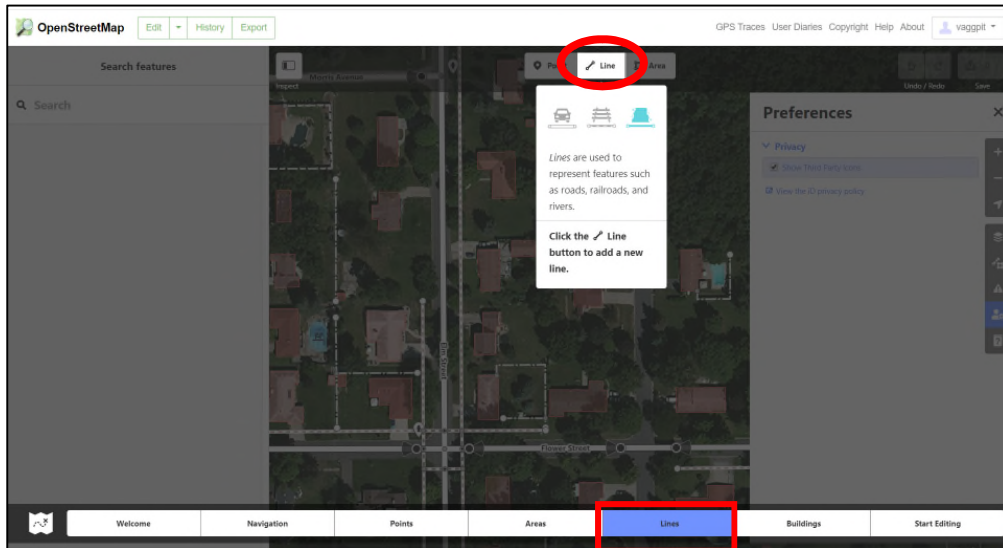


Figure 19: Select the line feature for mapping

The walkthrough tutorial will then ask you to add a road. After clicking the “*add line*” button click at the beginning of the section of the road you want to add. Trace along the middle of the feature (the road in this case) and click at every turn. Please note that is essential to click at every intersection between two or more roads to mark the junction. Double-click once you have reached the end of the road you want to map (Figure 20).

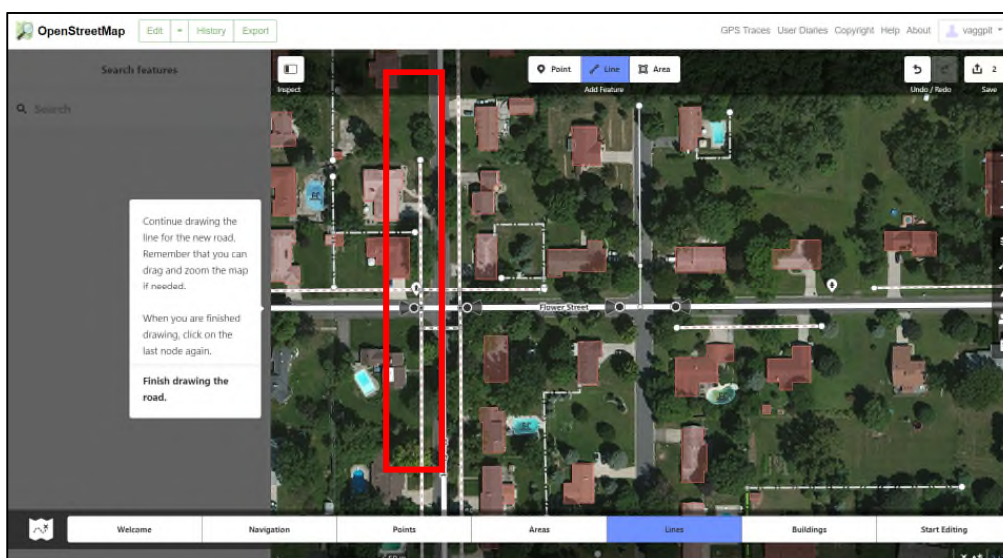


Figure 20: Adding lines/roads in the map



To tag the road, identify the road feature in the tagging field on the left (Figure 21). In this exercise you will be asked to use the tag ‘Minor roads’.

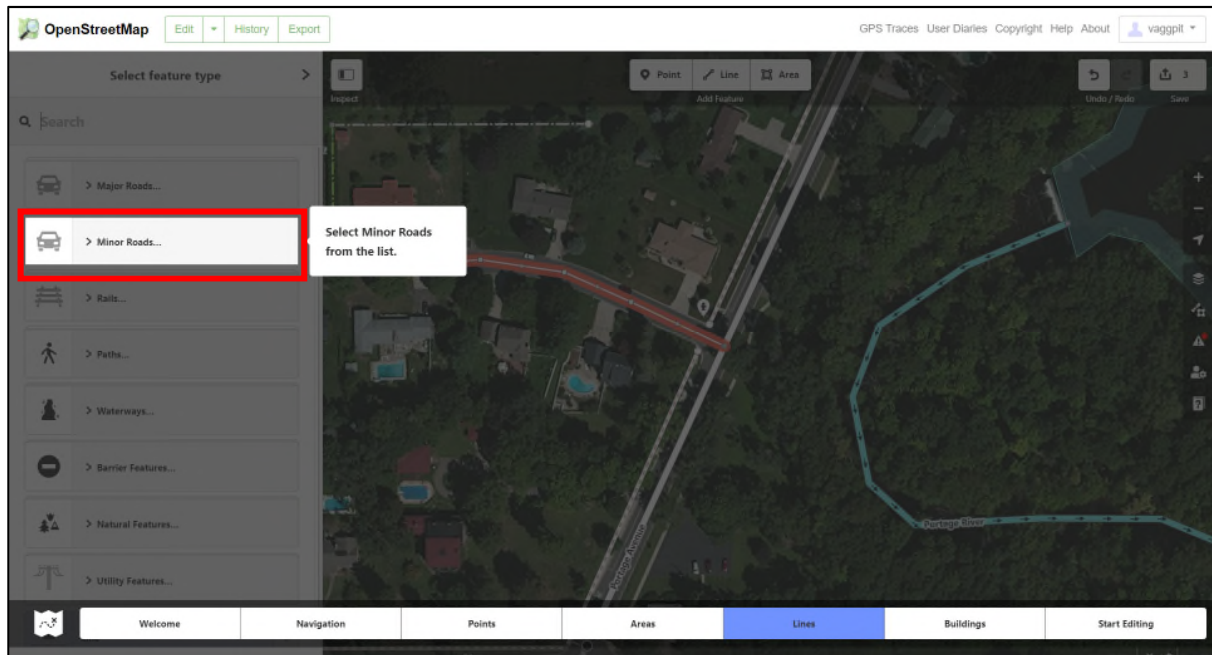


Figure 21: Choose the correct tag for your line/road

If you are unsure what type of road it is, click on the “I” button at the right of each type, which will provide you with more information. If you are still unsure, tag the road as “unclassified”. If you know the name and other details of the road, this can now be filled in the form in the feature editor on the left. The best way to map roads is by starting with the major roads and to work your way down to minor roads. It is important not to have any roads that are unconnected to the rest of the road network, so please sure that the roads you map are placed within the wider network. Starting with the major roads first will help you do so. Figure 22 below shows some of the options you have for tagging a road (make sure that you choose ‘Residential road’ for the exercise).

Note for mapping dense urban contexts: in areas where buildings are close to each other or overlapping it may be difficult to identify pathways. In these cases, it is best to focus on mapping buildings, and to only map roads if you have local knowledge and are sure that there is a pathway that may be “hidden” between buildings. The roads and pathways can be added at a later stage with field-mapping.

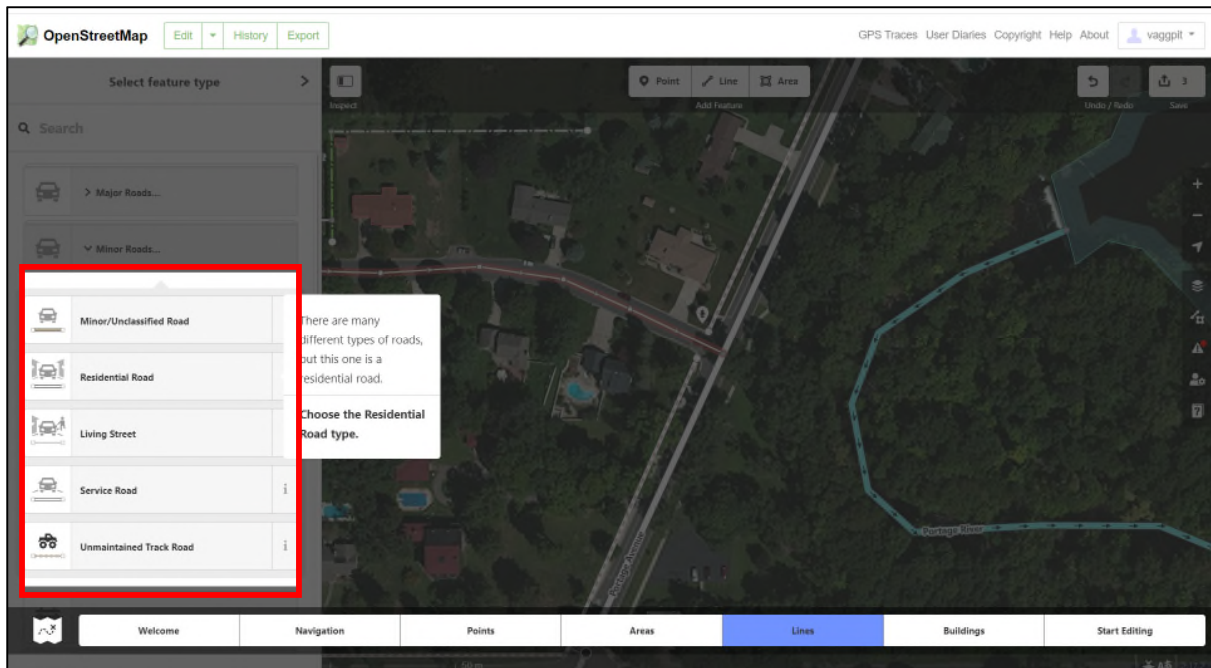


Figure 22: Different types of available tags

## 2.5 Buildings

The final step to complete this walkthrough is mapping buildings. Buildings are a specific type of 'areas' so in order to map one select the "Buildings" tutorial from the menu (see figure 5.7) and then select "Area" as indicated in Figure 23.

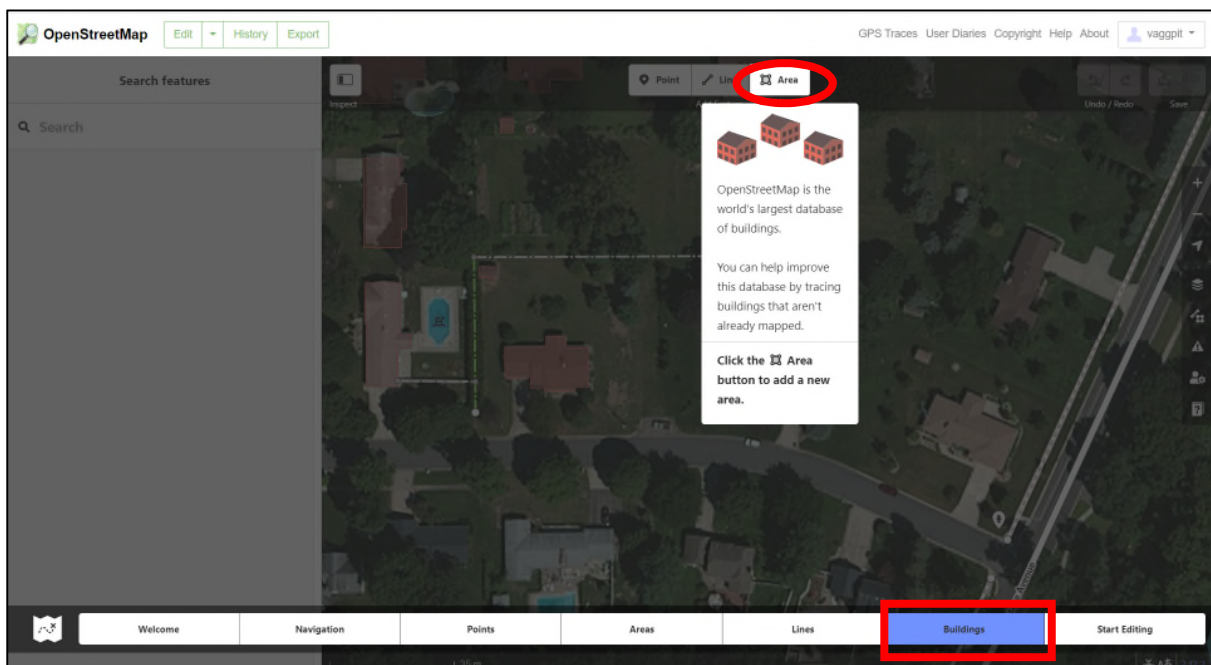


Figure 23: Select 'area' to start mapping your building

Then click once at the corner where you want to start tracing and continue tracing the outline of a building by clicking every time you want to mark a corner. Double-click once you reached

the last corner to stop tracing. To tag the building, choose the “*building features*” option in the feature editor on the left (Figure 24).

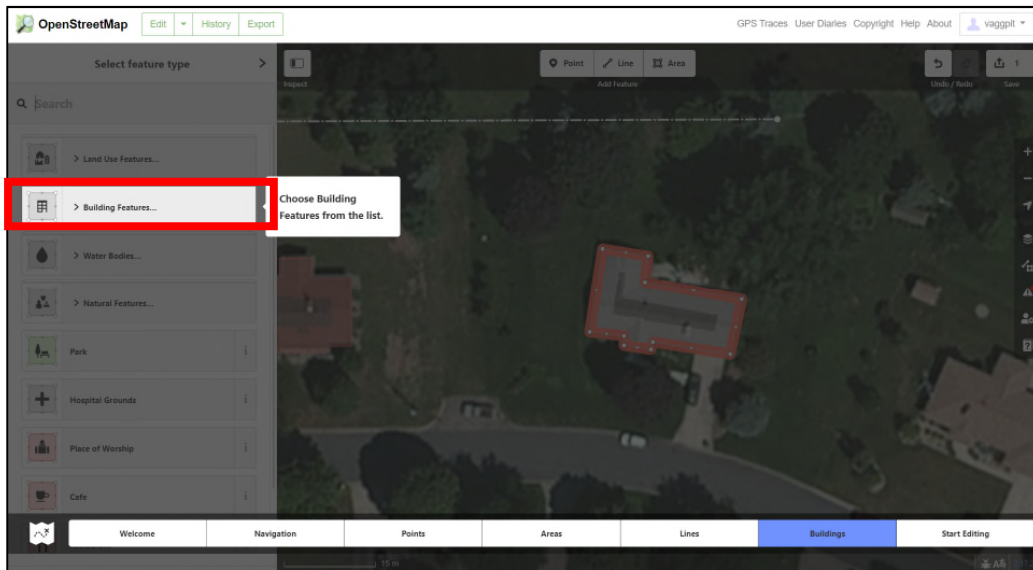


Figure 24: Choose 'building features' to find the correct tag

In general, it is best to tag unknown buildings as “*Building*” as it may be difficult to tell from the satellite imagery whether the building is a house or a commercial building. In this example however, it clearly is a house so select “*house*” from the dropdown menu (Figure 25).

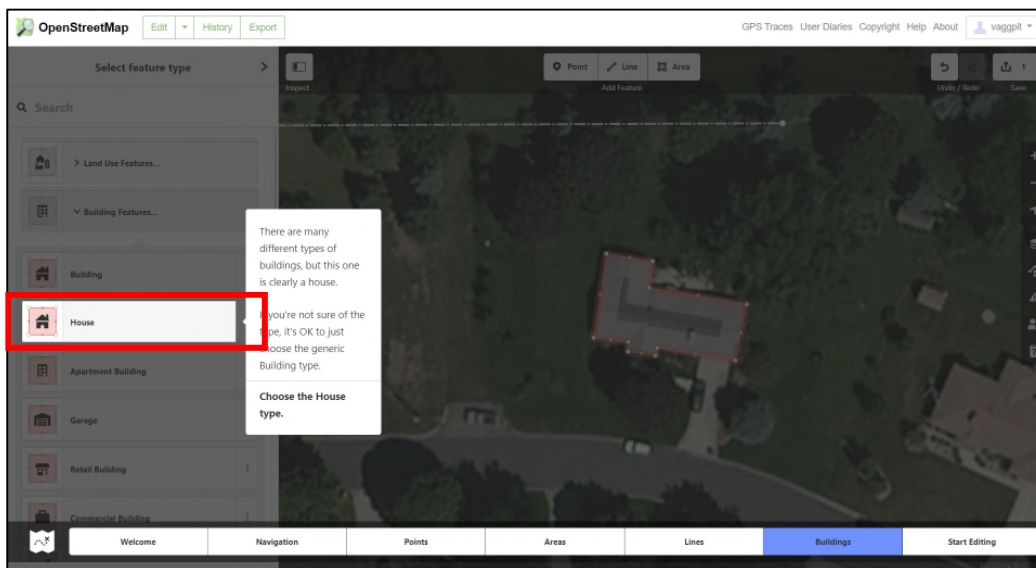


Figure 25: Choose the correct tag for your building

You can then add more details in the feature editor. To square the corners of the building, right click on the building and select the “*square*” symbol or press the ‘Q’ button on your keyboard. This is important, especially if the maps are to be printed out. The same sequence applies for

round buildings. To round your building, right click on the building to select it and then choose ‘circularize’ or click the ‘O’ button on your keyboard (Figure 26).

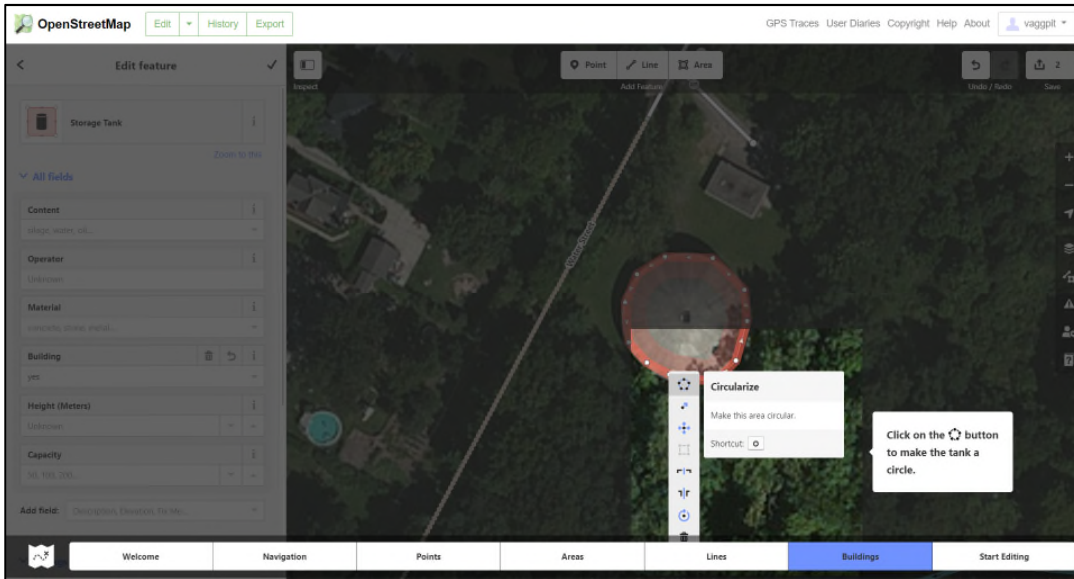


Figure 26: Circularise your building, if appropriate

## 2.6 Saving your work to OpenStreetMap database

For the walkthrough, it makes sense to disable the save button so that the edits done during the training will not be saved (i.e. uploaded to the online database). When (and if) you want to save your edits, click the “Save” button. The panel on the left will show the upload panel (see figure 27).

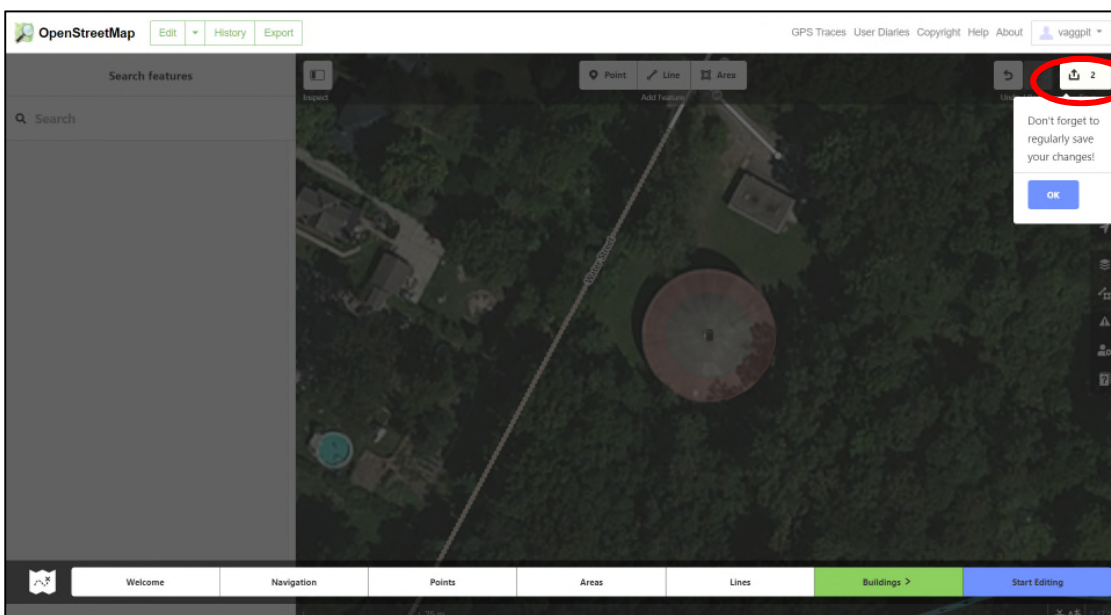


Figure 27: Save and upload your changes

In general, it is advisable to save whenever the box next to the saving button is at nine or higher, in case there are issues with the internet connection. Enter a comment in the “Changeset Comment” box about your edits (for example, with a hashtag referring to your institution/organisation and “added buildings”), tick the box with the text “*I would like someone to review my edits*” and click “*Upload*”.

### Key learning points:

The main elements used for mapping:

- Areas, which includes buildings; remember to “square” or “circle” them.
- Lines, such as roads and linear water bodies;
- Points, such as drinking water outlets, trees, sports pitches, children’s play areas, etc.

The feature menu on the left to assign a description of the feature you have just mapped:

- For buildings, if you don’t have information about their character: tag as “building”. Only assign a specific use (such as “house”) if you are absolutely sure.
- For roads, if you don’t have any specific information about their character, tag as “unclassified”.
- Only map footpaths if you can see them from the imagery or if you have local knowledge.

Remember to regularly save your edits while mapping.

**Congratulations, you now are ready for mapping on OpenStreetMap!**

### 3 Mapping on the Tasking Manager (TM)

#### 3.1 Log in, account information and email address confirmation

Please go to: <https://tasks.hotosm.org/>. Click on log in (Figure 28).

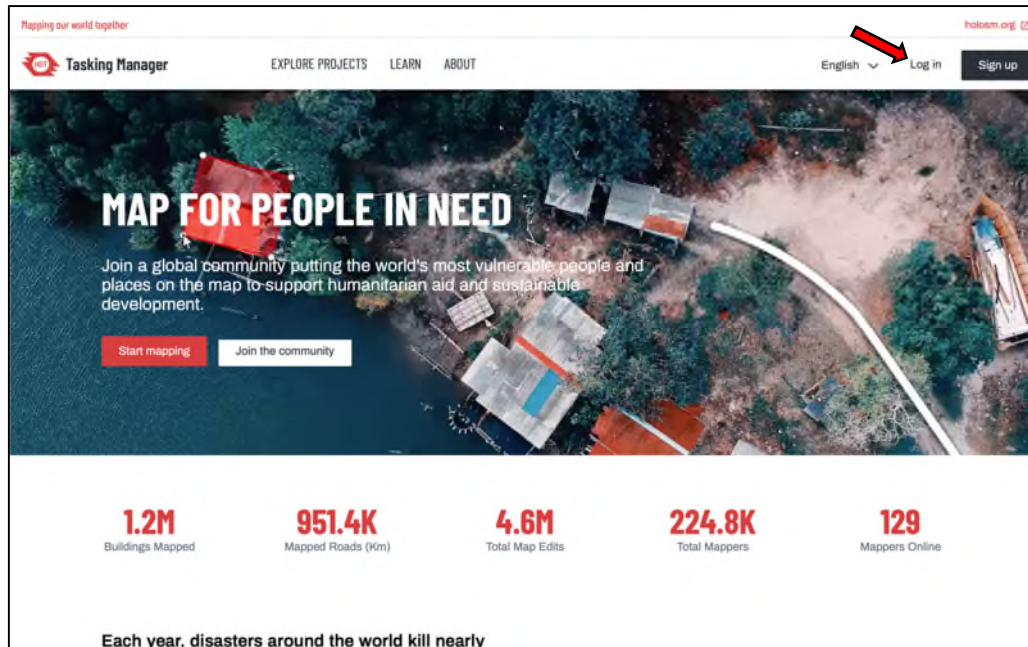


Figure 28: HOT Tasking Manager Landing Page

You will be redirected to OSM. Type in the OSM account credentials you created before (see figure 8).

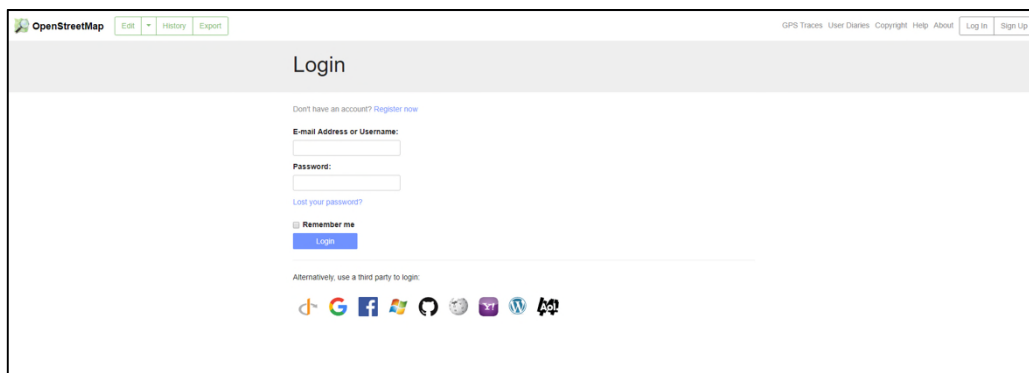


Figure 29: typing in the OSM credentials for logging into the TM

You will then be asked to allow the Tasking Manager (TM) access to your OSM account. Please click on “Grant Access” (Figure 30).

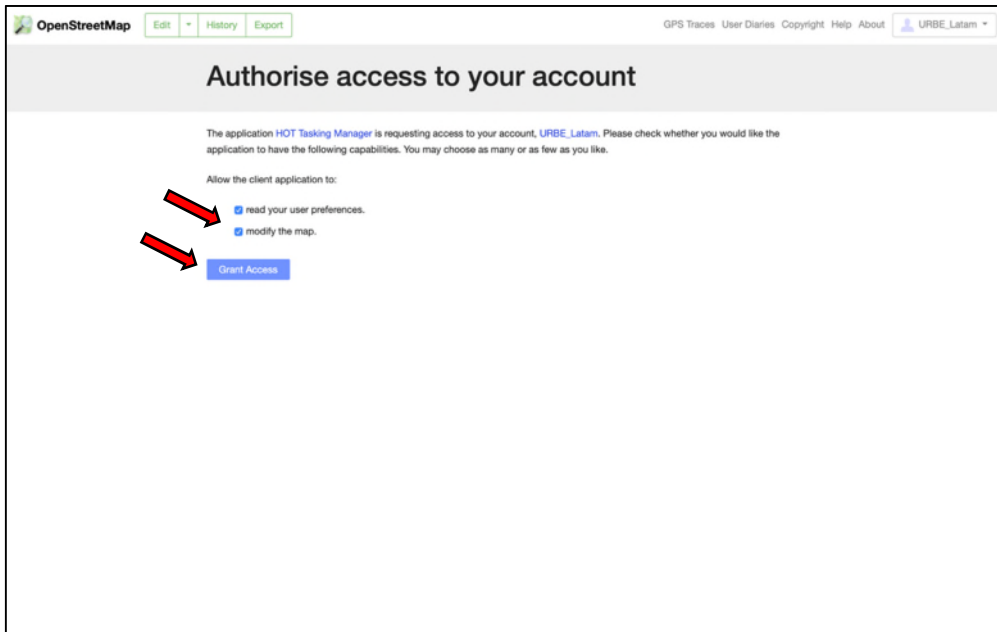


Figure 30: Authorising the TM to access your OSM account

Once you granted access you will be referred back to the TM, to fill in your account information there. You will be asked for your personal information, including your email address, and causes that are of interest to you (Figure 31). This page also allows you to set your language if it is not already displaying in the correct language. When you are finished, click “save” below the personal information box.

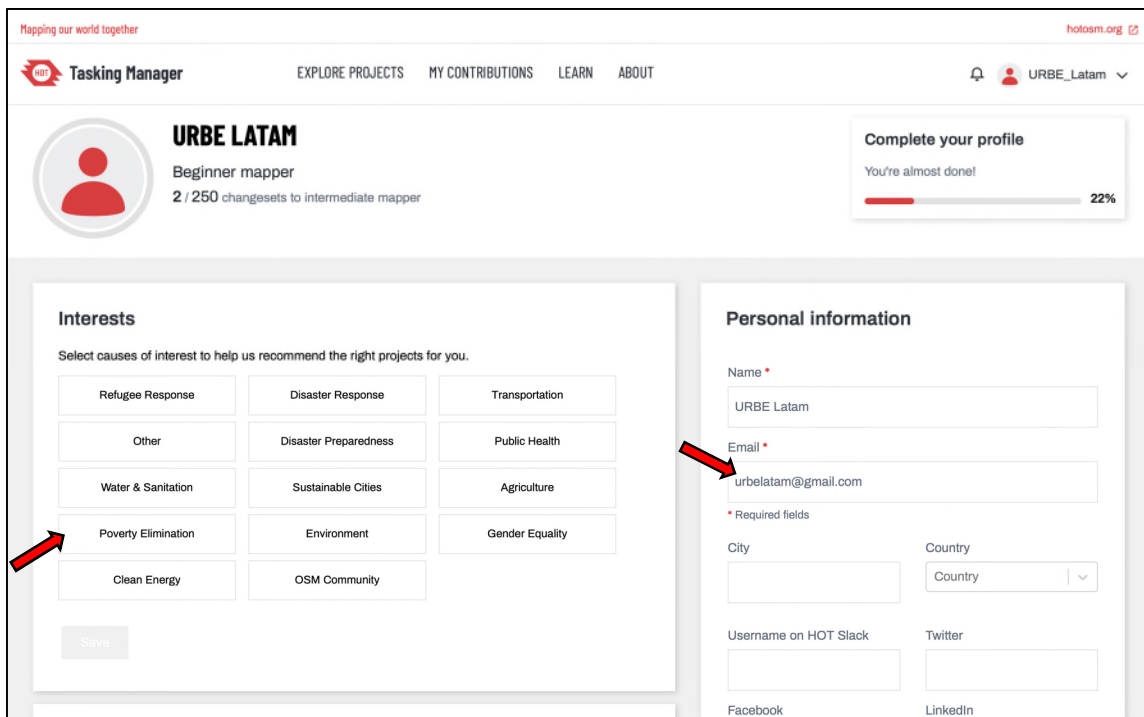


Figure 31: Adding account information

Please now open another tab and check your mailbox, where you will find an email confirming your address (Figure 31). Click on the link as indicated below, and switch back to the TM tab.

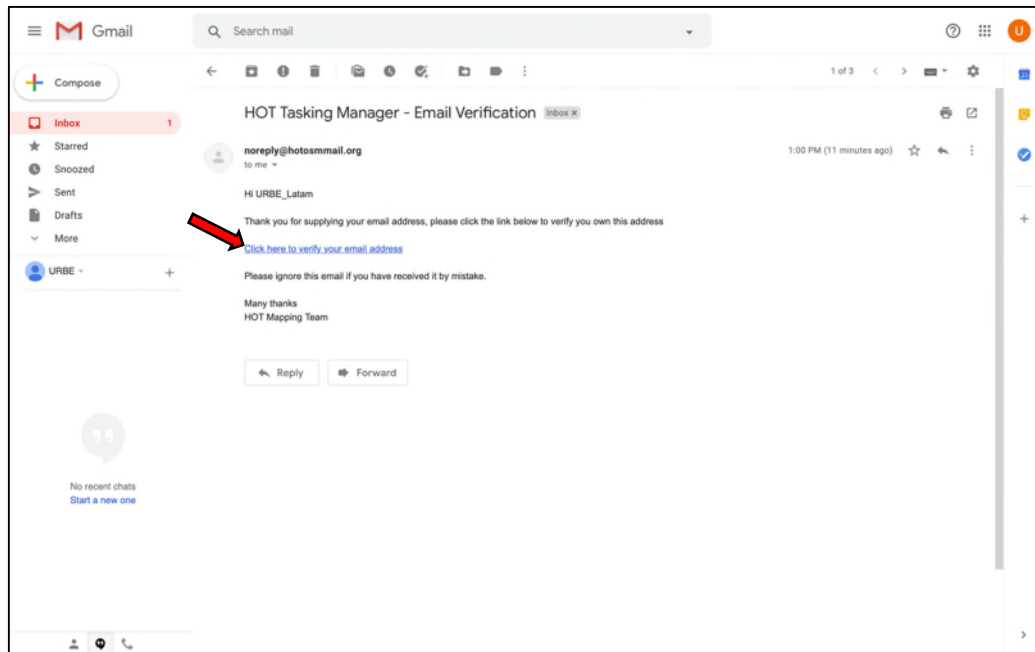


Figure 32: Confirming your email for the TM



### 3.2 Choose your project

Once you are back on the TM tab, click “Explore Projects” (Figure 33).

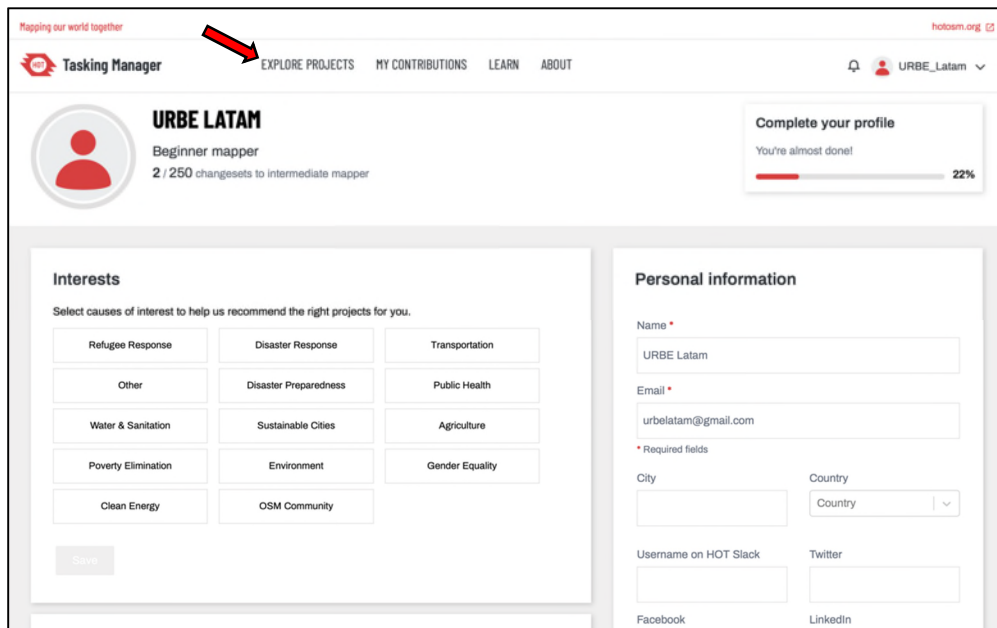


Figure 33: Clicking on Explore Projects

In the following page you can see all the current mapping projects on the TM. Click into the ‘Search Projects’ field (Figure 34).

If you are mapping Preventório, type in ‘8317’. If you are mapping El Pacífico, ‘8593’. Your project will appear (Figure 35 further below). Click on your project. In this tutorial we will use the example of Preventório, although the same procedure applies for mapping El Pacífico.

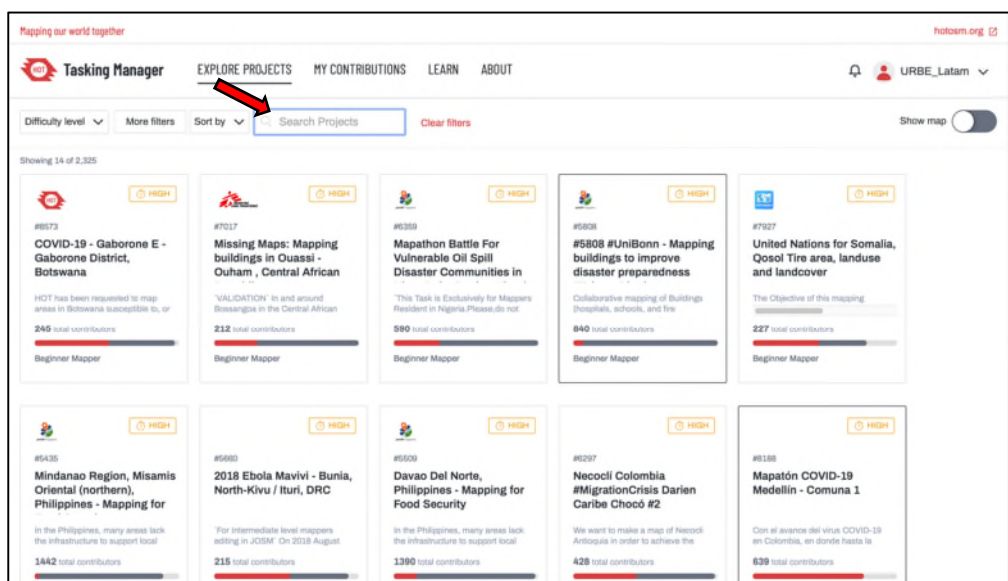


Figure 34: Clicking on “Search Projects”

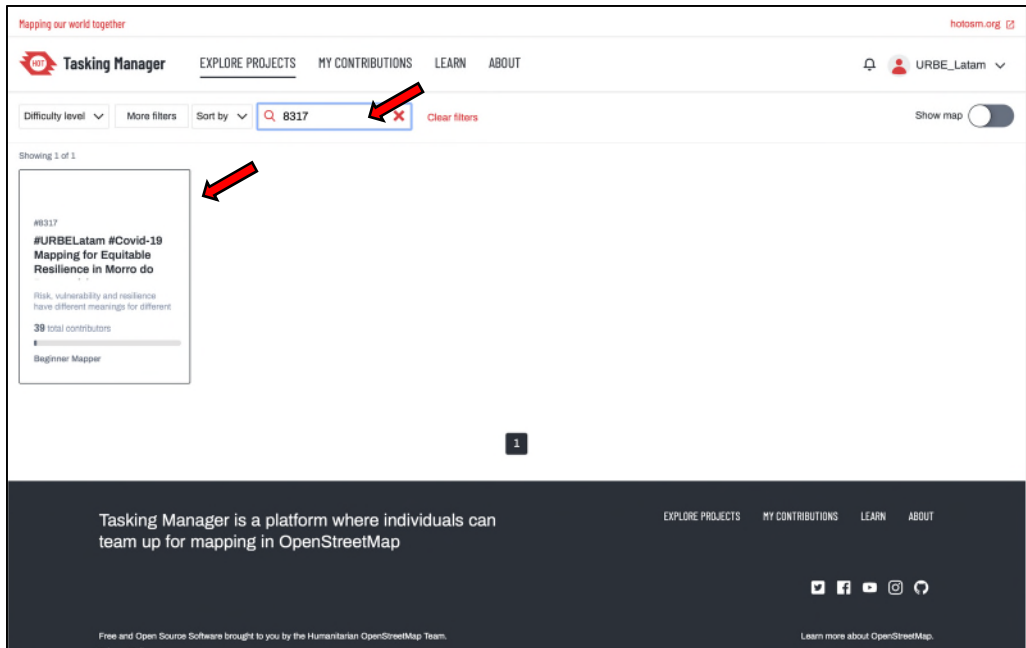


Figure 35: Finding your project with the project number

Once you clicked on the project you will arrive at the project landing page (Figure 36). Please read the project background description, then click on “Contribute”.

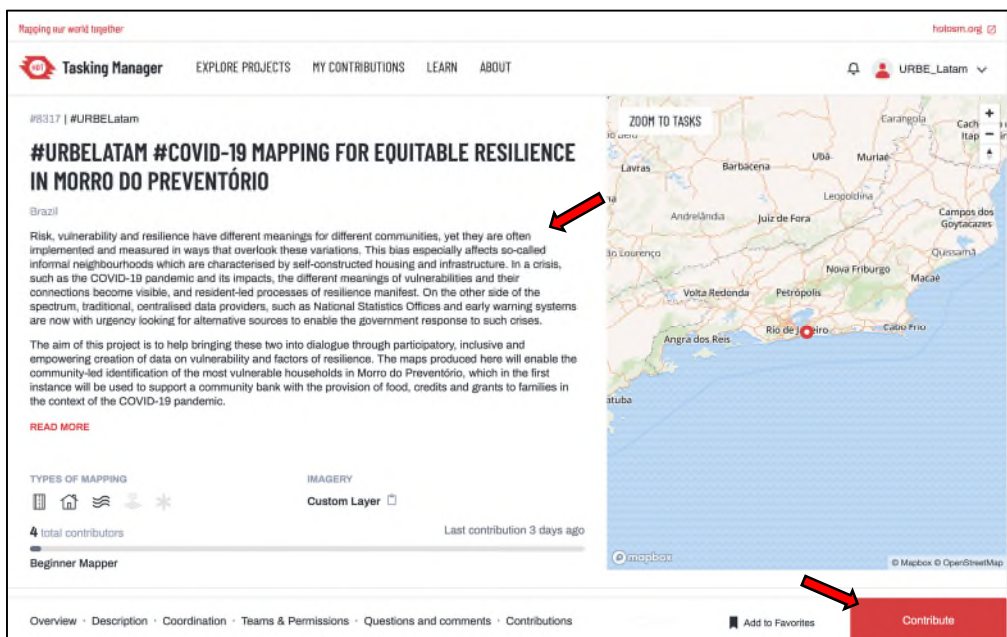


Figure 36: The project landing page

The next page zooms into the project (Figure 37).

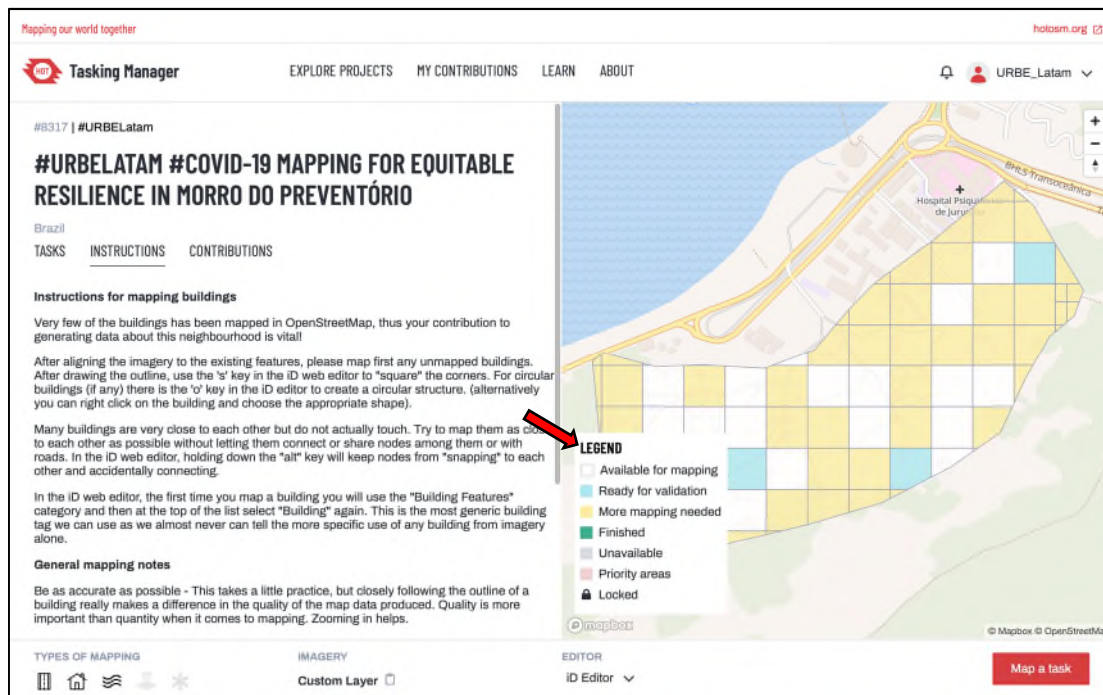


Figure 37: the detailed project page with the legend for the mapping status of the task squares

This part (see Figure 37) of the project page provides the instructions for mapping, including the imagery to use, which for Preventório and El Pacífico will be pre-defined and there will be no need to adjust. Please spend some time reading the instructions, as different projects require different things to be mapped. For instance, some projects focus only on the buildings of a designated area, others ask for buildings and roads etc.

On the right side, you will see the area that is to be mapped, divided into tasks (squares). The legend describes the meaning of the colour of each square. These are the following:

- White tasks squares colour are 'available for mapping'. These are tasks which have not been mapped as part of the mapping project.
- Turquoise means that square is ready for validation. This is the next stage of mapping where an experienced mapper assesses the technical (not geographical-contextual) validity of the task that has been mapped.
- Yellow means someone has started to map but it still requires further mapping before the task is ready for validation.
- Green tasks are mapped and validated by a more experienced mapper;
- Grey tasks mean that the task is unavailable, for example if someone tried to map that task but found that the imagery was not good enough for mapping (for example if there is cloud cover in that specific task).
- Red tasks: priority areas for mapping (not the case for Preventório and El Pacífico as the entire area of the neighbourhood is of equal urgency).
- A task with a lock means someone else is currently working on that task.

To select a task you have two options. The first one is to click on a specific task that is either white or yellow. This is a good option if you are familiar with that particular area of the entire area that is to be mapped, or, of course if you have a preference for this particular task for any other reason. In this case, click on the square you want to map if it is white or yellow, and then on the red button on the bottom right corner “Map selected task”.

The second and recommended option is random selection. To do that, just click on “Map a Task” (the red button on the bottom right corner; no need to select a task square within the map on the right). Please see Figure 38 below.

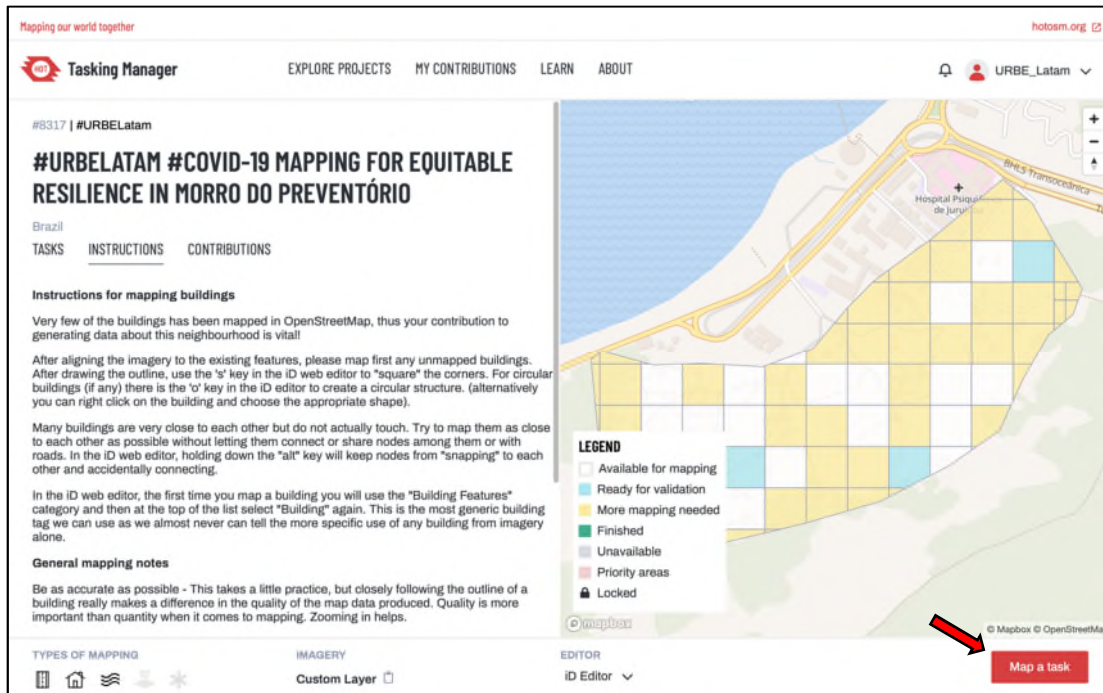


Figure 38: Starting to map

### 3.3 Mapping

Now the editor for mapping the task square will open (please see Figure 39). The pink/purple square on top of the imagery delineates the task you have selected. For mapping, please stay within this square.

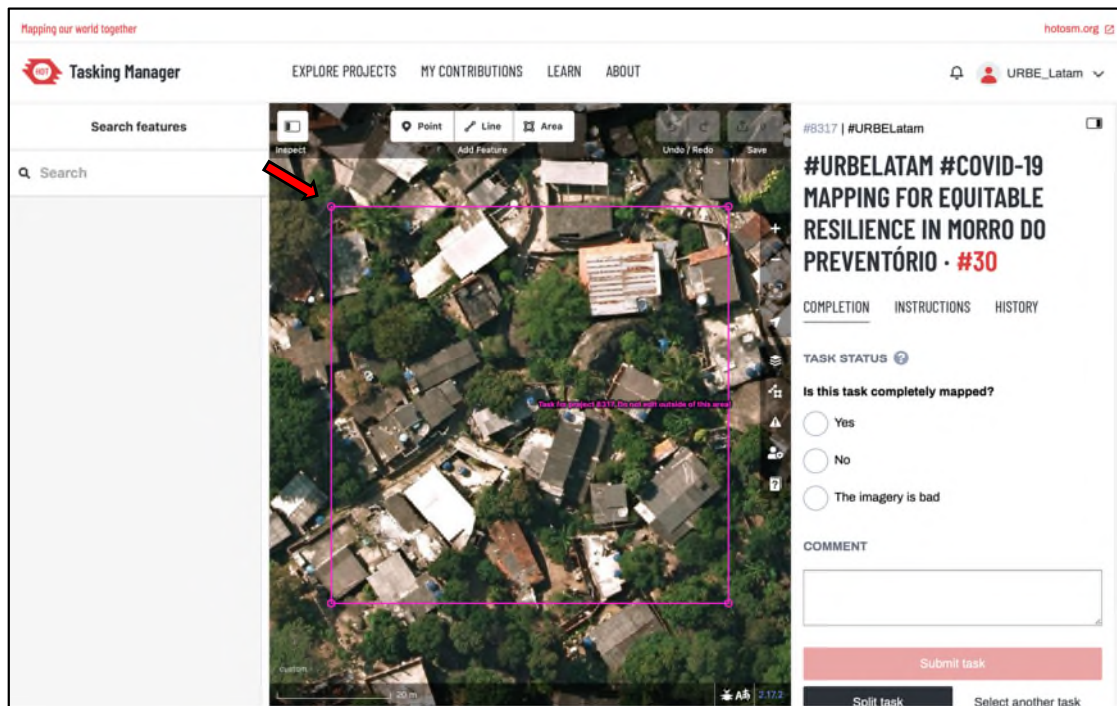


Figure 39: the pink task square

Now is the time to use your new cartography skills you acquired earlier! If a feature (building or road) is not entirely in your square but stretches outside your purple square, feel free to map it. Remember to tag the buildings you map (building, house etc.) and also add any other information about them you might know (not personal information about specific people or groups of people though!), for example the number of floors of a building or the name of a restaurant. Once you finish mapping a building press the 'Q' button in your keyboard to square it or right click on it and the choose 'square'. Remember to upload your changes! Once you map about 10 features (you will see the number on the top right corner of the image) click 'Save' to upload the changes to OpenStreetMap, followed by the blue "upload button on the right panel. (see Figure 40 below). This is very important.

For this project there is no need to click on the tick-box for someone to review your changes, as this will be done in any case.

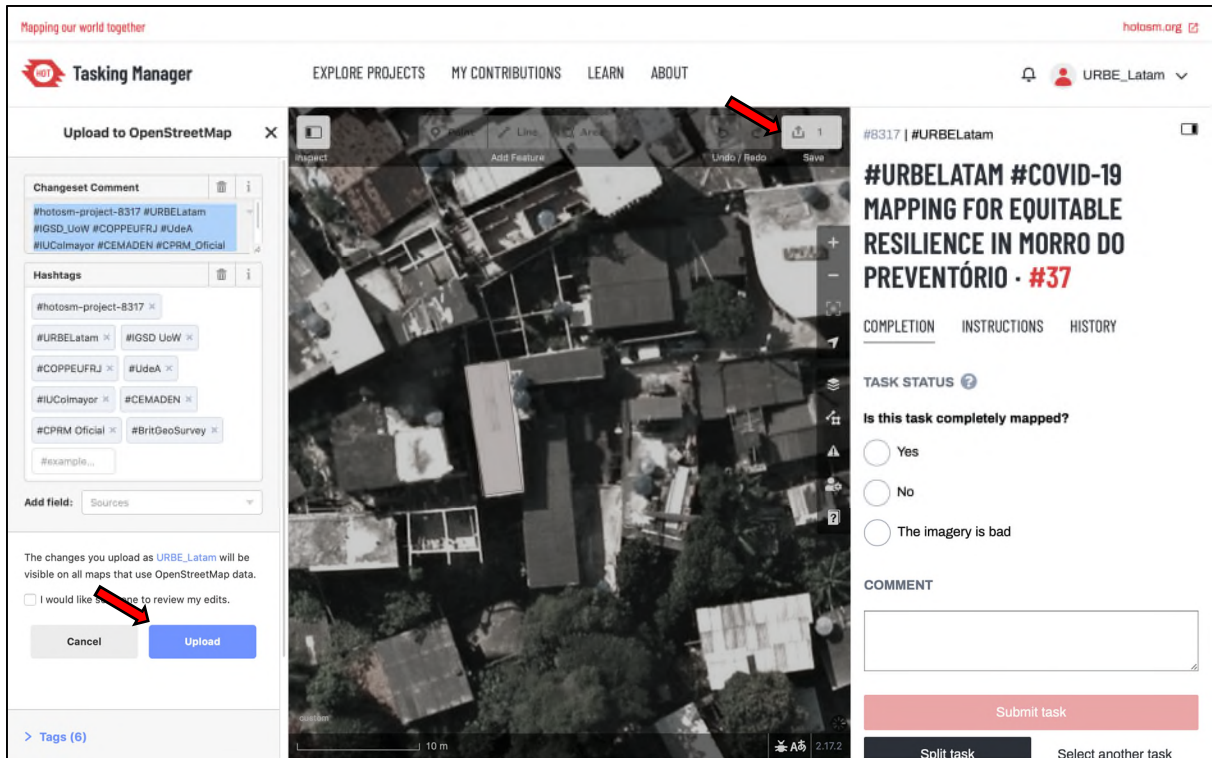


Figure 40: Saving your work

If you feel you made a mistake you can always delete that feature by clicking on it and then right-clicking, and selecting the bin symbol. If you lose connection you can always come back to the TM. Although unsaved changes will be lost (which is why it is important to save regularly) you can always select a new task to continue mapping. It might be different to the one you were mapping on, but this is fine – what matters is that the neighbourhood is becoming visible, which happens as long as we map any area that is available for mapping (white or yellow).

If you find the imagery is bad, click on “the imagery is bad” in response to the question “Is this task completely mapped?” on the panel to the right. The imagery selected for Preventório and EL Pacífico is without cloud cover and relatively clear, thus this should not be the case. If for these projects you find a black space instead of imagery, please try first reload the page. If that has not improved the imagery, slightly zoom out and back in. If the imagery is still black, please click on “select another task”, and you will be redirected to the previous page to select a new task. If the new task is still black, please leave a comment in the comments box. The project manager will look at this and trouble-shoot.

### 3.4 Finishing with mapping in a task

You can stop mapping the task at any time. To do so, please click on one of the options in reply to the question on the panel to the right (“Is this task completely mapped?”).

- a. If there are still features to be mapped (especially buildings), click on “No”. This means that the task you have just been mapping will be available for another mapper to continue. It will be helpful for other mappers if you leave a comment at the comment section regarding the changes you have made (for example, “added buildings”) or any problems you had with mapping (for example, if there are many previously mapped features which need to be changed to match the imagery used in this project (this could be the case if someone has mapped the area previously on OSM with imagery from a different date). Then click on “Submit Task” on the top right in the middle panel.
- b. If you believe that the Task square is completely mapped, click on “Yes” in response to the question on the panel to the right (“Is this task completely mapped?”). Then click on “Submit Task” on the top right in the middle panel.
- c. If for some reason you would like to map a different task, please follow the same sequence as a. or b. (depending on whether the task is completely mapped or not), and then click on “Select another task”.

We hope you enjoy mapping and continue with this new activity. There is a global community around OpenStreetMap and humanitarian and development mapping, and we hope you will join us.

## 4 More resources

- For more information on OSM as well as technical questions (for example which tags to use), please also have a look at the OSM Wiki:  
[https://wiki.openstreetmap.org/wiki/Main\\_Page](https://wiki.openstreetmap.org/wiki/Main_Page)

It’s always nicer to map in a crowd, so you might be interested in the following:

- OpenStreetMap Brasil, the Brazilian OSM community:  
<http://www.openstreetmap.com.br>,

- Geochicas, a group of women who do mapping in OpenStreetMap and work to close the gender gap in the OpenStreetMap community. Geochicas have members in many continents: <https://wiki.openstreetmap.org/wiki/GeoChicas>
- Missing Maps: a humanitarian project that preemptively maps parts of the world that are vulnerable to natural disasters, conflicts, and disease epidemics: <https://www.missingmaps.org>
- YouthMappers, an international consortium of university-level student mapping clubs, with local chapters in universities of various countries: <https://www.youthmappers.org>