How to Map Buildings: Developing Proficiency with OpenStreetMap

Background:
If you’re just getting started with OpenStreetMap, buildings are a good feature to start with. They’re relatively simple to draw and tag compared to roads, boundaries, and other more complex features. And they’re super useful to users of OpenStreetMap, such as public health officials, aid organizations, and environmental stewards. The buildings you add to the map just might be used to deliver medical or housing services to someone. If you complete the activities in this worksheet, you will be able to draw and tag buildings completely and correctly.

Activity:
Follow step-by-step instructions on the following pages to map buildings on OpenStreetMap: Select an area to map. Then using satellite imagery as a backdrop, trace the outlines of buildings, tag them, and save them to OpenStreetMap.

Time: ~60 minutes  Learning Level: Beginner

Learning Credit: TeachOSM will grant one hour of community service credit (for students) or professional development credit (for educators) with documentation.*

Learning Objectives:
• Correctly trace, tag, and save buildings on OpenStreetMap
• Successfully select a task from the Tasking Manager
• Completely map selected task using the iD editor

Materials Required:
• Lap/desktop computer connected to the Internet
• Mouse (highly recommended)
• An OpenStreetMap account (free!)
• Successfully completed the iD editor ‘Walk Through’. (Instructions below)

Notes to Learners:
• OSM does not work with the MS Internet Explorer web browser. Please use Mozilla Firefox, Chrome, Safari, or Opera.
• Use a mouse with your desktop/laptop to improve mapping precision.
• Tablets are NOT recommended for open mapping.

Companion Video to this Worksheet: [Link to companion video]

What is #100changesets? Our goal is to add 100 changesets to OpenStreetMap. 100 changesets is the threshold for basic mapping competency. Teachers should have basic mapping competency prior to incorporating open mapping into the classroom so that they can act as first line of technical support for students

*Contact: info@teachosm.org
If you haven’t mapped in a while, please review techniques for mapping buildings by taking the iD editor Walkthrough

1. Point your browser to [https://openstreetmap.org](https://openstreetmap.org)
2. Log in to your OSM account.
3. Center the map somewhere on your neighborhood, zooming in to the city block-level.
4. Now click ‘Edit’ from the OpenStreetMap page and select, ‘Edit with iD’
5. Then click, ‘Start the Walkthrough’ as shown on the top right.
6. Note you can find the Walkthrough from the Help tab, as shown on the bottom right.

Please pay special attention to the steps for adding buildings.

**Time:** ~15 – 20 minutes
Here’s a scenario: A tropical cyclone has just devasted a small Pacific Island and the only maps available are woefully out-of-date. The Humanitarian OpenStreetMap Team (HOT) has requested volunteers to map buildings in this area so that rescue & recovery teams can effectively deliver relief supplies to remote settlements. What do you do? Here’s the three-step mapping process which you’ll follow in the pages below.

1. Select task from Tasking Manager
   1. Point your browser to the Tasking Manager
   2. Find a buildings-only project & read the instructions
   3. Select a cell to map and select ‘Edit with iD editor’
   4. The iD editor will open in a new tab

2. Map using iD editor
   1. The pink square in the center represents the boundaries of your task cell.
   2. Map all buildings within your task cell. Do not exceed your task cell.
   3. Save your work, adding changeset comments and tick the box requesting review of your edits
   4. Close the iD editor tab after you have saved.

3. Close task in Tasking Manager
   1. Return to the Tasking Manager
   2. Did you map all building features?
      • If no, click ‘Stop Mapping’.
      • If yes, click ‘Mark as Complete’

The next few pages will take you through the process in detail.
1. Choose Your Mapping Project

In our scenario, you would be directed to a mapping project on an OpenStreetMap Tasking manager. But for this training, you’ll select a project of your choosing.

1. Point your browser to one of the Tasking Managers and sign in using your OpenStreetMap credentials.

2. Click Start Mapping to access the ‘Contribute’ page, where you’ll see project cards like the one below. Search or browse the projects and select one.

3. Read the Description, which tells you what you will be mapping and why.

4. Then read the Instructions, which tell you how to map. The instructions outline the process for mapping.

5. Then click, ‘Start Mapping’ to start the iD editor as show below.

Decide where to map by selecting a mapping project. Locate a project from the TeachOSM Tasking Manager. The Tasking Manager is a tool that divides a large area into smaller areas. This divides the work between more mappers and keeps them from mapping the same area.

You can find projects on one of these Tasking Managers:
- HOT: https://tasks.hotosm.org
- TeachOSM: https://tasks.teachosm.org

Example: Project Description

Example: Instructions
1. The grid on the map indicates the geographic extent of the project. Each white square represents one task, as shown at right.

2. Click on a blank, white square to select a task, which will be highlighted when selected.

3. Click the ‘Start Mapping’ button and on the next screen, click ‘Start Editor’ as shown below.

4. Your selected square will turn blue, as shown at right.

5. Clicking ‘Start Editor’ will open a new tab with the iD Editor.

• **Tip**: Don’t close the Tasking Manager tab. You’ll return to it to finish the task.

You’ve selected your task. Now you’re ready to map!
3. Map all the Buildings!

The task cell you selected is indicated by a pink square. Those are your mapping boundaries.

Please don’t map outside the task boundaries. Someone else may be mapping there.

Task Boundaries. Do not exceed!

- **Map buildings and only** buildings. Nothing else, please.
- **Don’t guess:** If you’re not sure it’s a building, don’t map it.
- **If you make a mistake, correct it:**
  - Buildings overlapping or connecting with road
  - Buildings overlapping other buildings
- **No mappable buildings?** If your task square is nothing but dense forest, open water, barren land, etc. do this:
  1. Close iD
  2. Return to the tasking manager and mark task as done
  3. Select a different square and map all the buildings.
Some Pro Tips for Mappers

- **General Tips:**
  - **Stay in your square.** The pink square is your task boundary. Respect other mappers and stay within it. (You may map buildings on the edge.)
  - **Map buildings and only buildings** for now.

- **Tips for Mapping Buildings:**
  - **Zoom!** - Zoom in so you can clearly see the building base, or footprint. The building should occupy most of your screen!

  ![Not Close Enough](image1)
  ![Just Right!](image2)
  ![Map the Building Footprint](image3)

  - **Square** your buildings! Click on the building to highlight it, then type ‘Q’ or right-click and click the square icon.
  - **Don’t guess:** If you’re not sure it’s a building, don’t map it.
  - **If you make a mistake, correct it:**
    - Buildings overlapping or connecting with road
    - Buildings overlapping other buildings

- **No mappable buildings?**
  - If your task square is nothing but dense forest, open water, barren land, etc. do this:
    1. Close iD editor tab.
    2. Return to the tasking manager and mark task as done.
    3. Select a different square and map all the buildings.

*More building mapping techniques in the Appendix*
Click ‘Save’ after every ~5 buildings so you don’t risk losing your work. Click, ‘Save’ and follow these steps:

1. **ADD CHANGESET COMMENTS:** You must add a changeset comment with:
   1. A short description of what was mapped, e.g. “Added public library”
   2. A #Team hashtag so you get credit!

2. **ADD SOURCE:** Where did you get your map information? Select from the drop down.

3. **REQUEST REVIEW:** New to OpenStreetMap? Tick the box requesting a review of edits. OpenStreetMap validators will review your work.

4. **UPLOAD:** Upload your edits then stop the iD editor by clicking the ‘OpenStreetMap’ banner in the upper left.

**What is a ‘changeset comment’?** A changeset is a group of edits. A changeset comment is a short, descriptive summary of what you mapped.

**Why add a changeset comment?** Comments not only describe what you did, but you can track what you did using the changeset #hashtags.
Finally, return to the Tasking Manager tab in your browser to close out the task.

There are two ways to close out the task: Either a) stop mapping, or b) mark as complete. Which should you select?

WHEN TO MARK AS COMPLETE:

If, and only if, you have traced all required features in a cell, and there is nothing more to map. **USE ONLY IF ALL FEATURES HAVE BEEN TRACED.**

WHEN TO STOP MAPPING:

If for whatever reason you can’t complete a task, leave a short note for the next mapper and choose ‘Unlock’.

Note that you can also click, ‘Mark as bad imagery’ to alert others OR click ‘Split Task’ to divide a very dense area into multiple tasks.

That completes the process. Let’s admire your mapping work!

Return to your OpenStreetMap tab and refresh your browser (Ctrl+R or Cmd+R). Your edits should be available within a few minutes.
The Fun Part: Check your mapping quality on OpenStreetMap

- Do your building traces follow the building footprint?

- Are your buildings squared (if all corners are at right angles)?
- Building tagged (‘building=yes’)?
- Descriptive changeset comment with sources?

You should now feel comfortable with editing buildings and have greater facility with both the Tasking Manager and the iD editor. Remember, you can always repeat this worksheet to add to your goal of 100 changesets!

In short:

- Buildings are a fun and easy introduction to open mapping. Buildings have no special requirements so new mappers gain experience quickly.
- Buildings are a valuable addition to the map. Indicate settlement patterns, economic & social activities. They are a widely used feature.
- Mapping tasks that focus on buildings can be found on the TeachOSM and HOT Tasking Managers.

More resources:

- Comprehensive introduction to iD editor: https://learnosm.org/en/beginner/id-editor/
**Low Density Areas:** It’s easy to see buildings in these images, though trees may cover a corner. Use the opposite corner to estimate its location. Small footways are clearly visible surrounding the main building. Only connect paths when their intersection is clearly visible.
**Medium Density Areas:** Buildings are much closer together making it a bit more difficult to distinguish individual buildings. Use roof outlines to the best of your ability.

See the visible alley between buildings? It’s easy to identify due to the wide space between buildings and its color, texture and shape. Alleys don’t always connect with other roads so trace only what you can be certain of.
**High Density Areas**: Buildings may so dense as to appear as one large building and you may have to trace it that way. If possible, use roof lines, shadows, and empty spaces to distinguish buildings.  
*Make sure your buildings don’t intersect with roads!* Map carefully in high density areas.