

# SKAI Example Labeling Instructions

Updated: Mar 28th, 2022

## Overview

The goal of this labeling task is to provide the SKAI machine learning model with example images of damaged and undamaged buildings, so that it can learn to identify buildings damaged in a disaster.

## Instructions

You will be presented with pairs of 'BEFORE'- and 'AFTER'- satellite images of individual buildings, along with the surrounding environment for context. Focus on the building marked by the red frame in the center of the image. Your task is to compare the 'BEFORE' and 'AFTER' images and determine whether the building has been damaged as a result of the disaster.



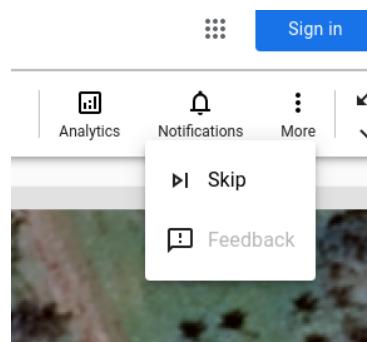
Sometimes it is difficult to tell if a building is damaged or not. Please do your best in these cases, and remember that a small number of mistakes will not mislead the model very much. If there are multiple buildings in the frame, evaluate only the building in the very center. Also we find that it often helps to look at the surroundings of the building for clues: if all the nearby buildings are clearly damaged, or if there is rubble and debris everywhere, it's likely that the building is damaged.

## User Interface

This is a screenshot of the labeling task in progress. It includes the BEFORE and AFTER images along with a label picker on the right.



- For each example, please choose the label option on the right hand side, and then click the submit button at the bottom of the screen.
- Every example you label will appear as a green circle with a check mark in the upper left of the interface. If you think you made a mistake on a previous example, you can always go back to it by clicking one of these circles.
- You can also skip examples by clicking on the “More” menu, in the upper right, then choosing “Skip example”.



## Labels explanations and examples

Please label each building from the following choices:

1. **undamaged** - The building was not damaged by the disaster event. This includes cases where the building was already damaged prior to the disaster (i.e. it is clearly damaged in the 'BEFORE' (left) image).



2. **possibly\_damaged** - The building looks like it may be damaged, but you are unsure. Use these for hard cases where it is hard to make a decision.
3. **damaged\_destroyed** - The building was damaged or destroyed by the disaster event. This includes buildings becoming a rubble or burned to the ground. Or less damage such as a missing roof, collapsed wall, part of the building becoming rubble.





4. **bad\_example** - Bad example labels cover many cases in which you cannot provide relevant labels. Some concrete examples include:
  - a. **No building** in the center of the red box (due to a mistake in our building detection). Examples include cars, patches of forest, shipping containers, etc.



- b. **Unclear images** - The building in either BEFORE and/or AFTER disaster image cannot be seen. For example when it is covered by clouds, or is too blurry.



- c. Extreme misalignment - The images are so misaligned that the correct building is mostly or completely out of the red frame. Don't use this label if the correct building is still mostly in the red frame.



## Challenging cases

### 'BEFORE'/'AFTER' images misaligned

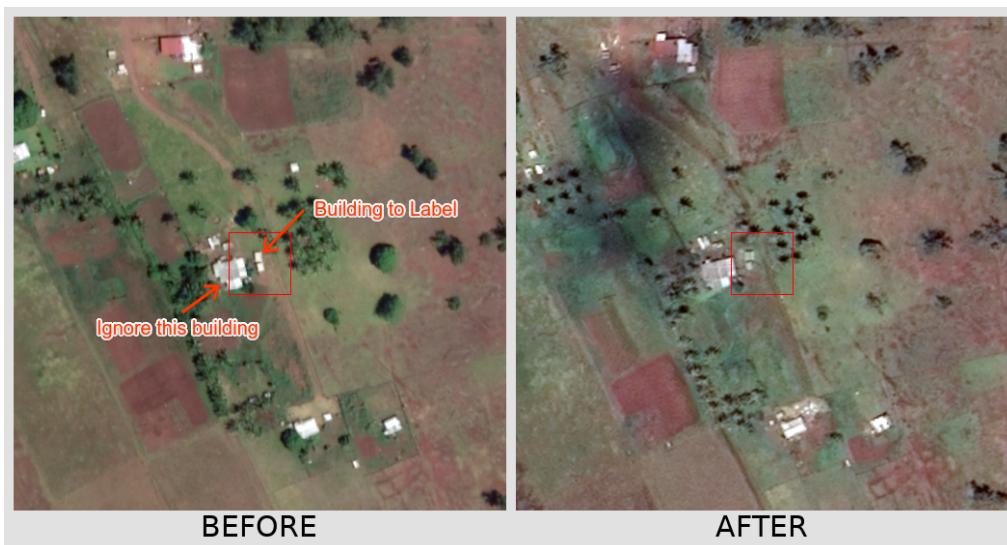
The 'BEFORE' and 'AFTER' images are misaligned, and as a result, the building in the 'AFTER' image is not in the center of the red frame.



**Recommendation:** Please try your best to identify the building in the 'AFTER' image that corresponds to the center building in the 'BEFORE' image, and decide whether that building is damaged, regardless of alignment.

### Multiple buildings in frame

There are two buildings in the center red frame.



**Recommendation:** Please focus on the building in the center of the frame, even if there are off-center buildings that are larger.