



# OSMREX

OPENSTREETMAP CROWD-SOURCING  
AS TOOL FOR GATHERING WORLDWIDE DATA FOR RISK  
ASSESSMENT DUE TO NATURAL HAZARDS



## THE PROBLEM

The population is not aware enough of natural hazards they are exposed to and the properties of the built environment are not well known for response and mitigation, especially those of critical facilities including schools and hospitals.

## THE SOLUTION

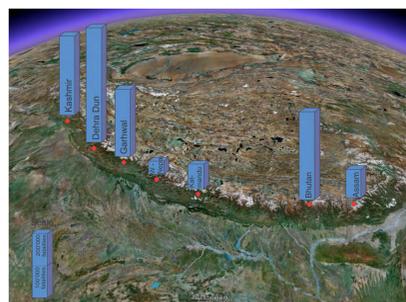
Get residents involved in mapping their built environment properties using OpenStreetMap.

## SUMMARY

The great need for global data concerning the built environment (dwellings, offices, industrial plants) and critical facilities for assessing the risk due to natural disasters will be addressed harnessing the enthusiasm of the crowd that contributes to OpenStreetMap (OSM) by teaching a new community of mappers how to gather information useful for risk estimates and mitigation. This is a new idea, never tried before, bound to revolutionize and accelerate the gathering of attributes of the built environment, especially in developing countries. Loss scenarios, including estimated numbers of fatalities and injured, will be calculated for the two target cities Shimla, India, and Athens, Greece, using the data now existing plus those gathered in this project, and the results will be discussed with the local participating crowd in order to augment local awareness of the earthquake risk.

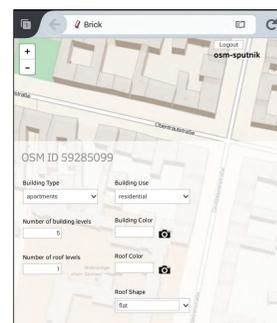
## DEVELOPING COUNTRIES THREATENED BY EARTHQUAKES

The Himalaya will be the scene of major earthquake disasters. Hospitals and schools in cities like Shimla (right) need to be identified and the population must become aware of the looming danger. We propose to develop our technique in Shimla.



## INPUT

Using the editor at the right people will be able to map the built environment of their neighborhoods, using smartphones and tablets.



After editing, the building will be displayed immediately in 3D according to the new properties



From the quickly calculated floor space of buildings important properties of a building can be derived.



Color-coded number of adjoining buildings. Dark buildings are identified as corner buildings

## THE OSMREX TEAM

### MAX WYSS

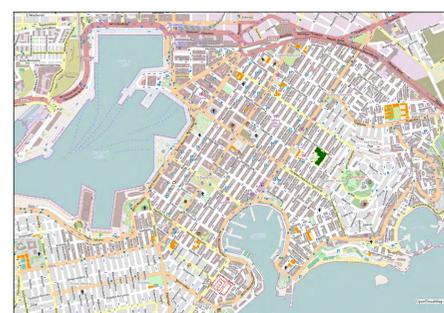
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## OUTPUT

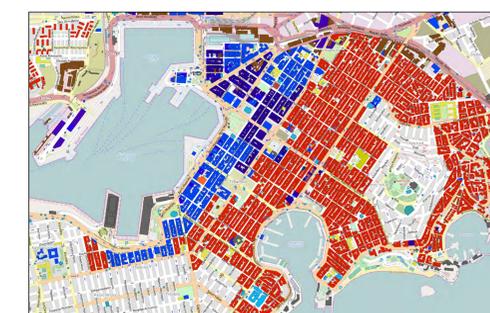
Various representations of a partially mapped suburban area in Piraeus, Greece, a city selected for learning the proposed technique in an industrialized country with earthquake problems.



Locations of schools and hospitals



Land use



Occupancy type of buildings:  
residential, commercial, industrial separated

## GOALS

- Understand the Risk of Your Community
- Identify Distribution of High-Risk Buildings
- Enable Mitigation Measures in the Studied Communities
- Understand Your Risk and Compare it With Other Communities
- Become Independent in Risk Assessments
- Spread Risk-Assessment Techniques to Nearby Communities