

WILDFIRES

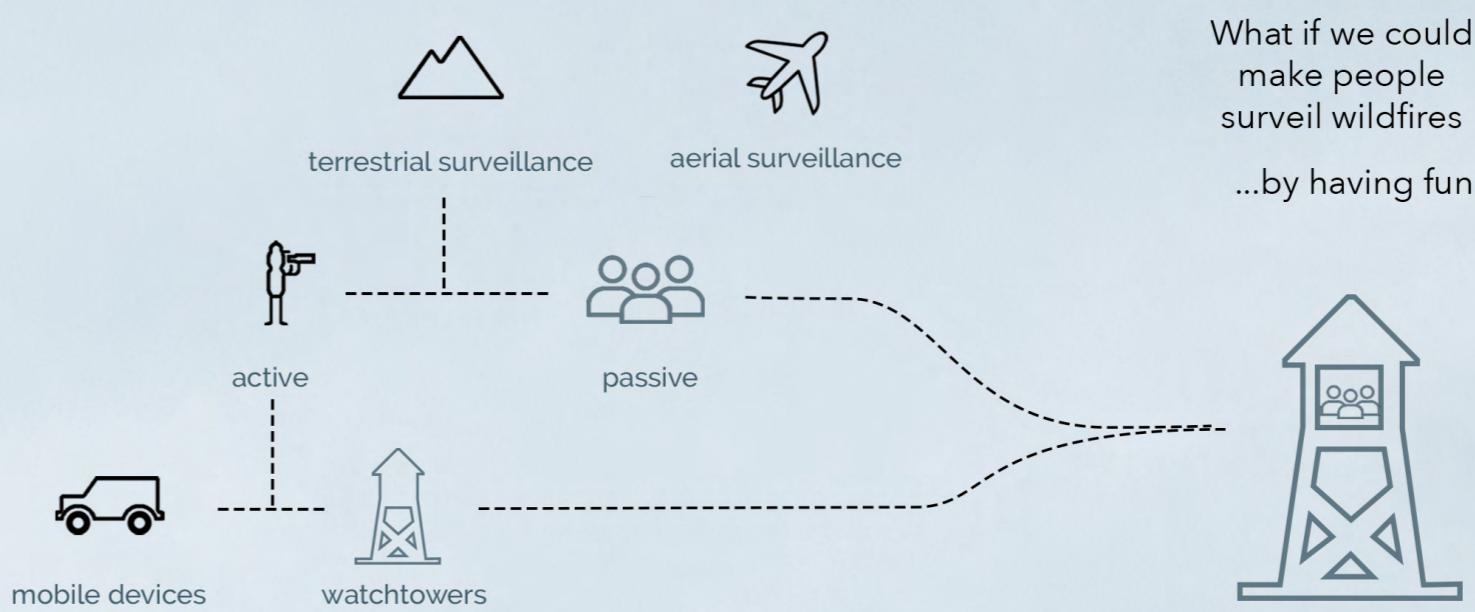
AN ARCHITECTURAL INTER-
VENTION OF RESILIENCE

It goes without saying that the problem of wildfires in Portugal is a dangerous and recurring one.

Our proposal focuses on how can architecture help prevent wildfires. Based on our research we believe that architecture could be a strong catalyzer in the early detection of wildfires and in that sense, we started by analyzing the current surveillance system. And so, we concluded that, although there were a great number of active methods of detecting wildfires, the passive way of detecting wildfires was, and still is, the most effective.

That being said, we sought to activate the passive agent of wildfire detection by creating a programmed network of infrastructure, that is, a network of various watchtowers with diverse programs linked to their surrounding context that incentivized people to passively detect wildfires, not by necessity but by simply reveling in their program.

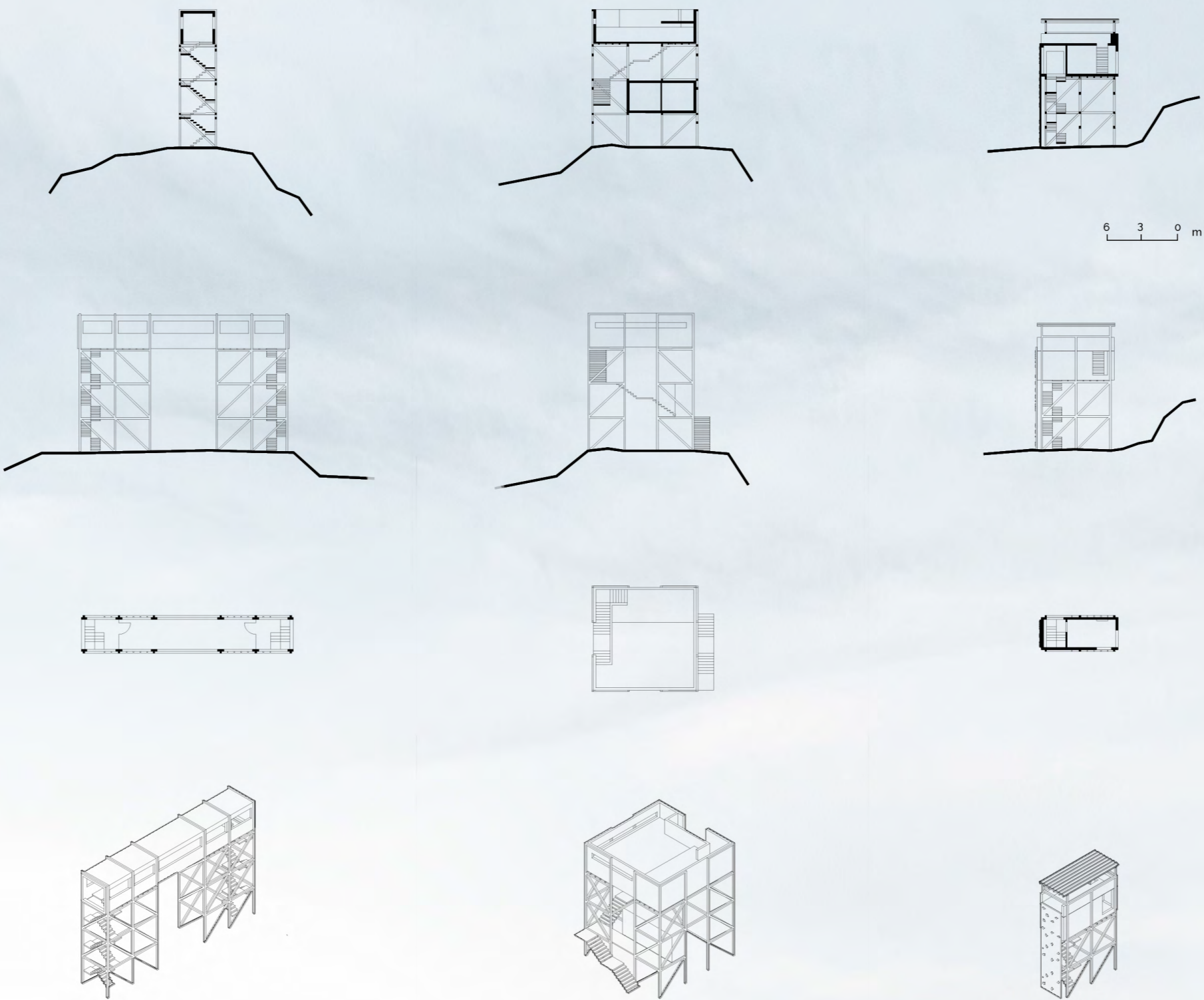
All the towers have a wooden structure that involves the different volumes placed on it. The volume are boxes cladded in wood inside and by steel sheets on the outside, referencing the “old” watchtowers as an everchanging context.



MUSEUM
TOWER

WATER
TOWER

SCOUT
TOWER



WILDFIRES

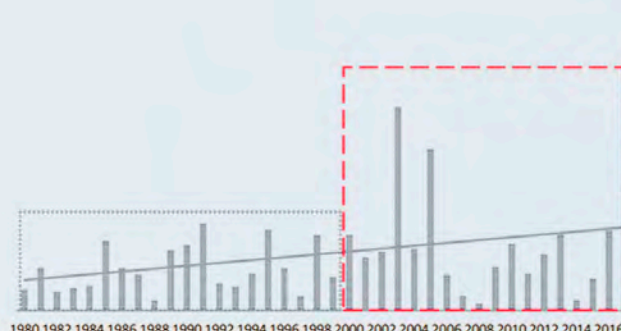
AN ARCHITECTURAL INTERVENTION OF RESILIENCE

DISASTER

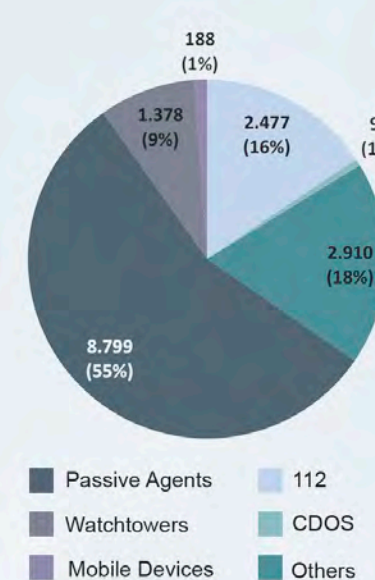
The wildfires that occurred in Pedrogão Grande in 2017 were amongst one of the worst natural disasters the country had faced since the great Lisbon earthquake in 1755, having burnt over 53 000 acres of land, killed 66 people and wounded 254 others. Although this has happened over a year ago, statistics show that wildfires are still, and should be a future concern not only for the victims of the aforementioned incident but also the country as a whole.

As such, the first step to pinpoint our procedure would be to analyse each pertinent approach to wildfire prevention and evaluate their respective relevance with architecture. In order to arrive to a solution that not only succeeds but does so because of architecture and not an underlying, unrelated aspect of architecture.

Annual fire burned area - Portugal 1980 - 2017 (forests and shrublands only)



The national watchtower network is extremely outdated and sometimes in poor conditions. In most cases the network doesn't take into account several properties that are crucial to the wildfire detection, such as smoke column height and areas of cultural interest as a priority.



Percentage of wildfires by different detection agents
Source: Relatório Anual de Áreas Ardidas e Incêndios Florestais em Portugal Continental, 2015

DISASTER STAGE



The option of building/rebuilding lost housing was put aside as a result of already 90% of lost homes being on the verge of completion or even already done in wildfire affected areas of the country.



One of the most effective methods of wildfire prevention is the correct pruning of trees next to houses, the planting of more fire-resistant species of trees and the creation of fire breaks all of which correspond to landscape architecture and therefore was put aside.



Education is also believed to be effective due to the number of wildfires occurring due to some kind of negligence but in fact there's also a great amount happening due to criminal activity which means that the intentional nature of these acts make education a not broad enough approach to this problem.



Finally, this process lead us to believe, by trial and error, that detection would be the approach necessary to effectively have a broad impact on the prevention of wildfires since it provides a direct impact on the natural disaster even more than directly combating it since it's early detection is key to resolving the issue thoroughly.

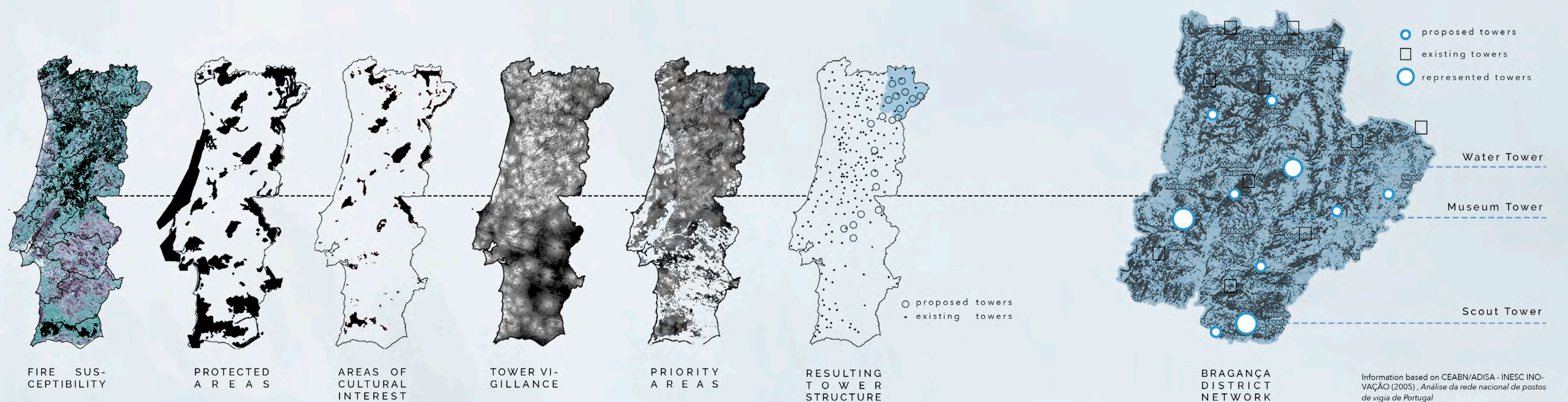
AREA ANALYSIS

From the analysis presented, we chose to work in Bragança district, due to its vulnerability to the fire on the different factors analyzed.

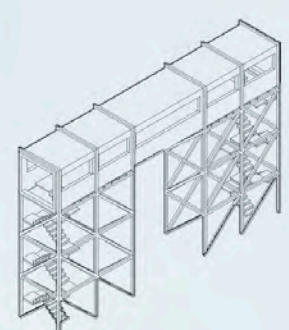
Bragança is located in the interior part of Portugal, which actually faces an intensive desertification, empowering the idea of bringing people to the interior and turning the watchtowers into an attraction point by the activities provided.

From the network proposed in the area of Bragança we identified three different types of contexts: On some cases the towers were located in isolated places, far from any type of civilization, usually between 8-10km from the nearest village. On other cases the towers were positioned around the center area between several small-scale villages. (150 to 250 inhabitants) and lastly, some were located near single large villages (750 to 1000 inhabitants). We then created programs that would match these three contexts and their more specific surroundings.

Being that we identified 3 different contexts we chose to detail 3 of the towers from the whole network.

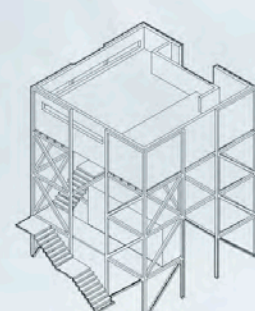


MUSEUM TOWER



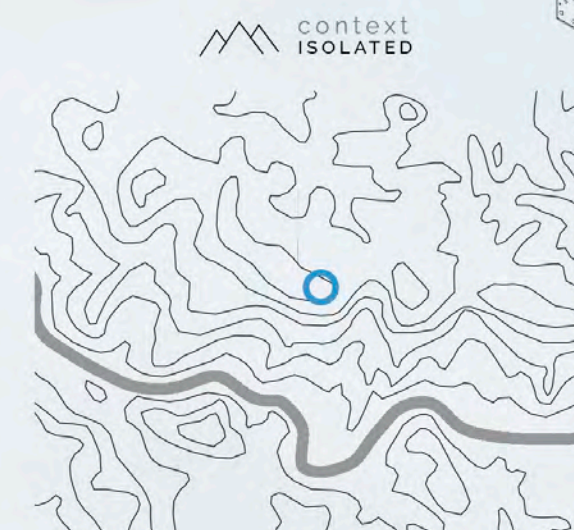
The first programed tower is the Museum Tower. This tower was structured as a single exhibition museum about the impact of wildfires in nature, society and specially in small villages as it is surrounded by small agglomerates. The building is long and narrow, defining a line as a single museum route that can either be traversed from front to back or vice-versa and informs its' users with the exhibition via drawings on its' glass windows that align the surrounding landscape with the information.

WATER TOWER



The second tower is called Water Tower. This tower is placed near Morais, a large village that can benefit from a water reservoir on the top of the building that can also be used for bathing and leisure purposes. This tower has a support building placed in the middle of its' wooden structure, on the way up to the reservoir, that serves as locker rooms and storage.

SCOUT TOWER



The third programed tower is actually a group of towers called Scout Towers. These 3 towers are isolated from any village, but are near the river "Douro" and provide several mountain and radical activities such as climbing, arborism, slide, etc... And give the possibility of camping inside. This idea of giving the absolute minimum conditions to camping matches with its' location and capitalizes on its target audience.

