

FIG Working Week 2017

Surveying the world of tomorrow
From digitalization to augmented reality

Increasing Urban Resilience of Athens' Historic Center

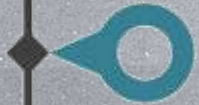


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May 29 - June 2, 2017 in Helsinki, Finland

Outline



LITERATURE REVIEW

Resilient City as a concept | Characteristics | Priorities



THE CASE STUDY OF ATHENS' CENTRE

Aim & Objectives | Methodology |
Brief Analysis of the Existing Situation | Findings and Proposals



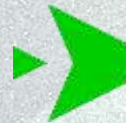
CONCLUSIONS - DISCUSSION

Literature Review: What a “Resilient City” is? (1)

A Resilient City goals in making

Problematic urban areas

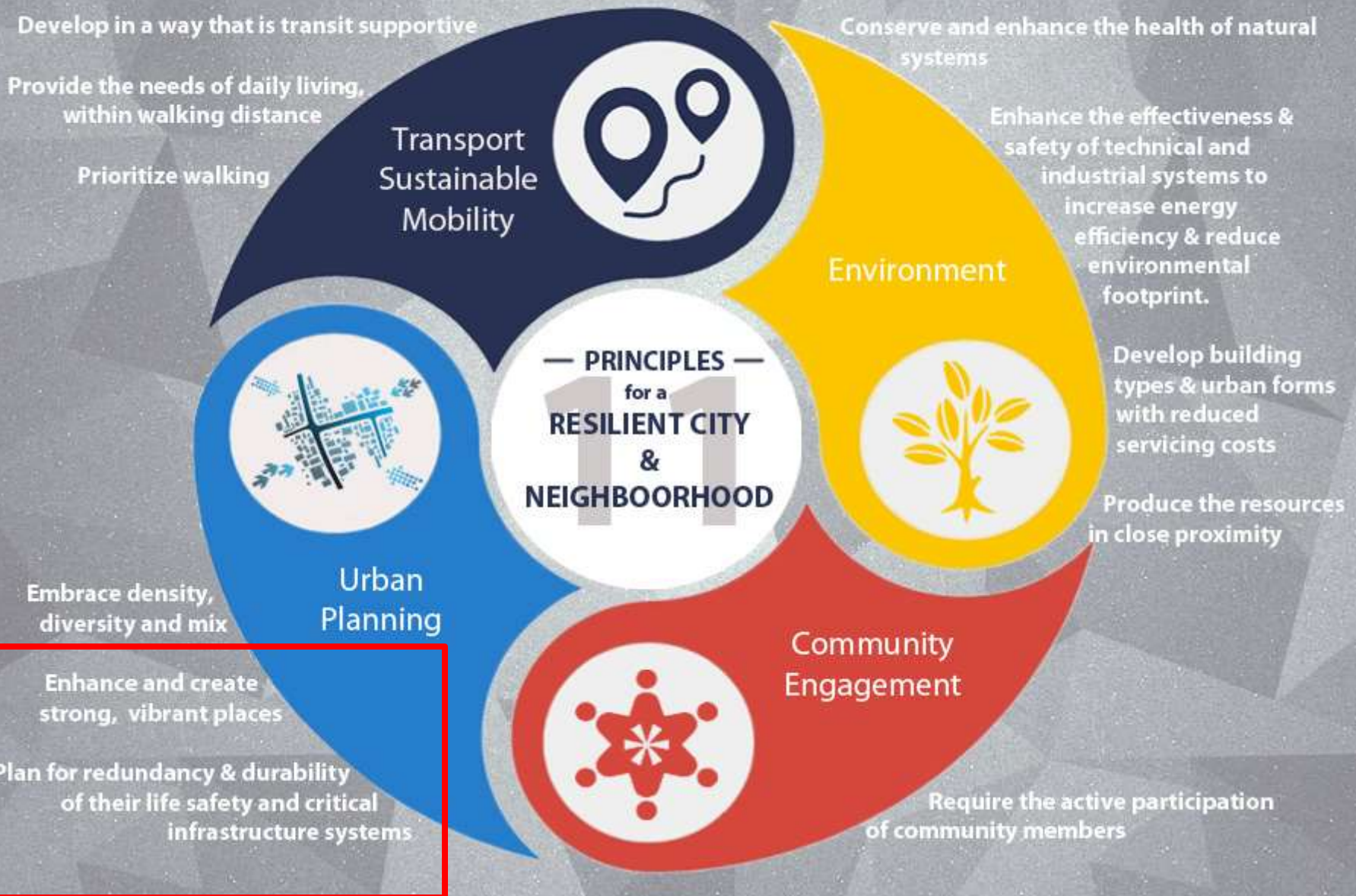
More flexible & efficient
in facing disasters



DEVELOPMENT



Literature Review: Principles for a Resilient City



Aim and Objectives

Aim



Objectives

Preparation for protection against negative impacts of a possible disaster in this area. For this particular scope, the following spatial parameters are investigated:

- Which are the **free spaces** in the center of Athens and what locations may be utilized as **potential** and **temporary gathering spaces** in case of emergency?
- Which is the **zone of influence** that may be efficiently served by each of these selected potential gathering spaces?
- Which are the **shortest routes** that may best serve specific types of vehicles in case of emergency?

Methodology



Definition of the case study area

the central historic zone of Athens | preserved traditional morphology (18th Century) | linear neoclassical influences (19th Century) | a compact neighborhood | small plots with narrow streets | centrality



Analysis of the current situation

Field research | geometrical characteristics of the street network | land uses | existing open spaces

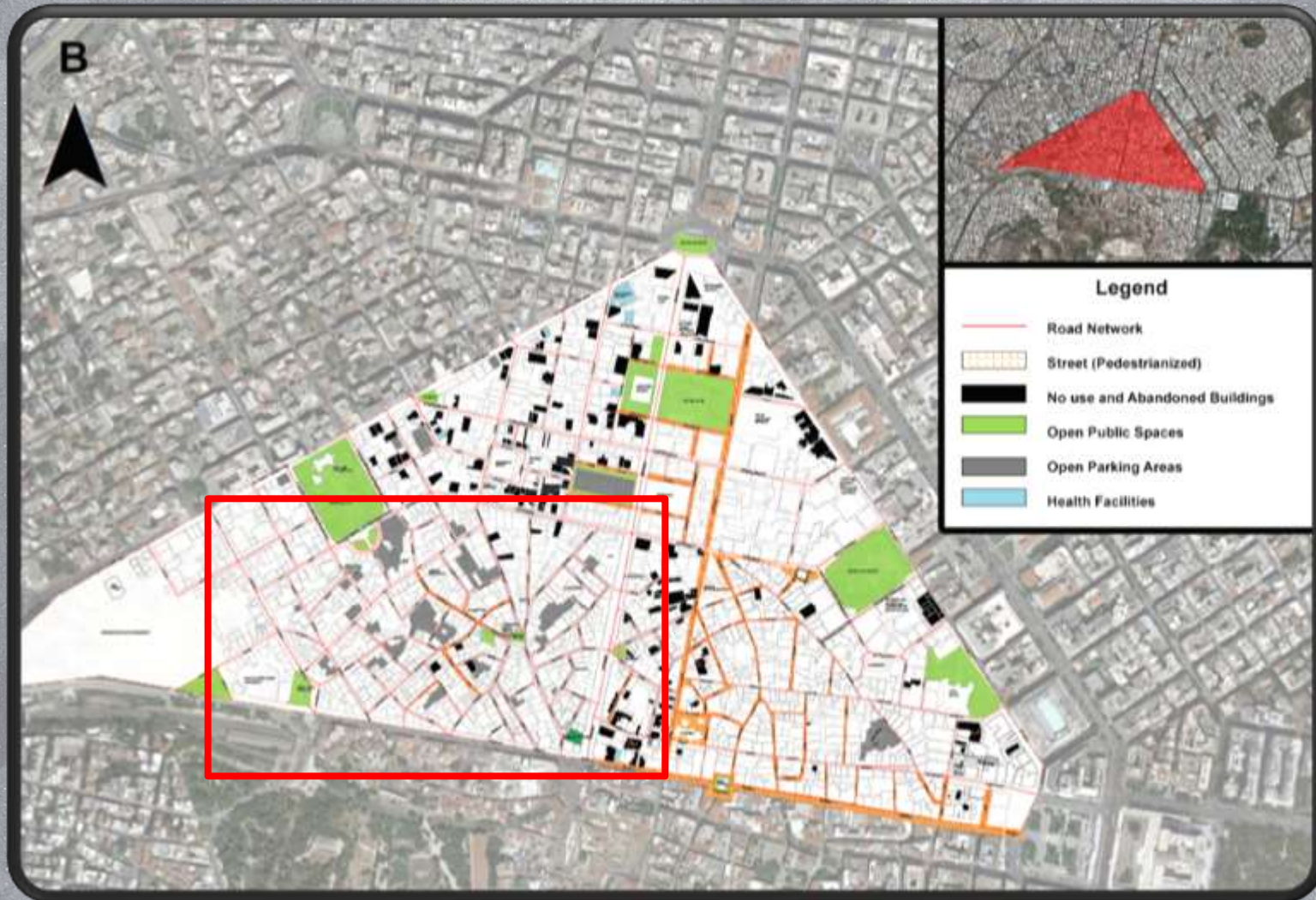
Literature review | spatial analysis tools (Thiessen Polygons) | Design Software (AutoCad, Q-GIS & Photoshop CS5)



Findings-Proposal

The proposal is focused on the identification of the hosting potential of the various open public urban spaces including the open private spaces, and their possible usage in case of emergency situations.

Analysis of the Existing Situation (1)

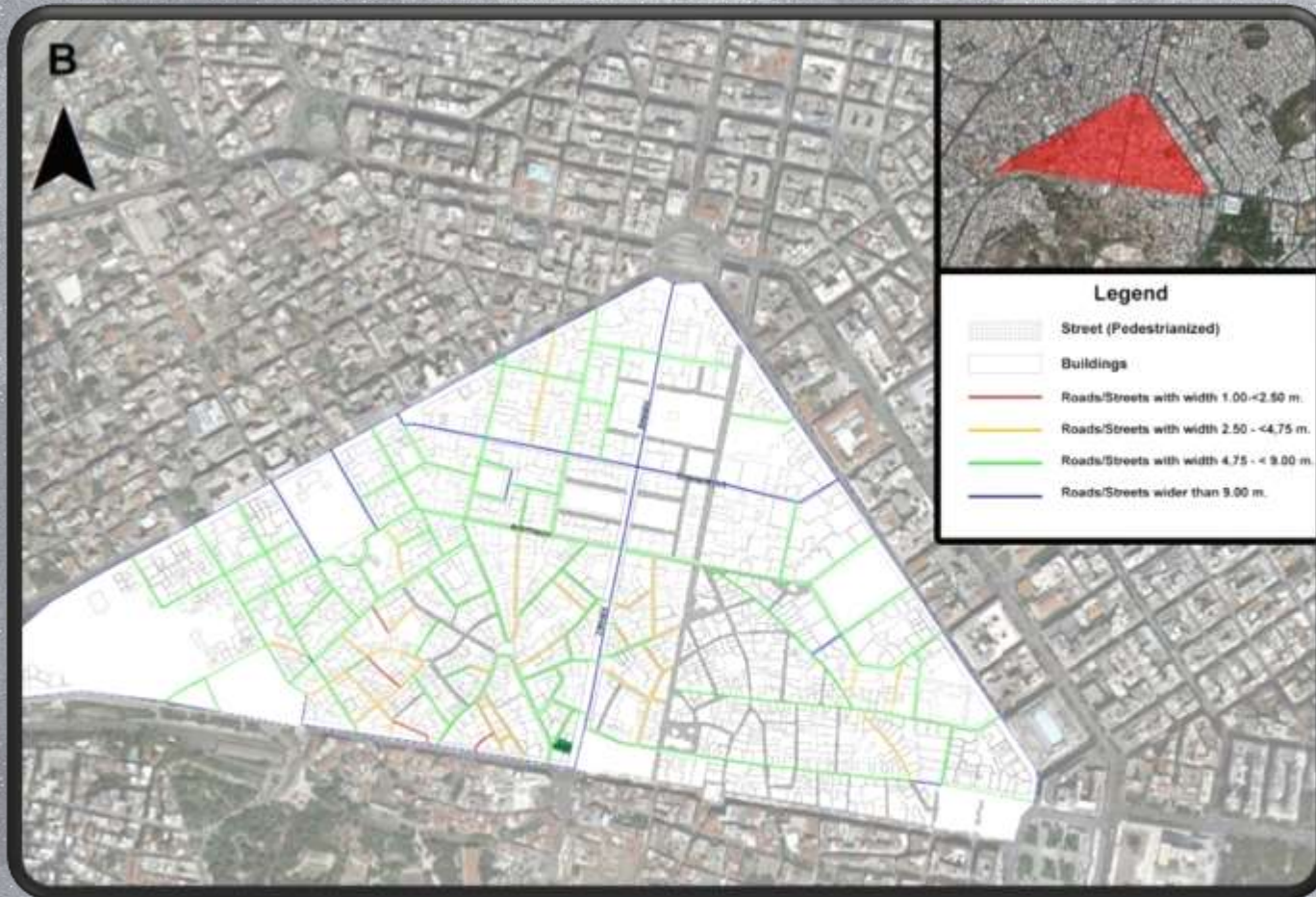


Many small open spaces (OS) in the denser area

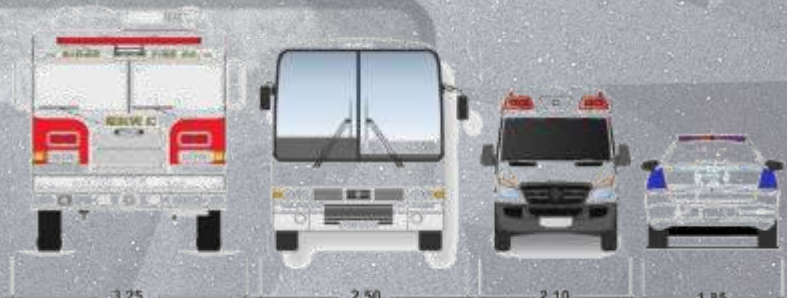
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A few big OS on the northern part

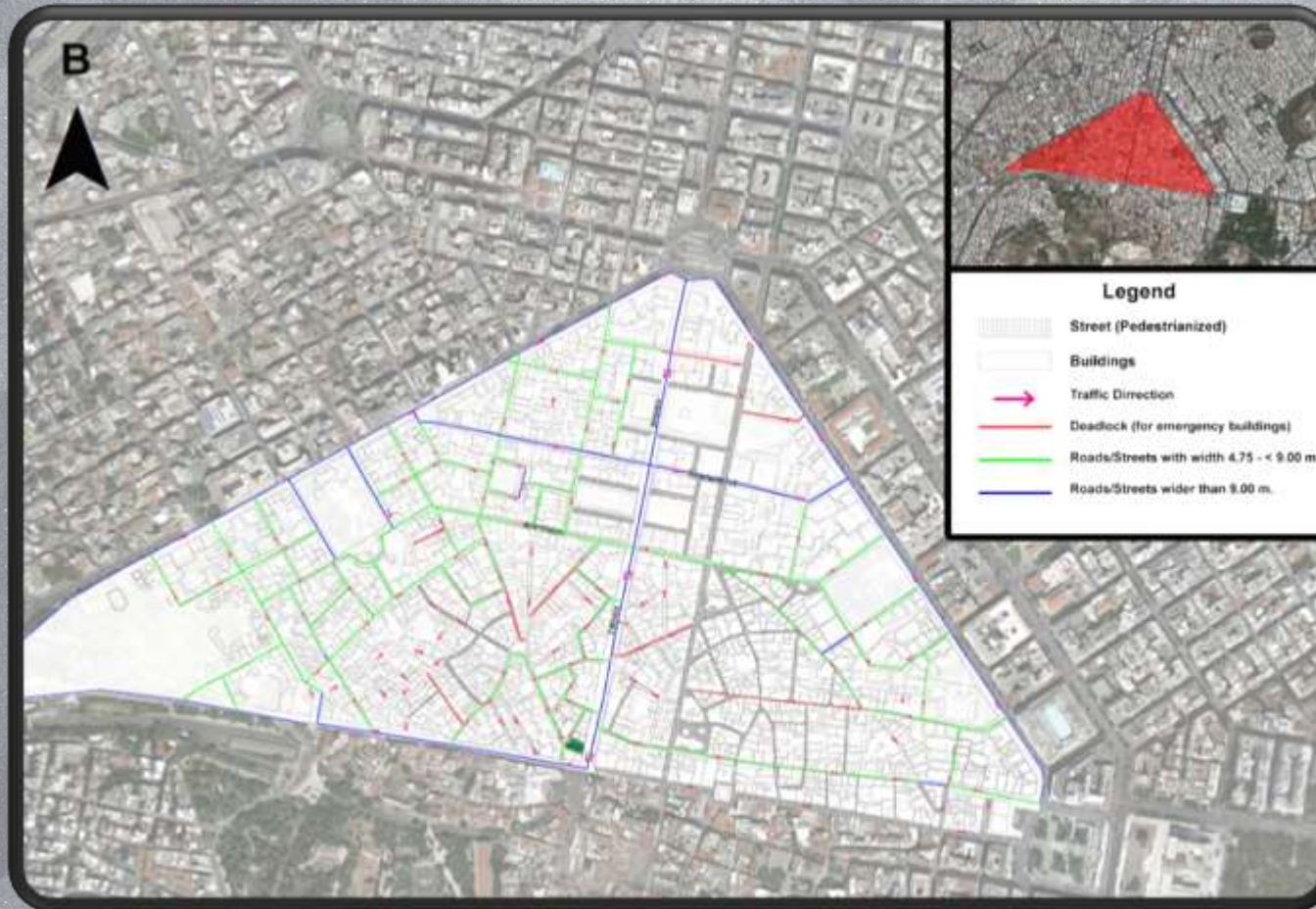
Analysis of the Existing Situation (2)



- Streets were classified into 4 categories according to their width
- A large number of them may be considered as accessible by emergency vehicles



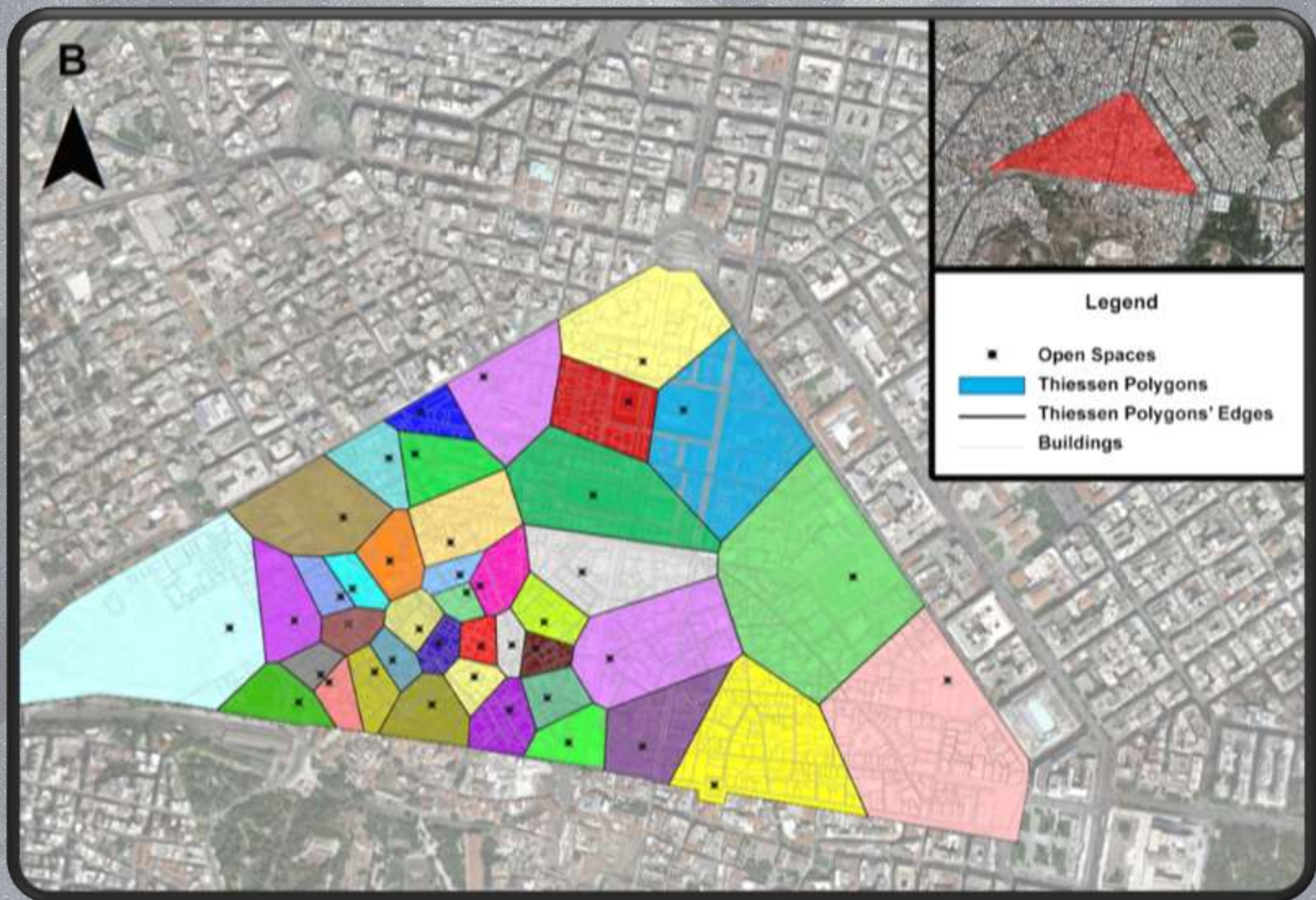
Findings and Proposals (1)



A large number of streets - due to their width - may be considered as accessible by emergency vehicles. However the on-site research has found that:

- the actual operational width of some streets is substantially limited due to both legal and illegal street parking, even on narrow streets, and
- emergency vehicles, due to their size, when moving through such streets face additional difficulty caused by a lack of proper signage

Findings and Proposals (2)



Findings and Proposals (3)



Today



VS

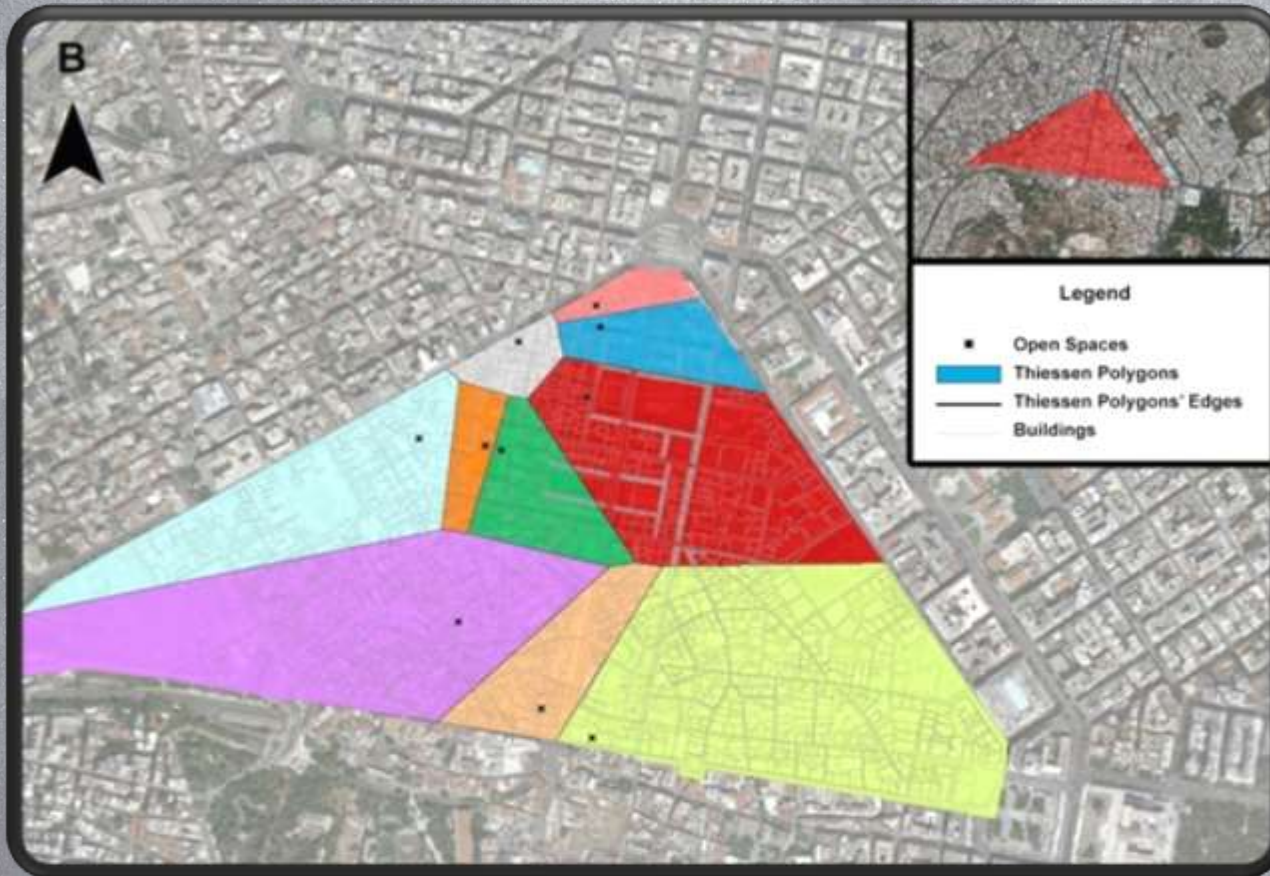


Proposal

Findings and Proposals (4)



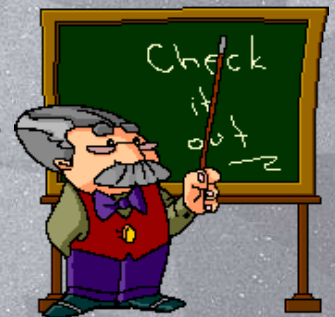
Findings and Proposals (5)



Installation of “smart boards”: dual role
Common information boards and providers of information about the nearest
“temporary shelter areas”/directions – nearby hospitals and health centres

Conclusions

- ❑ Natural disasters are matters on which modern cities must focus and require specific spatial data infrastructure to be prepared.
- ❑ A resilient city is a model which is combined with models of sustainable, economic and social models of city .
- ❑ Athens cannot function as a “resilient city” (narrow roads, extensive vehicular traffic, roadside parking and the absence of signage) – Opportunities (i.e. many open spaces).
- ❑ Our proposals focus on: (a) making Athens more flexible in dealing with natural disasters, (b) improving pedestrian conditions and promoting sustainable mobility and (c) social interaction.
- ❑ Research should be continued to provide the necessary spatial data infrastructure and identify the most appropriate measures that would function well in the various types of disasters.



Thank you!

Bakogiannis E., Kyriakidis C., Siti M., Milioni T. & Potsiou C.

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