

3D Model of Historic Area for Development Rights Determination – A case study in Athens Historic Center

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SUMMARY

The modern urban landscape has been strongly shaped by the concentration of activities and population in urban areas. Cities, and urban areas in general, tend to expand horizontally and vertically. In the case of cities with a history spanning over the centuries, they are characterized by the existence of living testimonies of this history, fully integrated into the contemporary urban landscape. Those cities bridge the past with the present and the future, and serve as open museums and knowledge hubs for both residents and visitors. Strong presence of tangible cultural heritage in contemporary urban life, not only defines the historic city's identity, is also of high value in terms of historical significance.

Thus, tangible cultural heritage is highly protected and regulated by the relevant government bodies, e.g. the Ministry of Culture, that proceed to enforce regulations to prevent construction activities and overall property exploitation with scope its protection.

Historic city centers, such as Athens Historic Center, are an important part of the modern urban landscape, highlighting their rich and over the centuries history. But in order to preserve their valuable characteristics, historic city centers are subjected to strict and protective legal framework, especially in respect to construction and building activities.

Restriction of construction activities has huge impact in the right of plot owners to exploit their property, that leads to restrictions on property rights, in particular their full development, resulting in a quasi-expropriation status. In this quasi-expropriation status, an owner has the full-scale obligations of property maintenance, e.g. property taxations by the central government or local municipal authorities, but is not allowed to proceed to all the activities permitted by building regulations and with no compensations granted. Thus, owners often are reluctant to proceed to

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regular maintenance of their properties, e.g. listed building etc. letting them fall apart.

But the protection of cultural heritage, its promotion and its integration to daily city life pass through the actual protection of property rights and especially of its development rights mainly construction activities. Transfer of Development Rights, TDR is an urban planning and international tool that aims to effectively protect cultural heritage and give to owners the opportunity to fully exploit their development rights to other areas of the city that serve this purpose. But in order for TDR to succeed its determination is a prerequisite, not in 2D level but in 3D.

In this publication, we present the methodology and a paradigm of 3D representation of the build-up surfaces of an area located in the Historic Center of Athens, and especially in the area of the Historic Triangle of Athens. The selected area is located just below the Sacred Rock of the Acropolis and contains important historical buildings. As it is located within the core Center of Athens, it has high building factors that are subject to severe restrictions by cultural heritage protection legislation. The purpose of the 3D representation is to determine and to visualize the restricted development rights in an easily understood and comprehensive way, so as to facilitate the determination of the TDR and of their actual value.