0188 Road Safety Audit of Ellinikon Urban Regeneration Project

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INTRODUCTION

The **Ellinikon Project** involves the transformation of Athens' former international airport site (6,200,000 sqm) to an urban ecosystem for luxury residences, commercial uses and public enjoyment, including the largest coastal park in Europe of 2,000,000 sqm. The foreseen road network serves the movement of road users inside the development while also connecting the project to the existing urban road network.

OBJECTIVE

The present paper aims to present, as a practical **case study**, the Road Safety Audit (RSA) of the preliminary and the final design stage for the main road network of the Ellinikon Project.

BACKGROUND

- RSA is a **very recently introduced measure** for the road design community in Greece and few projects have undergone this procedure since its establishment. Related practical experience of road safety engineers - auditors and road/ highway designers is still rather limited.
- The Project Owner (Lamda Development SA) decided that, although not mandatory, road designs should be assessed by an independent, qualified RSA team in order to **ensure an appropriate level of safety for all road users**.

THE TRANSPORT NETWORK OF THE PROJECT

The Ellinikon Project is surrounded by urban areas with primarily residential land uses of average density.

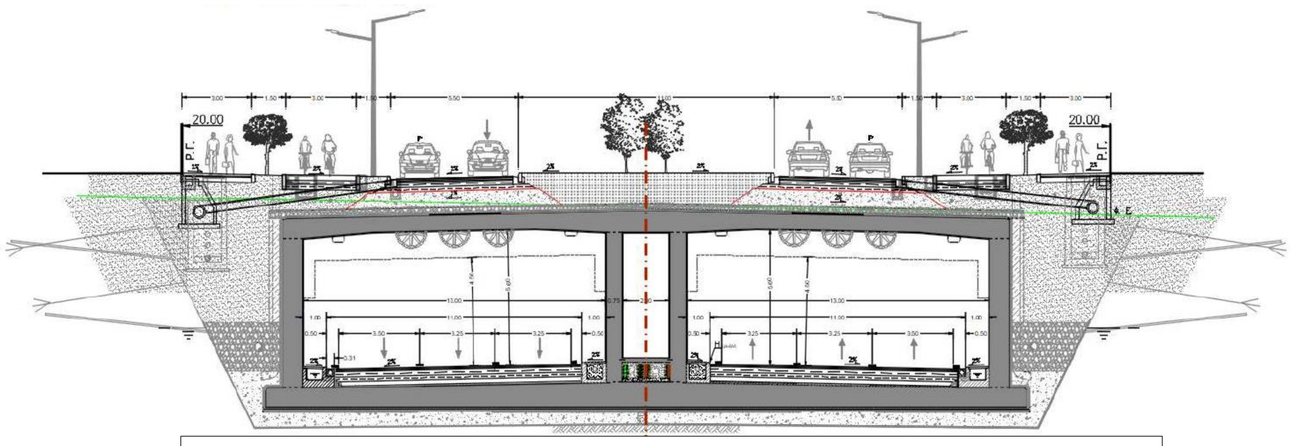
The project's future transport network comprises:
New tramway line
3 new bus lines
Routes for non-motorized users
Primary internal roads of high design standards
9 roundabouts
Secondary internal roads

The main road network of the project

The majority of the main roads are designed as **divided roads, with central median**, serving both as a refuge for the safer crossing by pedestrians and bicyclists, and also for the prevention of left turns from/ to the local road network, which are all served through adjacent roundabouts.

The main intervention in the primary road network of Athens is **the rehabilitation of Posidonos Avenue**, an existing seafront primary arterial road, with a divided cross section and three lanes per direction. The rehabilitation includes centerline relocation and as an underground tunnel.


Existing layout of Posidonos Avenue



Cross section of new Posidonos Avenue in tunnel

RSA FRAMEWORK

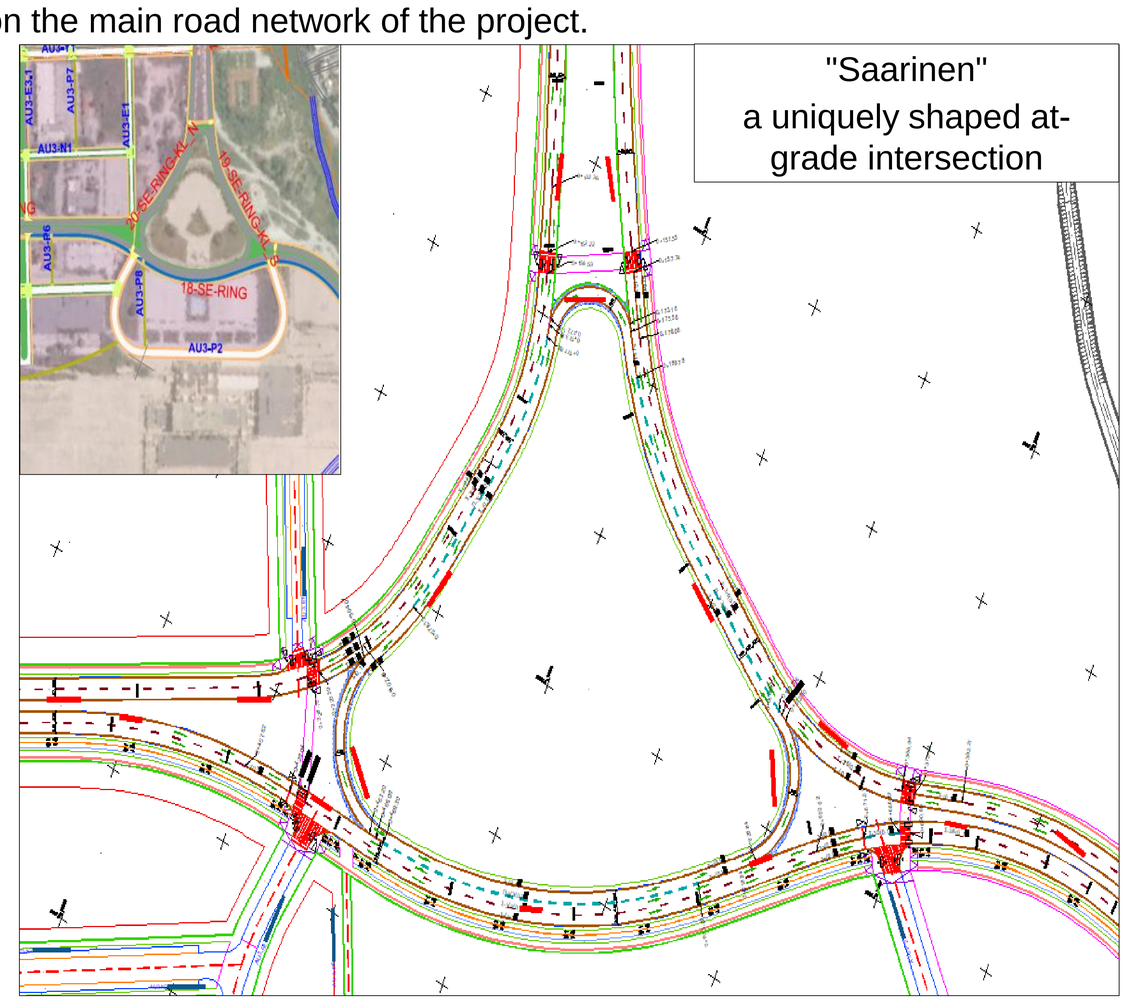
- RSA was performed in 2018 on the **preliminary design stage**, examining the overall transportation network inside the project.
- RSA was performed from 2020 to 2022 on the **final/detailed design stage**, focusing on the main road network of the project.

Interim RSAs
↓
Drawings & reports regularly delivered to the RSA team
↓
RSA reports developed with road safety findings and recommendations
↓
Suggestions incorporated in more advanced updates of the road designs
↓
Avoidance of delays & high level of road safety

RSA CONTRIBUTIONS

The RSA of Ellinikon Project assessed the road network design focusing on aspects such as:

- functional classification of roads,
- access to adjacent properties and on-road parking,
- design and operational speed,
- typical cross sections per road type, with consideration of all road users: motorised vehicles, bicyclists, pedestrians,
- road and streets geometric design,
- layout and geometric design of interchanges and intersections,
- issues related to the location and selection of road restraint systems,
- safety of vulnerable road users (pedestrians, bicyclists, elderly, children),
- safety of public transport users
- evaluation of the available sight distance.



"Saarinen"
a uniquely shaped at-grade intersection