NTUA Campus Road Network Upgrade

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> Artificial Intelligence for Road Safety and Mobility Workshop

> > 8th UN Global Road Safety Week

Athens, 15 May 2025





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NTUA Campus Road Network Upgrade

- Upgrade of NTUA Zografou Campus road network
- Performed by
 - NTUA Department of Transportation Planning and Engineering
 - NTUA Technical Department
- Duration of the project Start April 2024 – ongoing
- Current status
 - vertical traffic signage: construction finished (2025/04)
 - horizontal traffic signage: design complete
 - information signage: design complete
 - digital maps, directions guide: under review
 - specific improvements (kerbs, islands, etc.): under design

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Background

Current status of the road network of Zografou Campus is substandard, affecting traffic safety and level of service.

The Department of Transportation Planning and Engineering assists the NTUA Technical Department in the design and preparation of construction procurement of improvements.







Objectives

- Upgrade the traffic signage and road equipment of Zografou Campus to address specific needs:
 - road safety for all road users
 - speed management
 - self-enforcement of parking restrictions
 - readability of signs
 - improved aesthetics/ maintenance
- Provide complete and efficient guidance to NTUA students, staff and visitors through an updated, modern system that combines both digital guidance and physical information signs
- Signage improvements encourage road users not to violate traffic regulations





Methodological Approach

- Phase 1: Traffic Operation and Safety Inspection
- Phase 2: Traffic Signage Design (regulatory & warning vertical signage, road markings)
- Phase 3: Information Signage, Guides and digital maps
- Phase 4: Design of specific treatments (kerbs, islands, etc.) for road safety and traffic operation improvements



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Traffic and Safety Inspection

- Based on extensive site visits, with the following aims:
 - record current road safety and traffic operation conditions,
 - identify shortcomings,
 - suggest appropriate treatments,
 - categorize treatments in short-term and medium-term, and
 - estimate construction cost for short term treatments.
- A total of 23 different groups of issues (and respective treatments) were identified.



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Αξιολόγηση Οδικής Ασφάλειας και Λειτουργικότητας Οδικού Δικτύου Πολυτεχνειούπολης Ζωγράφου

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Regulatory & Warning Traffic Signage

- A complete design of horizontal and vertical traffic signage of NTUA Campus network, including:
 - horizontal markings (delineation, crossings, pavement arrows, marked traffic islands, etc.)
 - road surface reflectors,
 - speed bumps,
 - regulatory and warning signage (introduction of 30km/h maximum speed limit),
 - bollards for parking restrictions,
 - safety mirrors, etc.
- Construction of vertical signage recently completed. Overall, 565 signs on 256 sign posts, 5 safety mirrors and 150 bollards were installed.



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Information Signage and Guides

- > A holistic guidance system was developed, at several hierarchy levels (Schools/ Parking Lots, Buildings, Entrances, Rooms), with codenumbering of entities and colour-coding of Schools.
- \succ Outputs of the project:
 - Digital and clickable general map coupled with 11 area maps
 - Map-signs in physical form (general and per parking lot)
 - Information signage design (new guide signs, signage of parkings, etc.)
 - Building signs, Entrance Signs
 - Guide providing instructions to NTUA visitors







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Local treatments

- Specific improvements affecting kerbs, sidewalks, islands at intersections etc. to address issues identified during the Inspection and improve road safety and traffic operation
- Including design, cost estimation, support of the Technical Service for procurement and construction







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- 30km/h speed limit all over NTUA Campus, further reduced to 20km/h in the central area
- Efficient guidance (physical maps, digital maps, directions signs) for all road users
- Developing an exemplary safe, wellmaintained, clean and traffic efficient road environment for all road users in NTUA Campus





Future Challenges

- Construction of signage works and road safety treatments, as designed (funding, procurement, construction supervision)
- Systematic maintenance of installed signage (avoid vandalism)
- Expansion of information guidance inside buildings (responsibility of Schools & Departments) - both in physical and digital form
- Improvement of walkability in the Campus and access to persons with reduced mobility
- Rehabilitation of major junctions (roundabouts)





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