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Municipality of Egaleo
www.aigaleo.gr

Egaleo Smart City

Dr. Dimitris Tzempelikos
Head of Directorate of Planning & Development
City of Egaleo

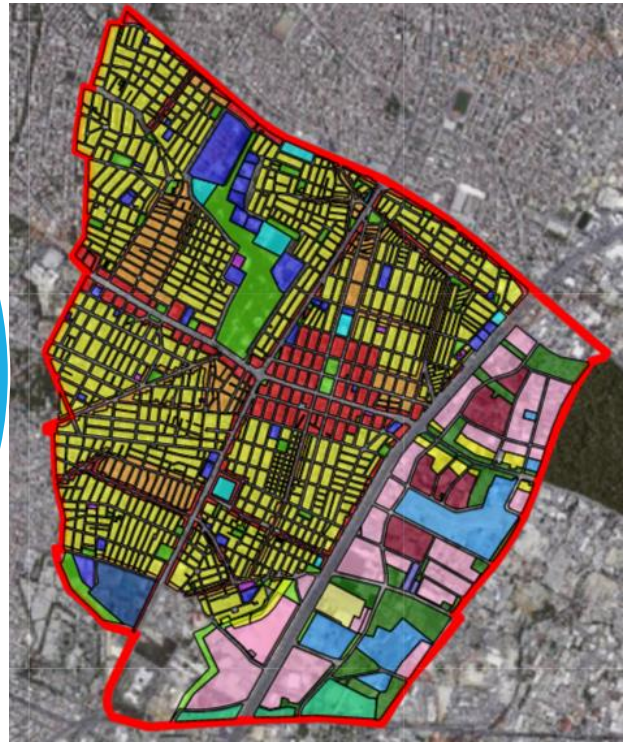
14 December 2023, Athens

Egaleo Profile

- The City of Egaleo is situated at the west region of Athens
- Is one of the oldest municipalities in Greece
- City of Egaleo has been built at both sides of the ancient road "*Iera Odos*"
- The city is inhabited by 64.828 people (Census 2021)
- Employees: 800 people
- Area: 6,45 km²
- Economical budget: 75m Euros
- One university (www.uniwa.gr)
- Three metro stations
- Urban city
- "*Elaionas*" region

The Municipality funds, organizes and develops initiatives in the fields of:

Culture and sports as well as on issues of Social policy, Environment, Technological modernization of services and Civic protection



Municipality of Egaleo European Projects

- Horizon 2020 / 5G ESSENCE
- Horizon 2020 / 5GENESIS
- Horizon 2020 / 5G!Drones
- Horizon 2020 / RESPOND-A
- Erasmus+ / Q-SER

2017 – ongoing, Budget > 3,5 M

- Horizon 2020 / TransformAr
- Horizon / C2IMPRESS
- Erasmus+ / UAMschool4cities
- Erasmus+ / Urban Youth Garden
- Horizon / BIN2BEAN
- Horizon / ImAFUSA
- I3 / AMBITIOUS
- NEB/EUI-IA - Rock the Block

September 2023, Budget > 2,4 M

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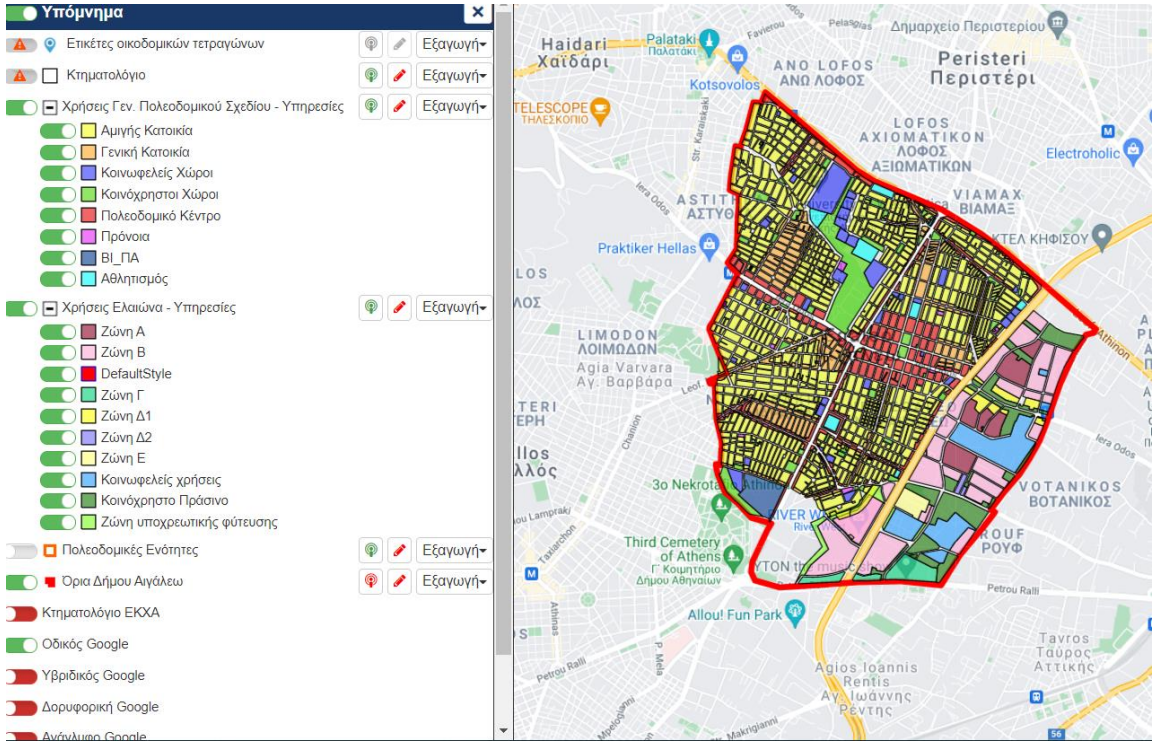
https://aigaleo.mygis.gr/



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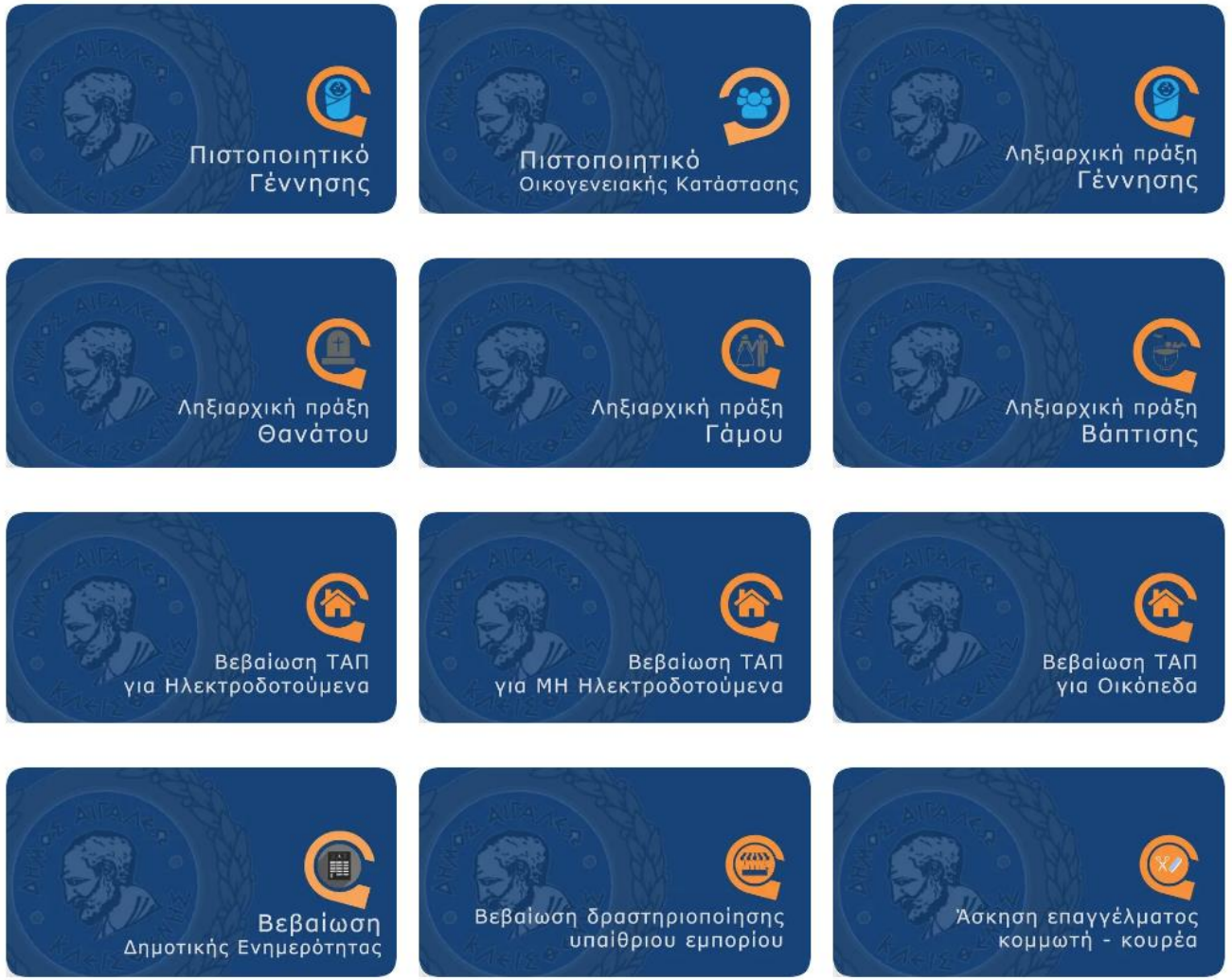
https://eservices.aigaleo.gr/



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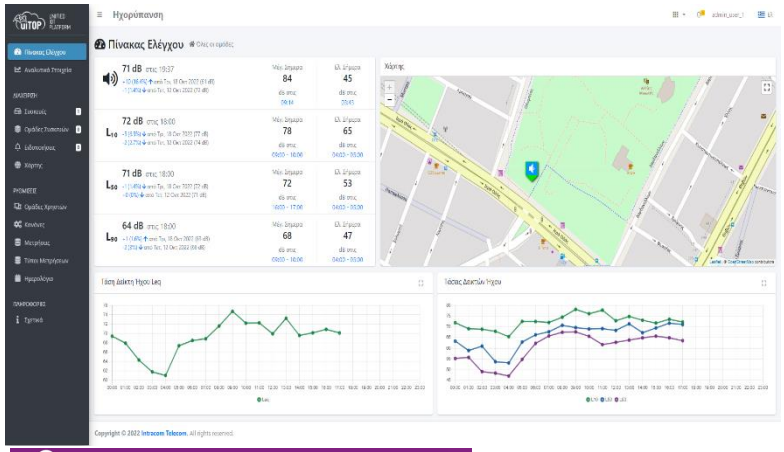
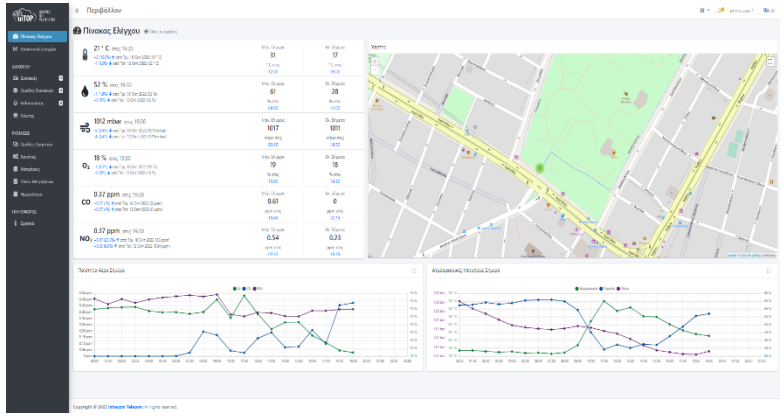
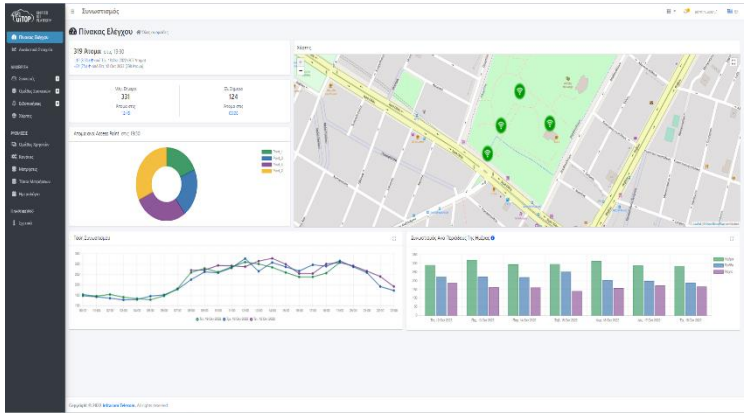
https://smartsquare.aigaleo.gr/







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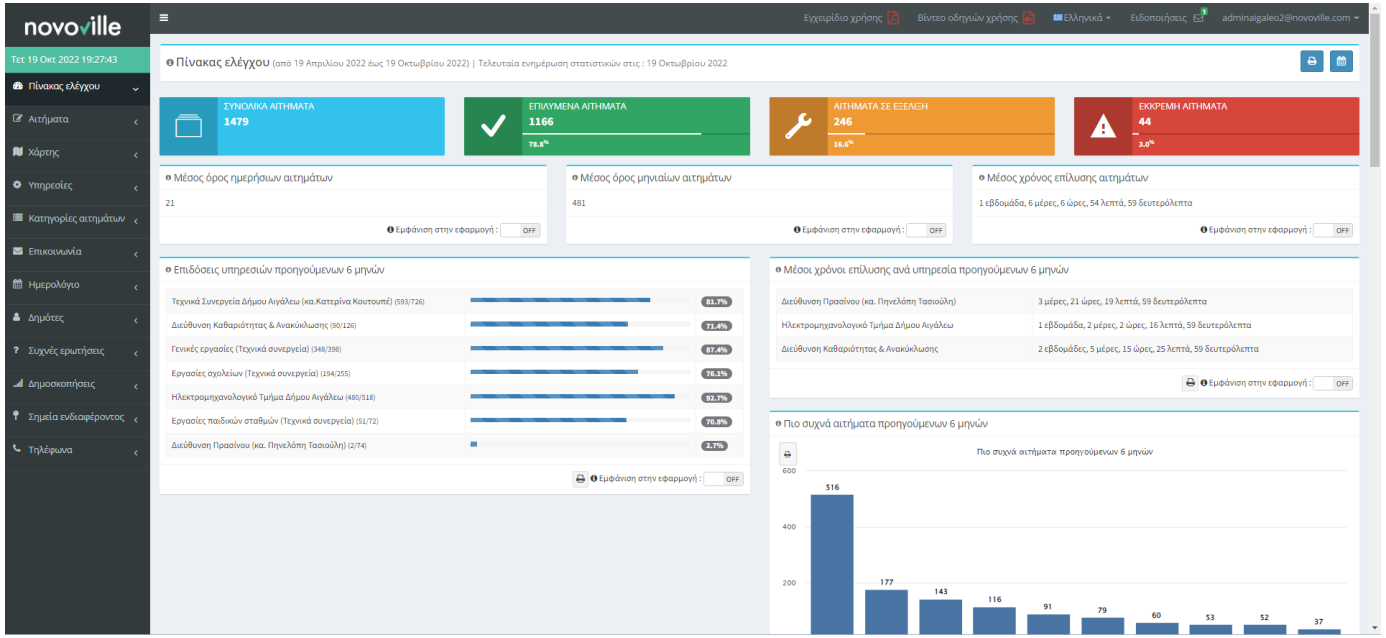
https://novoville.com/el/



Implementation of Smart City Applications in the city of Egaleo

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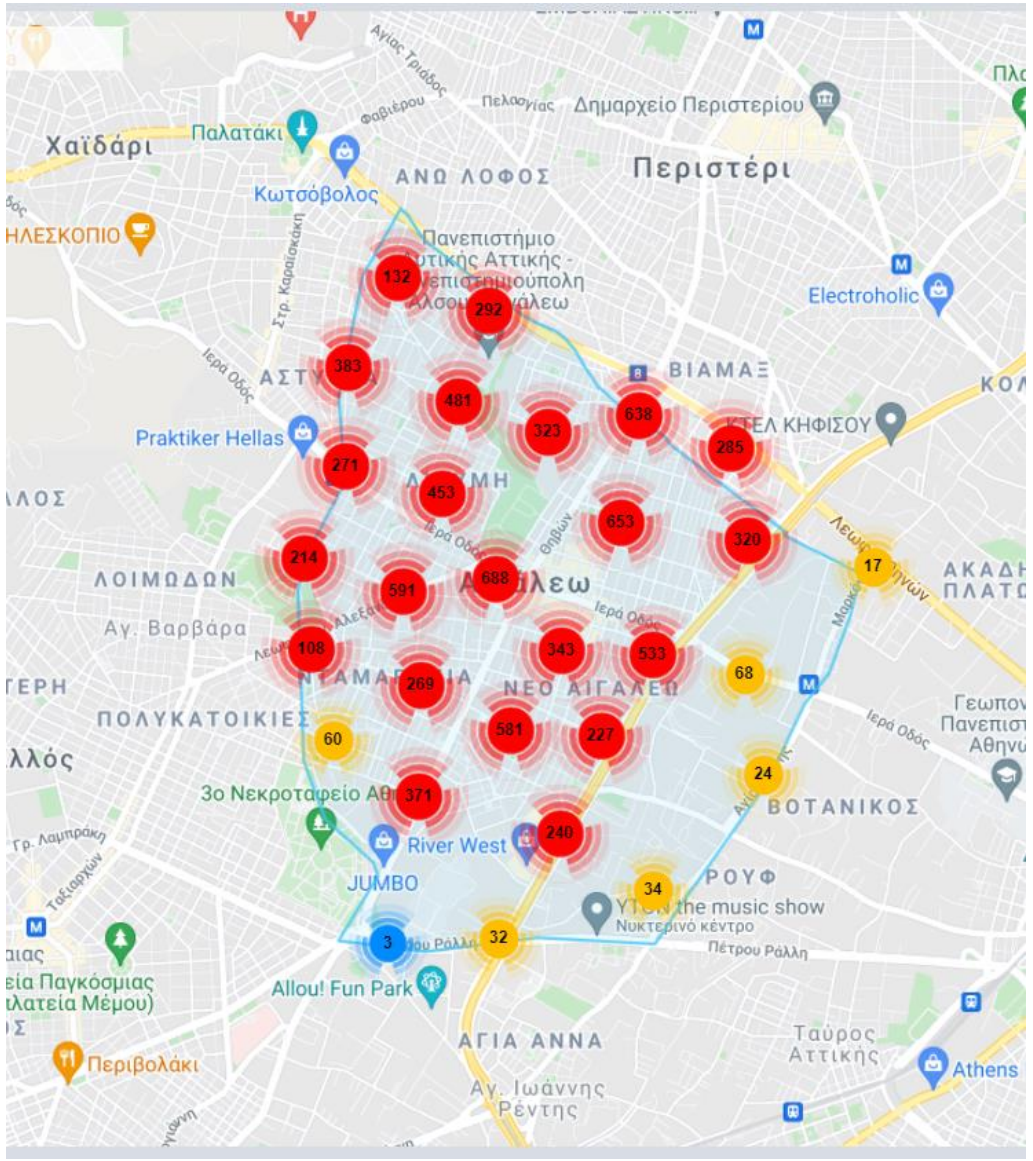
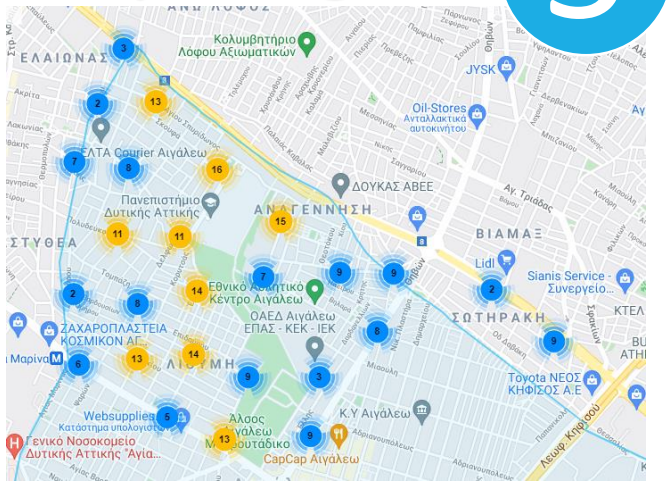
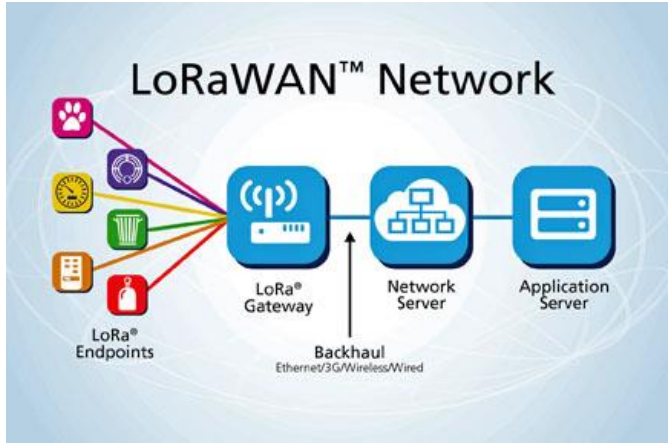
Existing network data		
Type	**Power (W)**	**Number**
Hg	125	4423
Na	70	318
Na	150	574
Na	400	159
HQI	150	77
HQI	250	191
LED	18	417
LED	24	149
LED	28	676
LED	30	16
LED	35	15
LED	40	16
LED	50	58
LED	60	327
LED	69	347
LED	100	80
LED	125	230
LED	137	4
LED	150	3
MH	100	555
PL	42	112
Total		**8747**

Total power: 960 kW







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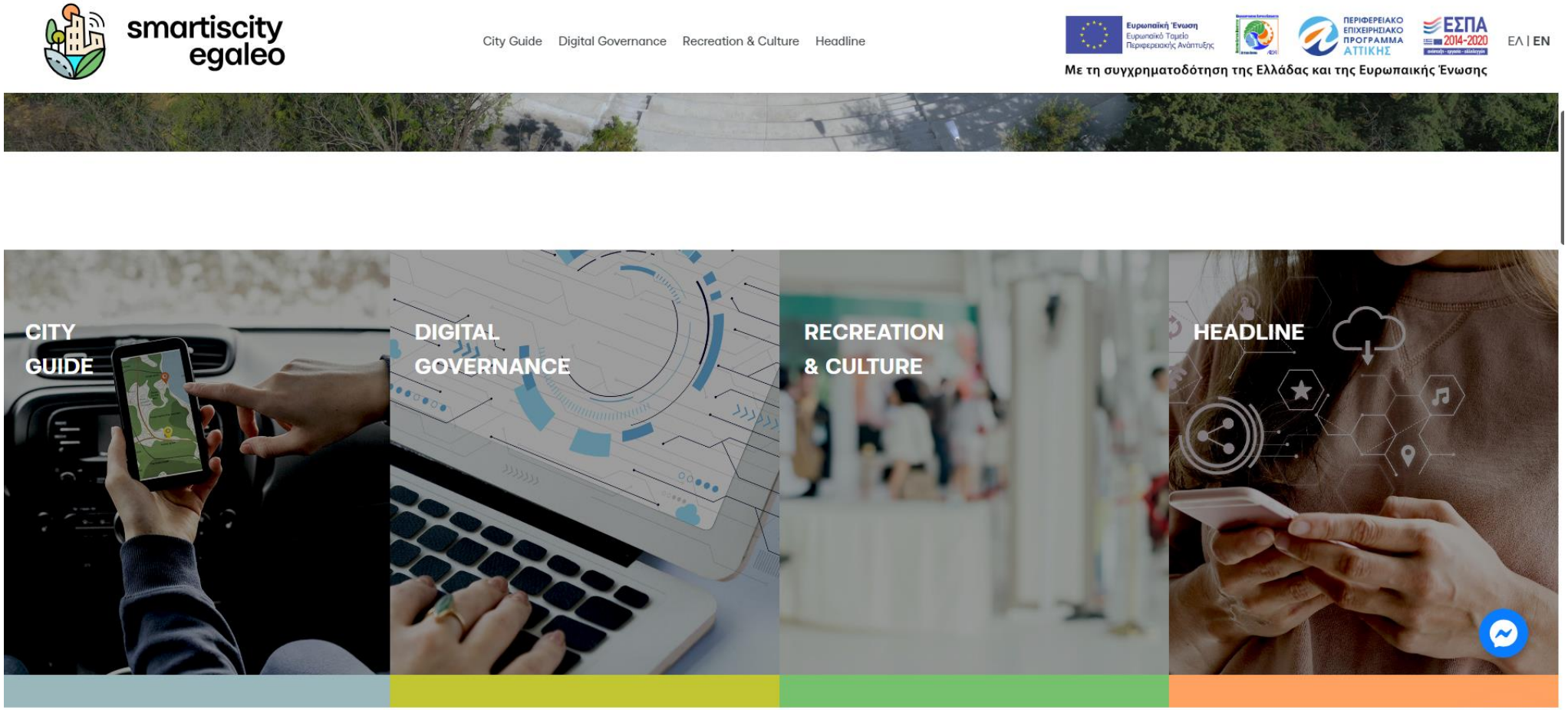

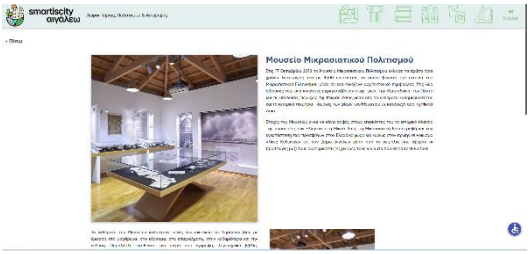

Egaleo Smart City platform

- City guide maps (digital guide, recreation and walks, Egaleo MyGIS)
- Digital governance (consultations with citizens, citizens' requests, digital certificates, repository of municipality's surveys)
- Recreation and culture (virtual tour in municipal grove, Asia Minor culture, digital guest book, games and contests, voluntary actions, municipal library)
- Business Intelligence (BI) platform (A decision support platform with a continuous improvement of the services of the Municipality of Egaleo. This platform includes tools, techniques, and technologies for the analysis of all the city's data and the extraction of useful knowledge that will be used in the process of making business and strategic decisions, in a historical, current and forecast context)
- Interface subsystem and other user applications (The interface subsystem and other user applications cover the user's communication and interaction points with the City platform. These include: the interface of smart mobile devices, the ChatBot interface and social network interfaces)

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smartcity.egaleo.gr

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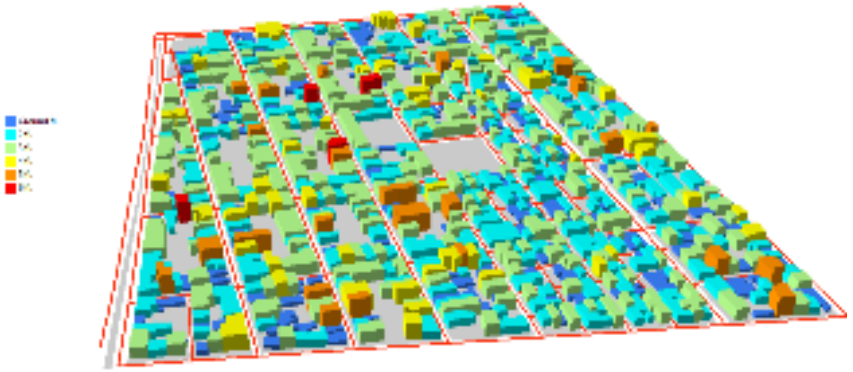

Fig. 2: Distribution of population generated for the Egaleo CSA.

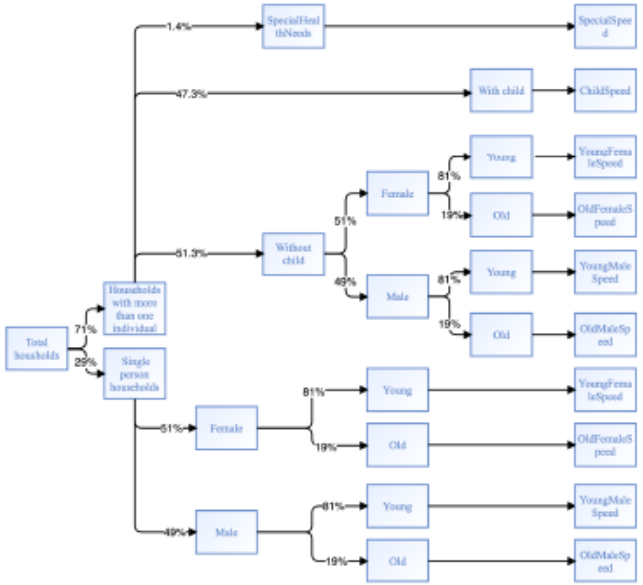

Fig. 4: Categorizing population by walking speed.

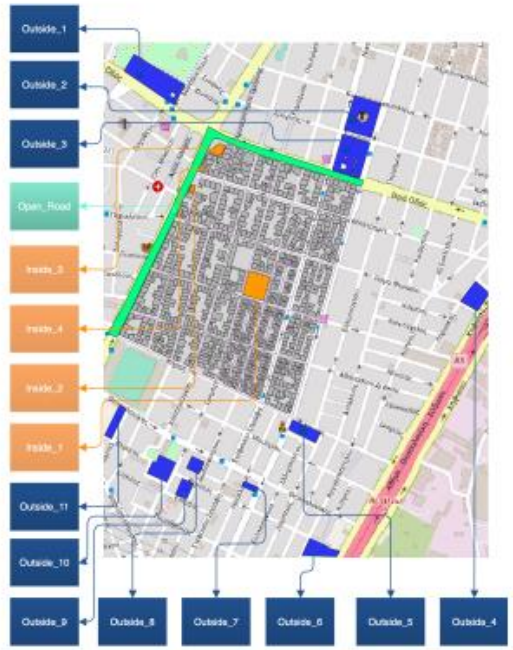

Fig. 6: Visualization of Evacuation Centers in the Egaleo CSA.

Implementation of Smart City Applications in the city of Egaleo

- Hazards: *heat waves, extreme precipitations, thunderstorms, and flooding events*
- Key Community Systems (KCS): *Health, Infrastructures, Urban planning*

- Pre-defined solutions
  - Smart climate stations (**SCS**)
  - Citizen app engagement (**CAE**)
  - Awareness-raising modules (**AWAR**)
  - Climate innovation hub (**CIH**)
  - Demand analysis for social services/infrastructures (**DSI**)

TransformAr

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Smart climate stations (SCS)

Hybrid system:

- 6 commercial microclimatic stations (SmartMe weather station)
  - Temperature
  - Atmospheric pressure
  - Relative humidity
  - PM2.5 & PM10 particles
  - Rainfall
  - Wind speed & Direction
  - CO_2 concentration

- 15 - Custom environmental IoT stations
  - Temperature
  - Atmospheric pressure
  - Relative humidity
  - PM2.5 & PM10 particles
  - CO_2 concentration

4G

LoRaWAN®

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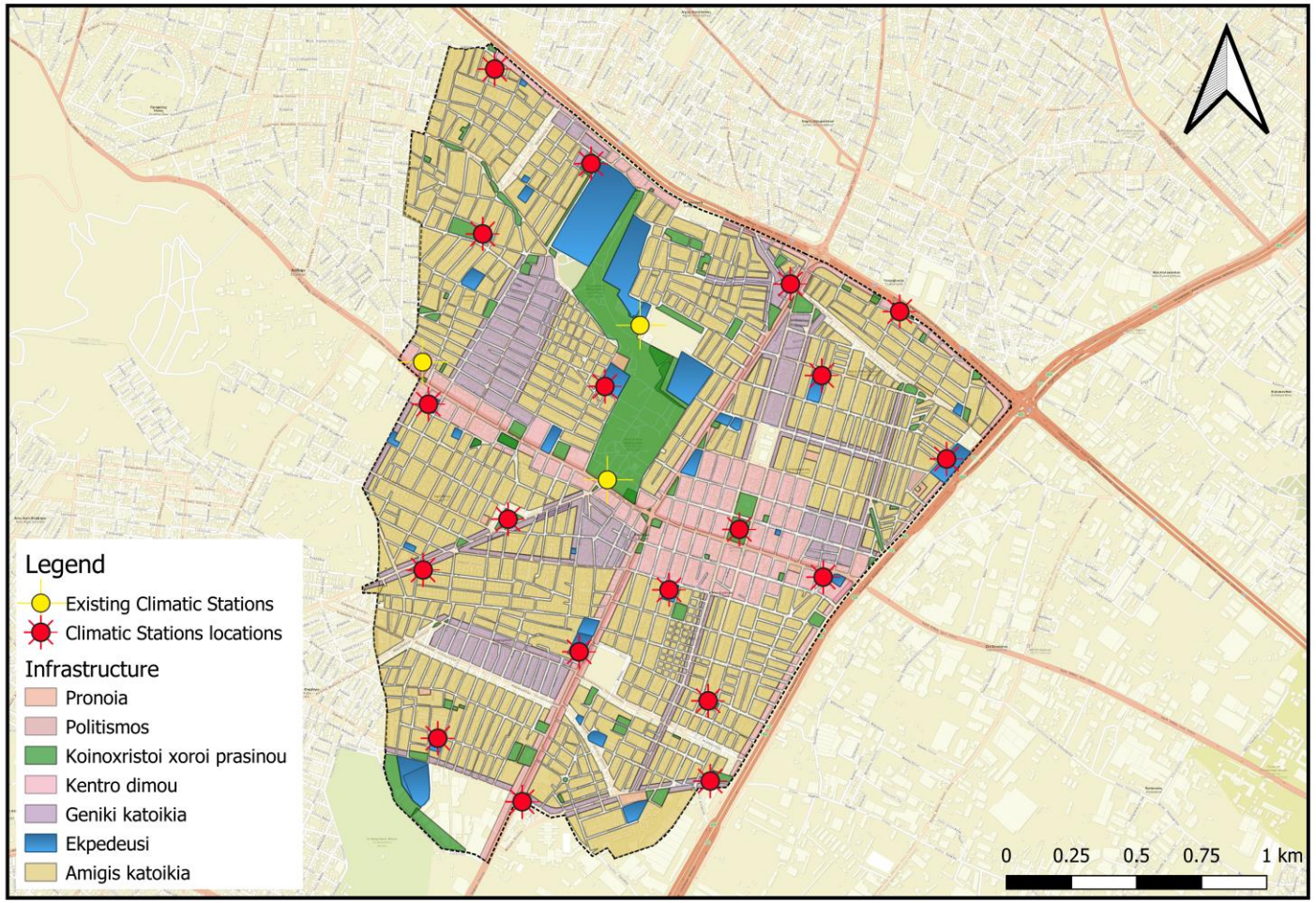
Environmental & climatic stations network



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Data collection and analysis

Municipality of Egaleo

Citizen app

Data analysis

Environmental stations

Climatic stations

HNMS

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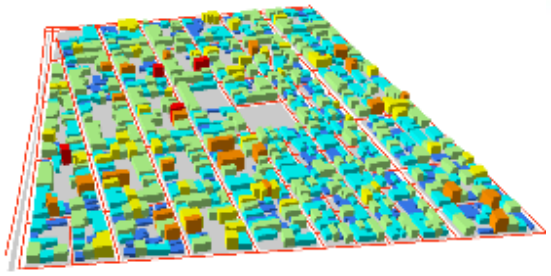
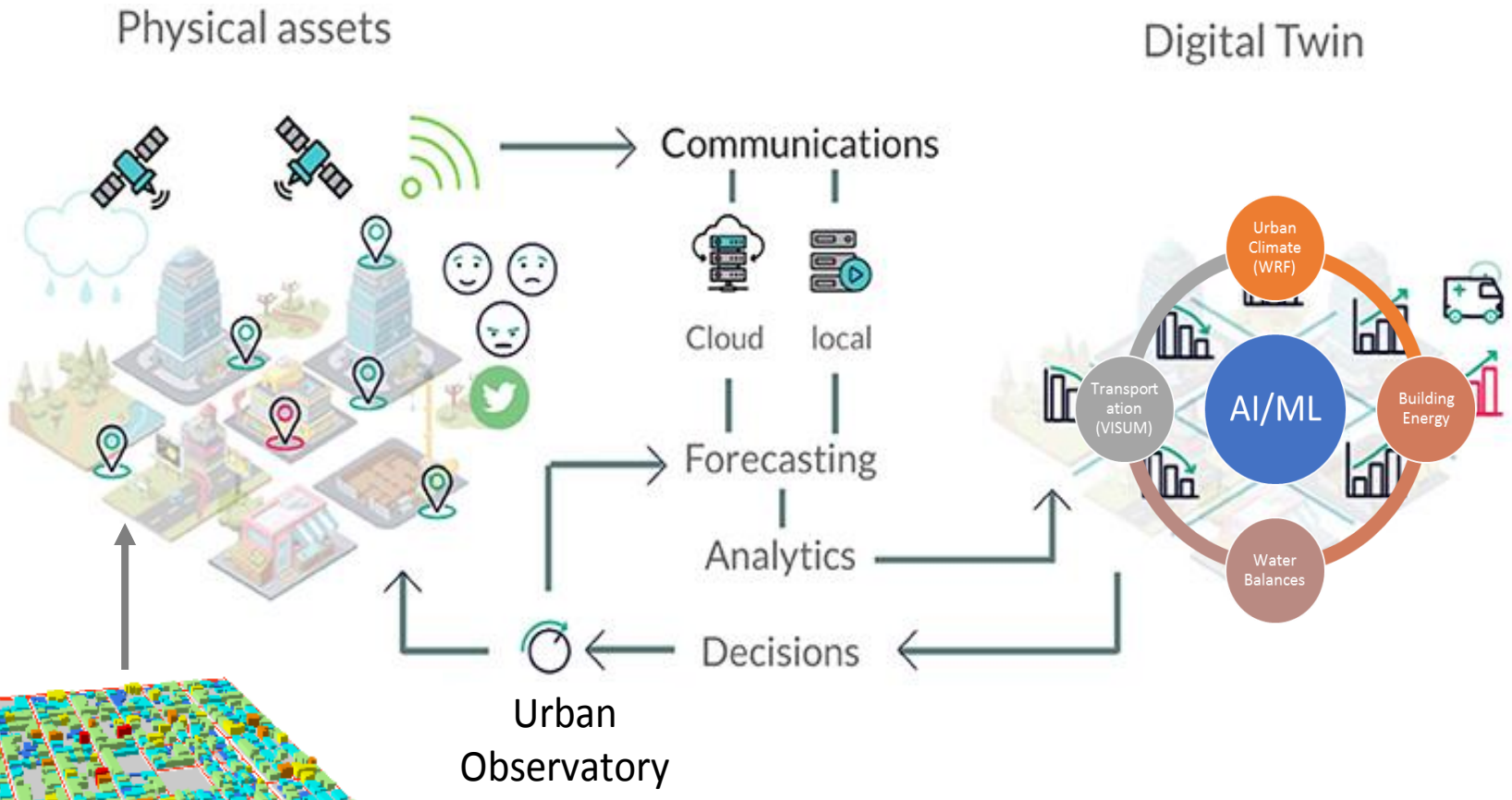
Towards urban Digital Climate Twin





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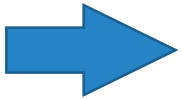
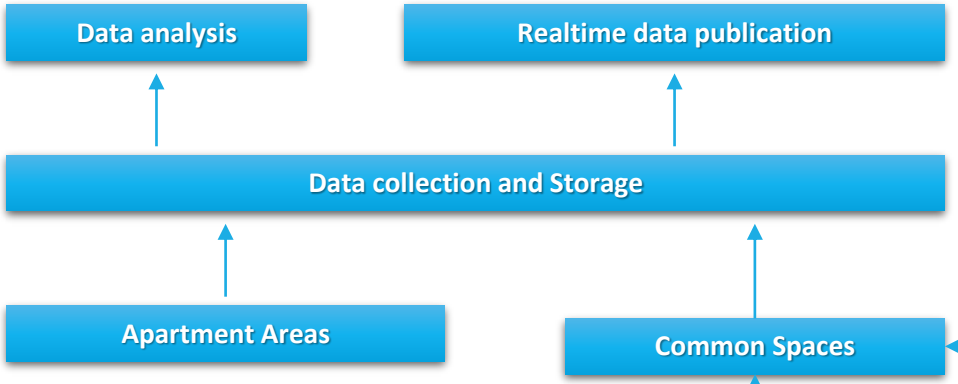
Rock the Block





Environmental and consumption sensors

- Indoor climatic station measuring: Air temperature, Relative humidity, PM2.5 and PM5
- Solar and UV radiation
- Water volumetric flow meter
- Natural gas volumetric flow meter
- Power consumption meter

Safety & Social

- Accelerometer and gyroscopic sensor
- People counter
- Smoke detector

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- ***IoT sensors*** placed in EGL (climate, energy consumption, CO_2 levels, transportation, water volumes), covering infrastructures, economic sectors and quality of life for citizens.
- ***E.O. data*** (land cover, urban heat, CO_2-air pollution levels, vegetation growth, etc).
- ***Socio-economic data*** collected from EUROSTAT and the Hellenic Statistical Service, local studies.
- ***Citizen collected data*** (through workshops, questionnaires, electronic surveys),
- ***Integrated modelling*** for the urban **climate** at very high spatial scales (250 m grid cells). This will be linked to open source:
  - **Building Energy** Balance model
  - **RES potential** model (implementation of rooftop PV/wind turbines)
  - Urban **transport**
  - **Water** balance
  - **Vegetation growth**
- **Urban observatory** where all collected data will be processed and transformed into suitable (spatio-temporal) indicators accurately depicting the climate/energy/carbon/social attributes and diagnostics.

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Climate Innovation hub in Egaleo, #hub.egaleo.gr

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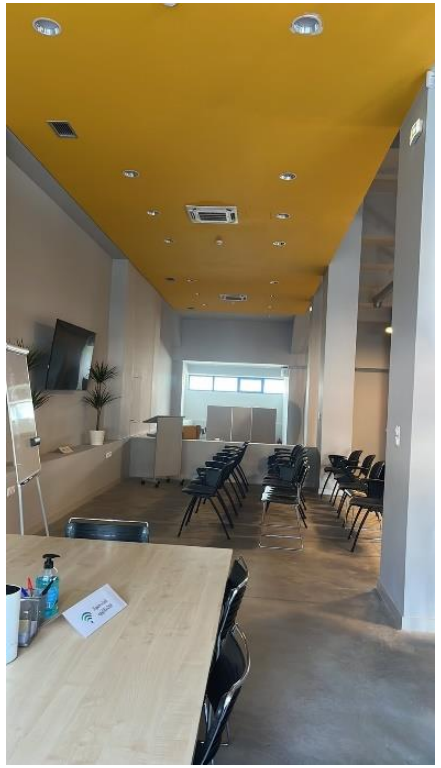

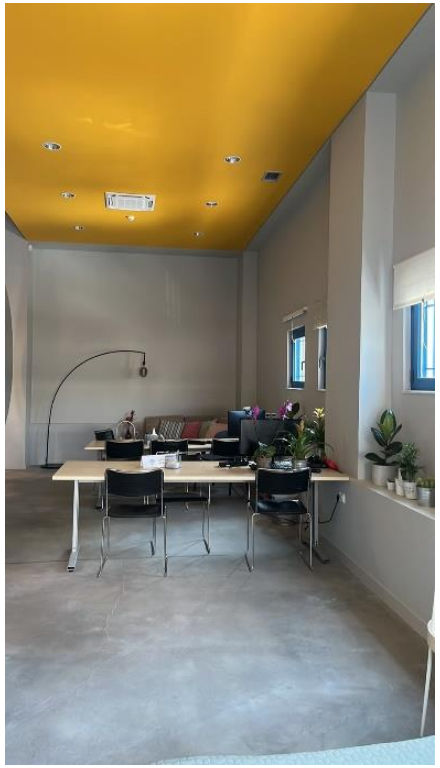

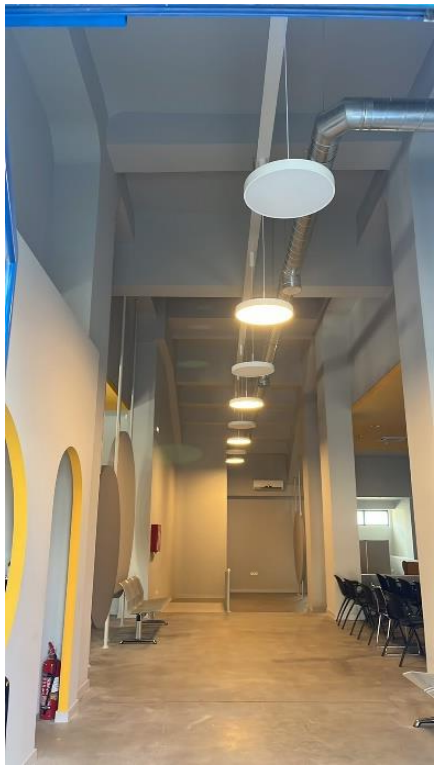

Thank you!

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