

Navigating Sustainable Masterplan Design using STAMP (Sustainability Toolkit for the Assessment of Masterplans)

alopedis

What is sustainability?

Definition: meets the needs of the present without compromising the needs of future generations to meet their own needs

(UN World Commission on Environment and Development (UNCED) – 1987)

- ▶ economic growth,
- ▶ environmental care
- ▶ social well-being





What is a Sustainable Masterplan

Social, environmental, and economic needs must be taken into account.

Meets human needs while preserving the environment so that these needs can be met not only in the present, but in the indefinite future



Why do we want sustainability in Masterplans?

A successful sustainable masterplan will help make sustainable, inclusive and safe spaces for people to live in, and enjoy, for generations to come.





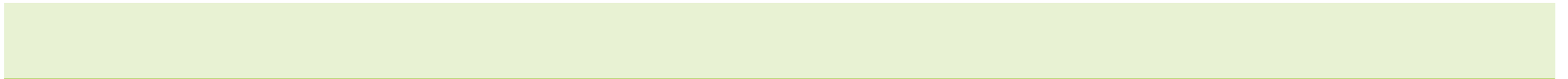
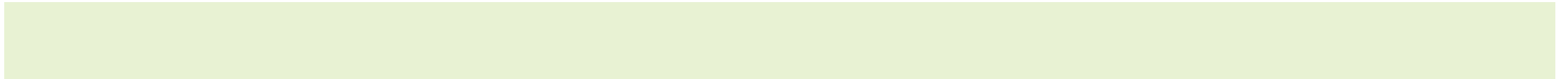
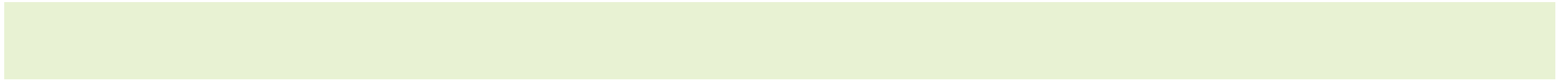
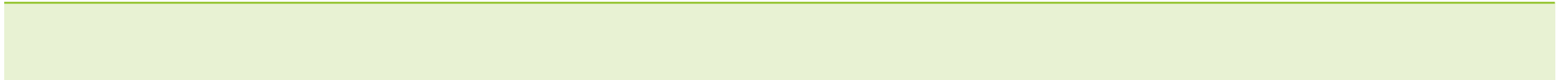
Announced 2021 - Aims to be the Most Sustainable City in the World

- ▶ The project is set to offer “*solutions that improve the quality of life, protect nature and the environment, and prepare the next generation for a better and more conscious future*”.
- ▶ The masterplan includes renewable energy sources, fresh water, autonomous transportation, and diverse housing options
- ▶ <https://cityoftelosa.com/>

How can we achieve sustainability and the highest standard of living for as long as possible?

Minimise

Maximise



How can we achieve sustainability and the highest standard of living for as long as possible?

Minimise	Maximise
Energy/Power Consumption	Renewable Energy Sources
Waste	Recycling
Environmental Impact	Responsiveness to Climate Change
Use of Resources	Re-Use of Resources
Pollution	Inclusivity
Land Coverage	Biodiversity and Green Areas
Use of Car Use	Sustainable Mobility



- CTP** Campus Planning Purposes
 - 1. Campus Planning Purposes
 - 2. Campus Planning Purposes
 - 3. Campus Planning Purposes
 - 4. Campus Planning Purposes
 - 5. Campus Planning Purposes
- ESC** Energy Center
 - 1. Energy Center
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- ESC100** Energy Center 100

Code	Description	Area (sq ft)	Count
UC1	UC1 - [Description]	100	100
UC2	UC2 - [Description]	200	200
UC3	UC3 - [Description]	300	300
UC4	UC4 - [Description]	400	400
UC5	UC5 - [Description]	500	500
UC6	UC6 - [Description]	600	600
UC7	UC7 - [Description]	700	700
UC8	UC8 - [Description]	800	800
UC9	UC9 - [Description]	900	900
UC10	UC10 - [Description]	1000	1000


 PROJECT NO. [Number]
 DATE [Date]
 BY [Name]
 CHECKED BY [Name]
 APPROVED BY [Name]
UCY
 MASTER PLAN PROPOSAL

Sustainable masterplans take into account:

environmental, social and economic issues

the community and other stakeholders (stakeholder engagement)

Inclusivity (for all population groups)

mobility/road safety

air quality, energy and climate

the preservation and protection of the local biodiversity

water management

soil and landscape

waste management

land uses

construction and materials

How can we ensure/measure sustainability in Masterplans?



BY CARRYING OUT AN ENVIRONMENTAL IMPACT ASSESSMENT



CARRY OUT A CLEAR PUBLIC PARTICIPATION PROCESS

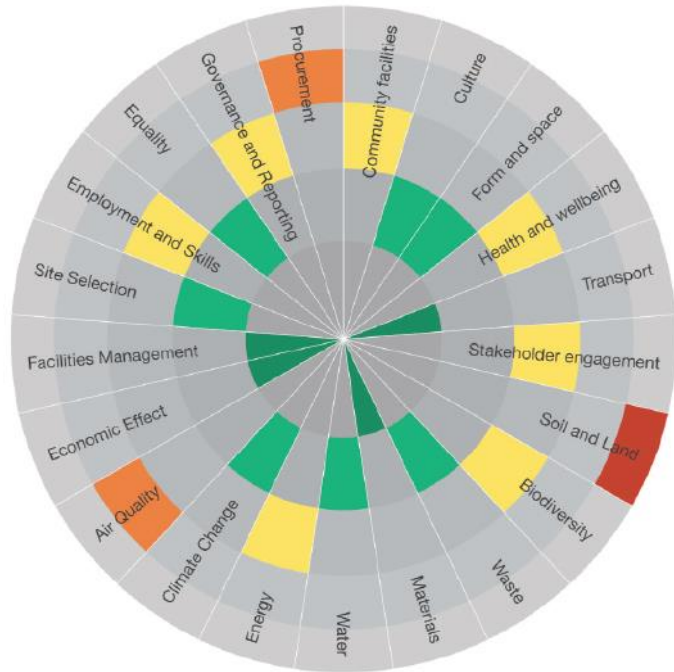


BY EVALUATING VARIOUS FACTORS AND METRICS, TO IDENTIFY AREAS FOR IMPROVEMENT

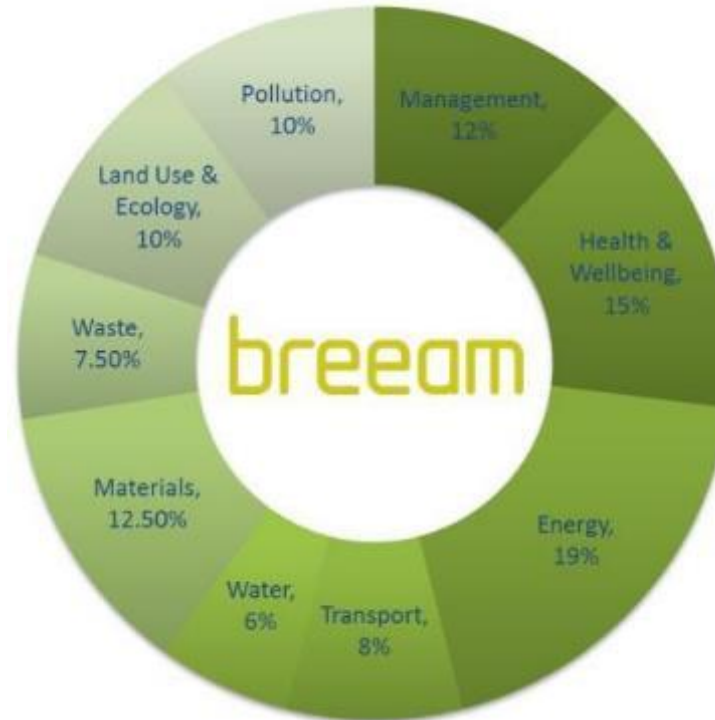


ENSURE THAT THEY CONTRIBUTE POSITIVELY TO THE ENVIRONMENT, ECONOMY, AND SOCIETY.

Sustainability toolkits



Sustainable Project
Appraisal Routine (SPeAR)



BREEAM Communities



LEED Certification for
Neighborhood Development

No simple and practical tool designed specifically for masterplans

The need for a sustainability toolkit for assessing the degree of sustainability of masterplans was identified



Toolkit to appraise masterplans based on key themes



Provide immediate feedback



Recommend actions needed to improve the sustainability of a project



to assist masterplanners and designers incorporate sustainability as much as possible into their design

STAMP (Sustainability Parameters)



Created through a collaboration between ALA Planning Partnership Consultancy L.L.C., the Society and Urban Form (SURF) Research Lab and the Software Engineering and Internet Technologies Lab at the University of Cyprus



CURRENTLY IN INITIAL STAGES OF PRODUCTION



FREE TO USE WEB PLATFORM



COMPRISES SIMPLE QUESTIONS THAT CAN BE ANSWERED BY THE DESIGNERS (SELF CHECK)



THEMATIC ASSESSMENT



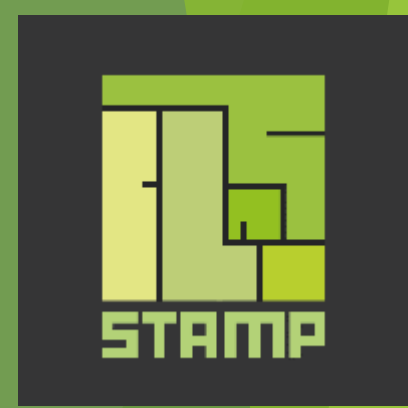
VISUAL OUTPUT FOR EASY UNDERSTANDING

What is STAMP?

- ▶ A free to use, web-based platform, for academics, students, and practitioners, which can assess masterplan designs and provide feedback on the level of sustainability of their masterplan design.
- ▶ Can be accessed via <https://www.kaebup.eu/index.php/stamp/>



- ▶ Aims to assist **practitioners** and **students** in the built environment field in assessing the degree of **Sustainability** of proposed masterplans and to incorporate sustainability into their design.



The tool is designed to assist:

- ▶ The Toolkit aims to assist practitioners and students in the built environment field in assessing the degree of sustainability of proposed masterplans and to incorporate sustainability into their design. In short, it is aimed for:
 - ▶ **Built environment professionals** to self-assess their masterplan design throughout the design process from initial design to final design and construction.
 - ▶ **Academics** as a teaching and learning tool to assist the teaching of architecture, planning and master planning students and inform them about sustainability principles.
 - ▶ **Professionals in the public and private sectors** (planning/permitting authorities, consultants, etc.) closely involved in the masterplan design process to support them in assessing the sustainability of a proposed master plan.



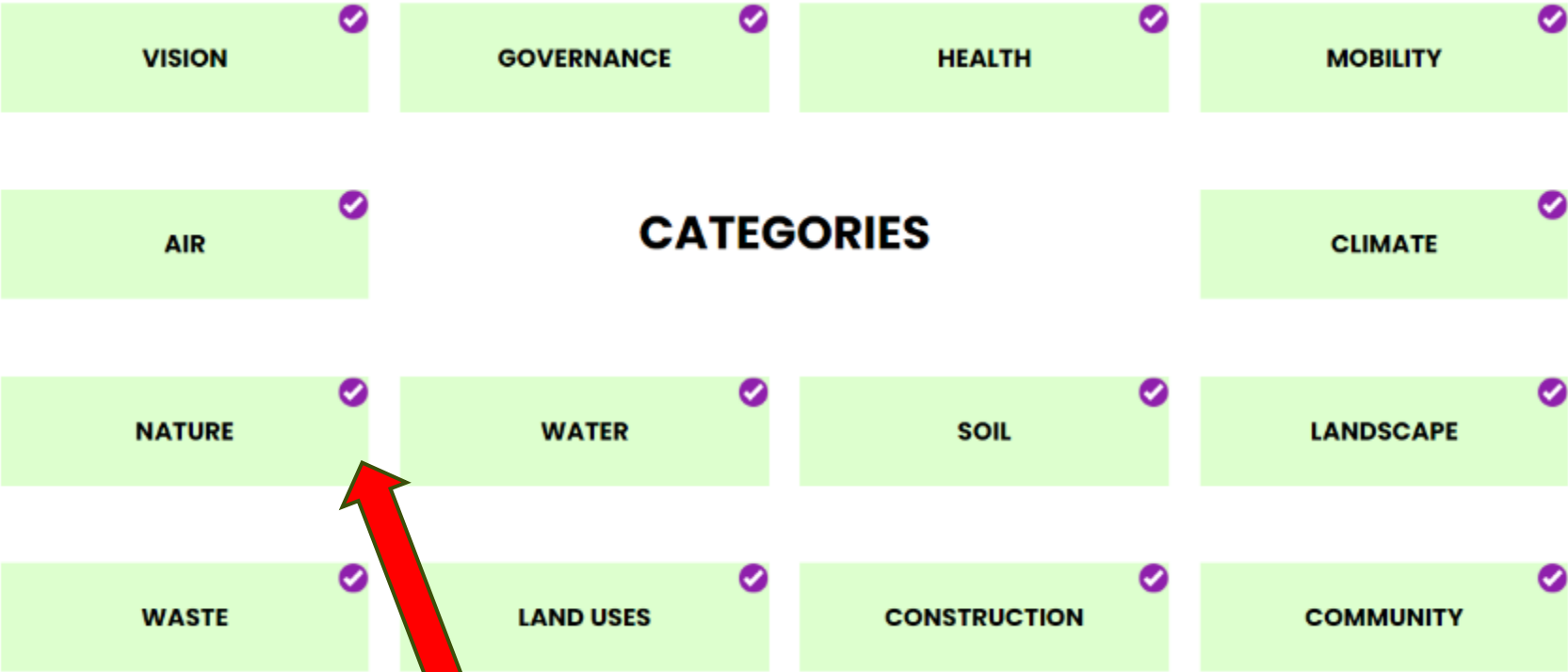
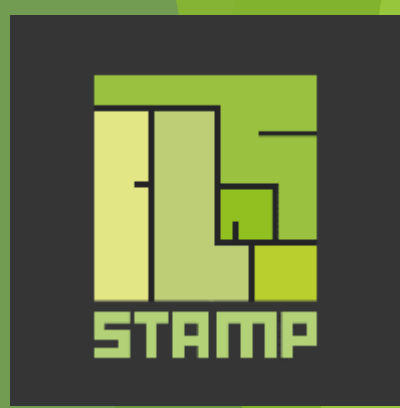
How does it work?

- ▶ Carries out evaluation of various masterplan projects.
- ▶ Each masterplan is evaluated across 14 categories.
- ▶ Each evaluation provides a chart (on the degree of **Sustainability**) for a project.
- ▶ Comparative evaluations allow the user to decide which plan is 'greener' than the other

The purpose

It can provide immediate feedback for decision-making on the actions needed to improve the sustainability of the project.

The 14 categories of STAMP



Each category has a specific set of questions that users need to answer

AIR QUALITY

[Home](#) / [Seneca Bay Resort](#) / [Evaluation Sample](#) / AIR QUALITY

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Does the masterplan design take measures to reduce traffic flow which is a source of air pollution? If YES, to what extent?

0 (to no or minimal extent)

No specific measures have been included in the masterplan

1

Specific Measures have been included in the masterplan to reduce traffic flow

2

A review of good practice measures has been made with regards measures and some of these have been incorporated within the masterplan

3 (to a great extent)

A review of good practice measures has been made with regards measures and some of these have been incorporated within the masterplan

Does the design consider cross ventilation, stack ventilation and night breezes? (Sufficient and adequately located openings, room depth, atriums, space between the buildings, etc)

0 (to no or minimal extent)

No design considerations for cross ventilation, stack ventilation night breezes (openings, room depth, atriums, spaces between buildings) have been included in the masterplan

1

Some design considerations have been included in the masterplan

2

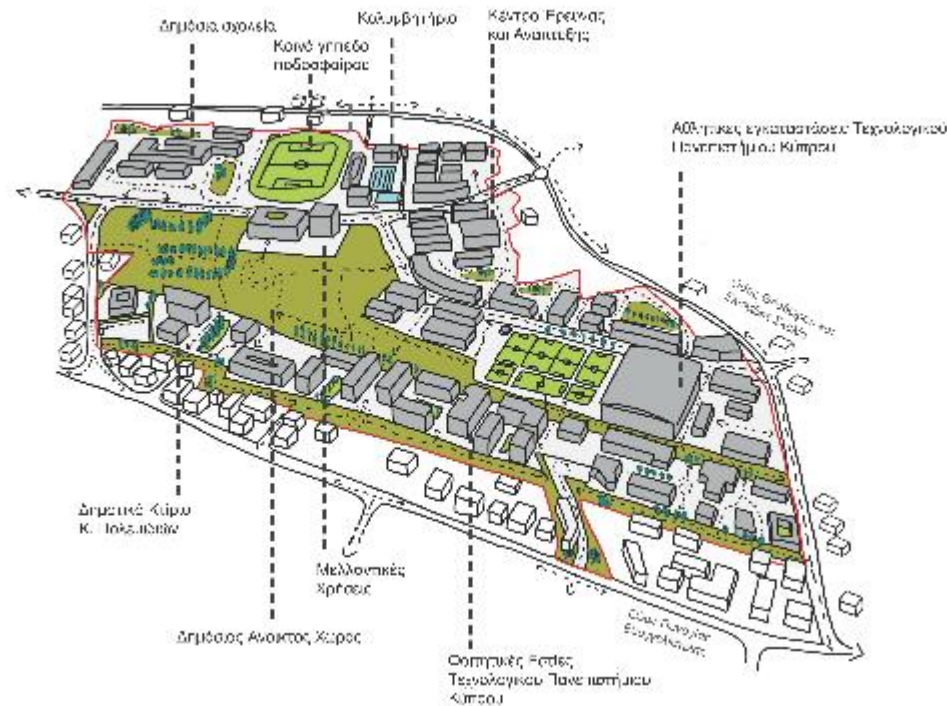
A sufficient number of design considerations (<3) have been considered within in the masterplan.

3 (to a great extent)

An extensive reference with examples (>6) (sufficient and adequately located openings, room depth, atriums, space between the buildings, etc) regarding cross ventilation, stack ventilation and night breezes.

Example Assessment - The Vereggaria Masterplan

- ▶ Using the STAMP toolkit, an assessment of the Vereggaria Masterplan took place.



Background

- ▶ The Vereggaria Masterplan proposes various uses for a site in Kato Polemidhia, Limassol, Cyprus. The site which has a total area of 260.000m³ was originally a settlement hosting the British Forces and their families has been abandoned in 1988 and has been classified as a brownfield site.
- ▶ In **2018**, the Council of Ministers in Cyprus has decided the re-utilisation of the area with new uses.

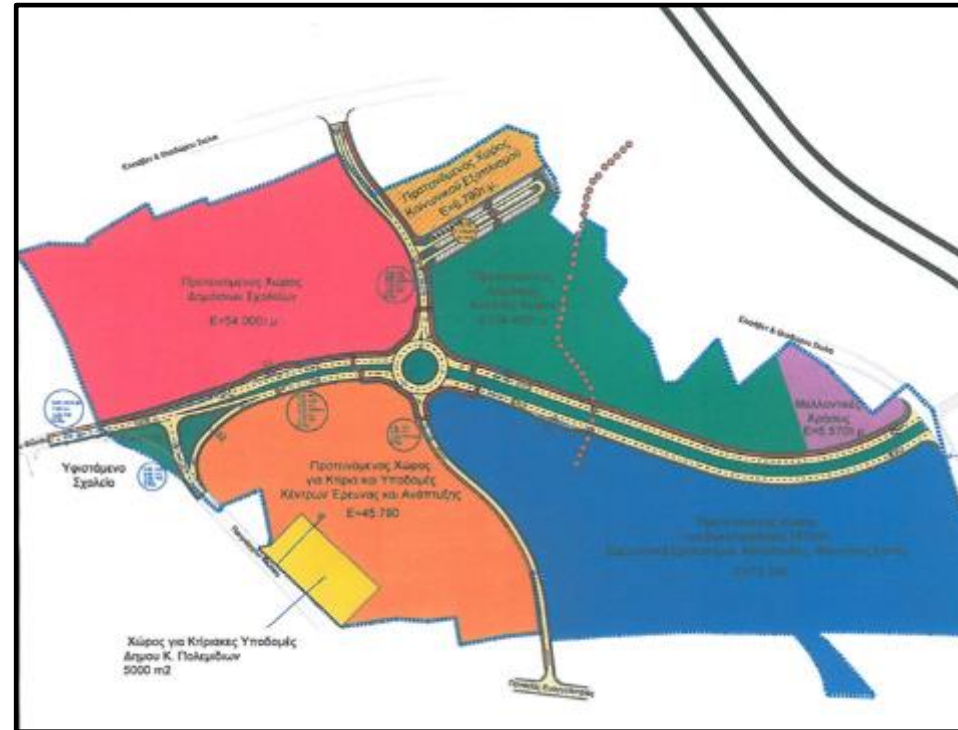


Background

- ▶ Following this decision, the Department of Town Planning and Housing proceeded in October 2018 with the preparation of a Preliminary Spatial Plan (Masterplan) for the area
- ▶ In January 2020, however, the Municipality of K. Polemidia appointed ALA Planning Partnership Consultancy L.L.C for the preparation of a New Masterplan with the objective being the relocation of the proposed uses and the creation of a functional road network based on sustainable mobility principles for the optimal utilization of the Verengaria area.
- ▶ In total, the masterplan underwent 3 design iterations

Preliminary Masterplan (2018)

The preliminary Masterplan (2018) was prepared by the Department of Town Planning and Housing and comprised proposals for building facilities of the Cyprus University of Technology, an R&D Centre, Public School Infrastructure, the Kato Polemidia Municipal Building, a Swimming Pool, Open Public and Green Spaces as well as road infrastructure favouring and enabling mainly cars.



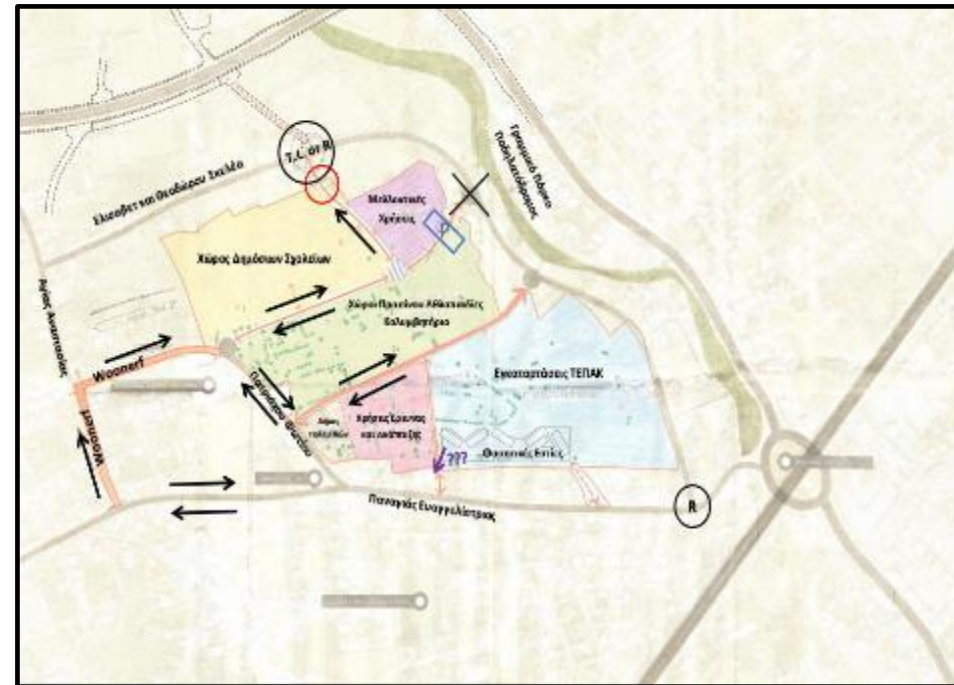
Revised Masterplan (2020)

The revised Masterplan (2020) prepared by ALA Planning Partnership Consultancy Ltd, following a following a holistic and sustainable approach, and taking into account cutting-edge and innovative practices of urban design and sustainability. The revised Masterplan applied contemporary principles of sustainable development and mobility.

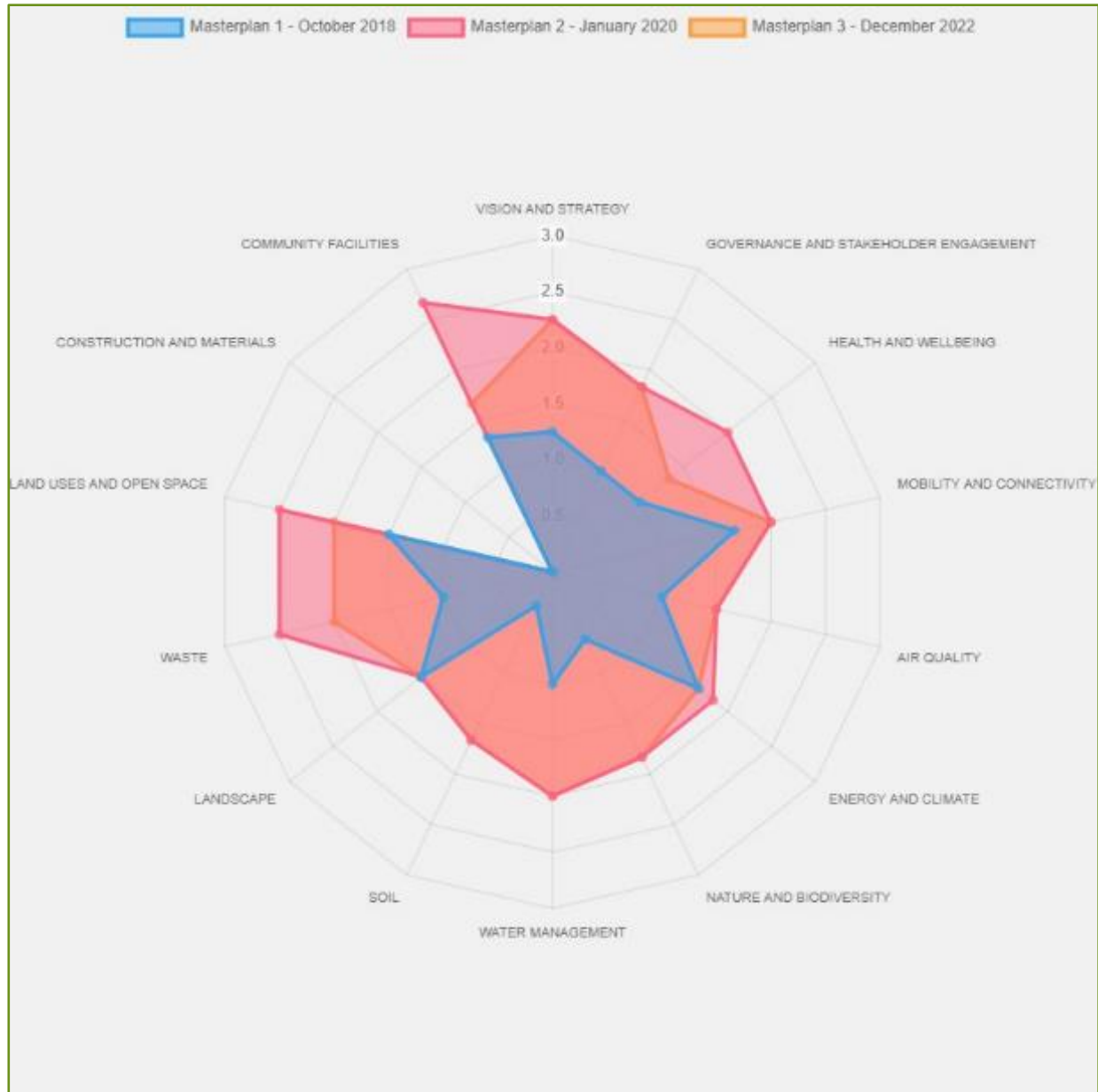


Current Masterplan (2022)

The third evaluation for the Vereggaria masterplan took place in December 2022 by the Department of Town Planning and Housing (DTPH). This masterplan maintained the 2020 land uses but rearranged them but proposed changes to the the road networking system. Also, some proposals regarding community spaces and waste management from the 2020 plan were not incorporated or finalized.



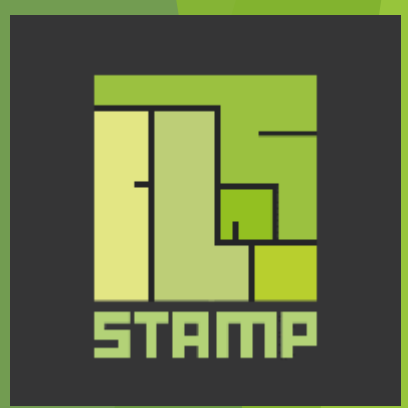
The Vereggaria Masterplan Radial Diagram





TRY STAMP TODAY!

► <https://www.kaebup.eu/index.php/stamp/>



Hands on objectives

- ▶ 1. Hands on exploration of the STAMP Toolkit
- ▶ 2. Use the STAMP tool to assess a masterplan
- ▶ 3. Present results - discussion