green charter

DIAZOMA

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Introduction

The City, the place where "Man-Citizen" becomes fully formed, is a constantly evolving organism. It carries traces of the past, harmonizes with the present, and envisions the future. Greek cities, be they big or small, often the bearers of a glorious past, struggle to maintain this balance and frequently end up resembling an urban formation with no identity.

Highlighting a place's cultural identity can play a crucial role in shaping a city's economic and social landscape. Enhanced and promoted, the monuments themselves can become self-luminous poles of attraction for visitors and reinforce the residents' sense of belonging. However, to sustain and develop this flow, the user's overall experience in the city needs to be attractive and functional.

An aesthetically attractive and welcoming city that operates on the principles of sustainability and viability and promotes safe mobility, the enhancement of green spaces, clean energy, and smart solutions provided by new technologies can make its residents' everyday lives easier and more agreeable. At the same time, it can offer both short-term and long-term visitors (such as *digital nomads*) the best possible sojourn and, ideally, convert them into the city's ambassadors. The potential benefits of moving in this direction, both in economic and social terms for the local population, provide a crucial incentive for implementing this transition.

Given the above, any attempt to promote a city focused on its natural and cultural monuments requires strategic planning with a holistic approach, including all the essential components for a city's development. These are, among other things, the enhancement of cultural identity, aesthetic improvement, the maintenance and development of urban green spaces (public and private), the promotion of environmentally friendly forms of energy, the adoption of smart city technologies, the strengthening of accessibility and the promotion of the principles of circular economy.

To this end, the *Green Charter*, a holistic approach bringing together several proposals, has been drafted to act as a handbook/implementation guide for the country's cities, subject to a given proposal's degree of feasibility naturally.

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I. Cultural identity

When a city's residents become acquainted with its cultural reserve through experiential and original ways, they are driven to love their city and actively participate in safeguarding and enhancing it, thus strengthening its identity. At the same time, they make the city a pole of attraction for visitors who wish to become personally acquainted with it.

A. Monuments at the center of everyday life

- Record the route connecting archaeological sites, monuments, and historical buildings/complexes on a single map of the city and produce accompanying materials (brochures, signs, mobile phone applications).
- Mark and signpost this route and significant "vanished traces" (e.g., ancient or medieval streets, walls, emblematic ancient or modern buildings) in the urban landscape, which can also be done using alternative ways, such as:
  - Different paving material or colors on the road surface or the sidewalk.
  - Audio guidance/narration (e.g., at an archaeological site, its history or other sounds linked to the site's use, could play on speakers and direct visitors to the next monument).
  - Other visual stimuli, e.g., graffiti on the windowless side facade of a block of flats.
- Visually unify monuments and archaeological sites through pedestrianization and the use of common architectural elements in building accouterments (the same type of railings, signs, light fittings, paving, etc.).
- Organize actions and events inside or around monuments, compatible with their character as a monument.

B. Modern architectural reserve

- Restore architecturally remarkable individual buildings and complexes (e.g., street fronts, residential areas), be they designated historical landmarks or otherwise. Utilize records and studies carried out by various bodies[1] and possibly use Ministry of Environment and Energy funding programmes[2].

[1]E.g. Theses and dissertations, records compiled by associations such as Monumenta, Elliniki Etairia (Society for the Environment and Cultural Heritage - ELLET), the IRC-Hermes programme, etc.

[2]The building renovation programme "*Diatiro Kat' Oikon*" and the implementation of the "*Digital Land Bank*" allowing the transfer of building coefficients, currently under consultation, will serve as excellent funding tools.

- Reuse historical buildings as a Municipality to house municipal services or other public interest bodies, setting a "good example" for the utilization of local architectural heritage[3].

- "Dispose" of any derelict or abandoned building that does not fall under any protected category for urban sanitation purposes as well as the creation of open spaces.

- Integrate historical buildings into the city's everyday life through actions that encourage the public to become acquainted with them[4].

C. Contemporary Culture

- Record the route connecting modern cultural sites (museums, theatres, conservatories, cultural associations, etc.) on a single map of the city and produce accompanying materials (brochures, signs, mobile phone applications).

- Connect ancient and contemporary culture by instigating a "conversation" between new artistic interventions and monuments.

- Promote local artistic activities (festivals, celebrations, sports events, etc.).

D. Local Products – Gastronomy - Intangible Cultural Heritage

- Protect and regenerate entire neighborhoods providing traditional products and services. Such areas are Evripidou Street in Athens (known for spices), the silversmith workshops in Ioannina, and the "Kazantzidika" ("Tinkers") market in Larissa. Architecturally upgrade shops/workshops, create neighborhood branding, open stores and workshops to the public with guided tours.

- Take actions connected to local products and gastronomy, such as the Festival of Cherries, Sardines, etc.

- Establish visitor information centers on the broader region's local products at selected locations in the city.

- Support local cultural institution events, such as the Vlach Wedding ritual in Thiva (Thebes) or the "Polysporia" ritual, tradition rooted in the worship of the harvest goddess Demeter in Elefsina (Eleusis), which are included in the national list of intangible cultural heritage.

[3]An important step in will be the Ministry of Environment and Energy regulation on the "adoption" of abandoned buildings by municipalities, companies etc. for a given number of years.

[4]Educational programmes for children, actions centered around opening buildings to the public, such as Open House, ELLET's *Visit a Historic House* and so on.

II. City Aesthetics

Aesthetically upgrading the urban landscape requires regeneration interventions on the exterior of buildings and their immediate surroundings, as well as public space. The purpose of these interventions is to address visual pollution through sanitation, i.e., the removal of unnecessary, non-uniform elements and concurrent creation of new, aesthetically pleasing constructions.

A. Buildings

Facades[5]

- To the extent possible, use a uniform color palette on existing buildings, with earth tones on walls, railings, signs, and other facade elements.
- Take special measures for air conditioner outer units and gas network equipment (meters and visible piping). Remove them from the building's facade where possible or conceal them with a customized cover (slatted or perforated). In any event, define zones on each building for the placement of this type of equipment.
- Place uniform canopies, awnings, signs, lights in a neighborhood or certain street fronts, according to the character of the urban whole.
- Regarding office buildings, establish a zone on their facade for the placement of business signs, issuing specific dimension and shape guidelines per building or set of adjacent buildings. In the case of a large concentration of office buildings and business premises or food and beverage outlets around an important landmark or archaeological site, prohibiting the placement of signs on the facades is recommended (e.g., configuration of the facades of buildings surrounding Omonia Square, 1999).
- Remove fly posters and graffiti. Apply anti-graffiti coatings (exercising caution in the choice of materials so as not to alter the coating's matte texture).
- Implement a reduction of illuminated signs on street fronts where historical monuments and points of interest are situated to reduce light pollution and improve the nighttime landscape. Particular attention should be paid to the preservation of the starry sky in mountain villages as well as insular settlements.

[5]See the PROSOPSIS (Facade) programme of the Municipality of Athens (Official Gazette-FEK1644/2003, FEK 734/2003, FEK 1358/2007)

- **Windowless Side Facades:**

  - Adopt artistic interventions, such as artistic graffiti. Explore the possibility of constructing planted walls/vertical gardens.

- **Flatroofs:**

  - Remove any non-structural constructions built without a permit.
  - Install a single central TV aerial per building.
  - Install new type water heaters with an integrated tank for reduced visual nuisance.
  - In public or private buildings with central ventilation and air conditioning systems, the external installations on the roof should be covered by slatted or perforated metal structures.
  - Construct planted roofs, whether for aesthetic/bioclimatic reasons or the creation of urban gardens (kitchen gardens).[6]

- **Outdoor common areas:**

  - Investigate the possibility of amalgamating the vacant site of all apartment buildings in a building block to create outdoor common area for the building block's residents. [7]

B. Public Space

- **Sidewalks – pedestrian streets:**

  - Construct sufficiently wide sidewalks, place trees and other plants as appropriate, remove obstacles posed by urban equipment and appropriately light public spaces.
  - Take measures to deter illegal parking on sidewalks and pedestrian streets by installing bollards or configuring the outer side of the sidewalk accordingly (planting, raised slanted curb, etc.), with retractable bollards and so on.

[6]Utilizing the privileges conferred by the amended "New Building Regulation" (NOK) (Article 106 of Law 4759/2020).

[7]See Article 10 of Law NOK, article 102 of Law 4759/2020).

- Place municipal waste collection bins in specially designed recesses on pavements or pedestrian streets. Explore the option of underground bins or installing bin enclosures of a pleasing aesthetic.

➢ **Urban equipment:**

- Remove damaged or redundant urban equipment elements (seats and benches, signs, bins, luminaries, etc.) and place new, aesthetically pleasing elements which will contribute to the city's aesthetic.

- Remove information and advertising signs accumulated on poles or other structures. Streamline placement of new signs, in groups, on specially designed structures situated at selected locations.

- Underground the overhead powerlines and feeder pillars.

➢ **Surfacing materials:**

- Pay particular attention to the materials used to surface sidewalks, which should be uniform and plain. Explore opting for castable materials (e.g., concrete), which have undergone special treatment to ensure a non-slip finish and create a "quiet" surface surrounding varied buildings. Choose materials based on environmental criteria (type of material, life cycle, recycling, etc.).

- Limit hard surfaces in public spaces (squares, playgrounds, etc.) whenever possible and opt for soft surfaces made from natural materials such as reinforced grass, beaten earth, gravel, etc.

➢ **Art:**

- Place works of art or stage art interventions in public gathering places and at important landmarks.

- Use art (photography, graffiti, painting) to "dress up" aesthetically deprived spaces/buildings in the city.

➢ **Food and Beverage Outlets:**

- Adopt a uniform aesthetic – by neighborhood or given street fronts – for food and beverage outlet furniture and fittings (tables and chairs, canopies, shading systems, signs, stoves, fans, lights, etc.). Their design shall be determined by the character of the area in question.

- Clearly define the limits for the placement of tables and chairs, allowing sufficient room for the passage of pedestrians.

- Establish rules for the operation of entertainment venues concerning music and light intensity (light pollution).

III. Urban Green Space

The well-designed and targeted enhancement of urban green space is a necessary and sufficient fact or to improve a city's microclimate and healthy living conditions. At the same time, green spaces, as an integral part of urban planning, offer rest and relief for the senses, upgrade the urban environment, and make it more user-friendly.

A. Biodiversity

- Prepare a biodiversity study for each city and select endemic species for green spaces so that the species selected for planting are compatible with the area's flora and fauna.
- In this study, provision should be made for species that will prove resilient under the climatic conditions (temperature, etc.) predicted 30+ years into the future.
- Support and promote planting actions in open spaces, house yards and rooftops, schoolyards, and hospital yards to increase greenery density in urban areas with endemic species.

B. Cultural–Green Routes

- Create a "green network" in the city's historical center by connecting monuments of nature and culture (of the city and surrounding areas) via green routes.
- Modify urban planning permitted uses with infrastructures suited to the creation of traffic calming conditions benefiting pedestrians and vehicles (mainly micromobility devices), paved with environmentally friendly material.
- Pave routes with materials that collect rainwater and replenish groundwater to be used to water public green spaces.
- Ensure the presence of ecological routes in the city and the peri-urban areas, preserving the region's biodiversity.

C. Green Spaces

- Evaluate the city's free spaces – public ground-level, above-ground, and wall spaces (vertical gardens) such as schoolyards, hospital roofs, etc.

- Carry out planting actions in the spaces mentioned above.

- Seek Municipality-Private Sector partnerships so that companies "adopt" green spaces within the framework of Company Social Responsibility. One such example is the Municipality of Athens' "pocket parks."

- Use (mainly public) spaces for the creation of urban agriculture. In other words, spaces where the land is cultivated, making it possible to grow and utilize farm produce. The potential benefits are numerous:
  - Increasing greenery in the city as a whole
  - Creating environmental education projects for pupils/students
  - Utilizing the harvest to supply economically vulnerable groups with raw ingredients.

- Develop programmes to enhance and promote the creation of private green spaces, for example, yards and open communal areas, flatroofs, vertical gardens, etc.These must be developed according to the Municipality's specifications and the respective Joint Ministerial Decision and in accordance with Articles 12 and 18 of the New Building Regulation (NOK).

D. Green Spaces Monitoring

- Set up a programme to continuously monitor, maintain, and improve green spaces.

- Use sensors to monitor weather conditions and regulate watering accordingly in order to reduce overconsumption of water for irrigation purposes.

- Use smart water management systems to save water and minimize wastage, measure the quality, quantity, and leakages of the water supply and irrigation network, as well as avoid flooding.

IV. Energy

It is not only feasible but imperative that energy, the driving force for the implementation of any number of human activities, be environmentally friendly. The three main pillars related to this issue and analyzed below are:

a) the means of producing energy; therefore, environmentally friendly energy sources, which can be applied both on a large scale and in the urban fabric, are examined

b) the ways of storing excess energy, given that the power generated by renewable energy sources fluctuates; thus, it is vital to identify environmentally friendly options for excess energy storage and management, which will allow us to use it when there is an energy deficit

c) ways of reducing energy consumption, as it is essential to reduce the need for energy even before it is produced in an environmentally friendly manner.

A. Reducing Energy Consumption

- **Private Buildings:**

  Strengthen, through incentives, the installation and use of means that reduce energy consumption on private spaces (residential and business premises). Steps to improve a building's energy class could include:

  - Thermal insulation of a building's external walls (thermal facades)
  - Thermal and moisture insulation of rooms, as well as final coating with reflective paints
  - Use of energy-saving light bulbs
  - Installation of 'softer' energy sources, such as natural gas
  - Installation of solar water heaters
  - Installation of thermal insulating window frames
  - Use of superior energy class appliances, both in homes and business premises
  - Use of a smart-device environment where the optimized management and energy-efficient operation of said devices (e.g., smart lighting, air-conditioning, temperature control, humidity control, operating hours, etc.) can be achieved even remotely by using sensors, applications, information, and communication technology.

- **Public Buildings:**

  Install energy consumption reducing means in public buildings. Steps to improve the energy class of public buildings could include:

  - Thermal insulation of a building's external walls (thermal facades)
  - Thermal and moisture insulation of rooms, as well as final coating with reflective paints
  - Use of energy-saving light bulbs.
  - Installation of 'softer' energy sources, such as natural gas
  - Installation of thermal insulating window frames
  - Use of superior energy class appliances, air-conditioners.
  - Use of a smart-device environment where the optimized management and energy-efficient operation of said devices (e.g., smart lighting, air-conditioning, temperature control, humidity control, operating hours, etc.) can be achieved even remotely by using sensors, applications, information, and communication technology.

B. Energy Production/Harvesting/Exploitation

- Conduct a study, by region, to determine the most usable form of Renewable Energy Source (RES). These are:

  - **Land-based Solar Energy** (ground-mounted photovoltaics). Recommended for regions with ample sunshine.
  - **Floating Solar Energy**, coastal, offshore, or lake (floating photovoltaics). Recommended for regions receiving considerable sunshine where the use of the water surface is preferred, such as insular and coastal Greece.
  - **Land-based Wind Energy** (land-based wind turbines). Recommended for regions with extensive wind potential, provided that other land uses are not impeded, and the wind farms do not cause a nuisance (visual, noise, etc.)
  - **Floating and sea-bottom based Wind Energy** (coastal and offshore wind turbines). Recommended for regions with extensive wind potential, such as the Aegean islands.
  - **Geothermal Energy**. Recommended for regions with high enthalpy geothermal fields, such as Grevena, Nisyros, Milos, etc.

- **Hydropower**. Recommended in regions with reservoirs, where hydroelectric plants can be constructed.

- **Wave Energy** (wave energy converters). Recommended for coastal regions with high wave energy potential, such as the Aegean islands.

- **Biomass Energy**. Recommended for regions where there is a surplus of wastes and residues of biological origin from agriculture (plant and livestock), such as Western Macedonia.

C. Implementing RES Power Generation in an Urban Environment

- Promote/support installing solar panels/parks or even solar shingle roofing for private spaces such as residential, business and industrial roofs, stadium roofs, etc.

- Promote/support installing solar panels/parks in communal spaces, such as the roofs of public buildings, stadiums, municipal parking lots, etc.

- Utilize wave energy potential by installing wave energy converters outside the port basins of coastal cities (marinas, ports, etc.).

- Create an energy community. Law 4513/2018 stipulates that an energy community can take the legal form of an urban (civil) cooperative of exclusive purpose (i.e., a voluntary union of persons having economic objectives).

D. Storage

- Store RES produced electricity through battery energy storage, both on a large scale for cities and for domestic use. The largest battery manufactured can power up to 30,000 homes.

- Store RES produced electricity indirectly by storing potential energy. One such example is pumped storage. At times of low electrical demand but excess wind capacity, the excess generational capacity is used to pump water to a higher elevation natural or artificial reservoir (lake), thus storing the water's potential energy. At times of low RES power generational capacity (e.g., low wind), the water from the upper reservoir is released downstream, generating electricity. Other than the initial impact of the original installations, this method provides environmentally friendly energy storage due to the perpetual flow of water.

- Store R.E.S. produced electricity indirectly by using it to produce clean fuels such as Hydrogen, which require substantial amounts of energy to be produced, but release no pollutants when consumed.

V. Sustainable Urban Mobility

Cities are looking for smart, new modes of mobility for their users, that are both user and environmentally friendly, and minimize car use. The flows of people and vehicles should be combined in a way that creates a safe, functional, and sustainable circulation network that ensures access for everyone to every part of the city.

A. Micromobility

Micromobility: all vehicles sharing specific characteristics (low weight, flexibility, autonomy, environmental friendliness) which contribute to short journeys in an urban environment and the distances covered by them. They occupy less space, both when in motion and when parked. They usually deliver greater environmental value, as they consume comparatively less energy than conventional means of transport due to lower weight, combined use with public transport modes, easier/faster parking, and connectivity.

- Incentives to encourage the use of PLEVs – Personal Light Electric Vehicles (bicycles, scooters, etc.), both financially and in terms of facilitating daily life:
  - Subsidize purchases.
  - Create dedicated parking spaces.
  - Develop charging stations.
  - Develop a dedicated transport network.
  - Connect PLEVs to traditional mass transportation and allow them to be taken on public transport so that users only seek to go that "extra mile" on their PLEV.
  - Develop a Municipal service responsible for PLEV sharing and renting.
- Develop a network of pedestrian streets connected to Personal Light Electric Vehicle circulation networks and green spaces.
- Develop a Demand Management Strategy, e.g., parking management, restricting or prohibiting the access of traditional vehicles such as private cars and motorcycles to designated urban zones.
- Manage urban logistics in designated city zones.
- Create incentives that discourage car use in city centers by providing parking spaces on the outskirts connected to PLEV sharing services so that PLEVs are used to cover the distance to the city center.
- Create the necessary conditions for the uninterrupted movement of PLEVs, observing the accepted standards for safe travel and driving.

- Analyze the existing situation in each city to form a vision of the goals and purposes. Then adopt a set of policies and measures clearly defining and demarcating the roles and responsibilities of civil society and the Municipality.

B. Accessibility

- Strengthen conditions favoring the unimpeded access to natural and cultural places of interest, bolstering PLEV or pedestrian access.

- Endeavour to expand unimpeded accessibility for persons with disabilities to:
  - Public buildings with, by way of example: ramps, wheelchair lifts, accessibility markings, indoor tactile surface indicators, etc., following a pertinent study with the participation of a representative of persons with disabilities.
  - The city's circulation network, vehicle and pedestrian thorough fares, with, by way of example: more wheelchair ramps, audible pedestrian signals for the blind and visually impaired, tactile ground surface indicators for the blind and visually impaired, etc.
  - Ramps. Tighter checks on violations such as parking or stopping at ramps designated for persons with disabilities. Possible monitoring through the installation of ramp sensors.
  - Food and beverage outlets. Create an Accessibility Mark to be awarded to premises that are accessible to persons with disabilities and including them on the Municipality's website.
  - Website accessibility. Make the Municipality's websites as well as those of local authority services accessible to persons with disabilities.

- Ensure safe circulation in the city via actions such as identifying obstacles, visual barriers to signs, and other markings and cleaning/removing them.

VI. Smart Cities

The concept of Smart Cities takes a broad approach to aspects of society, such as the citizens' quality of life, the environment, the economy, mobility, governance etc. Using innovation and new technologies (I.C.T.), optimizing the use of resources, and strengthening the interface between citizens and services, it seeks to accomplish the direct and active participation of citizens and the effective operation of the city.

A. Optimal use of resources:

- Monitor through sensors (temperature, humidity, etc.) and predict the watering needs of public green spaces by processing the collected data to minimize the use of water resources.

- Document the needs of public buildings in use and integrate them into a smart grid to monitor and process energy consumption data. Aim to reduce consumption by upgrading them possibly.

- Create a broader smart grid for all the city's buildings. Process the results to optimize energy consumption by the city as a whole.

- Configure city lighting and street lighting according to the city's needs, which will be determined by processing sensor data and measurements and controlled and addressed both automatically and from remote computers.

- Reduce the energy consumed by street lighting using sensors and automation systems, such as motion detection and lighting (for example, lights turn on when a vehicle has been detected some distance away).

B. Interface between the Municipality and its Residents:

- Create/subscribetoanappthatwillreinforcecommunicationbetweentheMunicipality and Residents as regards:

    - Matters concerning city problems (greenery, lighting issues, etc.), bringing them directly to the attention of the relevant services, who will notify the citizen upon resolution.

    - Matters concerning Municipal services, such as available parking space updates, especially with charging stations now in play, where online booking and payment (where pay for parking applies) can be made via the application.

    - The submission of citizens' questions, which could be answered either by the competent staff or by A.I.(Artificial Intelligence) systems (chat bots, etc.).

- Questions submitted by the Municipality to its citizens to poll their opinions on key issues.
- The ability to electronically receive or download useful documents.
- The creation of a digital public consultation.

- Optimize traffic using sensors at traffic network hubs and subsequently/ simultaneously processing them via information systems to manage traffic in the best and safest way.
- Transition to 5G technology to facilitate the above.

VII. Circular Economy

It is essential that we transition from the contemporary "take➔make➔dispose" linear production model to a circular bioeconomy model, with a biomimetic approach, where the value of products, materials, and resources remains in the economy for as long as possible, and the generation of waste is minimized. What was previously regarded as "waste" can now be converted into raw material.

- Implement, strengthen and promote the principles of *Reduce, Reuse, Recycle(RRR)* both in the public and private sectors, i.e., reduce the use of resources, reuse them where possible and, if not, recycle them.
- Promote a reciprocal circular economy, where recycling efforts are reciprocated by both private companies (e.g., supermarkets) and public bodies offering a range of incentives (e.g., free parking, reduced electricity charges, etc.).
- Cooperate with universities so that both their scientific findings on using resources and the design of sustainable circular economy systems from the outset can be implemented.
- Reinforce *sort– collect– repair– repurpose-reuse* actions for waste such as:
  - Electric accumulators (batteries), which can be remanufactured and used for another purpose, e.g., use vehicle batteries to store energy for homes
  - Cooking waste, such as used cooking oil, which can be repurposed in other sectors, as well as organic wastes, which can be composted
  - Urban, agricultural, and livestock waste for energy production (biogas)
- Strengthen distribution and sharing programmes for products and services, surplus or otherwise, such as:
  - Shared mobility programmes for vehicles such as PLEVs, combined with public transport, in order to reduce the ratio of one vehicle per person
  - Surplus food distribution to those in need, possibly in cooperation with existing soup kitchens, organizations, NGOs
  - Surplus everyday item distribution to people who need them and which can be reused, such as clothing, pharmaceuticals, etc., possibly in collaboration with existing organizations and NGOs
- Support the further education of workers in the manufacturing industry (processing of plastics, metals, etc.) through public schools (such as vocational training institutes) or by subsidizing private school fees where the former are lacking.

- Support the manufacturing sector and decentralize it, as these are usually smaller enterprises that can operate in the peri-urban zones of provincial cities.

VIII. Active Citizens

Any new and groundbreaking direction taken in a society cannot succeed unless its citizens become actively involved, becoming its co-creators rather than mere recipients. Therefore, to avoid yet another plan that does not become embodied in society, the participation of the local community is essential and could be achieved through the following actions:

- Citizen participation in public consultations through the modern tools offered by information technology, from the earliest stages of the shift to sustainability.
- The creation of educational programs for all school grades on sustainable development and increased student participation (via competitions etc.).
- The promotion of the values of sustainability in the media via targeted campaigns using relatable everyday life examples.
- The support and participation of NGOs, business and consumer organizations, citizens, trade unions, academia, research institutes, and other sustainability stakeholders so that there is a sense of common purpose.