EARLY CONNECTIONS BETWEEN URBAN GREENING AND PLANNING. THE FIRST CITY PLANS OF ATHENS AND PATRAS.

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ABSTRACT

Greening cities is nowadays acknowledged to increase the quality of urban environments, promote sustainable lifestyles, enhance climate resilience and develop city branding within a globalized economy. Urban actors from city leaders and spatial designers to citizen-based groups, adopt the goal of urban greening at all scales from living roofs/walls to entire Green Cities. This interest in flora within the public realm is relatively recent. It was municipal efforts mainly in 19th-century Europe and the USA that advanced tree streets, public gardens, and parks as important planning elements. Yet, there has been little scholarship on the history of greening during that period related to the cities of the newly-established Greek state.

This paper addresses this unexplored area focusing on (a) paradigm shifts and international precedents leading to the establishment of city greening as an urban strategy, and (b) green aspects of early urban planning in Modern Greece. It examines functions and meanings of greening in the pre-industrial and the industrial city. Trends, shifts and agents are described and critiqued so as to determine the role of greening in urban settings. In this international context, the 1830s proposals for Athens and Patras new city plans are studied. Quantitative and qualitative green aspects of their urban forms are addressed and evaluated according to green values identified in the international discourse and practice as well as to their environmental performance.

The paper draws on international precedents of urban greening and underdiscussed green data from the infancy of urban planning in Greece, to argue that green strategies and design initiatives were in concurrence to contemporary trends in theory and practice, and that lessons learnt from that period may contribute to redefining our future approaches for greening Greek urban space with an eye on identity, equity and climate change.

KEYWORDS

urban greening; Athens plan; Patras plan; town planning; royal garden; Stamatis Voulgaris

1. INTRODUCTION

Adopting greening as an urban design and planning strategy in forms ranging from green area ratios and major tree planting programs to living roofs or walls, ambitious canopy goals, and Green Cities, is seen as a relatively recent phenomenon. Back in late C18th and early C19th, however, increasing concerns for city life quality cut off from nature led to greening of urban streets and open spaces. Public access to royal gardens was also allowed, as in London's St. James's Park (1828), and Berlin's

Tiergarten (1833). In these very years respectively, Patras and Athens city plans were drawn. New cities were an opportunity for Greek architecture and planning to be presented alongside international models and standards. Yet, there has been little scholarship on the green aspects of the new city plans and the environmental concerns of their designers. This paper aims to investigate the impact of early notions on urban green and the related international discourse of the time on the first city planning efforts in Greece. It addresses this unexplored area focusing on (a) paradigm shifts and international precedents leading to the establishment of greening as an urban design strategy, and (b) green and greening aspects of early urban planning in Modern Greece.

2. METHODOLOGY

Our research first examines functions and meanings of greening in the pre-industrial and the early industrial city. Planting in public open spaces -squares, boulevards, parks, streets- are assessed. International trends, shifts and agents are identified, described and critiqued so as to determine the role of greening in urban settings. Within this context, the new city plans for Athens and Patras are examined through historic maps, documents and literature. Quantitative and qualitative green aspects of urban form (e.g. street-, planting- and vegetation patterns, open space types) of the case studies are discussed following the green values identified in the international discourse and practice.

3. AN OVERVIEW OF URBAN GREENING

The concept of public parks and gardens dates back to classical Greece and Rome. Cimon donates trees and plants for the Athenian Agora and Gymnasium. Emperor Augustus builds Campo Marzio, a 2km2 public park in Rome. During the Middle Ages, trees in public spaces of compact cities were limited, mainly to be found in walled private gardens. In the Renaissance, open spaces started being designed with the same skill as buildings, and

gardens provided precedents for urban design also including the introduction of trees in public space. In the Renaissance garden, classical geometries, axes and multi-level parterres enrich visual experience, while fountains and grottos add to the sensory feeling. Although privately owned, some of them became publicly accessed, leading to the establishment of regulations on visitors' behaviour (Lawrence, 2006). As Mathis and Pepy (2016) argue, gardens open to a select public showed the owners' generosity as well as power to shape nature. An early notable example is the Vatican Belvedere Courtyard by Bramante (1507). In Baroque France, garden layouts extend towards the surroundings and initiate the development of urban fabrics. The main axis of the Tuileries gardens – originally designed as a finite Italian Renaissance garden (1570) by Bernard de Carnesse and redesigned by Andre Le Notre (1664) – was extended in the form of a *grande allee* towards the rural area beyond, so as to enhance the perspective of the palace, thus establishing the Champs Elysees, a spatial 'spine' for organising the Paris' fabric from the Louvre to today's Defense. The *allee* draws its origin from the Renaissance preoccupation with perspective. Lawrence (2006) remarks that Claude Mollet and Jacques Boyceau, eminent C17th garden designers, explored the mathematics of the harmonious allee dimensions. Boyceau cautioned that these long paths need to be sufficiently wide to avoid a visual tunnel effect.

The development of garden design into urban design came along with lifestyle changes. Due to prosperity, recreation and promenading became eminent activities in cities. For example, the game of Pall-Mall required a course defined by a double *allee*. In the C17th when the game was not

in favour anymore, people used these long *allees* for promenades, and, by the C18th, the term 'mall' was increasingly used for promenades (Lawrence, 1988). It would be replicated throughout U.S. cities university campuses in the C20th (Eisenman, 2015). The co-existence of vehicular travel and trees along

a promenade appeared in Cours-la-Reine, a 1km-long fenced royal route with quadruple row of elm trees, created in 1616 by Marie de Medicis. Aiming to avoid travelling through the crowded streets of Paris and homesick of Italian gardens, Marie would transform the garden's *allee* into a tree-lined boulevard, a street type that would soon spread across Europe (e.g. Unter den Linden, Berlin). For Mumford (1961) the urban boulevard is "the most important symbol and the main fact about Baroque city", introducing the monumental element in cities worldwide. Most tree planting in this era took place along the city edges due to land availability and the belief that trees belonged to nature (Lawrence, 1988). In the second half of the C18th, the ideal urban space of the Enlightenment is subject to four conceptual states: *magnificence, hygiene, clarity, emulation*. City *magnificence* is articulated through trees framing views along boulevards; *hygiene* through public gardens and tree-lined avenues enhancing air quality and fostering promenades and healthy activities; *clarity* through parks and *allees* that connect city and nature, creating distinct urban 'character' and clear architectural order; *emulation* through the moral inspiration provided by public statuary and observation of the upper-class behaviour in public (Etlin, 1994; Lawrence, 2006). A naturalistic, romantic design approach in urban greening in C18th England would overpower the formalistic Baroque gardens and influence C19th urban parks in Europe and North America. As Lawrence (2006) observes, while the Baroque saw trees as elements of architectural composition, pruning and trimming them severely, the second half of the C18th liberated, even venerated, trees. In the C19th, cities are greatly transformed due to industrialization and urbanisation. Mathis and Pepy (2016) note that nature, essentially in the form of parks and gardens, was considered an antidote to the Industrial Era's evil impacts by the political and learned elite. Policies of transforming royal properties into parks accessible to all emerged. Pre-industrial perceptions and aesthetics on urban green, are broadened so as to include notions of mobility, health and social concerns in the industrial city.

4. ENVIRONMENTAL ASPECTS OF ATHENS AND PATRAS FIRST CITY PLANS

4.1 The first Athens city plan (1832-3)

Green spaces were dominant in the Athens plan designed by Stamatios Kleanthes and Eduard Schaubert. They introduced strong spatial and visual arrangements with the aim to enhance the landscape and ancient relics so as to produce meaning. The report accompanying the plan prescribed a city of 40.000 inhabitants with 4.000, mostly freestanding, two-storey houses with a front yard and/or a walled garden in city blocks of 10-15 lots (Papageorgiou-Venetas, 2001). However, neither landowners nor speculators cared for form or meaning. They opposed what they considered a wasteful and unprofitable design. Leo von Klenze was brought in to revise the plan responding to spatial and political criteria. He proposed higher density, narrower streets, taller buildings, and continuous facades. Biris (1966) points out that "instead of a city open to evolution, Klenze composed a small monolithic settlement."

The following 'Green' aspects can be found in Kleanthes and Schaubert's plan:

i. *A bipolar landscape design*. Athens and Pireaus were both parts of Kleanthes' and Schaubert's comprehensive spatial vision for the new city and its port. The two plans were independent yet interdependent and their layouts were in tandem with the natural landscape and the historic heritage. Royal gardens open to citizens in the two cities occupied 10% of their area. Located at both ends of the notional axis of Piraeus Street, they would counterpoint Eleonas, the historic olive grove of Athens. The pattern and variety of ornamental planting would contrast the monotony of the olive grove. Thus, European landscape architecture principles would be introduced to Modern Greek cities.

Figure 1. Athens basin map by J. A. Sommer (1840) with royal gardens and Piraeus street highlighted, after Alex. Papageorgiou-Venetas.

ii. *The Royal garden and People's garden.*

The palatial and ministerial complex of Athens, at the site of today's Omonoia Square, occupied an area of 500m x 300m. The symmetrical layout of its gardens and the ornamental planting was designed so as to highlight the buildings. A 36m-wide and 1km-long tree-lined boulevard defines both the complex's north edge and the isosceles trapezoid that contains the royal garden. The latter, following European precedents, is divided in three parts. The main paths of the garden's central part are straight. They incorporate the axiality and enhance the perspective of the complex's layout. The other two parts are less formal with curvilinear paths. In doing so, the monumental character of the master plan permeates in the form of axes the romantic and more naturalistic garden design. The paths, straight and curvilinear, subdivide the garden in 110 segments of a surface ranging from 200 to 500m2. This segmented pattern provides a variety of
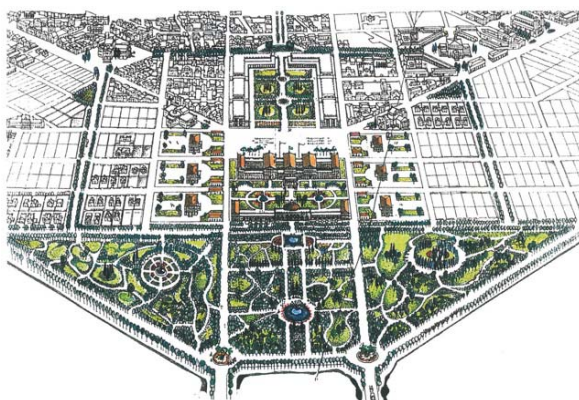

Figure 2. The Athens complex of palatial and ministerial buildings and gardens, after Alex. Papageorgiou-Venetas.

alternative pathways, enhancing visitor's experience.

Papageorgiou-Venetas (2016) estimates that crossing the 950m-long garden would take 10-15 minutes, while strolling could last up to 90 minutes. Beyond recreational and social opportunities, the location of the royal garden would contribute to the shielding of buildings and their ornamental gardens from north winds. As already customary in Europe, the royal garden would be open to the public. However, this would not be the only green space of the complex available to Athenians.

On the southern side of the Palace towards the Acropolis, Kleanthes and Schaubert introduced People's Garden, an open space framed by the city market's arcades. We argue that, just like Baroque gardens designed to be viewed from royal interiors, People's garden was also conceived as part of the perspective enjoyed from the Palace and focusing directly on the Acropolis. Its design, consisting of intersecting geometric patterns, creates circular nodes enhanced with fountains and statues. Kleanthes and Schaubert further designed a botanic garden at the foothill of Lycabettus, in conformity with the emerging European trend of creating botanical gardens for the provision therapeutic plants and the in situ study of indigenous species.

iii. A *Museum: an* archaeological park and open-air exhibition of antiquities. The two architects pursued the creation of an archaeological park that would serve as a green space for people's promenades, as well as an open-air museum of ancient architecture. They envisioned the park as "unique in the whole world where clusters of trees and gardens with plants indigenous to the Attica's climate would grow among the ancient ruins". As Papageorgiou-Venetas (2016) notes this is a seminal concept of an archaeological museum/park in situ where planting would

highlight the monuments and frame visitors' views.

While Kleanthes and Schaubert were educated as architects, not urban planners or garden designers, they succeeded in providing a functional and emblematic city plan that would comprehensively define green spaces, build entities, city blocks and dwelling types, and would introduce openair space typologies, such as tree-lined streets. However, opposition resulted to the architects' resignation. The whole scheme was reworked for its current location overlooking Syntagma Square. The Royal Garden emerged as the joint work of Queen Amalia, architect Eduard Riedel, garden designer Louis-Francois Bareaud and gardener Julius Schmidt.

4.2 The first Patras city plan (1828-9)

As with Athens, what had remained in Patras after the War of Independence were only a few sound structures. The new plan, was assigned by Capodistria to Stamati Bulgari (Stamatis Voulgaris), a Corfiot *Lieutenant ingenieur* of the French Army, educated in Paris and later acknowledged as the first Modern Greek town-planner. Within early C19th notions of city planning, Bulgari designed the orthogonal grid of the Upper Town (originally assigned to him by Capodistria) following the orientation of the street layout of the roman colony, *Colonia Augusta Aroe Patrensis (CAAP)* founded by Caesar Augustus in 14 BC. He carefully considered topography and other data and identified locations for future archaeological excavations. He further introduced the new Lower Town of Patras anticipating its future along the coastline as a port city. It can be argued that the plan of the Lower Town draws upon Bulgari's military training and his knowledge of military planning.

The following 'Green' aspects can be found in Bulgari's plan:

i. A 'healthy' street pattern. This follows the premises established by Roman town planning in relation to healthy cities, as known to us through Marcus Vitruvius Pollio, the Roman architect and military engineer and his treatise

De Architectura, dedicated to the very Caesar Augustus. *De Architectura* stresses that the *primum electio* for building cities is a very healthy site, where streets are oriented so as to optimise benefits from wind directions. It should be stressed that the Patras plan grid is oriented according to northeast and southwest blowing local winds.

ii. A sequential experience of green squares. Central features of both Upper and Lower Patras plans are the number and distribution of city squares provided, as well as their relative position within the street grid. Streets do transverse city squares in x and y-direction rather than osculate them, forming sequences of openai public spaces. Dimacopoulos (1986) finds direct connections between the Patras plan and the detailed recordings by the Greek historian Polybius (Book VI, *Histories)* of the simple gridded arrangement that Romans applied ubiquitously to pitch their camps. During the Renaissance Polybius' work was rediscovered and published in 1530. His descriptions of ancient camps were adopted and developed by the C16th
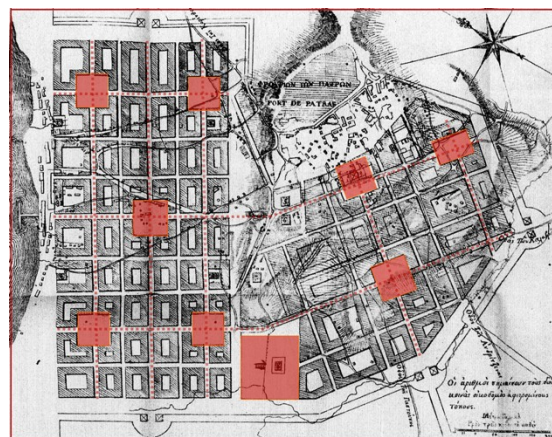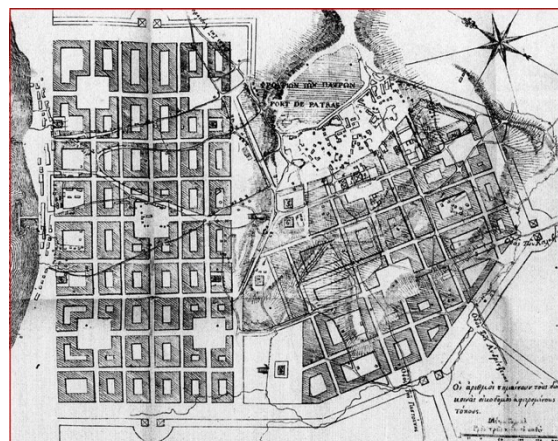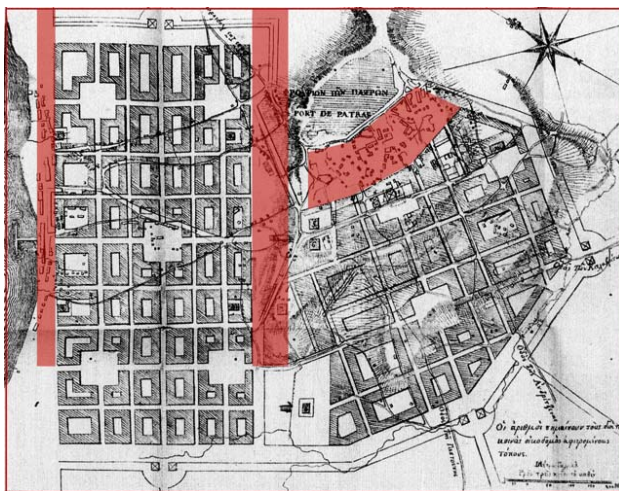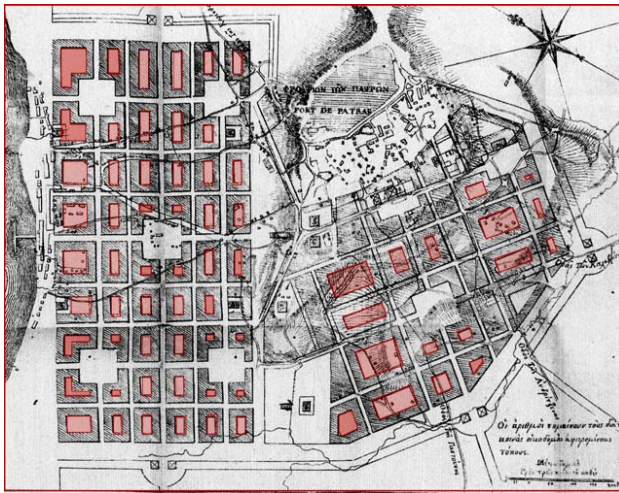
Figure 3. From top to bottom: Upper and Lower Patras plan, squares, city blocks' courtyards, non aedificandi seafront, archaeological and castle protection green zones.

military as sources for warfare knowledge, as well as for ideal city plans. They influenced among others those by Giacomo Cataneo and Vincenzo Scamozzi. It should be noted that Roman camp and ideal city precedents were identified in Savannah, Georgia, plan, attributed to its founder, James Oglethorpe, and dating as early as 1733 (Bannister, 1961). Organised as a Scottish tartan rather than a simple grid, the Savannah plan is developed through the repetition of a modular unit, the ward, with a square in its centre. This spatial sequence of squares offers a unique experience, as pedestrian sidewalks align with paths crossing sequences of green spaces. Paul Zucker (1959) remarks that "the square by frequent repetition in Savannah becomes an integral part of the street pattern and creates a

series of rhythmically placed openings which give a wonderful sense of space in a solidly built townscape". Savannah proves, as Spiro Kostof points out, that "grids can be much more than dull blueprints of land division".

Pondering the same precedents, we comparatively evaluate the potential environmental qualities of the 1828 Patras plan in comparison to that of Savannah. By 1820, most public squares in Savannah had been planted, transforming it into a green town. As the city expanded through the repetition of the modular unit, squares were multiplied. The city did preserve its unique character. In contrast, Patras altered or built up the squares that Bulgari designed, thus missing the rhythmical sequence of open spaces.

ii. A green avenue. Having been a disciple of painter Jacques-Louis David's, Bulgari showed a keen interest in nature. In his
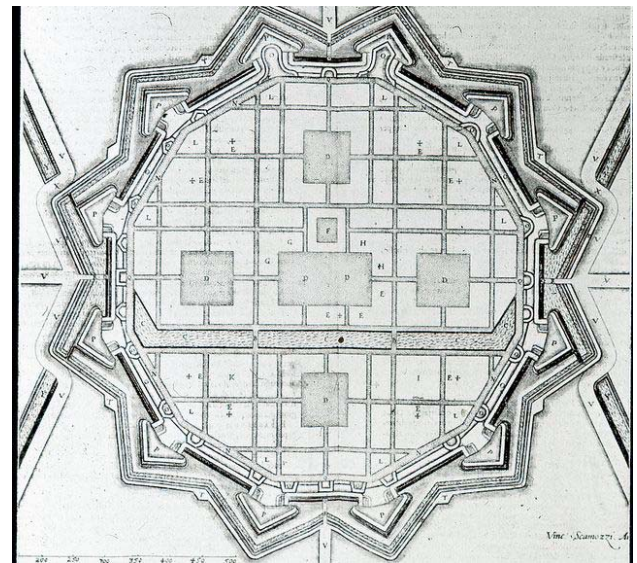

Figure 4. Plan of a fortified town by Vincenzo Scamozzi (L'Idea della Architettura, 1615)

Souvenirs, he confides that the happiest period of his life was that of his picturesque promenades in the forest of Fontainebleau and shows his admiration for the Alhambra gardens and the botanical gardens of Cayenne, Lesser Antilles. In his Patras plan, Bulgari envisions a green zone between the city and the coastline. In his 26.01.1829 letter to Capodistria, he even offers his fees for planting an allee on the spot to which Capodistria replied that he would double the number of trees at his own

expense. Capodistria reckoned that the residents of Patras would be obligated to Bulgari for this green space. However, the project was never carried out. Furthermore, the subsequent construction of a railroad finally cut off the city from the sea to date.

iv. Provision of non aedificandi areas for the protection of ancient heritage. Bulgari, a romantic, described himself as "a friend of solitude and the charms of the past". In a letter to local authorities he pointed out the need to preserve ancient ruins and house excavated antiquities in a national museum. He planned a sizeable buffer zone between the Upper Town and its castle so as to protect the latter from unanticipated development. Furthermore, he excluded from development the slope separating Upper and Lower Patras, where the Roman Hippodromus was later found. Bulgari's approach on greening areas adjacent to monuments and sites of interest reveals his will to protect cultural heritage.

Figure 5. Savannah Plan, 1757 (W. G. de Brahm, History of the Province of Georgia, 1849)

v. City block courtyards and pedestrian arcades. Bulgari's plan provides for rowbuildings arranged along the edge of perimeter blocks with rectangular courtyards in their centre. This form allows ample sun lighting and air circulation in the also in the back quarters of houses optimizing living conditions. Furthermore, it creates a restricted green and/or social open space for the residents. Regrettably, subsequent building regulations uniformly applied to Greek cities

focused on the individual building lot ignoring the totality of the city block. They resulted in random and irregular courtyards, as left-over spaces shaped by the agglomeration of buildings (Rodi, 2018). Another important element to be mentioned on the Patras fabric is the presence of arcades alongside the block facades, as introduced by Bulgari for the protection from rain or hot sun.

5. RESULTS AND DISCUSSION

The research's overview of the history of urban greening in Europe reveals that perceptual approaches shifted from meaning and beautification to health and social concerns. By the mid-C19th, gardens and parks in Europe were attracting much attention and citizens were free to enjoy urban green as nobility previously did. It is important to point out, that it was in that period that our current understanding of public gardens as accessible to all emerges.

In this context, building cities in the newlyindependent Modern Greece demanded both international imports and local inventions. Our examination of the green aspects of the early and unexecuted Neoclassical city plans of Athens and Patras reveals prevalence of pure international influences and imports, such as Baroque and naturalistic garden layouts, *allees*, archaeological parks, axial views, botanic gardens, and planting along the city edges. The European tradition of landscaping was critically adapted by designers to the Mediterranean context and the local constraints (topography, climate, ancient relics, scarcity of land, water and other resources, etc.) so as to enhance the living environment for uneducated communities, through reduced means (street arcades in the Patras plan by Bulgari, limited water elements in gardens in the Athens plan by Kleanthes & Schaubert). Still, in both cases design visions were finally defeated by land speculation and petty interests. The designers' eagerness succumbed to harsh reality, sweeping along their own financial and professional status.

6. CONCLUSIONS

The research compared international precedents of urban greening with underdiscussed green data from the infancy of urban planning in Greece, to argue that green strategies and design initiatives in Greece were in theoretical concurrence to contemporary trends and practices, but failed to be applied. Learning from that period may contribute to redefining our future approach to greening Greek urban space with an eye on identity, acceptance, equity and climate change.

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