

# The Victoria Square Neighbourhood: Enhancing Resilience by Social Networking

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## **Introduction**

Athens is climatically characterised by a Mediterranean climate with mild and rainy winters and warm summers. In the summer the average temperature is 35°C, with many days exceeding 40°C. Athens is often struck by heat waves, meaning at least 3 consecutive days with air temperatures above 36.5°C. Since the 1950s the number of heat waves has increased substantially: in 2007 14 days have been recorded in comparison to only 6 days in 1955 (FOUNDA and GIANNAKOPOULOS 2002, 229). Inappropriate building materials, the lack of green and open spaces as well as high volumes of traffic contribute to the increasing temperatures in Athens (FOUNDA and GIANNAKOPOULOS 2002, 229). Some places within the city are easily prone to high temperatures, which is called the urban heat island phenomenon. The urban heat islands describe “the excess warmth of the urban atmosphere and surfaces compared to the non-urbanized rural surroundings” (SATHOPOULOU and CARTALIS 2007, 358). The development of urban heat islands is influenced amongst others by construction material, vegetation, emissions, circulation and topography (SATHOPOULOU and CARTALIS 2007; KATSOLIS and THEOHARATOS 1985; HASSID et al. 2000). The vulnerability towards natural hazards and risks, including urban heat islands, are multidimensional: human, social, economic, institutional, urban and ecological. Social vulnerability is defined as “the exposure of groups or individuals to stress as a result of social and environmental change, where stress refers to unexpected changes and disruption to livelihoods” (NEIL ADGER 1999, 249). It depends on various factors, such as the lack of social cohesion, social exclusion, poverty, gender, age, unemployment, housing condition and the access to health and medical services (CUTTER et al. 2003; NEIL ADGER 1999, SAPOUNTZAKI et al. 2015). Athens is especially vulnerable, as many residences do not have sufficient insulation and thus the buildings heat up in summer (BANK OF GREECE 2011). The Victoria Square neighbourhood is characterised by low-income households and various ethnic groupings. The transformation of the neighbourhood to a more resilient one towards heat islands, is not possible without major state and private

investments. As the inhabitants have other, more dominant problems to cope with, than being bothered developing a sustainable neighbourhood, we have decided to use the already existing grouping to create a neighbourhood which is connected among each other, for example by creating neighbourhood gardens and making use of the roof tops among others. The idea is to develop a mobile phone app named 'Greender', which aims at encouraging people in the district to help each other. In the following, the neighbourhood will be analysed along social structures and the built environment. Then, the concept of neighbourhood networks will be explained in detail, which will then be applied to the idea of 'Greender'.

### *Analysis*

The investigated district is located between the Street of the 28th October and the main railway station, whereby the Street of the 28th October can be considered as a hard border between the neighbouring districts to the East (see figure 1). This road, as well as Acharnon Street and Liosion Street run through the district, connecting the city centre of Athens with suburbs in the North. These streets carry a large amount of traffic, creating emissions which make the micro-climate of the neighbourhood highly polluted and increasing the risk of heat islands.

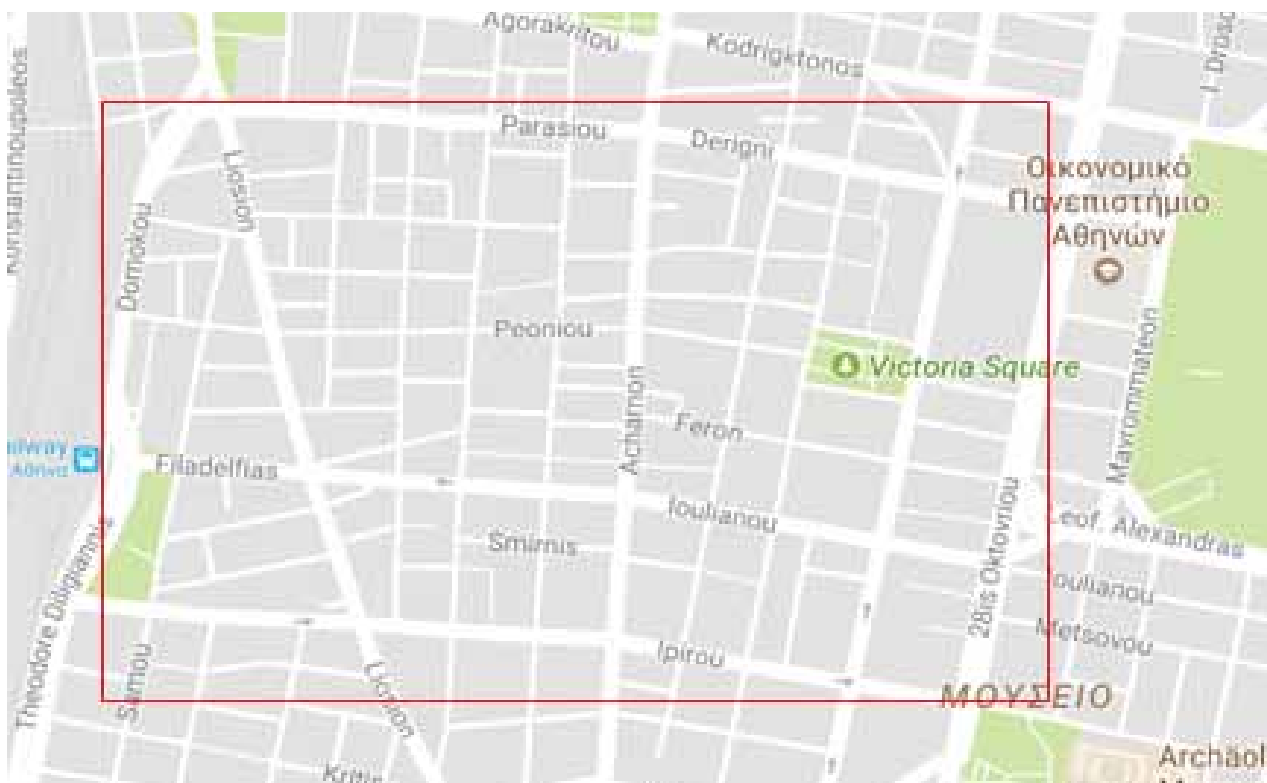


Figure 1: Investigation area (Source: GOOGLE MAPS 2017)

The district is characterised by a diverse, multi-ethnic residential structure with high percentage of immigrants (see figure 2), mainly from the Middle East, Africa and Eastern Europe. Victoria Square, although located at the very West of the district can be regarded as the heart of the neighbourhood, being a central meeting place for the residents. In the past two years the piazza has been home to an ever-going number of migrants, mostly from Afghanistan, and thus has become a synonym for the migrant crisis which is affecting Greece (McVEIGH 2016). Although Victoria square has become a shelter for many people, the square seemed tidy and organised, there were hardly any hard evidence of people housing there. It rather looks as if the different minorities keep to themselves and have formed groups in which they interact. According to Gaglias and Seferoglou (2015), there were very little problems with the refugees settling in Victoria square and the residents of the neighbourhood. In fact, the residents have been helping the migrants out with food, water and clothes. Furthermore, the district is characterised by a low income household, that receive state-aid. Simultaneously, the neighbourhood is home mainly to residents mainly up to 50 years old (see figure 3).

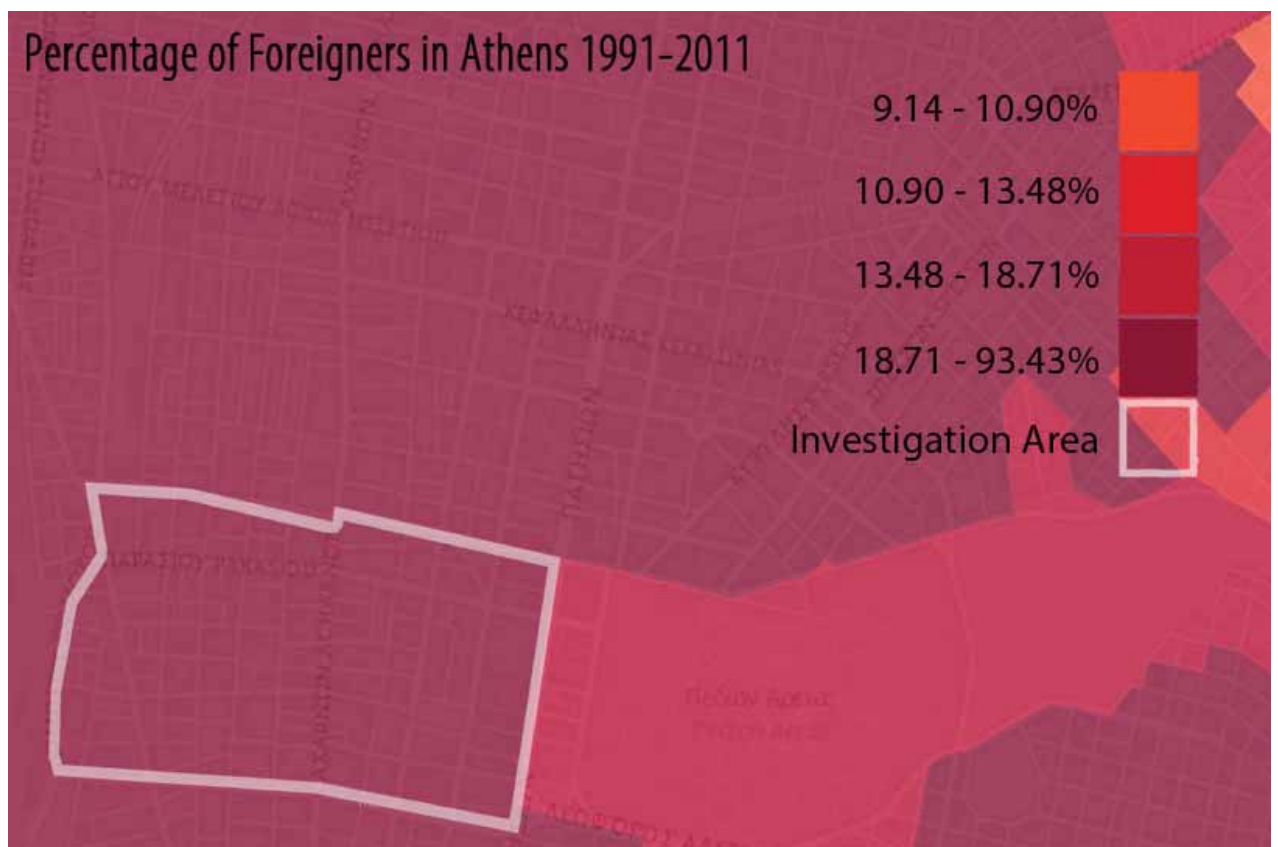


Figure 2: Percentage of foreigners (Source: NATIONAL CENTRE FOR SOCIAL RESEARCH, 2015)

Victoria Square is also the entrance to the metro station 'Victoria' (see figure 4) which serves line 1 running from Kifisia to Piraeus. The station was connected in 1926 and re-designed in 1947 after German role model (ΑΤΤΙΚΟ ΜΕΤΡΟ 2017, www). Hence, the square is often frequented by numerous pedestrians passing by, as it lies between the main train station and the rapid transit network. Due to the passing-by pedestrians and the people frequenting this place, it can be characterised as a vibrant and lively open space.

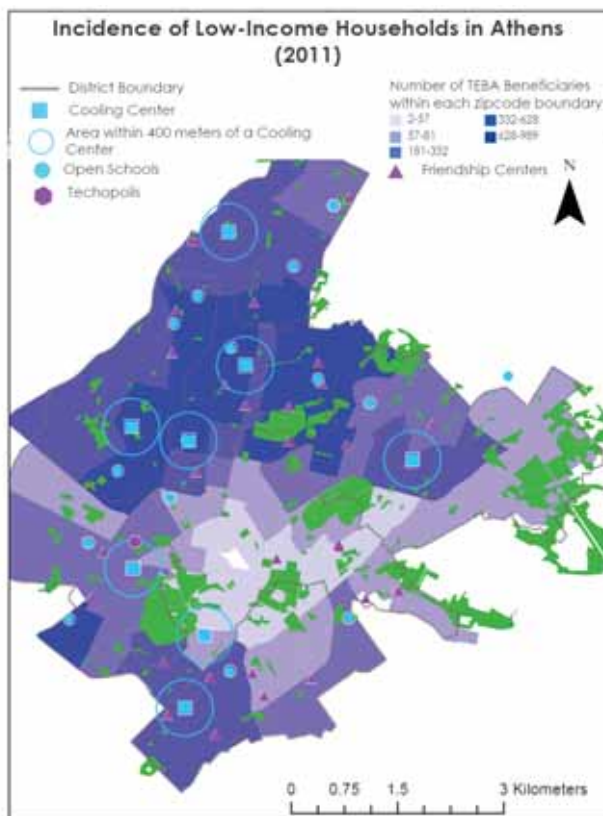


Figure 3: Number of low-income households (Source: ATHENS OFFICE OF RESILIENCE AND SUSTAINABILITY 2011)



Figure 4: Entrance to Victoria Station (Source: WIKI COMMONS 2007, www)

The entire neighbourhood is densely built up with hardly any open spaces but Victoria Square. The built environment is mainly characterised by old and poorly maintained buildings, showing once again the low incomes of the inhabitants as well as the lack of public investments. On the one hand most of the buildings seem to have accessible rooftops, which appeared not to be used and bare. On the other hand, the balconies look as if the people frequently use them and have taken the initiative to place plants on them in order to create a slight cooling effect and to create a homely atmosphere. This leads to the



assumption that people are feeling at home where they live as well as the willingness to green spaces. The bad state of the buildings is also projected on the pavements. As is major parts of Athens, the pavements are very narrow, making it very hard for a single person, let alone for several people next to each other, to use them. Furthermore, many sidewalks are destroyed due to the roots of trees. The sidewalks are mainly used as parking spaces and the few non-built up spaces in the neighbourhood have been converted into unofficial parking lots, which is necessary due to the large amount of cars and the little space to park them. It was quite outstanding how many cars were parked on the side of the roads, taking into account that the field visit was conducted in working hours. This stresses the assumption that the public transport offers are widely used.



Figure 5: Peoniu Street. (Source: Own Photography)

While investigating the area, the impression was made, that it is already quite green. At first this was surprising, as the district is crossed by three major roads and carries a heavy load of traffic and there is only one open public space within the neighbourhood. This impression was supported by the plants on balconies as well as by the many small roads which are lined by trees (see figure 5). Yet these trees, which are very beneficial for the micro climate are closely surrounded by pavements counterbalancing the positive effects slightly. Noticeable was, that the streets which were lined by trees were mostly those running from North to South, while the East-West corridors were mainly dominated by concrete. Although many streets were lined by trees, the air was sometimes very stuffy which can be seen as a result from the heavy traffic on the three important axes crossing the neighbourhood.

In general, the heat island effect was noticeable when there were no trees offering shade.

Victoria Square, being the central meeting point of the residents, is lined with trees and squares of grass, offering shade and a few green specks. Nevertheless, it seems as if the piazza, which actually is the heart of the neighbourhood and quite lively, does not belong to the residents due to the small fences which line the green spaces (see figure 6). Yet, it is used and welcomed by the residents, as Victoria Square is the only organised and openly accessible open space in the districts. The open space would gain attractiveness, if the green spaces and trees were not fenced in.



Figure 6: Victoria square (Source: Own Photography)

All in all, the convergence of two crises – the refugee inflow and the economic crisis that has been plaguing the country for the last years – is well represented in the neighbourhood and mainly on Victoria Square. The district is already quite green and it seems to be difficult to undergo any further improvements of the micro climate without major interventions, whether infrastructural or financial. The residents seem to be organised within ethnic groupings, which keep among each other. Thus, in order to combat the risks of heat islands, it is important to approach the residents, raising awareness, so that they take the issue and make it one of their own, for example by using their roof tops and greening them.

As the analysis of the neighbourhood has shown, the investigation area has a great number of immigrants, refugees and low-income families who have to deal with other problems rather than climate change effects. In addition, Greek people lack in trust for governmental structures (SMAGHI 2017, www) and big environmental projects like parks seem hard to be realised. Even if the Greek government tried to solve environmental issues, and measures against climate change impacts (NANO 2015, 49), the problem was a lack of willingness to implement those, due to more important economic and political discussions (NANO 2015, 57). In order to overcome the mentioned issues and still find a solution for the urban heat island effect, this concept tries to find a bottom-up approach that establishes green infrastructures as a side effect of social structures which are only beneficial for household budgets but also increase community strength. To achieve that, the concept focuses on creating resilience strategies by incorporating social and ecological measures into a complex “socio-ecological” one (HOLLING 1973, 6; WALKER and COOPER 2011, 1ff). Those practical, decentralised bottom-up strategies can complement high-level policies and find cost-effective strategies against climate change issues.

## Concept

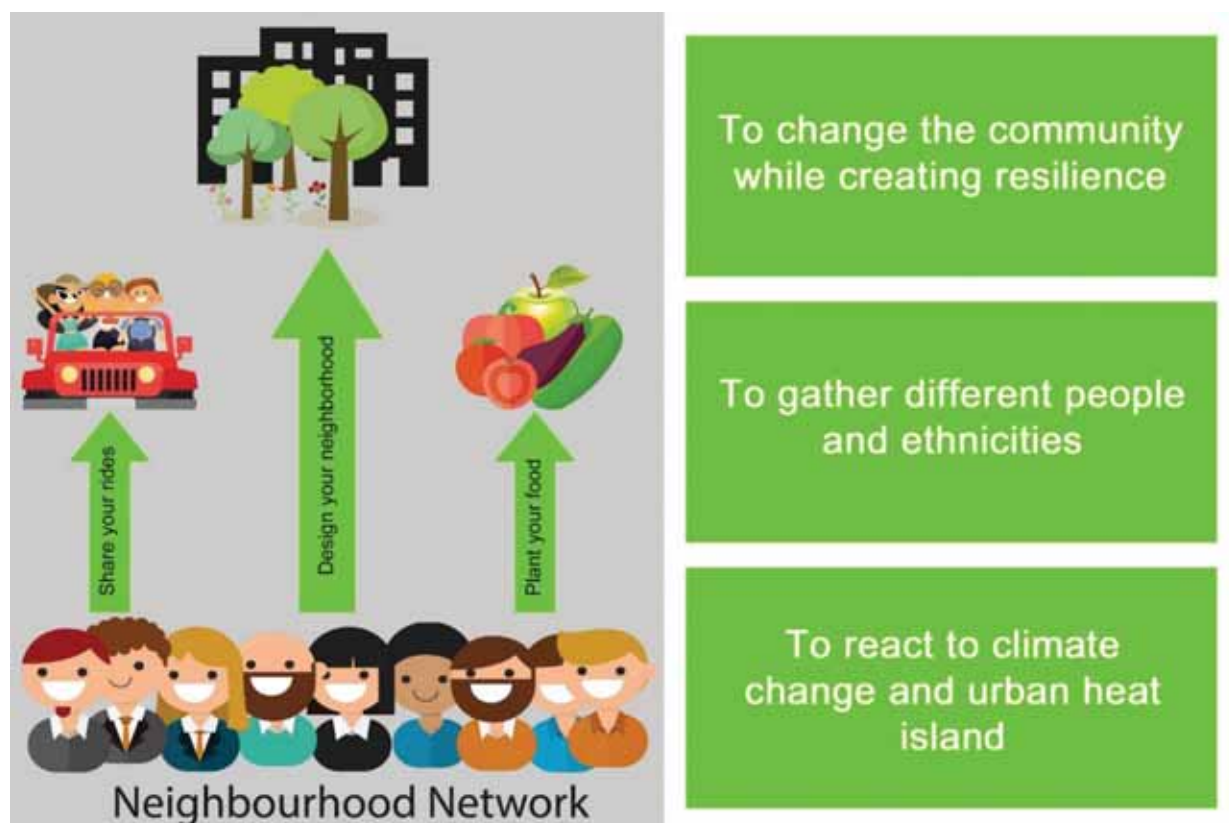


Figure 7: Concept overview (Source: Own Depiction)



Creating “social networks contribute to increased socio-ecological resilience, as communication, adaptive management, and good governance are central in fostering adaptive capacity in communities” and will help to establish the ability of self-organising as an important factor for resilience (WESTERMAN et al. 2012, 89f). The neighbourhood network is based on two main pillars: community gardens for growing own produce, and carpooling for reducing traffic and costs. The idea is based on self-organisation of the inhabitants with little outer influence. The aim of the neighbourhood network is to create a more resilient and tight community, to gather the different ethnicities which will both lead to more resilience towards climate change and urban heat (see figure 7).

### **Planting and sharing food in community Gardens**

Encouraging the people of Victoria Square’s neighbourhood to establish community gardening will lead to many benefits for both social and ecological aspects. As people grow their own food in abandoned lots, on their balconies or rooftops, they will save costs for vegetables and fruits, they would normally have to buy at the grocery store (WAKEFIELD 2007, 97). This will be an important incentive but will also provide a better access to healthy food which is an important issue for people with low incomes (WAKEFIELD 2007, 95). It gives opportunities to learn about nutrients, induces people to eat less junk food and therefore increases the overall physical health (ALLEN et al. 2008, 431). In addition, it can enhance economic self-reliance of the community and can provide food security (KOBAYASHI and TYSON 2010, 14). As community gardens are free to participate, there is no economic exclusion of participants (QUAYLE 2008, 19), which makes them an opportunity for social connecting and therefore not only increase their physical but also their mental health. Interacting with nature creates a feeling of relaxation and calmness. Community gardens are seen to provide recreation in a densely populated city - but social aspects seem to be as important as offer of a therapeutic environment (QUAYLE 2008, 77), as the “community health” can be enhanced by connecting people (WAKEFIELD et al. 2007, 97). Some cases were showing that there is a strong bonding between people who participated in community gardening projects which improved their feelings of loneliness and isolation, because the projects offered a place



to meet new people and topics to talk about. “Look, if you don’t do stuff like this there is no way of meeting those other people [...], let’s say you live in your own little world [...], you may have your own friends but they are all the same [...] and you don’t get to experience anything else” (KINGSLEY and TOWNSEND 2006, 530f). Furthermore, programmes linked to gardening “have been shown to reduce children’s involvement in alcohol, drug, and tobacco use [...] which may improve the quality of life in their neighbourhoods” (ALLEN et al. 2008, 431). Building up a strong community-feeling force people to interact, this creates relationships and prevents and reduces crime (HEROLD 2012, 45). Sharing and even selling their own produced vegetables and fruits were noticed as a satisfying activity and people developed pride and a local identity at an individual level. The empowering process and the feeling of “having something in life, work out” can help people, especially those with low incomes (WAKEFIELD et al. 2007, 97). Also neighbourhood beautification will benefit from plants and new, strengthened social structures (KOBAYASHI and TYSON 2010, 15). Another financial benefit is the reduced energy use caused by planted roofs and balconies. Cities heat up twice as fast as the rest of the world, because of the concrete environment absorbing heat very well. To deal with these problems, people tend to cool their houses more, air conditioners run harder (HARRIS 2012, www). Planted roofs act as insulators for buildings, reduce heat transfers, improve indoor comfort and even can lower heat waves in general. “[...] vegetated space [...] helps water evaporate throughout the day. And evaporating water carries away heat. Like sweat, it’s nature’s air conditioning, but we’ve managed to interrupt that process in cities. The result is called the urban heat island effect, and it’s adding to our warming woes” (ibid.). That means that energy costs for both cooling in summer and heating in winter will be lowered by planting activities (EPA 2017, www). Installed little green spaces combined with community gardens create islands of calm to offset the heat that builds up between concrete cities. As a side effect of encouraging locals to act more socially and developing stronger ties, the environment will improve. It strengthens environmental understanding which creates a link between local actions and the global issues of climate change, bringing positive change to both. This means to their own lives and the lives of their neighbours (QUAYLE 2008, 77).

*“If we’re talking about social justice it has to encompass the food that we eat, the people that grow the food, how they’re treated, their health benefits, their wages. How hard they’re living. Are they living in substandard housing? Do they have heat and hot water? What about the children? Are they getting a good education? Is it quality in terms of schools? So for me, the movement started about growing food but then blossomed into this social justice conscious.”* (STORYCENTER 2017, www).

### **Reducing traffic and emissions through car sharing**

The second part of this concept is to encourage people use car sharing and carpooling systems. Owning and driving a car is one of the major household budget expenses which can be a burden especially for low-income families. “Households that share rather than own a car can reasonably save \$500 to \$1,500 per year” (LITMAN 2015, 5).

Besides financial benefits, car sharing reduces emissions like CO<sub>2</sub> by using less fuel which will have a positive effect on the progress of climate change and the air condition of Athens. In addition, traffic and parking pressure can be decreased. The parking lots that are not needed anymore can be reorganised by local planners with the involvement of the public and offer more open space for gardening projects, improving the quality of life in the neighbourhood (LOOSE 2009, 3f).

As explained, community gardening and car sharing can have a positive influence on socio-ecological resilience, combining community creation and actions against climate change issues like the urban heat island effect. But how to install those ideas in the neighbourhood of Victoria Square?

In order to really encourage people to participate in the mentioned activities, the first step is to inform people about their possibilities and then to connect people who are willing to implement them. The best way to achieve these goals is through social media. Social Media provides not only a good way to present ideas (NETI 2011, 6), but also “an accessible and powerful toolkit for highlighting and acting on issues and causes” while supporting their users working, thinking and acting together (RO 2017, www). It gives the best opportunity to connect people with the same interests through simplified, instant communication (ibid.). As 77% of the world’s population is online and many people use smartphones and tablets in

their daily life, this concept tries to implement the ideas through a social media mobile app. Mobile Apps have many benefits such as they can be used right away from any place in Athens and most of the time are free to use (VIDIOUS 2017, www).

### **Greender – creating your little green neighbourhood**

#### Overview:

*Greender* is an application that combines all good aspects that social networking can offer to a society directly with cooperative economy. Its main aspiration is to create a social network that directly connects people within a specific radius that spatially is defined by the area of a neighbourhood. It consists of two main branches that will be further analysed: the Urban Green Network and the Carpooling part. *Greender's* mission is to form a network of people willing to collaborate in a march towards a greener urban sustainability locally. Its mission is to promote and encourage small initiatives that help people with a common goal interact and work together towards a greater cause. The investigated district will be very suitable as a functioning neighbour on *Greender* as the residents seem to have already organised themselves in (ethnic) groupings. Accordingly, there are dynamics which can foster the usage of the app as well as be promoted due to *Greender*. The overall ambition is a city full of little neighbourhood hubs with little gardens and sustainable urban farming.

#### How it works:

First step in *Greender* is the registration - there exists a visitor mode which will be analysed later on, but the main function of the app is for registered users. Upon registration, personal data of the applicant are requested, and most importantly, valid proof regarding their home address. It is important to verify that the app users have entered their residence correctly so that the networks are created correspond to actual neighbourhoods. Once the residence is verified, the new user is requested to use a map in order to define the area where an intervention could be made. In order to facilitate this procedure, when a neighbourhood is selected, the patios (*akalyptos in greek*), the rooftops and streets are highlighted and the user can define his/her area of influence, so to name the urban space where the user has access to. This is a preliminary potential urban

green mapping whose goal is to trace the potentials of the urban green network. Once registered, even if no activities are proposed, the users are linked with the area they have selected. This data is of crucial importance for the understanding of the potentials of such a network if it reaches full expansion. After registering, users have access to the main branches of the application which will be further analysed: Carpooling, educational mode, Urban Green Network and Visitor's mode.

#### Hour Points (HP)

Hour Points is a currency tool used by the application. The users who offer their time are credited with HP that they can offer in exchange of other people's help. Since Greender is focused on equal exchange, HP is a helpful tool that helps keep track of people's input in the process and help determine an exchange ratio. Its use is not obligatory, but it is encouraged since it helps promote a cooperative economy that is not based on money but mutual exchange.

#### Urban Green Network

The focus point of this application is first of all to create urban green spaces, but not separated and unassociated: the goal is to create with cooperative means, a network of green spaces within the city that are mostly produced by cooperative initiatives of people within a neighbourhood. After registering, the users have areas of influence (e. g. their akalyptos) in which they can start proposing projects. These projects mainly focus on green movements, but once created could be expanded in further networking. When proposing a project, the user selects the area where he wants to make an intervention, the name of the project, how many HP he offers and a brief description of the project. For example, a user posts project 'Akalyptos 3.0' which offers 3HP and consists of planting vegetables in the patio where he has access to. When the project is posted, the users within a determined ratio are notified that a new project is posted and declare their interest. Once committed to the project, the participating users can submit proposals and discuss anything related to the project. The actual activity could happen in one day or last for longer periods of time e. g. one hour every Monday. When the project is created in a semi-public space a user has access to, the users that have



access to that space are directly notified and invited as well as the users that have access to neighbouring areas. This way the users can add their space in the project and expand it.

### Carpooling

This branch of the application focuses on discovering overlapping roots that neighbours follow in their everyday life in order to connect them and promote ride sharing. It works in a way similar to the philosophy of known carpooling apps, in a sense that drivers publish their future ride or their everyday route and passengers claim interest on them. The difference lays on the audience it is addressed to. Only neighbours with similar roots can view each other's data and connect privately to arrange their meet up. This branch of the application does not promote one-time ride shares but instead it aims at the creation of groups of people living close to each other that share a ride every day, with all the beneficial effects that this can have in the environment. The need for this service was not realised by the lack of public transport. On the contrary, there are specific routes in the area that are easily accessible by public transport, like the connection of the area in question with the commercial centre of Athens. The difficulty prevails when one tries to reach the suburbs of Athens in working hours, where public transport is significantly inefficient. Concluding, the carpooling branch of *Greender* is a side-branch of the application, substantial enough for the environmental upgrade of the neighbourhood and a crucial factor to the enforcement of social bonds created within the same neighbourhood.

### Visitor mode

A registered user who is evidently active within his own neighbourhood, can gain access to the so-called 'visitor's mode'. This means that these users, when visiting a different neighbourhood, can shuffle through the active projects of the district, visit them, upvote, and participate in them if accepted by the supervisor of the initiative. In the visitor's mode, registered users with evident activity can connect with each other and share experiences and intra-neighbourhood ideas for networking.

### Educational mode

A complementary educational menu consists of the 'bible of urban sustainability': Be it detailed instructions for creating a rooftop garden, or data on CO2 emissions of cars in cities, the educational mode offers an insight into all the environmental factors that make a network like Greender necessary as well as all the instructions essential for its application. This data could be used for a presentation of the application, or for a simple introduction to the new user.

### Every day use

When browsing through *Greender*, the user can view all active projects on a map with a green dot, all past projects and all future projects. He or she can comment, make proposals and upvote a project. However, the user can only participate in active projects within his or her own neighbourhood. Upvotes and comments promote a more active involvement in the whole procedure, since best projects could be featured and published, as well as expanded in different neighbourhoods.

## ***Conclusion and Outlook***

Athens is effected heavily by climate and societal hazards, which need to be tackled effectively. The economic and the refugee crisis have strained efforts in reducing climate related issues. Hitherto, public money is too scarce to handle all problem simultaneously and appropriately. Thus, the idea of using the potentials Athens has to offer arose. The Victoria Square neighbourhood is a district characterised by low-income households with various ethnical backgrounds, which seem to be connected among each other. The residents have other problems than to primarily think about how they can actively contribute to a more resilient and sustainable city. Thus, we have come up with creating an urban green network by an App, which takes advantage of these formed groups and addresses these directly. The App will rise attention for a more sustainable lifestyle and should enable the residents to integrate small habits into their daily life, to make their neighbourhood more climate and socially resilient. Tackling climate change solely by social efforts in reducing carbon emission, greening public spaces and rising awareness to the matter, will not be sufficient. It is clear, that transformations in the built environment have to be made as well.

Furthermore, the heat island phenomenon and its problems have to be embedded in administrative and political decision-making in order to achieve more positive effects. Hence, a multi-level approach including civil society, should be initiated in order to tackle heat-related issues simultaneously.

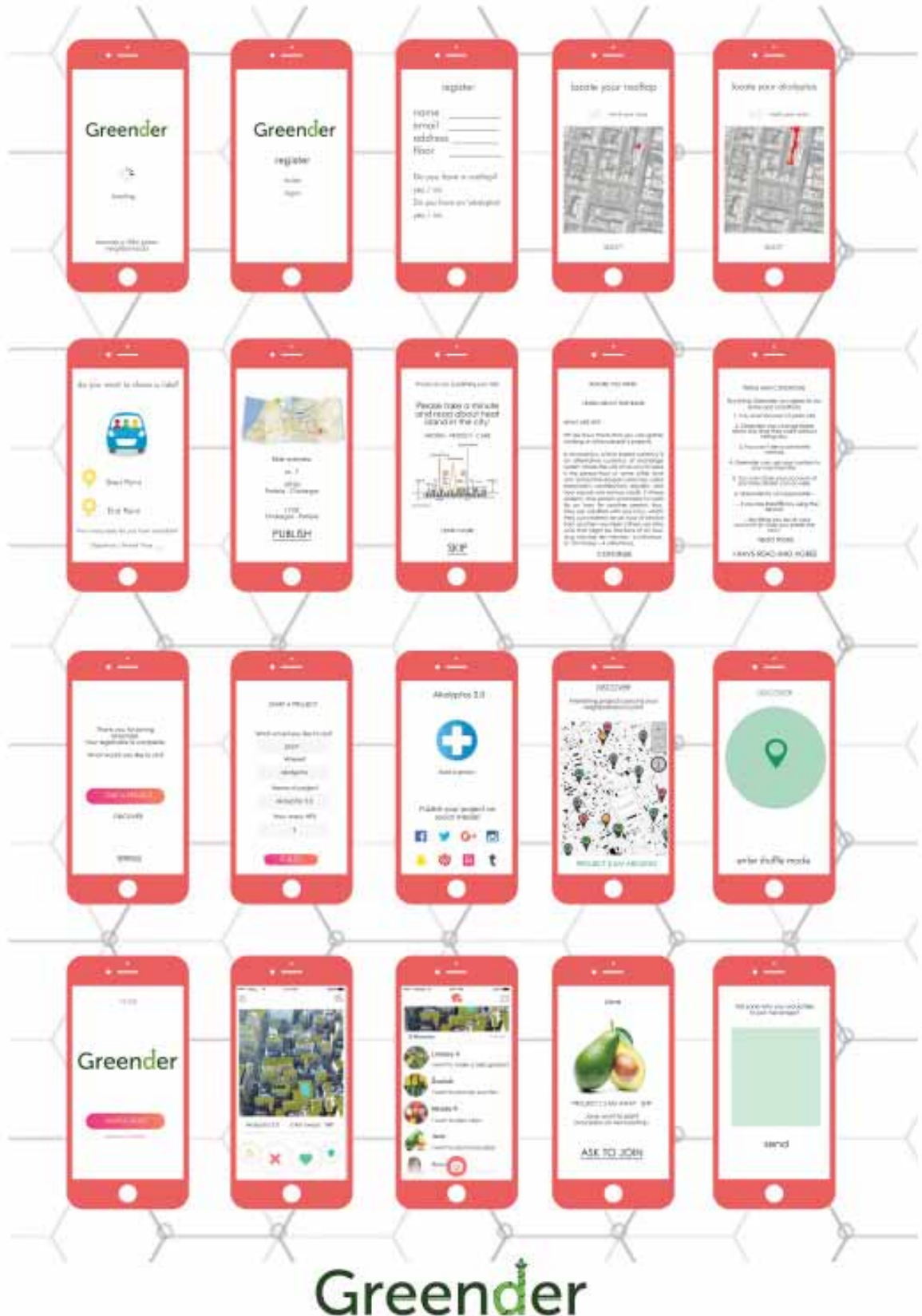


Figure 8: Overview of Greender (Source: Own Depiction)

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