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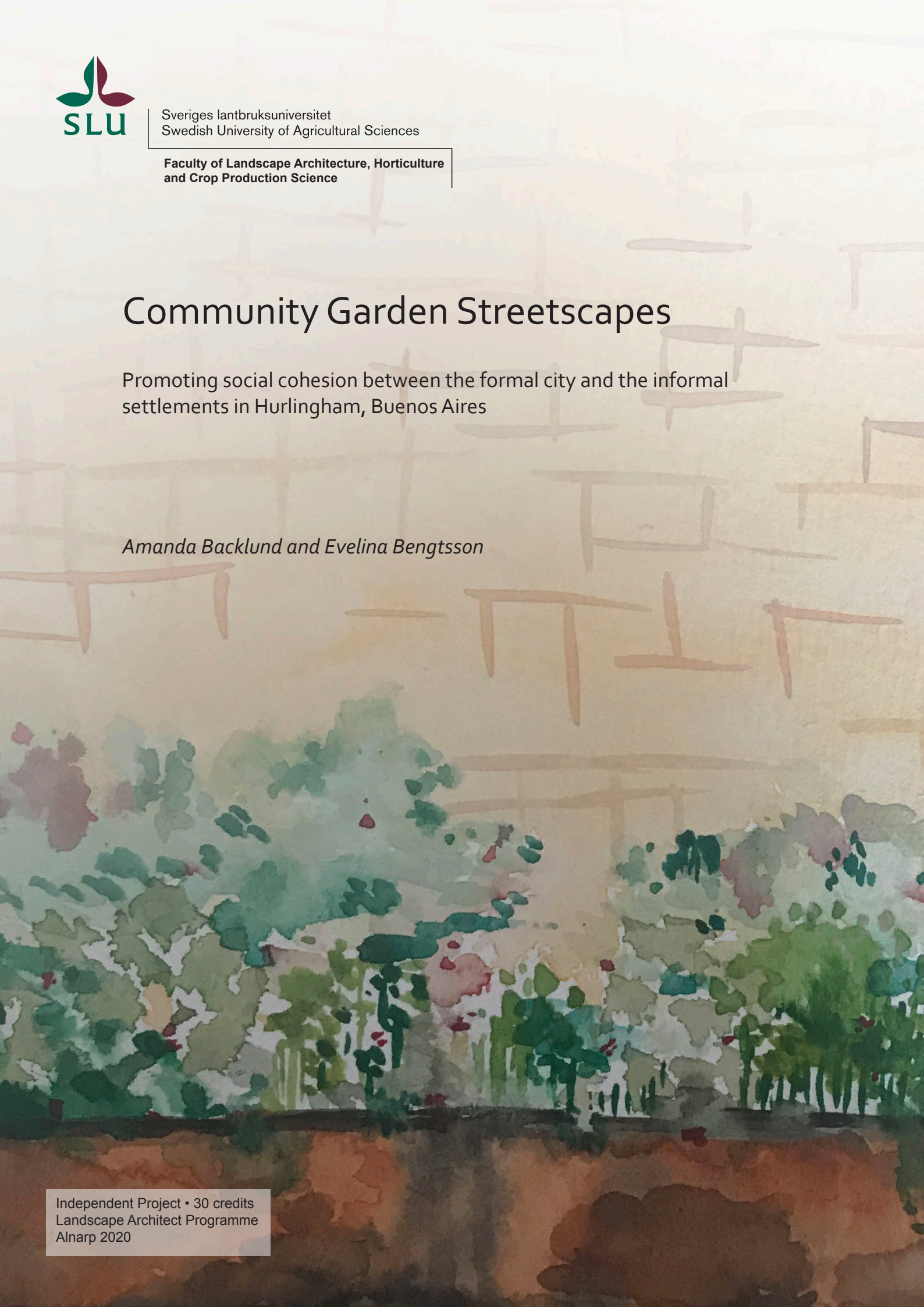
Faculty of Landscape Architecture, Horticulture and Crop Production Science

Community Garden Streetscapes

Promoting social cohesion between the formal city and the informal settlements in Hurlingham, Buenos Aires

Amanda Backlund and Evelina Bengtsson



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Promoting social cohesion between the formal city and the informal settlements in Hurlingham, Buenos Aires

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Prologue

This thesis has been made possible thanks to the Linnaeus-Palme Exchange Program, a stipend financed by SIDA, the Swedish International Development Cooperation Agency. It is developed within the frames of a partnership between SLU, The Swedish University of Agricultural Sciences and FADU, Faculdad de Arqitectura, Diseño y Urbanismo at UBA, Universidad de Buenos Aires.

The project has its foundation in previous research done within the Linneaus-Palme collaboration. First, *Beyond Best Practice Re-valuing mindsets and re-imagining research models in urban transformation*, a work by Lisa Diedrich, Andrea Kahn and Gunilla Lindholm (2020) has been of importance for our working process. This content discusses the concept of site specific design, a mindset we believe to be an important tool in our project. When examining the informal settlements of Buenos Aires, we have understood that its urban fabric differs from everything we have experienced before. With this in mind, we cannot simply believe that a design solution found in a Swedish environment can be implemented in the informal settlements, although as an inspiration it might be helpful.

> *'Formal design imports may offer convenient, photogenic solutions to pretty-up a vague masterplan picture, but rarely acknowledge the particularites qualifying a local site.'*
>
> (Diedrich et al. 2020. p.38)

Diedrich et al. (2020) pinpoint the core of generic design, arguing that limited research and knowledge about a specific site is problematic. Yet, strategies applicable at more than one site can be regarded as more sustainable.

Second, *Espácio Públio como agente de cambio* by Flavio Janches (2020), a work that has been fundamental in the choice of subject for this thesis. This text brings to life an important dialogue about the lack of urban spaces in marginalised areas and how social stigmas make residents feel less integrated in the urban systems. Further, *Public Space in the Fragmented City* (Janches 2012), gives examples of projects working with social space in informal settlements in Greater Buenos Aires. Within the informal settlements, Janches suggests creating networks of interdependent public places to increase the chances of social cohesion. He also highlights favourable consequences of such transformations:

> *'...the integration, interconnection and interaction opportunities through a network of public places made up of spaces for community activities, infrastructures and flows'.*
>
> (Janches 2012. p.40)

As landscape architects we find public space interesting, however, we also carry knowledge within urban vegetation in connection to public space. To strengthen the work previously completed within the Linneaus-Palme framework, we consider green public spaces in informal settlements to be a topic worth researching more thoroughly, in this thesis more specifically taking the form of community gardens.

Acknowledgements

First, I, Amanda, would like to thank Evelina for this partnership. We started this journey, clueless of what a world in crisis would mean for our project and friendship. Covid.19 most definitely turned things upside down and we only had two weeks in Buenos Aires before total lockdown was a fact. I am very grateful that I had you by my side during these uncertain times, stuck in Argentina with no flights leaving the country, you always kept the spirit up. After a bit of a struggle, we made it back to Sweden and despite the changed conditions, we kept conversing our honest thoughts via daily video calls. Thank you for all the motivation and inspiration.

And I, Evelina, would like to thank you Amanda. I'm very grateful for all you have taught me, from quarantine workouts to Spanish grammar. Being in a foreign country during a time of global crisis was in many ways challenging. Despite this, you kept a rational mindset and a positive spirit, always making the best of the current situation. Thank you for this incredible journey, both in space and mind. I hope we get to experience Argentina together soon again.

Together we would like to send our special thanks to our supervisors Lisa Diedrich and Flavio Janches. You have always been there for us, offering guidance regarding the thesis as well as in unexpected situations created by the global pandemic, thank you! We really appreciate your engagement, support and valuable insights.

We would also like to thank Andrea Winter for all her encouraging words and inspiring thoughts.

Furthermore, thanks to the participants of the Proyecto Urbano course held by UBA. A special thanks to Sofia Videla for helping us with Spanish translations when our language skills were not enough. In a time of isolation, our Argentinian classmates have not only contributed with helpful thoughts and material for the thesis, but also friendly faces and important social interactions.

Last but not least we would like thank Victor Olsson and Fredrik Palm for taking their time reading through the work an endless number of times.

Fig. 2. Buenos Aires, roof top view (Backlund, Amanda 2020).

Abstract

Urbanisation causes challenges related to environmental issues and social conflicts (Sijmons 2010; Elmqvist et al. 2018). On a local level, in the informal settlements of Hurlingham in Greater Buenos Aires, it is expressed through unequal distribution of urban land, severe floodings and segregation (Janches 2020a; van de Berg 2018). The informal settlements, also called barrios populares or barrios vulnerables, emerged in the aftershock of a rapid urbanisation process, in a country which has been dealing with an unstable economy for decades. Barrios populares are built, without provision, by the urban inhabitants themselves (van Gelder 2017). Today they provide shelter for over 1 600 000 people excluded from the formal city (van de Berg 2011). The residents in the informal settlements are exposed to high risk of crime, floods and pollution (Janches 2020a). Yet, in these vulnerable self-created neighborhoods, cultural assets such as social streetlife (WUF10 2020) and strong sense of community can be found (Janches 2012). This thesis examines how these site specific aspects can be enhanced by a transformation of the streets through the concept of community garden streetscapes.

Design and management strategies for community garden streetscapes in Hurlingham are developed based on literature findings and inspiration from reference projects. Moreover, five streetscape typologies have been formulated based on a street's typical attributes. Overall design ideas for all streetscape typologies are presented and the visualisations show how the gardens can fill a variety of purposes, from increased food availability and lowering the number of unemployed, to the creation of recreational and biological values. In terms of enhancing social cohesion between the residents in the formal city and the informal settlements, the street typology *Bridging Street*, has proven to be most suitable.

The thesis takes on a speculative approach and discusses community gardens as one way to handle global challenges at local level. Hopefully it can provide important insights to potential benefits that urban agriculture, in the form of community garden streetscapes, can give to a community in terms of life quality and social cohesion.

Abstracto

El urbanismo genera desafíos relacionados con problemas ambientales y conflictos sociales (Sijmons 2010; Elmqvist et al. 2018). A nivel local, en los asentamientos informales de Hurlingham en el Gran Buenos Aires, se expresa a través de una distribución desigual del territorio, graves inundaciones y segregación (Janches 2020a; van de Berg 2018). Los asentamientos informales, también llamados barrios populares, surgieron como consecuencia de un rápido proceso de urbanización, en un país que ha estado lidiando con una economía inestable durante décadas. Los asentamientos informales son construidos, sin provisión, por los propios habitantes (van Gelder 2017) y brindan refugio a más de 1600000 personas excluidas de la ciudad formal (van de Berg 2011). Los residentes de los barrios populares están expuestos a un alto riesgo de delitos, inundaciones y contaminación (Janches 2020a). Sin embargo, en estos vecindarios vulnerables creados por ellos mismos, se pueden encontrar activos culturales como la vida social en la calle (WUF10 2020) y un fuerte sentido de comunidad (Janches 2012). Esta tesis examina cómo estos aspectos específicos del sitio pueden mejorarse mediante una transformación de las calles a través del concepto de huertas comunitarias de paisaje urbano.

Las estrategias de diseño y gestión para las huertas urbanas comunitarias en Hurlingham se desarrollan con base en información de la literatura e inspiración de proyectos de referencia. Además, se han formulado cinco tipologías de paisajes urbanos basándose en los atributos típicos de una calle bonaerense. Se presentan ideas generales de diseño para todas las tipologías de paisajes urbanos y los imaginarios muestran cómo las huertas pueden cumplir una amplia variedad de propósitos, desde una mayor disponibilidad de alimentos y menos desempleo, e incluso inculcar en la gente nuevos valores recreativos, biológicos y medioambientales. En términos de mejorar la cohesión social entre los residentes de los asentamientos informales y la ciudad formal, la tipología de calles que ha probado ser más efectiva es la que denominamos *Calles Puente.*

La tesis adopta un enfoque especulativo y analiza las huertas urbanas comunitarias como una forma de manejar los desafíos globales a nivel local. Esperamos que pueda proporcionar información relevante sobre los posibles beneficios que la agricultura urbana, en forma de huertas comunitarias de paisaje urbano, puede darle a una comunidad en términos de calidad de vida y cohesión social.

Sammanfattning

En ökande urbanisering skapar utmaningar relaterade till fysisk planering, miljö och integration (Sijmons 2010; Elmqvist et al. 2018). I utkanten av Argentinas huvudstad Buenos Aires, närmare bestämt i informella bosättningar i kommunen Hurlingham, kan dessa utmaningar beskådas på lokal nivå. Här är de offentliga ytorna begränsade och miljöproblemen påtagliga (Janches 2020a; van de Berg 2018).

Argentina har sedan 60-talet haft en instabil ekonomi. De bristande ekonomiska resurserna, i kombination med en snabbt växande befolkning, har resulterat i uppkomsten av informella bosättningar, i folkmun kallade slumområden. Dessa områden består av hus som invånarna själva har byggt, utan tillåtelse, på kommunal eller privat mark (van Gelder 2017). I Buenos Aires slumområden bor det idag 1 600 000 människor (van de Berg 2011). Invånarna här lever under usla förhållanden med en ständig risk att utsättas för brott, översvämningar och föroreningar (Janches 2020a). Trots den stundande problematiken i de informella bosättningarna går det att finna kulturella tillgångar som inte bör förringas (WUF10 2020). Här är de sociala relationerna starka (Janches 2012) och gatulivet levande (WUF10 2020), tillgångar som vi i detta examensarbete vill ta till vara när vi föreslår hur gemensamma odlingslotter i gatumiljö kan komma att utvecklas.

Kunskap hämtad från litteratur och referensprojekt utgör grunden i gestaltnings-och skötselstrategier för gemensamma odlingslotter. Utöver detta har Hurlinghams gatumiljö analyserats och, baserat på dominerande karaktärsdrag, delats in i fem gatutypologier. Designförslagen som har utformats har till avsikt att ge en övergripande uppfattning om vilka fördelar som gemensamma odlingslotter kan frambringa. I uppsatsen lyfts exempel såsom ökad matförsörjning och nya arbetstillfällen, men även högre rekreativa värden och en ökad biodiversitet. Projektets målsättning är att öka den sociala sammanhållningen mellan invånare som lever i områden som idag är både fysiskt och socialt segregerade från varandra. Litteraturstudien indikerar att Bridging street har bäst förutsättningar för detta, därav görs ett mer fördjupad designförslag för denna gatutyp.

Examensarbetet spekulerar kring gemensamma odlingslotter som ett sätt att hantera globala utmaningar på en lokal nivå. Med nya perspektiv gällande stadsodling, mer specifikt gemensamma odlingslotter i gaturummet, är förhoppningen att uppsatsen medför viktiga insikter gällande hur gaturummets gestaltning kan stimulera levande stadsmiljöer där människor möts och interagerar med varandra.

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Fig. 3. Traveling from Sweden to Buenos Aires. (The map is based on an illustration by Lindbom, Dag & Theander, Nelly. Created within the framework of Curso Urbano 2019).

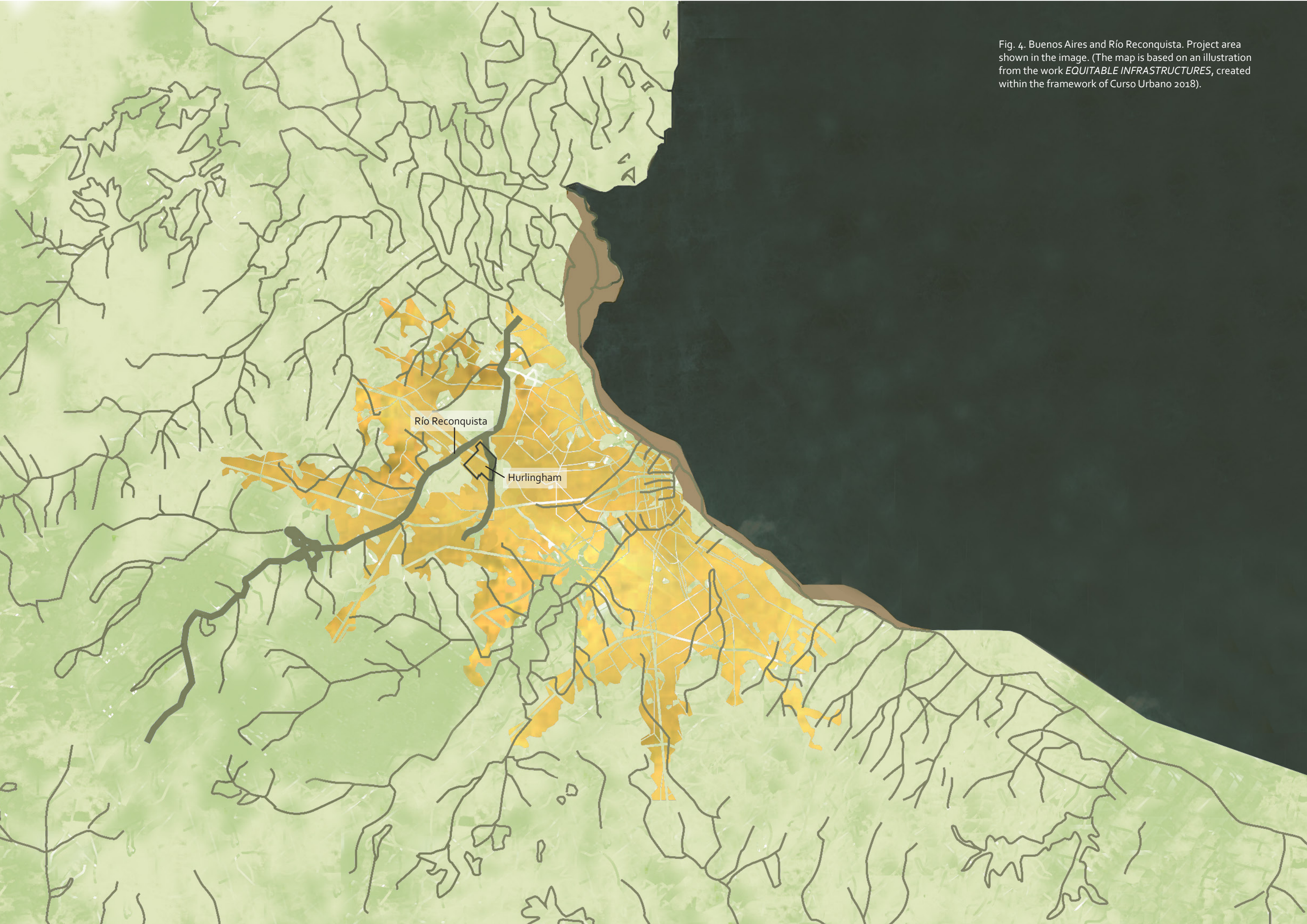


Fig. 4. Buenos Aires and Río Reconquista. Project area shown in the image. (The map is based on an illustration from the work *EQUITABLE INFRASTRUCTURES*, created within the framework of Curso Urbano 2018).

Introduction

Landscape architecture studies in Sweden demonstrate a reality which often seems to be about beauty and exclusiveness. With much focus on urban structures, we learn about design and planning of cities with fortunate circumstances. This gives us a solid foundation to stand on when picturing a future career in northern Europe. However, as we are just about to enter the landscape architecture field as professionals we begin to consider our need to broaden our spectrum of knowledge. It feels like we need to peek behind the curtain and see a bit more of what other issues and opportunities that might await us.

With an eagerness to understand how environmental and social inequality can be minimised, using methods of landscape design and planning, we both started to search beyond our natural habitat. Individually, we both looked for opportunities and challenges differing much from previous experiences. We came across the Linnaeus-Palme collaboration between the Swedish University of Agricultural Sciences and the University of Buenos Aires and realised that this would offer us a unique chance. Having been classmates for several years, little did we know about the journey which we were soon to depart on together.

At first glance, you could mistake Buenos Aires for a southern European city. The Spanish influences strikes us as we walk up and down the streets of our current home, the neighbourhood Palermo. We understand that with a city this size, there are neighbourhoods that hold other standards. Still, what is difficult to get a sense of is the enormous size of the city. Also, it is hard to grasp to which extent deprived areas in the outskirts of Buenos Aires struggle with severe poverty, environmental insecurity and social exclusion. Yet, these injustices are matters we deal with in this project.

Landscape architecture has unique width and a meaning with absolute depth. We would argue that landscape architecture communicates hope, change and equality. This definition might come across as romantic, however, we believe that one needs to strive for big things to make big things happen. With this definition at the back of our minds, we have developed this proposal. A proposal which we do not see as one single, or absolut solution. Still, we hope it can be a part of a larger development strategy which gives rise to further ideas for transformation of deprived neighborhoods.

Introducing Hurlingham, Greater Buenos Aires

The number of people living in slum conditions worldwide is increasing every year. Today approximately one out of four urban inhabitants live in informal settlements (UN-habitat 2015). In megacities in the Global South the number is even higher, here the majority of urban residents live in informal settlements (Fattah & Walters 2004). These dwellings are built on vacant land, without legal permission (van Gelder et al 2016). They are often located in the urban periphery, exposed to environmental risks such as floods and pollution. Furthermore, they commonly lack functional water and sewage systems and are usually situated far from public services (van de Berg 2011). In this project we will deal with sites within, and on the border of, informal settlements in Greater Buenos Aires.

Our project has its starting point in the fragmented river landscape around Arroyo Morón in the municipality of Hurlingham. It is located in the western part of Buenos Aires Metropolitan Area and is characterised by social struggles and environmental injustices, many of which are the result of insufficient waste and water management (COMERIC 2018). Along the river Arroyo Morón, almost 1000 families live in informal settlements, called barrios populares or barrios vulnerables. The informal settlements are physically close to the formal housing areas, in a number of cases formal and informal neighbourhoods are on opposite sides of the same street. Yet, there are economic and cultural differences as well as social stigmas which segregates the inhabitants in the barrios populares from residents in the formal city (Janches 2012).

Fig. 5. Arroyo Móron (Besares, Pedro 2020).

Site Specific context

Generally, landscape architects and designers learn from and find inspiration in other projects. Still, Diedrich et al. (2020) stress the risk of creating universal checklists for design solutions. Every site has unique qualities and features, ones that should be considered in order to create successful design (Diedrich et al. 2020.) In spite of this, professionals lacking knowledge of the locale, repeatedly neglect site specific conditions and thus, compromise crucial aspects (Braee & Diedrich 2014). Instead of blindly believing in the concept "1-size-fits-all" designers should invariably study the individual site's potentials (Diedrich et al. 2020). Despite the need of local awareness, commonly known design ideas can be useful in projects (Braae & Diedrich 2014). Also, to bear in mind, strategies applicable in more than one site are more sustainable (Diedrich et al. 2020).

Janches (2020c) points out the country's unstable economy as one important aspect to consider when working with urban planning in Argentina. Rather than proposing large restoration projects dependent on external financing for many years, he proposes to focus on small projects, possible to realise at a low cost and in a short period of time. Additionally he suggests an alternative working method. In order to complete a larger project, he proposes dividing the project into individual parts. Every part can function on its own, yet are also part of an entity. In addition, it is easier to acquire funding for a smaller project (Janches 2020c). In relation to the informal settlements, Janches (2012) suggests implementing small public spaces. He points out that small spaces are easy to create, that their public character possesses vital energy and that they have potential to work as catalysts for larger changes (Janches 2012). Also, Borthagaray (2020) advocates implementation of small scale, easily changeable, temporary design as a possible strategy when working with urban development in informal settlements.

Informal settlements are created by urban inhabitants that, without permission, construct dwellings on land owned by private actors or municipalities (van Gelder et al. 2016). In the absence of the state, they form their own neighborhoods, build football fields, club houses and churches (Janches 2012; Ziccardi 1983; Fernandez Wagner 2009). Bishop and Williams (2012) argue that deprived neighborhoods in South America are of a more temporary character than low-income areas in Europe and North America. According to them, people in the Brazilian favelas and Argentinian barrios populares do not have the luxury of permanence. They live in extreme poverty, in houses built without permission, where they try to sustain bearable living conditions day by day. Hence, these neighborhoods have a temporary character, both regarding the construction of buildings as well as the usage of space (Bishop & Williams 2012). This is supported by Janches (2020b) who discuss how spaces inside the infomal settlements are often multifunctional and provide temporary usage depending on time of day and year (Janches 2020b).

According to Hernández-Garzia (2013), the use of the open space within the informal settlements is based on mutual understanding. An outsider, a person who does not live in the barrios populares, would not feel welcome to use the space. Furthermore he argues that the division between the public and private space does not have the same meaning in the informal settlements as in the formal city. In the barrios populares, no strict borders between dwellings and outdoor space exist. The outdoor space is seen as an extension of the dwelling, often doors and windows are wide open to provide free movement. Consequently, the division between public and private becomes more or less non-existing in these neighbourhoods.

Informal settlements possess special cultural and social assets (Hernández-Garzia 2013), such as a strong sense of community (Janches 2012) and social life in the streets (Shu & Hu 2014). WUF10 (2020) proposes that the specific characteristics of the informal settlements should be seen as a source of inspiration (WUF10 2020).

The Public Life in the Streets

The street's function as place for social integration has been pointed out by several sources (Metha 2013; Gehl 2011; Hassan & Kaufman 2016). As the public space where we spend most of our outdoor time (Lindal & Hartig 2015), often together with others (Gehl 2011), the streets have an ability to bring different groups of people together (Metha 2013). According to Hassan and Kaufman (2016) the streetscape is therefore the type of public space with the highest potential to foster social cohesion.

Historically, the street has been of importance as well. The city of Buenos Aires was constructed in uniform square blocks, separated from each other by continuous streets. A rigid grid was developed, democratically splitting the land and creating equal access to the street: the public space (Janches 2012 & Ferarri 2020). The structure of the formal city is very much defined by the grid (Ferrari 2020), however, the informal settlements often have a more irregular appearance. Houses are placed wherever there is empty space and the streets do not follow the classic city grid (van Gelder et al. 2016). In addition, the amount of public space is limited (UN-habitat 2013). Given the lack of public space, the utility of the streets in the informal settlements extends beyond the purpose of transportation (WUF10 2020). The streets are valued for the open space they offer (Shu & Hu 2011). Also, Tornaghi (2016) claims that urban streets often are underused and therefore have a high potential to be used as space for urban agriculture.

Fig. 6. Hurlingham Streetscape (Google Street View 2020).

Community Gardens and Potential Benefits

Urban agriculture has in recent years received worldwide attention (Bryant et al. 2020). It has been noted to generate employment, be a source of income and support economic development (FAO 2014). It may also positively affect food availability (Zezza & Tasciotti 2010), improve the supply of drinking water and reduce the transportation needs of waste and goods (Deelstra 1987).

Community gardens are a subset of urban agriculture (Rogge & Theesfeld 2018). These collectively owned gardens are known to support social interaction, inclusion and cohesion (Veen et al. 2015; Rogge & Theesfeld 2018; Wakefield et al. 2007). Furthermore, sources indicate that community gardens can promote place attachment (Veen et al. 2013; Comstock et al. 2010) and contribute to the democratisation process of urban space, thereby ensuring the inhabitants right to the city (Visoni & Nagib 2019). Urban agriculture, in the form of community gardens can therefore, according to Rogge et al. (2018) be linked to UN's Sustainable development goals number 1. No poverty, 2. o-hunger, 3. Good health and well-being, 10. Reduce inequalities, 11. Sustainable cities and communities, 12. Responsible consumption and production, 13. Climate action and 15. Life on land (Rogge et al. 2018; UN n.d.).

Fig. 7. Malak Community Garden.1 (Fntau, David n.d. Licens under: CC BY-NC-SA 2.0).

Defining Social Cohesion

The concept *Social Cohesion* is broad and has been interpreted in various ways, often including aspects related to a sense of belonging, trust, acceptance, friendly relationships and social capital (Veen et al. 2016; Ndiwakalunga & Yazdanifard 2014). The United Nations (2016) argue that social cohesion is an extensive concept, including both social inclusion and social integration. The breadth of the concept, and the complexity of defining it, is also discussed by Ndiwakalunga and Yazdanifard (2014). According to them, social cohesion can be defined as *'the bonds or glue that maintain stability in the society'* (Ndiwakalunga & Yazdanifard 2014 p. 16).

We have chosen to use this concept in our thesis because of this broadness, making it, according to Veen et al. (2016) a suitable concept when exploring the many social benefits community gardens might possess.

Aim

Influenced by the aspects presented so far, the social value of the streets in the informal settlements and the potential benefits of community gardens, we have chosen to examine how the street functions as a public space for integration as well as how interactions can be strengthened by implementing community gardens in the streetscape.

The aim of this thesis is twofold. First, we strive to develop useful design and management strategies for community garden streetscapes with the main purpose to promote social cohesion between the residents of the formal city and the informal settlements. Second, we aim to propose how these strategies can be adapted and applied in Hurlingham and sites with similar conditions.

Research Question

How can community garden streetscapes be designed to foster social cohesion between informal settlements and the formal city?

Finding Methods for Site Specific Studies during a Pandemic

This thesis consists of two phases, the first focuses on theoretical research whereas the second presents design and management strategies.

Different methods have been used to gather information. Literature studies supports the research of (1) the historical development of the Buenos Aires landscape, (2) community gardens in reference to social cohesion and (3) greenspace design supporting social cohesion.

We have also attended the course Proyecto Urbano at FADU, Facultad de Arquitectura, Diseño y Urbanismo, UBA, Universidad de Buenos Aires. The course is supported by the Linneus-Palme stipend. Normally, it includes lectures by local scholars, professionals and site visits. However, due to the Covid.19 outbreak, all on-site lectures have been replaced with online lectures. Also, the site visits have been replaced with desktop studies. We have used digital tools such as Google Maps and Google Street View, examined field work completed by other students, researchers, municipalities and authorities prior to the outbreak of Covid.19.

The information provided throughout Proyecto Urbano and additional desktop studies have been utilised to broaden our knowledge of the site's strengths and weaknesses. Yet, as we did not have the opportunity to visit the area, we had to adopt a speculative approach to the work.

Moreover, inspiration has been gathered from reference projects focusing on social life in the streetscape as well as community gardening. Information from projects worldwide have served as a base for understanding how community gardens in the streetscape can be designed and managed to support social cohesion.

The research assembled has been used to develop principles of community garden streetscapes that can support social cohesion between residents in the formal city and the informal settlements.

Throughout this project, a combination of the methods Research for design and Research through design has been used. With *Research for design* we refer to the definition *'all types of research that support the design product or design process'* (Lenzholzer et al. 2016), in this thesis, for example, the reference projects. *Research through design*, on the other hand, is explained by Jansson et al. (2019) as a method where something is communicated, learned or experienced through design (Jansson et al. 2019). In the two final chapters we discuss how our proposed strategies might affect the urban inhabitants. Even though we cannot try out or design in real life, by using the method Research through design, we speculate regarding potential effects and discuss valuable lessons learnt during the design process.

Limitations

Community gardens can, as stated in the introduction and later discussed in the literature study, have multiple functions. However, this thesis will focus on the value of community gardens as a part of the streetscape in order to support social cohesion. Aspects such as environmental benefits and climate adaptation are therefore only briefly touched upon.

The geographical location of Hurlingham is highly problematic and it cannot be emphasised enough that we understand the important role which the Reconquista river presents. Still, this work mainly aims to propose developments of the green structure, hence improvements related to the blue structure will not be examined to the same extent.

The geographical limitation for suggestions is Hurlingham, Greater Buenos Aires, although the idea is that the strategies can be implemented in other sites with similar conditions.

Creating a Theoretical Framework

The Right to the City

The concept *Right to the City* was first introduced by Henri Lefebvre in the mid nineties (Purcell 2016). The theory addresses the concept of rightful ownership and argues that property ownership is a way of claiming space that actually belongs to the urban inhabitants (Lefebvre & Eliasson 1982; Purcell 2016). Purcell (2016) describes how the right to the city refers to that the urban inhabitants has the right to "retake" the city from private owners by appropriation:

> *'To appropriate something is to take it to oneself, to make it one's own. In claiming a right to the city, inhabitants take urban space as their own, they appropriate what is properly theirs.'..... 'Appropriation is thus a "right" in the sense that users have a normative right to the space of the city. It is rightfully theirs. In this light, owners' claims to property rights are wrong, a claim to something that is not properly theirs.'*
>
> (Purcell 2016 p. 149).

However, the theory has been interpreted and used in various ways. In Latin America, the right to the city has often been used as a powerful tool in the citizens fight for their right to public transport, legal housing and health (García Chueca 2016). In other cases, the right to the city has taken form as an additional right within the existing liberal-democratic framework (Purcell 2016). The UN has tried to conceptualise the right to the city as a human right, defined as follows:

> *'...the right of all inhabitants present and future, to occupy, use and produce just, inclusive and sustainable cities, defined as a common good essential to the quality of life.'*
>
> (UN-habitat 2017 p. 26).

Flavio Janches, the course leader of Projecto Urbano, has been an important source of inspiration throughout this thesis. He is an architect and professor of Architecture and Urban design at UBA, Universidad de Buenos Aires. Janches has many years of experience working with the shattered landscape of Reconquista river basin and informal settlements (SLU 2020). With no opportunity to visit the project area, he has provided important insights about the economic, social and cultural situation of the informal settlements in Buenos Aires. In his book, *Public Spaces in the Fragmented City* (2012), he brings to life multiple arguments of how the residents in the informal settlements are being denied their right to the city, describing how they live in the urban periphery with limited access to public services, public space as well as functional sewage and water systems.

The right to the city is an interesting concept in relation to our project for multiple reasons. As Janches (2012) raises, the absence of this right, not the least within the informal settlements, is an issue (Janches 2012). Furthermore, right to the city-movements have historically been strong in Latin America (García Chueca 2016). Perhaps most important for the subject of this thesis, community gardens have in recent years been recognised as a tool to support people's right to the city (Visioni & Nagib 2017).

Urban Agriculture

Urban Agriculture, UA, defined as, *'the production of crop and livestock goods within cities and towns'* (FAO 2010 p.1), has in recent years become a globally known concept (Bryant et al. 2020; Rogge et al. 2018). It has been recognised to have multiple benefits, for example ensuring food availability (Zezza & Tasciotti 2010) and water supply (Deelsta 1987), increasing employment, economic development (FAO 2014), tourism and production of ecosystem services (Bryant et al. 2020), as well as reduce waste and transport needs (Deelsta 1987). The potential benefits have led to a rapid increase of urban agriculture worldwide (Bryant et al. 2020). In Latin America, approximately 50 % of the urban inhabitants are engaged in some kind of urban agriculture (Zezza & Tasciotti 2010). Furthermore, urban agriculture is becoming a more common strategy to promote sustainable development in informal settlements, providing the inhabitants with fresh food and giving them the opportunity to influence their everyday environment (FAO 2014). Tornaghi (2016) argues that urban agriculture can be an especially useful tool in deprived neighborhoods since it might improve the overall quality of the neighborhood, as well as create job opportunities. She also states that it can help to provide the most vulnerable inhabitants with nutritious food. Urban agriculture therefore, according to Tornaghi (2016), plays a vital role in self-empowerment of urban residents.

Community gardens are a form of urban agriculture which not only focuses on food production, but also on community building and the creation of social networks (Rogge & Theesfeld 2018). With this social approach, community gardens have been recognised as a specific form of urban agriculture that especially enhances place attachment (Veen et al. 2015; Comstock et al. 2010) and increases the urban inhabitant's right to the city (Visoni & Nagib 2019; Tornaghi 2016). The concept of urban agriculture, in the form of community gardens, is therefore of special interest to our thesis.

Site Specific Design

Lisa Diedrich is our supervisor and a recognised researcher in the field of Contemporary Landscape Architecture. With a background in architecture, urbanism and journalism, Diedrich has a broad spectrum of knowledge. Since 2012 she has been a professor of landscape architecture at SLU Alnarp, although she is frequently abroad for research and teaching (SLU n.d.). Together with Flavio Janches, Diedrich is the main professor within the Linnaeus-Palme collaboration between SLU and UBA (SLU 2020).

In today's society, economically driven and rapidly planned, cultural and social aspects are often neglected (Braae & Diedrich 2012; de Block et al. 2019). Much due to the lack of long term planning (Van Assche et al. 2009) and the idea that we can copy-paste any solution (Braae & Diedrich 2012). Yet, within the field of landscape architecture, planners are generally well-aware of the need to not see a landscape as an isolated island (van de Brock 2019). In this thesis, Diedrich's research within the topic *Site Specific Design* has worked as a constant reminder to think about the site specific qualities and to review a landscape which constantly changes.

In order to understand the meaning of site specific, we have turned to multiple of Diedrich's works. For example *Site specificity in contemporary large scale harbour transformation projects*, written together with Lee Gini and Ellen Braae, as well as Diedrich's PhD thesis *Translating Harbourscapes Site-specific Design Approaches in Contemporary European Harbour Transformation*. Furthemore, in order to gain knowledge regarding the site specific qualities of Hurlingham, projects completed within the Linnaeus-Palme program have been of great

importance. Both Diedrich's work *Beyond Best Practice Re-valuing mindsets and re-imagining research models in urban transformation*, written together with Flavio Janches, Andrea Kahn and Gunilla Lindholm published in the book *Tácticas y estrategias para el mejoramiento integral del paisaje hídrico-urbano en el área de la Cuenca del Río Reconquista* as well as previous student work and information gathered during online lectures have been useful.

Space, Place and Place Attachment

In this thesis, the expressions space, place and place attachment are all frequently used. To help ourselves distinguish the difference between these, as well as to guide you further in this reading, an attempt of defining these expressions now follows.

Place, Tuan (1975) claims, is itself constructed by experience. While using mind and senses to interact with our surroundings, both in a direct and a more passive manner, a place unnoticeably takes form. Additionally, to maximise the understanding of a place, it has to be seen both as abstract and as real as if it would be a relation between two people (Tuan 1975).

Despite the abstract view needed to comprehend the full meaning of place, space as a concept is even more abstract (Tuan 1975). *Space* is defined by its objects, the geometric forms it contains. Using the geometrical form of a triangle to illustrate this, first the triangle, space, appears imprecise. To observe the triangle more clearly, the corners, places, will have to be identified (Tuan 2001). Space, at a first equintance, becomes place when a person gets more familiar with it (Tuan 1975). This can be likened to an experience of a first visit to a new neighbourhood, how it afterwards is memorised by a load of unordered mental images. When streets, parks and other architectural features later become knowledge, the space has turned into place (Tuan 2001). Tuan (1975) defines the difference between the two as follows:

> *'Space is abstract. It lacks content; it is broad, open, and empty, inviting imagination to fill it with substance and illusion; it is possibility and beckoning future. Place, by contrast, is the past and the present, stability and achievement.'*
>
> (Tuan 1975 pp. 164-165)

Yi-Fu Tuan has done extensive research within the field of space and place. He is known for his work as a humanist geographer. In 2012 Tuan was awarded the Vutrin-Lud International Geography Prize, which is the most prominent award a geographer can get. He is best known for his book *Space and Place*, although he has written about 20 books on subjects such as time, age, happiness and concept of home (Gabriel 2013). Geography, he says, is often looked upon as an object, however, there is much emotion involved:

> *'People think that geography is about capitals, land forms, and so on. But it is also about place — its emotional tone, social meaning, and generative potential.'*
>
> (Gabriel 2013)

Having learnt about Tuan's view of space and place, what can be interpreted is that place is something one has a relationship to. Tuan's extensive work within the field has shaped our definition of the concepts. Still, other researchers have written interesting content for the purpose of this study.

Positive feelings towards a place can initiate a special connection, a connection explained by Altman and Low (1992) as *Place Attachment.* Central to this theory is affect and emotions, yet also knowledge and behaviour in relation to a place. Further, both individuals and different groups can experience a certain connection to a place (Altman & Low 1992) and in this thesis the importance of place attachment within communities, community attachment, will be examined further.

Place attachment is a deeper emotion than satisfaction, in fact, social class seems to affect the feeling of attachment only scarcely. Instead, what matters the most is the social involvement, primarily contact with friends although with new acquaintances as well, will increase the sentimental ties. Another positive factor is closeness. Having points of interest located within the community helps to increase place attachment (Altman & Low 1992).

On the contrary to Altman and Low (1992), Veen et al. (2015) suggest that it is more vital that the residents can identify with the neighbourhood than that there is social activity going on within a community. Caring for the appearance of your community, feeling proud, can help someone to identify with the neighbourhood. Altman and Row (1992) do mention the aspect of identification although claim that it has to do with a feeling of "insideness" and thus separate this from the concept of place attachment and put it into its own category, community identity. Following a similar course, Fang et al. (2016) argue "insideness" as the degree to which people feel like they belong in a place.

> *'If a person feels "inside a place", then they feel a sense of inclusion, security and safety, which results in stronger feelings of identity.'*
>
> (Fang 2016 p.224)

Fig. 8

Fig. 9.

Fig. 10

Fig. 11.

Fig. 12.

Fig. 13.

Fig. 8-13. Streetlife in Hurlingham. The residents have claimed their own streets by creating space for shops, plant pots and garden ornaments (Google Street View 2020).

1. BUENOS AIRES SOCIAL LANDSCAPE

In this first chapter, we do not only travel across the globe physically, we also travel through time mentally, beginning with the historical development of Buenos Aires.

Fig. 14. Buenos Aires, roof top view (Backlund, Amanda 2020).

It all started with the Spanish influences...

This story of Buenos Aires begins in the first half of the 14th century when the Spanish Crown began its expansion into the New World, the New World in this context being the Spanish influenced countries in the Americas. The Spanish Crown efficiently seized power in the region and the settling of new Spanish colonies escalated. Just like today, cities were important nodes of power and decision-making processes and the establishment of new cities were huge achievements (Mundigo & Crouch 1977).

Buenos Aires was founded in 1580, after a previously unsuccessful attempt. The Spanish settling of the New World was done according to rules of a planning philosophy which the Spanish Crown adhered to. These regulations, *Laws of the Indies*, were first implemented in 1513, although a comprehensive guide on how to plan and build cities was not issued until 60 years later in 1573 (Mundigo & Crouch 1977). This document is, still to this day, one of the most important documents in urban development. Also astonishing is the fact that a remarkable number of cities are built after these guidelines (Reps 1965).

Mundigo and Crouch (1977) argue that the ideals followed were clearly those of Spanish influences. The location of a new city had to be selected according to certain rules. The site was for example recommended to be situated close to both water and land suitable for farming. Buenos Aires is located by the sea partly as it offered opportunities of trade as well as defence. Within the city, the main square, Plaza de Mayo, was the centrepiece. The urban fabric in the

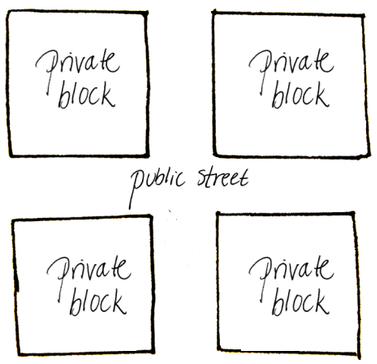


Fig. 15. The spanish street grid.

Spaniard's city was traditionally built around the main plaza and from here, the central axes would derive. If the city was located close to the sea, the plaza was placed near the harbour whilst inland, the plaza would be located in the centre of the town (Mundigo & Crouch 1977). Not only did the Laws of the Indies set out the regulations for the plaza, but also for other important planning structures in the new cities. Certain orders limited establishment of houses, planting and cattle breeding and the settlers were told, as far as possible, to create a uniform appearance (Reps 1965). Buenos Aires continued to grow with a homogeneous grid, following the Spanish influences, dividing the land into blocks of 100x100 metres. This distribution of land, creating smaller lots, clearly distinguished between public and private (Janches 2012).

Gardner (2015) estimates that Buenos Aires, at the beginning of the 16th century, likely to be seen as a small town or a village rather than a city, was not inhabited by more than a thousand people. With a town this size, 10 blocks wide and 4 to 6 blocks deep, a walk from east to west was estimated to about six minutes, while from north to south it would take around 15 minutes to cross (Gardner 2015). Ferarri (2020) includes the importance of constructing Buenos Aires so that it would face the river: Río de la Plata. This to create views of the river rather than of the inland (Ferarri 2020)

Two centuries would pass before the city had grown out of its original urban system (Gardner 2015). Much of the advancement was inspired by Torcuato de Alvear, the first governor of the capital, who shared his ideas on how Buenos Aires could be modernised. His plan encompassed Puerto Madero and renewal of the main square Plaza de Mayo and in connection to this, a boulevard, Avenida de Mayo (Gorelik 2003). Importantly, Alvear's plan suggested an expansion of Buenos Aires. Ignatieva and Faggi (2009) claim that from the year of 1857 until 1949, the population increased heavily due to a flow of immigration, mainly arriving from Italy and Spain, but also from other European countries (Ignatieva & Faggi 2009). Around 1950, the population within the city of Buenos Aires stabilised at 3 million (Berjman 2001b).

Ferarri (2020) describes how an imaginary city limit was turned into a road, Avenida Callao. He continues with a discussion about the development of train lines towards north, south and west. In the north, agriculture was a growing business while the land south of the city was more frequently used for industrial purposes. Along the western train lines, especially around nodes such as train stations, habitations sprung up and an urban atmosphere developed. The structure of the newly populated land was, as traditional, a homogenous grid, which now extended along the train lines, dividing the land into equally sized blocks. Ferrari (2020) means that the rigid grid was a democratic way of splitting up the land as it created equal access to the public space. Janches (2012), however, argues

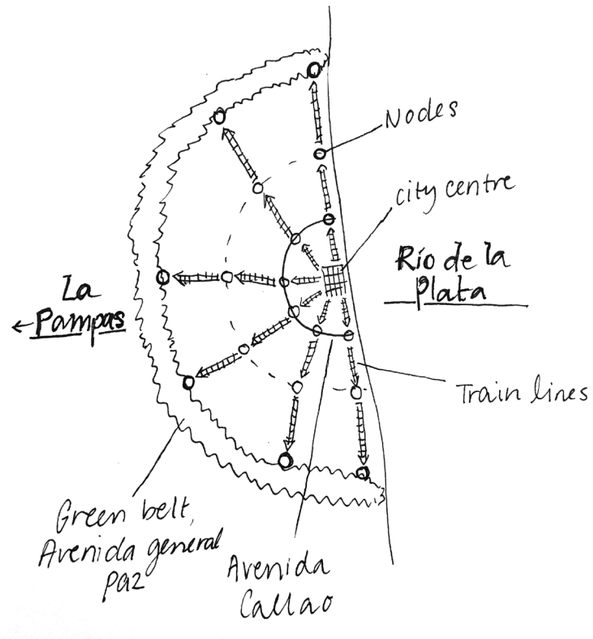


Fig. 16. Illustration of how Buenos Aires has developed over the years. The city centre is the oldest part of the city, located on the shore of Río de la Plata. The city has then come to grow inland. Infrastructure such as larger roads and train lines has played an important role in the development of the city.

Fig .17. The development of Buenos Aires (Ferrari, Andres 2020).

that there is more complexity to this subject:

> *'On one hand, it involved a division into lots and a regulated sale of the new lands. On the other hand, it was a real process of democratization of the urban space, since it followed a logic of state intervention which gave priority to public use spaces.'*
>
> (Janches 2012 p. 50)

With this said, the squares of land had some contradictory functions. It was both democratising as well as doing the opposite by regulating price on land.

Gorelik (2003), in line with Janches (2012), describes how the green structure of Buenos Aires advanced as a matter of interest. The first public park in Buenos Aires, created in Palermo in the 1870s, was the first of many that started to pop up around the city during the first half of the 20th century. The knowledge that parks could generate social health began to spread. The park in Palermo was also the outset for a green belt surrounding the city. The belt was proposed to be located at the same site as where Avenida General Paz eventually was constructed (Gorelik 2003). Ferrari (2020) illustrates how the avenue was built for the same reason as Avenida Callao was constructed many years earlier: namely, as the expansion of Buenos Aires progressed, new borders had to be built.

Further, Gorelik (2003) addresses that the inhabitants of Buenos Aires wanted to distance themselves from La Pampas, La Pampas then being defined as the home of barbarism. The motorways being built were excellent borders to help create this distance. At the time, the central part of Buenos Aires figurated in the spotlight. What was strived for was to resemble the European cities, an aim which in many ways was reached in the year of 1910. At this time, Buenos Aires had a fully functioning port and a modern city centre consisting of large buildings. The spacious walks were compared to the ones in Paris and the narrow streets were like the ones in London. The central areas of Buenos Aires were the main focus of the urban planners, nevertheless, behind the stage were the growing number of suburbs starting to populate fast. The suburbs offered public space with possibilities for social cohesion. The parks were highly appreciated in these communities and social activities of different sorts started to flourish. In the 1920's, the suburbs grew to become widely popular. Between the new suburban residents and the residents who prefered to keep the high-status areas within the city centre, the social distance started to grow. Frequent debates regarding infrastructure turned into conflicts, where the population in the city centre did not want the state to invest in infrastructure supporting the suburbs (Gorelik 2003).

With the new suburbs of Buenos Aires, a development of what is today called the urban sprawl started to take form. The central areas and the periphery began to drift apart. Buildings centrally located were transformed into hotels, offices and housing of extravagance. On the contrary, the suburbs were emerging like small islands, turning areas into country clubs and gated communities. The suburbs created along the motorway secured the urban network and made sure all necessities were reachable for the new population with middle-high incomes. This new distribution of inhabitants was the beginning of what Janches calls "The fragmented city" (Janches 2012).

Ignatieva and Faggi (2009) add to the conversation about the fragmented city. This type of development, they claim, is widespread and can be seen in large cities all over the world. By promoting a car-dependent lifestyle, a life in the outskirts of the cities can easily be managed. Additionally, space, safety, comfort and closeness to nature are appealing features that exist in the gated communities (Ignatieva & Faggi 2009).

Yet, the fragmented city poses for far more problems than what has been mentioned. There is a large number of the population which are not able to consider a lifestyle either in the city centre or in the gated communities. The socially and economically marginalised have been, and still are, very much affected by urbanism. Also the infrastructure has functioned as a way of categorising socio-cultural space within the city (Janches 2012).

Informal settlements take form

The first informal settlements in Argentina were developed in the 1930's, initially built as temporary homes for European immigrants. The liberal land use legislation as well as the high availability of land made it possible for the immigrants to soon thereafter relocate to permanent, legal dwellings (van Gelder et al. 2016).

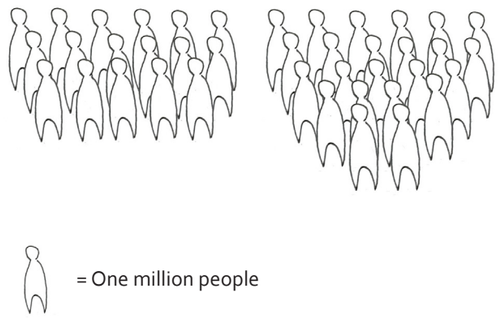
During the second half of the 19th century, a large number of people moved from the Argentinian countryside (van Gelder et al. 2016), as well as from the surrounding Latin American countries, to Argentina (Dovey & King 2011). In just over 20 years, from 1947 to 1970, the population in Argentina grew from 17 million to 23 million (Macrotrends 2020). The rising number of people, together with the downfall in Argentina's economy during the 1960's, caused an expansion of the informal settlements. From 1950 to 1970 the residents within the informal settlements in Buenos Aires grew 8 % per year (van Gelder et al. 2016) and the total lack of housing grew from 1,5 million units in 1957 to 2 million in 1962 (United States Deparment of Labor n.d). The Argentinian economy continued to fall and in 2001-2002 it reached total collapse and the government defaulted on its debt (van Gelder et al. 2016). Lopez Murphy et al. (2003) explain the collapse as a combination of socio-economic factors, a state in default and financial stagnation, inflexibility to external shocks and pegging the peso to the euro. This problematic period affected the country in such a way that Lopez Murphy et al. (2003) go as far as to claim:

'....the Argentine crisis combined all evils put together'

(Lopez Murphy et al. 2003 p.28).

Fig. 18. Villa 31, 1935 (Ritter, Michael 1946).

The economic collapse pushed even more people into poverty. By 2002, more than half of the total Argentinian population lived below the poverty line (van Gelder 2007). Increased land prices and new laws forbidding people to buy or sell cheap lots with insufficient infrastructure all together led to a growing number of people having to seek shelter in informal settlements. The enlargement of informal settlements during the 1950's and forward led to a change of the dynamics within them. Earlier, people would simply build their homes wherever there was space. However, when the unoccupied land became limited, people would no longer have the opportunity to construct new homes. Instead they first moved in with acquaintances, while waiting for another house to become available. This created a pattern of movement within the informal settlements, generating strong social connections amongst the dwellers. Buildings of different standards were constructed, some were sold, others rented out and by the end of the 1990's, a process of mercantilism could be noticed. The informal settlements were no longer a place for temporary homes, instead families inhabited them generation after generation (van Gelder et al. 2016). Fernandez Wagner (2009) describes how the residents in the informal settlements have built a town of their own, reforming the barrios populares from a space to be in, to a place to live an everyday life in.



= One million people

Fig. 19 In just over 20 years, from 1947 to 1970, the population in Argentina grew from 17 million to 23 million.

Dovey and King (2011) argue that, despite the irregularity and chaotic apparence, the informal settlements usually have high socio-physical order and sophistication (Dovey & King 2011). The residents in the informal settlements often have their own football teams, build their own clubhouses, construct their own football fields and organise tournaments as well as leagues between teams from the different barrios populares (Ziccardi 1983). According to Janches (2012) these clubs, as well as other institutions, for example neighborhood committees and religious communities, help to support social cohesion and strengthen the group identity between the inhabitants. These kind of activities might seem simple, although they create an opportunity to foster place attachment and create possibilities for more complex organisations to unfold (Ziccardi 1983). Janches (2012) portrays the informal settlements:

'As a spatial, administrative, and even social reality, the barrio determined a social imaginary and a focal point for a sense of belonging…'

(Janches 2012 p.56)

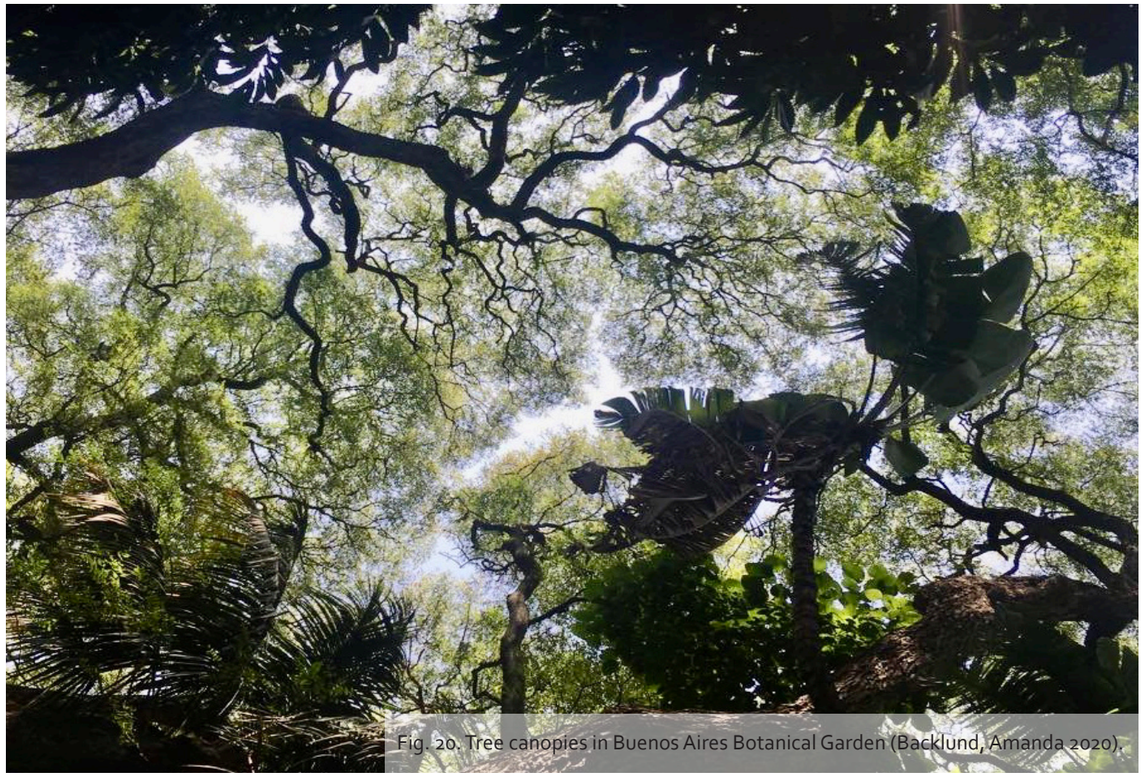


Fig. 20. Tree canopies in Buenos Aires Botanical Garden (Backlund, Amanda 2020).

Greenspace bacomes fashionable

Greenspace, Berjman (2001a) argues, has developed from the same basic principles as plazas. Both defined as space in the city, free and extensively available. The centrally located plaza was a place where various goods were sold, a democratic site where markets and public festivities were held. Complementing the functions of the square, the greenspace was supposed to include vegetation, seats for relaxation and rest as well as opportunities for a stroll (Berjman 2001a).

The first interest for green planning was acknowledged in the second half of the 19th century. The reason for this excitement can be linked to a growing knowledge of health benefits linked to urban vegetation. A new insight of how the city is an organism dependent on its vegetation came to mind, hence quality of life would be put at risk without a close connection to greenery (Musso 2016).

Ignatieva and Faggi (2009) address the architectural history of greenspace in Buenos Aires and claim that it has its roots in French ideals. The planning ideas were brought to the city between the years 1880-1914 when the Frenchmen Courtois and Thays arrived in Buenos Aires. Being responsible for the enlargement of green structure (Ignatieva & Faggi 2009), Courtois mainly developed promenades while Thays specialised in larger transformations of the city layout, inspired by the french colonial symmetrical style (Berjman 2001a). Jules Charles Thays, Musso (2016) writes, was probably the most influential urban designer at this time, especially after Thays was appointed the city's Director of Parks and Walkways in 1891. His unique way of designing public and private greenspace, leaving traces still noticeable today, featured characteristics such as straight lines and places with both open and closed spatialities. Visually, the European forest was preferred instead of a rural expression, although the Argentinian subtropical forest also seemed an influence, not the least in Thays's work (Musso 2016).

During this period, the look of English gardens was desired and so were elements as lawns and serpentine roads. From the French model, they gathered inspiration of garden elements like benches and sculptures in combination with park components like bridges, lakes and promenades (Ignatieva & Faggi 2009). Thays influences from the domestic subtropical forests, Ignatieva and Faggi (2009) claim, was shown in the variation of tree species he included in the design. The species he selected were for example *Tipuana tipu, Jacaranda mimosifolia* and *Ceiba speciosa*. Thays was also inspired by the gardenesque style and introduced exotic and indigenous palms, for example *Phoenix canariensis* and *Syagrus romanzoffianum* (Ignatieva & Faggi 2009).

In the 1870s, in the neighbourhood Palermo in Buenos Aires, the city got its first public park. This huge park came to be called Tres de Febrero and was developed on land previously used for farming and recreation. The park was designed with influences from Central Park in New York. After Tres de Febrero, the number of greenspaces in Buenos Aires continued to grow, however the design was often rather simple. Functionality was prioritised whereas the positive aspects related to greenspace were forgotten (Ignatieva & Faggi 2009). Berjman (2001b) addresses how the functional design favoured at this time had initiated "espacios secas" in english "dry spaces". She describes how the authorities and planners wanted to conceptualise their version of modernism. She even goes as far as to express how the tree, within the modernist era, was thought of as the worst enemy.

It would take until the 1970s, Ignatieva and Faggi (2009) note, before a change of preference could be identified within greenspace design. A shift from an admiration for foreign species to native species created new ways of designing plant beds. The new plant beds would include a combination of plants with a native and exotic expression. These new perspectives within planting design were linked to a growing interest for sustainability and environmental issues. In the 1990's, non-governmental organisations started to advocate for saving, as well as developing, greenspace. This interest also generated neighbourhood participation and developed ideas on how to strengthen the sense of place (Ignatieva & Faggi 2009).

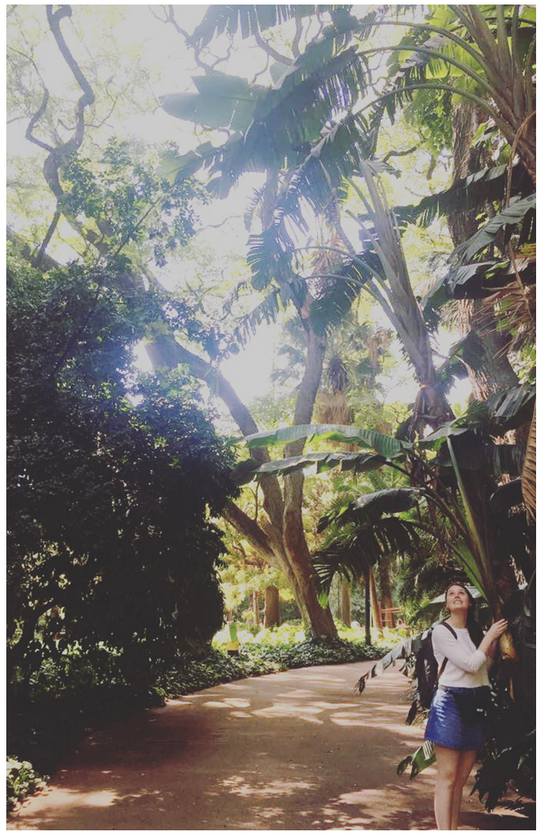


Fig. 21. Jardín Botánico, Buenos Aires (Bengtsson, Evelina 2020).

Key Findings

THE FRAGMENTED CITY EMERGES AS A RESULT OF URBANISM AND AN ECONOMY IN CRISIS

Site Reading

The landscape of Buenos Aires is characterised by unequal distribution of urban space (Thuillier et al. 2015), a lack of greenspace (Musso 2016) and a fragmentation of the street grid (Barrigton-Leigh & Millard-Ball 2020). These are, as the previous chapter highlights, results of urban development coloured by an economy in crisis and political reforms. What also has to be noted though is that these are problems visible not only in Buenos Aires but also globally and are according to Sijmons (2020) linked to urbanisation.

Local Solutions to Global Challenges

We live in what Elmqvist et al. (2018) call the Urban Age, with 50 % of the world population living in urban areas. By 2030 the number is expected to be 60 %. The addition of one and a half billion people in the world's cities and towns will create new global challenges (Elmqvist et al. 2013). Around the world, examples of urban sprawl results in a fragmentation of the street grid (Barrington-Leigh & Millard-Ball 2020; Sijmons 2020) and a reduction of ecosystem services and biodiversity (Seto et al. 2013; Sijmons 2020). Sijmons (2020) argues that even though these challenges are visible on a global scale, the solutions are found on a local level. He explains that cities are the result of complex flows and processes of materials like air, water, food, people and data. The processes where these are constructed and consumed can be referred to as *the Metabolism of the City*. In order to make our cities more sustainable, Sijmons (2020) stresses the need to, locally, stop processes in some systems and/or reduce losses from others (Sijmons 2020). Urban agriculture has been suggested as an effective tool to do this. It can reduce waste and transport of goods, as well as improve the water supply and food availability. Furthermore, it has been linked to several social benefits (Deelstra 1987).

Besides urbanisation, another visible phenomena is a change in world politics, this resulting in what Aart Scholte (1997) explains as a stage of global capitalism. According to Van Assche et al. (2009) good landscape design requires cooperation and time:

> *'Landscape architecture is one of the usual victims after the collapse of communism, since it requires a high degree of coordination of efforts, long-term policies, and since it cannot be easily sold as a product in absence of governmental "buyers".'*
>
> (Van Assche et al. 2009 p. 282)

Landscape design and planning is therefore adversely affected by the new era of capitalism (Van Assche et al. 2009).

Diedrich (2013) and de Block et al. (2019) also address the problem of today's economy-driven development. Diedrich (2013) discusses how the usage of universal planning methods unfolds in homogeneous design and argues that the lack of site specific design is a threat against the identities and individualism in new urban areas (Diedrich 2013). Often urban planning focuses on new technologies to preserve ecosystem services, although neglects site specific socio-political aspects (de Block et al. 2019), such as geographic location, culture and history (Diedrich 2013). To avoid this, Diedrich (2013) suggests that urban planners should look upon landscape design as a way to transform the existing, instead of creating something completely new. Bishops and Williams (2012) proposes a similar strategy of recognising and valuing what is there, nurture the possibilities and define what it is missing. By thinking of the city as, *'...an ever-changing but essentially temporary phenomenon'* (Bishop & Williams 2012 p. 220), instead of trying to design for an impossible permanence, urban planners can use the concept of temporality to develop strategies more suitable for today's rapidly changing cities (Bishop & Williams 2012).

Fig. 22. Urban Agriculture in Stockholm, Sweden (Backlund, Amanda 2020).

Green and Bluespace in Buenos Aires

Buenos Aires at first glance looks like a green city. Walking around in the neighbourhood Palermo Hollywood, it is easy to be fascinated by the large number of trees creating a feeling of wilderness. First time in Buenos Aires we, as landscape architects, naturally wanted to visit green spots such as Ecoparque, Jardin Japones and Jardín Botánico. Although, with the unfortunate effects of Covid.19, we only had the total time of one week outdoors in the city. With this limited amount of time, it was difficult to gain any deeper understanding of the greenspace. Turning to the literature, a wider knowledge of greenspace in Buenos Aires can be comprehended.

During the last 15-something years, municipal authorities have operated a programme which aims to make the greenspaces in Buenos Aires more appealing. By renovating the parks and other vegetated areas, the government hope to endorse activity in various forms, stimulating both mental and physical health. Increase in social interaction, sports and opportunity of closeness to nature are examples of what they strive to achieve. To promote exercise, new outdoor gyms are implemented. Already existing in several parks are a number of festive events, encouraging social interaction (Faggi et al. 2015).

Greenspace produces important ecological factors and Krellenberg (2007) has studied the ecological functions in five of Buenos Aires parks. With the gathered information, she proposes new ways of developing existing, as well as new, greenspaces. One matter of concern is the lack of space for a large number of plant and animal species. She suggests creating networks of green patches, using methods of connectivity such as green corridors.

Musso (2016) presents data on the number of trees existing in Buenos Aires today. Trees in parks and squares can be counted to around 52.000 whilst the total number of trees along pavements is around 370 000. With reference to this she argues the cultural and ecological importance of the trees in Buenos Aires. Trees help to incorporate shade and shelter but also fulfills a purpose as decoration. Some of the most common tree species found in the city today are *Tabebuia avellanedae, Fraxinus Americana* and *Platanus acerifolia*. To follow the World Health Organization's, WHO:s, guidelines, Buenos Aires would have to plant more trees. The 430 000 trees within the city today is correspondent to one tree for every seven people, although WHO suggest one tree for every three people to

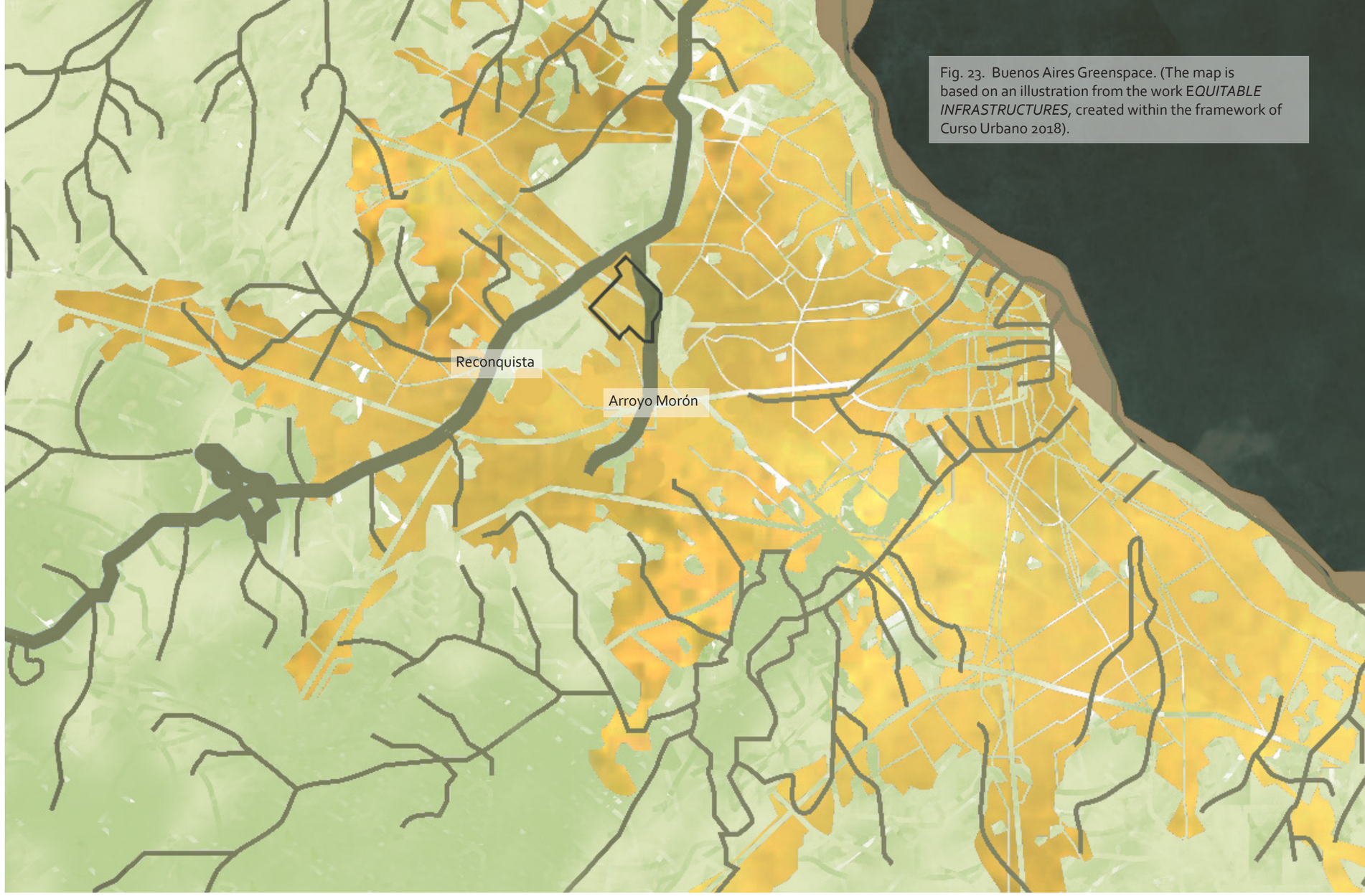


Fig. 23. Buenos Aires Greenspace. (The map is based on an illustration from the work E*QUITABLE INFRASTRUCTURES*, created within the framework of Curso Urbano 2018).

improve the air quality sufficiently (Musso 2016).

Buenos Aires is located on the western shore of the estuary of Río de la Plata. The estuary is extensive, 35 000 square kilometers, although shallow, between 5 to 15 meter deep (Guerrero et al. 1997; Framiñan & Brown 1996).

Framiñan & Brown (1996) argue that Río de la Plata is one of the most important waterways for the Latin American countries, with ports both in Argentina and Uruguay, as well as further upstream in Paraguay. Additionally, the water system provides important habitats for several coastal species and are of high importance to the fishery industry (Framiñan & Brown 1996). Although the significance of the water basin is clear, the mistreatment of the river does indicate the opposite (Sánchez Arrabal & Guilarte 2017; Framiñan & Brown 1996). Framiñan & Brown (1996) plunge straight into the subject, arguing that sewage and industrial waste from coastal cities and maritime transport pollutes the water system. Moreover, Sánchez Arrabal and Guilarte (2017), together with Janches (2020a), argue that the challenges found in Rio de la Plata are the result of a defective and non-unified planning system. Even though the river is a joint system, it has historically been managed by different actors and on top of that, the municipalities have continuously lacked in communication (Sánchez Arrabal & Guilarte 2017; Janches 2020a).

One of the many connecting water systems flowing into Río de la Plata is the Reconquista river basin. Reconquista is of special interest as the tributary Arroyo Morón is directly connected to it. The river landscape is characterised by environmental and social injustices and the area is inhabited by approximately 3 million people, many of which live in informal settlements (COMERIC 2018).

Fig .24. Greenspace in informal settlements in Hurlingham, Buenos Aires (Besares, Pedro 2020).

Fig. 25. Evelina walking down a vegetated street in the neighbourhood Palermo, Buenos Aires (Backlund, Amanda 2020).

Fig. 26. Street tree in the neighbourhood Palermo, Buenos Aires (Backlund, Amanda 2020)

- in Hurlingham

When looking at comprehensive maps, Hurlingham appears to have plenty of greenspace (fig. 27). Yet, Winter (2020) argues that the majority of this space is privately owned and of no use for the residents. A studentwork by Boraei et al. (2017) refers to these areas as "dead" or "empty" spaces. However, in the master thesis by Lindblom and Theander (2019) they argue that these areas still have ecological functions such as infiltration and storage of rainwater (Lindbolm & Theander 2019).

The majority of the greenspace in Hurlingham is found in the water landscape of Reconquista and Arroyo Morón (fig. 27). These areas struggle with environmental issues (fig. 29) and COMERIC (2018), in line with Janches (2020a), discusses how contaminations from industries, together with residents dumping their waste in the river, pollutes the water (COMERIC 2018; Janches 2020a). Water samples from 1996 indicate that Arroyo Morón is 3 to 10 times more polluted than any of the other watercourses connected to Reconquista (Herkovits et al. 1996). Furthermore, Janches (2020a) adds that the area along Arroyo Morón is exposed to floodings. This, he explains, is due to human modifications of the streams in combination with the shallowness of the rivers and a high amount of rain fall.

As the map shows, the amount of accessible public greenspace is limited in Hurlingham. Instead, according to Hernández-García (2013), the majority of public life in the informal settlements occur in the streets.

Fig. 27. Hurlingham Greenspace (The map is based on an illustration by Boraei, Sara., Ma, Tianyue., Trilford, Brittany., Ling, Wenqian. and Feng, Siyun. Created within the framework of Curso Urbano 2018).

Housing in Buenos Aires

In more recent years there has been an increasing number of gated communities in Buenos Aires. Consequently, the city structure has changed (Ferrari 2020) and today there are above 350 gated communities in Greater Buenos Aires (Thuillier 2005; Murdock Duncan 2008). They cover an area of 300 square kilometers, which is 100 square kilometers more than the total area of the city of Buenos Aires (Thuillier 2005). Simultaneously, the number of people living in informal settlements is growing, especially along the city border (van De Berg 2011). Thuillier (2005) discusses how the gated communities developed in the outskirts of the city, next to informal housing, causing huge contrast between luxury and poverty. This is well visualised by Harvey (2008):

> *'.... Wealthy neighbourhoods provided with all kinds of services, such as exclusive schools, golf courses, tennis courts and private police patrolling the area around the clock intertwine with illegal settlements where water is available only at public fountains, no sanitation system exists, electricity is pirated by a privileged few, the roads become mud streams whenever it rains, and where house-sharing is the norm. Each fragment appears to live and function autonomously, sticking firmly to what it has been able to grab in the daily fight for survival'*
>
> (Harvey 2008 p.32).

According to Thuillier (2005), the increasing number of gated communities has led to an unequal distribution of urban space. Murdock Duncan (2008) also comments on the problem and writes that the gated communities in Buenos Aires can be seen as a territorial expression of the ongoing polarisation between the rich and poor (Murdock Duncan 2008).

Today, approximately 13 million people live in Buenos Aires, 10 to 15 % are estimated to live in informal settlements. This means that roughly 1 600 000 people live in areas segregated from the formal city, in sites that are characterised by exposure to environmental risks and shortage of sufficient sewage and water systems, public services and greenspace (van De Berg 2011).

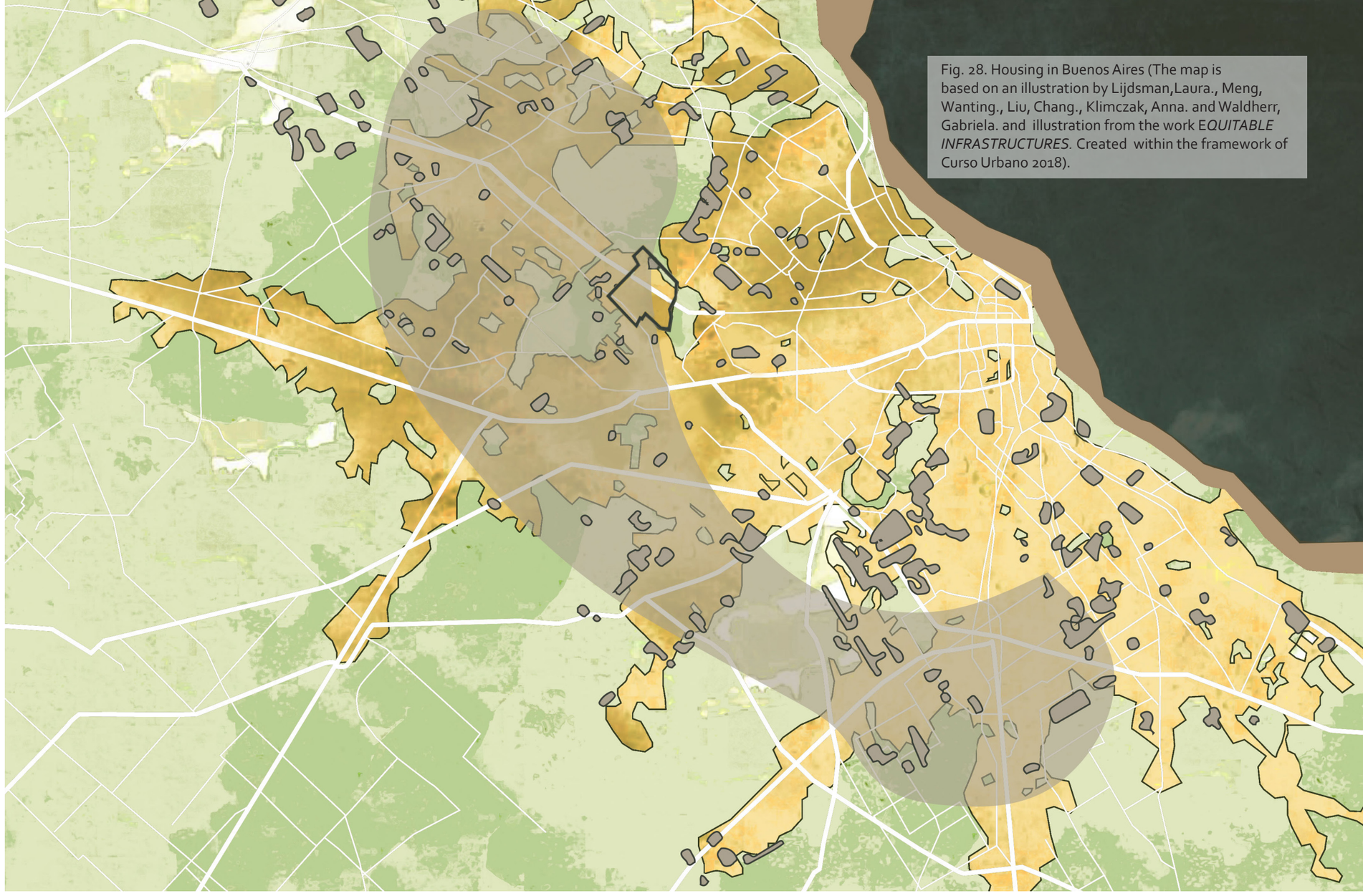


Fig. 28. Housing in Buenos Aires (The map is based on an illustration by Lijdsman,Laura., Meng, Wanting., Liu, Chang., Klimczak, Anna. and Waldherr, Gabriela. and illustration from the work E*QUITABLE INFRASTRUCTURES.* Created within the framework of Curso Urbano 2018).

- in Hurlingham

Approximately 172 000 people inhabit the Arroyo Morón basin. A large number of these residents live in the informal dwellings placed in between industry buildings along the river (COMERIC 2018). The informal settlements are exposed to environmental risks (fig. 29) and located far away from centralities (fig. 31). Furthermore Janches (2012) and van De Berg (2011) depict an everyday life characterised by unemployment, poverty and high crime rates.

The informal dwellings and their immediate surroundings are constructed by the inhabitants themselves (van Gelder et al. 2017; Janches 2012; Fernandez Wagner 2009). Restrictions regarding usage of space is based on mutual understandings, rather than ownership of the land. The concept of private and public therefore becomes more blurred in the informal settlements than in the formal city (Hernández-Garzia 2013). Fernandez Wagner (2009) describes the informal settlements as a space with a messy exterior although with an underlying order based on complex territorial relationships.

Fig. 29. Housing in Hurlingham (The map is based on an illustration by Sara Boraei, Tianyue Ma, Brittany Trilford, Wenqian Ling and Siyun Feng. Created within the framework of Curso Urbano 2018).

Fig. 30. Gated communities and informal settlements in Buenos Aires (Pisarenko, Natacha. AP pictures n.d.).

Mobility in Buenos Aires

Lascano Kezic and Durango-Cohen (2012) argue that the homogenous grid and flat landscape are attributes that provide good orientation and improved accessibility. Further, they give examples of how the street layout creates connectivity, which together with the flatness of the landscape, is beneficial for pedestrians. Additionally, good access to public transport results in a well-functioning relationship between land use, rail, train and pedestrian infrastructure.

However, in recent years an increase of automobiles, thus an escalation of roads, is threatening the connectivity of, and accessibility within, the classic grid (Lascano Kezic & Durango-Cohen 2012). According to Barrigton-Leigh and Millard-Ball (2020), the streets in Buenos Aires have recently become more disconnected with an increase of dead ends and interrupted streets. On the topic of automobile dependency, Rebelo (2005) addresses an ongoing trend in the Buenos Aires Metropolitan Region where a larger number of people abandon public transport in favour of automobile travels (Rebelo 2005). Despite this, data from the beginning of the 2000's indicates that public transport still stands for the majority of all daily trips in the region. The most common mode of transport is bus (42%), followed by private cars (28%) and train (7%) (Rebelo 2005). It should also be mentioned that the data presented by Lascano Kezic and Durango-Cohen (2012) shows a drastic increase of train and metro journeys between 2005 and 2010, increasing from 500 million travels per year in 2005, to 750 million in 2010. This indicates that the public transport system is on a recovery (Lascano Kezic & Durango-Cohen 2012).

Our experience of using public transport in Buenos Aires was overall good. However, moving by foot was sometimes less pleasant. Even if the urban environment offered complex, inviting and interesting features, the traffic safety was low, sometimes making us feel unsafe. Cars generally drove fast and pedestrians were not prioritised.

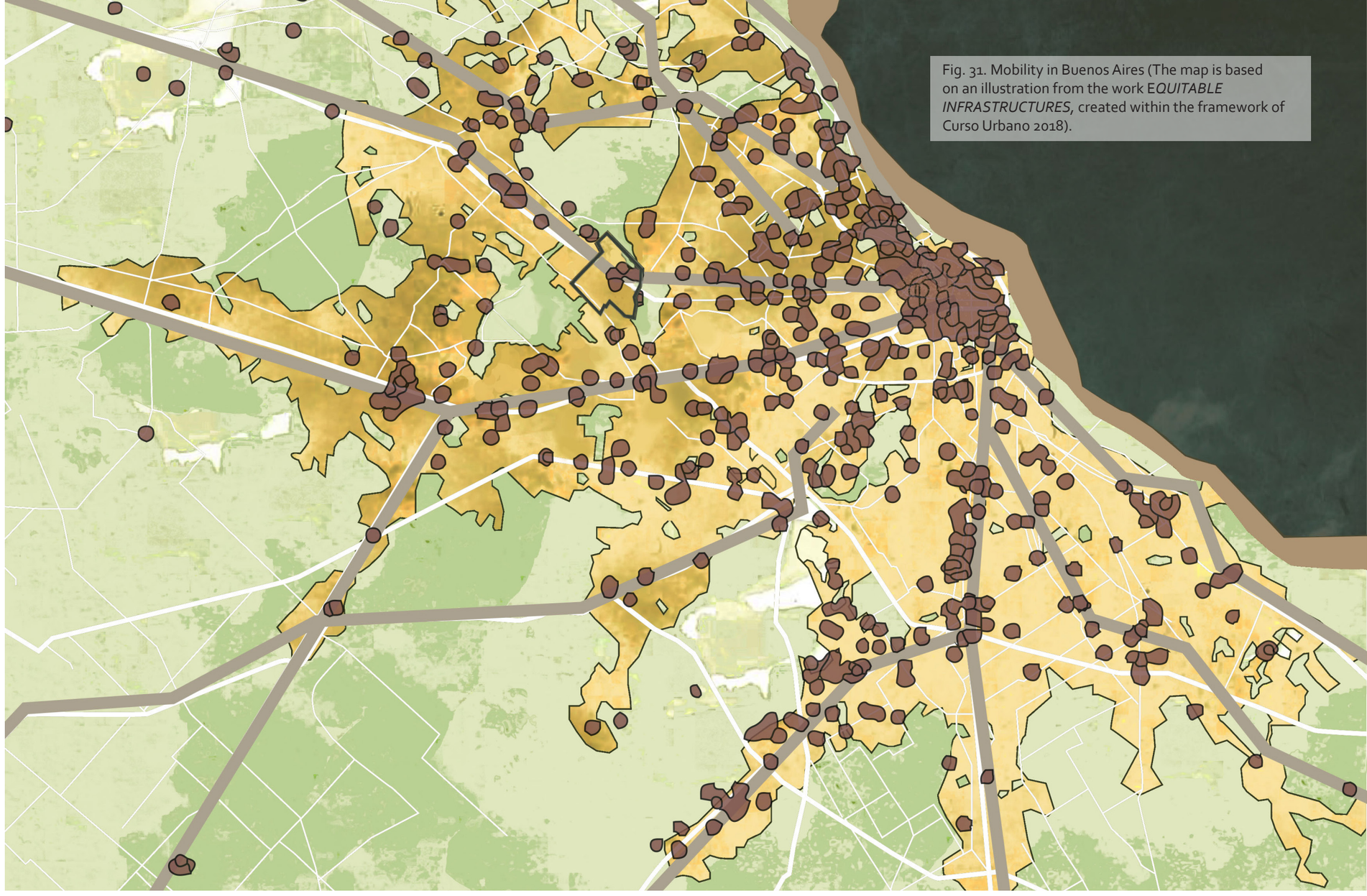


Fig. 31. Mobility in Buenos Aires (The map is based on an illustration from the work E*QUITABLE INFRASTRUCTURES*, created within the framework of Curso Urbano 2018).

- in Hurlingham

Hurlingham has major regional infrastructure. Two train lines and the motorway Acceso Oeste cross through the municipality. There is also a small airport, Palomar Airport, just outside the municipality border. Within the crossroads of the larger roads and/or train lines, nodes for commercial and other social services unfold (fig. 31).

The street network is influenced by the classic Spanish structures, just as in Buenos Aires city centre. However, the informal settlements are often located at the end of one street which is disconnected from the rest of the street system. Here, there is less of an opportunity to promote developments of new nodes. Inside the informal settlements, the streets are mostly unpaved and the houses are placed irregularly. Together with the problems of insufficient handling of sewage and water, the unpaved streets often become demolished and flooded, decreasing accessibility (fig. 33-36). As mentioned previously, the informal settlements are often located far away from public transportation, this furthermore limits the residents to move freely and reduces access to all kinds of services.

The settlements along the Arroyo Morón are located in what Diedrich (2020) refers to as the "inbetween land", the space between the river and the urban centralities. In the periphery, the streetscape is often underused (Diedrich 2020). The large roads placed close to important nodes have multiple car lanes and are dominated by hard surfaces. In comparison, the streets inside and around the barrios vulnerables along Arroyo Morón, have a softer appearance and are less traficated by motor vehicles (fig. 33-39). Yet, these streets also differ a lot. Their varying features will be reviewed in chapter 4.

Fig. 32. Mobility in Hurlingham (The map is based on an illustration by Boraei, Sara., Ma, Tianyue., Trilford, Brittany., Ling, Wenqian. and Feng, Siyun. Created within the framework of Curso Urbano 2018).

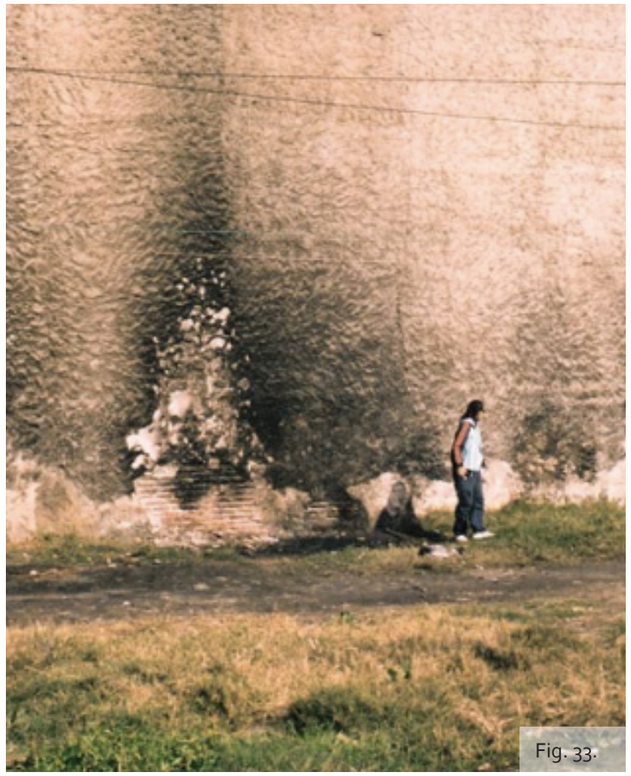


Fig. 33.


Fig. 34.


Fig. 35.


Fig. 36.

Fig. 33-36. Streets in the informal settlements in Hurlingham, Buenos Aires (Janches, Flavio 2020).


Fig. 37.


Fig. 38.


Fig. 39.

Fig. 37-39. Streets in the formal city, central Buenos Aires (Backlund, Amanda 2020).

Key Findings

Site Reading

When looking more closely into the socio-economically marginalised neighbourhoods of Buenos Aires it becomes clear that the social landscape of Buenos Aires today provides unequal accessibility to public space.

Global Influences

Urban agriculture may be effectively used in transformations of larger cities. It can help to reduce waste and transport of goods as well as help to improve the water supply and food availability. It has also been linked to several social benefits.

Today's economy-driven development favours a usage of universal planning methods. Site specific design can help to preserve identity and individualism in new urban areas.

Greenspace in Buenos Aires

For about 15 years, the municipal authorities have operated a programme which aims to transform the existing greenspaces into places for mental and physical recreation.

- in Hurlingham

Hurlingham appears to have plenty of green and open space, although the majority of this space is privately owned and of no use to the other residents.

Housing in Buenos Aires

In more recent years there has been an increasing number of gated communities in Buenos Aires. Simultaneously, the number of people living in informal settlements is growing, especially along the city border.

Roughly 1 600 000 people live in informal settlements in Buenos Aires. These areas are characterised by exposure to environmental risks and shortage of sufficient sewage and water systems, public services and greenspace.

- in Hurlingham

Approximately 172 000 people inhabit the Arroyo Morón water basin, many of whom live in informal settlements .

The barrios populares along the river Arroyo Morón are exposed to severe environmental risks.

Mobility in Buenos Aires

The homogenous grid and flat landscape, together with good access to public transport, result in a well-functioning relationship between land use, rail, train and pedestrian infrastructure.

In more recent years, an increase of automobiles has come to threaten the connectivity of, and accessibility to, the classic grid.

- in Hurlingham

The informal settlements are often located at the end of a street where there is no opportunity to promote developments of new nodes.

Together with the problems of insufficient handling of sewage and water, the unpaved streets often become demolished and flooded, decreasing accessibility.

The informal settlements are often located far away from public transportation which limits the possibilities to move freely and reduces access to all kinds of services.

2. COMMUNITY GARDENS IN THE STREETSCAPE AS A MEANS FOR INTEGRATION

Turning to the literature, it becomes clear that many of the existing problems in Buenos Aires can be linked to global challenges and urbanisation. In spite of this, just as Sijmons (2020) points out, the solutions to these challenges are often found at a local level, in towns and cities.

Finding inspiration in urban agriculture and WUF10 (2020), we would like to further explore the potential of strengthening the street's function as a public space through a development of community garden streetscapes.

Why Streets?

Limited access to public space is one of many challenges in the informal settlements (UN-habitat 2015). In absence of parks and plazas, the streets evolve into the main type of public space (Shu & Hu 2011), used for leisure, social activities, travel, play and meetings (Mehta 2007). According to WUF10 (2020) the cultural and social values of the streets in the informal settlements should be seen as a quality. Mehta (2013) addresses that streets bring different groups of people together, creating opportunity for exchange of knowledge and culture, thereby enriching communities:

> *'Sharing the space with strangers is important. That is how we become tolerant, how we learn about new viewpoints and new ways of perceiving the world around us, and become innovative. This is how society in general becomes more complex but richer, and how it advances culture.'*
>
> (Mehta 2013 p. 2)

In a way, the streets also reflect the city (Metha 2007). This is perhaps best described with the famous quote by Jacobs (1961):

> *'Think of a city and what comes to mind? Its streets. If a city's streets look interesting, the city looks interesting; if they look dull, the city looks dull.'*
>
> (Jacobs 1961, p. 29).

The streets are of importance for transportation, in addition the streets are located close to homes, hence are important public spaces where people spend most of their outdoor time. Furthermore, a street is often viewed from people's homes and offices. Improving the qualities of the streets is therefore an effective way to enhance people's everyday life (Lindal & Hartig 2015). Additionally, Hassan and Kaufman (2016) argue that the urban streets have high potential to foster social cohesion and community engagement. Also, according to Gehl (2011), improved street quality is linked to increased street activity. More specifically, a study by de Vires et al. (2013) shows that social cohesion is supported by high quality urban vegetation in the streetscape. Furthermore, Gehl (2011) argues that establishment of activities right outside residential houses prolongs the time people spend in the streets, increasing outdoor activities and conversations between neighbours. Hence, soft-edged streets, meaning streets edged by low buildings, urban vegetation, benches and front yards, encourage social interactions (Gehl 2011).

Besides high potential to foster social cohesion (Gehl 2011; Mehta 2013; Hassan & Kaufman 2016), Tornaghi (2016) claims that many urban streets are underused and that street verges and other small spaces within the streetscape can be useful for growing food. With this Tornaghi (2016) states an urge to rethink and change how urban spaces can be used in relation to food production.

Why Community Gardens?

Community gardens can have multiple positive effects, several of which can be linked to UN's sustainable development goals number 1. No poverty, 2. 0-hunger, 3. Good health and well-being, 10. Reduce inequalities, 11. Sustainable cities and communities, 12. Responsible consumption and production, 13. Climate action and 15. Life on land (Rogge et al. 2018; UN n.d.). Furthermore, research has proven that community gardening supports social cohesion (Veen et al. 2015; Rogge & Theesfeld 2018) in multiple ways (Veen et al. 2015). Sharing a garden with others means regularly meeting the people you share it with. Additionally, working for a common goal, for example producing food or beautifying the neighbourhood, strengthens the feeling of having a joint responsibility (Veen 2015) and "being part of something bigger" (Kinglsey et al. 2019). Having a collective aim helps to create possibilities for the gardeners to bond with each other and thereby develop new social connections (Veen et al. 2015). Moreover, social connections first born in the community gardens might be taken further into meetups in other forums, although often linked to the community garden somehow, such as cooking and eating together (Veen et al. 2015). Other activities could be selling and trading food (Veen 2015) or seeds (Ouis & Lisberg Jensen 2009).

Veen et al. (2015) bring to light an interesting discussion about place attachment. Both active and non-active gardeners may benefit from having a community garden in their neighbourhood. Non-gardeners may achieve an improved community feeling if the community garden is aesthetically appealing. Continuously, Veen et al. (2015) argue how active gardeners gain positive affects such as social relations, both formal and informal, with friends and neighbours. Several aspects of community gardening make it an inclusive activity. The low-cost and proximity of the garden make it possible for everyone to participate no matter age, income and/or education (Comstock 2010).

Furthermore, Visioni and Nagib (2019) explain community gardens as a way of democratising the urban space, giving residents the opportunity to interact with the public space and integrate with each other. Thus, community gardens can be used as a way to assure people´s right to the city (Visioni & Nagib 2017; Tornaghi 2016) and work as a catalyst for future large-scale changes (FAO 2014). Additionally, community gardens often possess vital energy (Veen 2015). Usually starting out as small, temporary initiatives, they might grow into more permanent gardens supporting community building (Bishop & Williams 2012). Hunter and Brown's (2012) study of private gardens placed in the streetscape, shows how the gardens multiplied to form into clusters. This indicates that the desire to perform gardening in the streetscape can spread between neighbours. Also, as community gardens can be set up for temporary use at rather low cost, it can be seen as an especially successful transformation tool when working in the informal settlements, where large scale transformation projects are hard to realise due to economical aspects and the neighbourhoods instable structure (Borthagaray 2020; Janches 2020a).

Defining Community Garden

C*ommunity Garden* is a broad concept, frequently used although not often clearly defined. A community garden often includes some sort of cultivation, although if it is done individually or collectively, on private or public land, differs (Veen et al. 2015). Rogge and Theesfeld (2018) define community gardens as:

> *'...collectively used and self-organized open places situated in urban areas, where food, non-food plants, and a sense of community is grown, to address diverse local needs and to generate personal and common benefits.'*
>
> (Rogge & Theesfeld 2018)

In this rather general description, Rogge and Theesfeld (2018) argue that characteristics such as management, as well as types of plants and crops, can vary. The urban setting, however, is recurrent and so is the fact that community gardens produce a community feeling. In addition, Lawson (2005) claims that a commonly known description of a community garden is: a plot of land, individually cultivated yet with joint management of the garden as a whole.

Fig. 40. Oficina de Horta (1) (Fora do Eixo 2015. Licensed under CC BY-SA 2.0)

Community Gardens and Social Cohesion

Looking more closely at the various forms of community gardens, certain structures are alleged to enhance social cohesion more than others (Veen et al. 2015).

Tasks and Resources

There are structural differences between community gardens regarding division of space. The cultivated plots can be cared for individually or collectively and in a number of gardens both systems appear. Parts of the area will always, to some extent, be shared by all the participants, for example the pathways and basic infrastructure (Veen et al. 2018).

Workload together with infrastructure like toilets, furniture, kitchens, greenhouses and tool sheds, as well as resources such as seeds, soil and harvest, can be collectively divided or collectively shared. *Collectively Divided* implies that it is commonly divided and used when assigned. *Collectively Shared*, on the other hand, refers to usage without any arrangements (Rogge & Theesfeld 2018). With a larger number of collectively shared spaces, the occasions where social interaction can occur will increase. Sharing not only the infrastructure, but also resources and workload, may create opportunities for social interactions (Rogge & Theesfeld 2018). This is also supported by Rogge et al. (2018) and their study of community gardens in Germany which showed that social cohesion was enhanced when the gardens were mutually maintained by the whole community instead of an outside party or just a small group of the community. Yet, collectively sharing requires much communication, cooperation and organisation between the members in order for management to be successful (Rogge et al. 2018).

Access to Community Gardens

Community gardens can be open for anyone to access whenever they want. These gardens are called public-access community gardens, in short *PAC-gardens*. They can also be enclosed gardens, where fences, gates and restrictions regulate who, and when, people are allowed to visit the garden (Spierings et al. 2018). PAC-gardens allow a larger flow of people with a more diverse background to access (Bendth 2012). Furthermore, enclosed community gardens might result in social exclusion (Spierings et al. 2018). This is also mentioned by Staeheli et al. (2002). They argue that by regulating who is, and who is not, allowed to visit community gardens located in public space, some people are being limited their right to urban public space.

The Purpose of Gardening

The purpose of having a community garden can be numerous. One ambition may be to produce food (Rogge & Theesfeld 2018), although as Lawson (2005) suggests, if that is the only target for keeping a garden it would be both cheaper and easier to go to a shop and buy the food (Lawson 2005). Australia City Farms & Community Garden Network, ACFCGN, has completed a checklist which suggests several goals. The checklist proposes recreation, community building, food security, health and education as probable purposes of community gardening (Grayson & Campbell 2001). Social cohesion is according to Rogge et al. (2018) the main reason why people engage in community gardening in Europe and Australia. However, studies made in South America are not comprehensive enough to provide conclusions regarding purpose at this state (Rogge et al. 2018).

Veen et al. (2015) have studied community gardens with different structures and state that in gardens with cooperatively used plots the social aspects are more valued. Moreover, they differentiate between two types of gardeners. The *Neighbourhood Bound Gardeners*, who look for the social aspects of gardening and the *Non-Neighbourhood Bound*, the individuals who are primarily interested in cultivation. Veen et al. (2015) expand the concept of neighbourhood bound by adding that the willingness of finding ways of socialising is stronger amongst residents living in the same neighbourhood. Gardening as an activity arranged for people living in the same area is by Veen et al. (2015) called *Place-Based Gardening*. In a place-based garden, the gardening in itself is not the main purpose, but rather the sense of community.

The article by Veen et al. (2015) takes up specific examples of the social life which occur in place-based gardens. They interviewed participants in different community gardens and one woman in a place-based garden specifically told a story about their friendship growing beyond the garden. When one of the member's had his car set on fire, the interviewed woman, who had two cars, lent one of hers while the member was looking for a new car. This, she said, would not have happened if they were just neighbours.

Further, Veen et al. (2015) take up a few negative aspects of place-based gardening. Place-based community gardens studied in the Netherlands showed a decreasing number of active members after construction of the garden was finished. Agriculture is an ongoing process which takes time and hard work, hence as cultivation was not the focus of these gardens, the participants did not feel any obligation to stay active. Yet, important to mention, the members continued to meet for social gatherings, although not regularly. However, in *Interest-Based Community Gardens* the shareholders did not care as much about social interaction although they showed devotion over a longer period of time.

Also, Veen (2015) argues that place-based community gardens tend to only attract one type of people. Exclusion, she continues, is less likely to happen in interest-based gardens. As participants come together for a joint interest, people from different socio-economic backgrounds, age groups and levels of education would all be involved based on the same interest (Veen 2015).

Veen (2015) finally adds that most people engaged in community gardens are attracted by a combination of motives. The categorisation is not all black and white, the same garden can to some members count as place-based and to others as interest-based.

Participation

Rogge et al. (2018) have studied 123 community gardens in Germany and state that the average community gardener is non existent. This is due to the fact that participants vary in age, background, interest etcetera. A heterogeneous group is in several ways favourable since it emphasises diversity and creates possibilities for the garden members to learn from people with different experiences and cultural backgrounds. Although it may lead to difficulties in decision making when their interests do not align.

Moreover, the number of gardeners connected to a community is shown to range between 2 and 82 amongst the community gardens studied. The number of participants do not affect the management processes, yet a larger group might struggle to compromise when interests and values differ. The most common size of a community consisted of 10-15 members, a size that has proved successful. However, to enhance social cohesion, the community should depend on a feeling of openness and trust rather than the size of the community or the garden (Rogge et al. 2018). This is also mentioned by Bendt et al. (2012) who discuss how gardens with an introverted character might make it hard for newcomers to join the community.

Community Garden Initiatives

Community gardens often unfold through small-scale, local, *Bottom-Up Initiatives.* The spontaneous and informal foundation of the gardens give them vital energy, forming a feeling of hope amongst the residents and the policy makers (Veen 2015; Bishop & Williams 2012). Bishop and Williams (2012), Visoni and Nagib (2019) as well as De silvia (2016) show examples of successful community gardens created by bottom-up initiatives. Fox-Kämper et al. (2018) claim that bottom-up initiatives often aim to meet local needs and offer solutions that are achievable at a low cost. Although, Veen (2015) argues that these initiatives are dependent on motivations and strong networks. She explains that people who are less administratively and culturally literate have little possibility to influence their own environment. To simply depend on a community garden to be created by grass-root movements may cause large inequalities and low chances for the garden to arise where it is most needed (Veen 2015).

Community gardens created through *Top-Down Initiatives* are more frequently used to mitigate diverse problems in larger populations (Fox-Kämper et al. 2018), for example food insecurity in a country (FAO 2014). Fox-Kämper et al. (2018) discuss that whether top-down or bottom-up initiatives are most suitable depends on the situation and the purpose. According to Nettle (2014), most community gardens have been created through a combination of top-down and bottom-up initiatives. She continues to explain that grass-root movements often are dependent on land or other resources provided by the government, NGO:s or similar partnerships. This is also supported by Tornaghi (2016) who argues that most community gardens would not have been made possible without external grants and provision of land (Tornaghi 2016). Conversely, top-down initiatives are seldomly successful without motivated residents, participants and support by volunteers (Nettle 2014; Tornaghi 2016). Also, it is hard to distinguish between top-down and bottom-up community gardens since it is common that their characteristics change over time, as more residents become involved, partners withdraw, the government increases their support etcetera (Fox-Kämper et al. 2018).

Fig. 41. Oficina de Horta (2) (Fora do Eixo 2015. Licensed under CC BY-SA 2.0).

Key Findings

Why Streets?

With a lack of public parks and squares, the streets evolve into the main public space.

The cultural and social values of the streets in the informal settlements should be seen as a quality.

Streets bring different groups of people together, creating opportunity for exchange of knowledge and culture, thereby enriching communities.

Urban streets are public spaces that have the highest potential to foster social cohesion and community engagement.

Improved street quality is linked to increased street activity.

Social cohesion is supported by high quality urban vegetation in the streetscape.

Why Community Gardens?

Community gardens can have multiple positive effects, several of which could be linked to the UN's sustainable development goals.

In a shared plot, the gardeners regularly interact with the other members.

Community gardening implies working for a common goal, such as producing food or beautifying the neighbourhood. This strengthens the feeling of having a joint responsibility and "being part of something bigger" which additionally supports place attachment.

Having a collective goal helps create possibilities for the gardeners to bond with each other and create new social connections.

The low-cost and proximity of a garden, makes it possible for everyone to participate, no matter age, income or education.

Defining Community Garden

"...collectively used and self-organized open places situated in urban areas, where food, non-food plants, and a sense of community is grown, to address diverse local needs and to generate personal and common benefits."

(Rogge & Theesfeld 2018)

Community Gardens and Social Cohesion

Structural differences between community gardens regard division of space. The cultivated plots can be cared for individually or collectively and in a number of gardens both systems appear.

Infrastructure, resources and workload can be collectively divided or collectively shared. Collectively divided implies it is commonly divided and used when assigned. Collectively shared refers to usage without any arrangements.

In collectively shared spaces, many occasions of social interaction can occur.

Publicly-accessible community gardens, PAC-gardens, are open for anyone to access.

Community gardens can be enclosed by fences and gates. Such gardens may have restrictions which regulate who, and when, people are allowed to visit the garden.

PAC- gardens allow a larger flow of people whilst enclosed community gardens might result in social exclusion.

Well-being, ecosystem services, education, recreation and social cohesion are reasons that motivates community gardeners.

The social aspect are higher valued In community gardens with a cooperative atmosphere.

A place-based community garden is well connected to the residents it is located close by, and the neighbourhood it is located in.

An interest-based community garden is formed by participants with a genuine interest in gardening.

A size of 10-15 participants per garden has proven to be successful. A larger group might cause difficulties.

To enhance social cohesion, the community garden is dependent on a feel of openness and trust.

Community gardens can be created by top-down or bottom-up initiatives.

Community gardens often unfold through small-scale, local, bottom-up initiatives. The spontaneous and informal foundation of the gardens gives them vital energy, forming a feeling of hope amongst the residents and the policy makers.

Bottom-up initiatives often aim to meet local needs achievable by low cost. Top-down initiatives are more frequently used to mitigate diverse problems in larger populations.

3. SOCIAL COHESION AND GREENSPACE

To receive comprehensive information relevant to this study, chapter 3 includes literature about greenspace in relation to social cohesion. As we consider community gardens to be a type of greenspace, we believe the following chapter brings interesting matters regarding how to design community gardens in order to foster social cohesion.

Digging into litterature

Research indicates that whether greenspace has the ability to foster social cohesion depends on its size (WHO 2016), if it is easily accessible, appears clean and feels safe (Rasidi et al. 2012). Therefore, this chapter will examine greenspace in relation to size, accessibility and safety.

When reading the following chapter, it is important to bear in mind that even though some of the aspects are considered well-known and commonly used in Sweden, it might not be the case in the informal settlements of Hurlingham. Research presented in the thesis so far confirms that the informal settlements often lack this basic infrastructure. Regarding social cohesion, it has to been considered that what is desirable in a high and middle income area in Sweden, might be of disadvantage in the barrios populares. This is discussed under the heading: The risk of Green Gentrification. Another aspect to stress is, according to Diedrich (2020), that even if these aspects are presented one-by-one, they should be considered in relation to each other, as well as in the real-life situations they are brought into.

Size

Larger areas can support a higher number of activities, hence foster social cohesion successfully (WHO 2016), therefore Sugiyama et al. (2010) suggest that one large park provides greater utility than several small ones. Also Forsyth and Musacchio (2005) comment that people tend to use parks in various ways, limited size might therefore result in conflict between users. On the contrary, Rogge et al. (2018) argue that community gardens are not dependent on size to enhance social cohesion. Furthermore, Gehl (2011) argues that social interactions are supported in areas where people share and use the same public space, move slowly and can see each other face to face on the same vertical level. He continues by adding that between 1,3 to 3,75 meter is a suitable distance for neighbors and co-workers to communicate (Gehl 2011).

The risk of Green Gentrification

Anguelovski et al. (2018), Haase et al. (2017) as well as Curran and Hamilton (2012) bring to light the issue with implementing large greenspaces in socio-economically exposed neighborhoods. They argue that as areas become greener, the value of the land often increases, leading to private actors starting to invest and appropriate the land. This results in higher real estate prices, forcing poor people to relocate, a process called *Green Gentrification.* Implementing large greenspaces in vulnerable neighborhoods might therefore risk social exclusion (Anguelovski et al. 2018; Haase et al. 2017). Astell-Burt et al. (2014) add to this subject, that low-incomers are the ones who have the most to gain from having greenspace easily accessible, still they are the ones who lack money to buy a home in such a location.

To lower the risk of green gentrification Haase et al. (2017) suggest implementing *Just Green Enough strategies.* For urban planners this involves designing small scale, scattered greenery instead of large spaces and massive green belts. To avoid green gentrification in the Global South, Anguelovski et al. (2018) suggest that planners should work specifically with transforming vacant land into small parks.

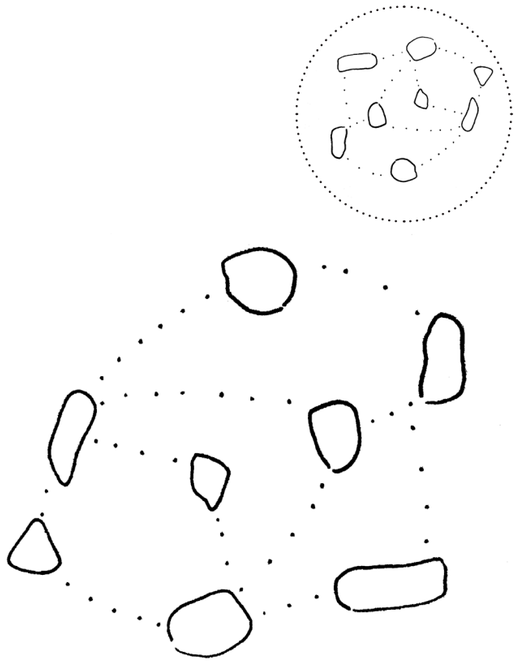


Fig. 42. Implementing large greenspaces in deprived neighborhoods might cause green gentrification. To minimise the risk of this, countries in the Global South can develop small scale greenspaces.

Perceived size or Actual size

Nordh et al. (2009) add an important aspect of size arguing that there is an extension between actual size and perceived size. Perceived size is dependent on the relationship between vertical height and horizontal space. Thus, a park surrounded by high buildings or trees can be perceived as smaller than it actually is (Nordh et al. 2009). Even if large spaces often provide multiple activities (WHO 2016; Sugiyama et al. 2010), Forsyth and Musacchio (2005) suggest that small green spaces still can offer possibilities for a wide variety of activities if they can be used for different purposes depending on the time of day and year. Movable chairs and varying constellations of seatings is one way to create flexible and multifunctional spaces (Forsyth & Musacchio 2005). Kingsley and Townsend (2007) suggest that chairs and seatings in connection to community gardens may enhance the garden's possibility to support social interactions (Kingsley & Townsend 2007). The same applies to the streetscape, where available seating creates more activities and a higher chance for social interactions (Metha 2007).

Fig. 43.

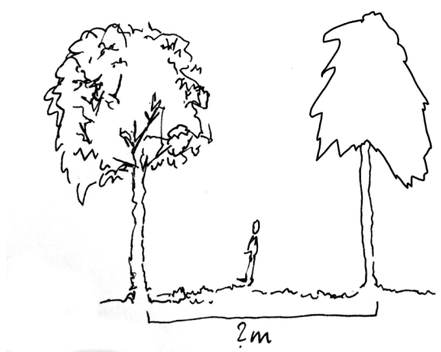


Fig. 44.

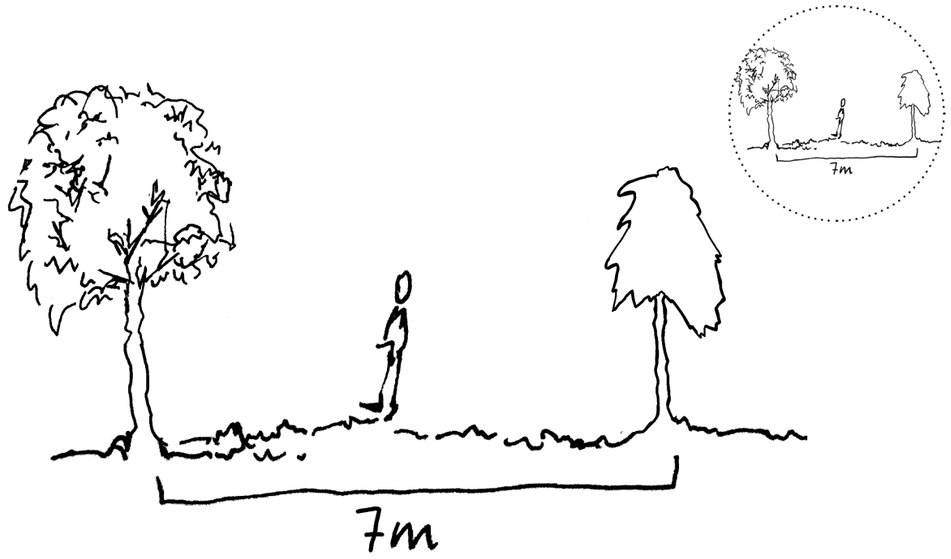


Fig. 45.

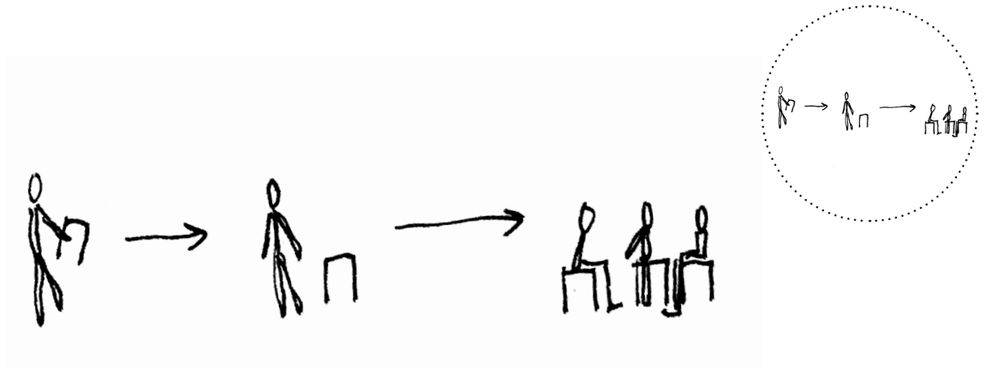


Fig. 42 - 44. Carefully designed greenspaces can be used for a large variety of activities. The height of vertical elements surrounding a space may influence how it is perceived. By creating multifunctional spaces with flexible attributes such as movable furniture, a small greenspace can be used in multiple ways.

Accessibility

A growing volume of data points to multiple health benefits of greenspace in urban areas. These effects apply in general, although the connection between well-being and greenspace might be more crucial in low-income neighbourhoods (Gidlow & Ellis 2011). Despite this, a lack of greenspaces can be noted in disadvantaged neighborhoods compared to affluent neighbourhoods (Roe et al. 2016). Gidlow and Ellis (2011) as well as Mears et al. (2019) argue the specific relevance of giving the underprivileged the possibility to live close to greenspace as they have fewer opportunities to travel and are therefore dependent on local availability. The distribution of greenspace is according to Mears et al. (2019) a matter of *Environmental Justice* , EJ (Mears et al. 2019). The concept is described by Mitchell (2018):

> *'Environmental Justice (EJ) is concerned with the fair distribution amongst social groups of environmental quality'*
>
> (Mitchell 2018 p. 569)

The UN (n.d.) add to the discussion about greenspace and environmental justice that safe and inclusive green public spaces should be provided to a wider extent. The UN Global Goals for sustainable development, target 11.7 says:

> *'By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.'*
>
> (UN n.d.)

Greenspace within a short distance from home can be referred to as *Doorstep Green Space*. This does not necessarily mean literally right in front of the house, but rather local urban parks. These places may bring the largest positive health effects due to frequent exposure (Gidlow & Ellis 2011). Gehl (2011) addresses the social aspects of accessibility and claims that most social interactions take place in front of people's home, hence having front yards facing the streets might be a better way to foster social cohesion than having larger green areas located farther away.

Accessibility related to varied Physical Conditions

Whether something is accessible is not dependent on distance alone. Physical accessibility is crucial in any course of social inclusion since people who are excluded from sites are not able to profit from the community feeling. Difficulties to access greenspace can be experienced by a range of people, from young to old (Seeland & Nicolè 2006). Seeland and Nicolè (2006) has specifically studied people with different types of disabilities and their perception of greenspace. They argue that attitudes towards disabilities will have to change in order to provide equal accessibility for all, disabilities can no longer be looked upon as the deviant but rather the obvious. Additionally, social isolation applies to elderly with physical challenges and planners need to design with everyone's interest in mind. By doing so, weak users, for example the elderly, would have the same opportunity to improve their health as well as their social relations.

Seeland and Nicolé (2006) have found that activities such as gardening are favoured by weak users. Moreover, accurately designed public greenspace should not exclusively attract one user group, instead flexibility and diversity needs to be implemented to a wider extent when planning accessible greenspace. Seeland and

Nicolè (2006) claim that integration, in planning contexts, imply that the physical environment is designed so that it serves special needs. Social inclusion, however, has a broader meaning and is more of a mindset. No one should have to settle for certain standards and in order to change the view on standards, different user groups should participate in the planning process (Seeland & Nicolè 2006).

Fig. 46.

Fig. 47.

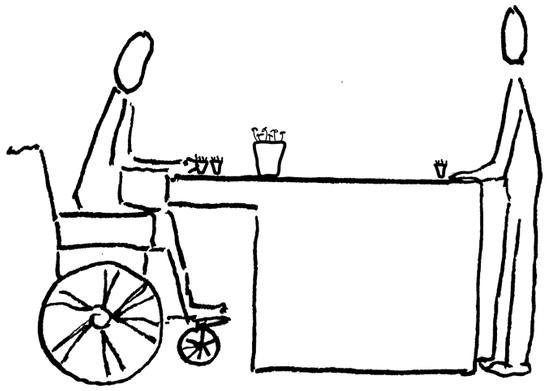


Fig. 46 - 47. For every designer, creating space which invites users with varied physical abilities should be a natural way of thinking.

Fig. 48. The need for greenspaces near by, referred to as doorstep green space, is especially high in deprived neighborhoods.

Safety

Feelings of safety in the public space is mainly related to maintenance (Hong et al. 2018; Harig et al. 2014), surveillance, traffic safety (Zuniga-Teran et al. 2016), lighting (Paching et al. 2017; Boomsma & Steg 2014; Haans & de Kort 2012), and perceived risk of entrapment (Blöbaum & Huencke 2005).

Greenspace maintenance

Urban vegetation is often linked to an increased feeling of safety. However, in some cases it can lead to the opposite. High trees in public spaces enhance safety, while small trees or bushes, limiting the sight, increases the risk for crime (Hartig et al. 2014). Additionally, Hunter and Brown (2012) have studied *Easement Gardens*, in this specific article referring to private gardens placed in the public streetscape. Their study shows that gardens that do not have any visible weeds were more appealing than gardens with a large presence of weeds. Despite this, they argue that a badly maintained easement garden was still better than not having a garden at all. This they call the *Gnome Syndrome*, it being the tendency to find garden art appealing, independent of quality, since it shows signs of engagement and effort (Hunter & Brown 2012). However, in relation to social cohesion, multiple sources point out that greenspaces need to be well maintained in order to convey a feeling of saftey and to support social cohesion (Bonnes et al. 2018; Rasidi et al. 2012; Hartig et al. 2014). More precisely, in relation to urban vegetation in the streetscape, De vires et al. (2013) address that social cohesion is supported by a large presence of well maintained vegetation in the streets. Furthermore, keeping community gardens well-maintained may increase the feeling of place attachment (Veen et al. 2015).

Traffic safety

A study done by Hong et al. (2018) demonstrates that older adults sometimes perceive unmaintained vegetation as a threat against traffic safety (Hong et al. 2018). In Ann Arbor, Michigan, streetscape easement gardens are popular. There they have increased traffic safety by having regulations limiting the height of the vegetation along the streets to 36 inches (Hunter & Brown 2012), equal to a height of approximately 1 metre.

Whether high traffic safety can be achieved by separating traffic or not is a commonly discussed issue (Swedish traffic administration 2007). Some argue that separating the pedestrians from motor vehicles increases traffic safety (Zuniga-Teran et al. 2016). On the other hand, a growing amount of literature suggests shared space, meaning space where pedestrians, bicycles and motor vehicles traficate the same space, as an alternative solution. Shared space as a design strategy is widely used in Sweden, Denmark and Germany, although also common in Holland, France, Spain and UK (Hamilton-Baillie 2008). Mohan (2002) adds that in low-income countries, pedestrians and bicycles are often seen sharing the street with motor-vehicles. However in this case it is a result of limited resources instead of conscious planning. The consequence of this tends to be lower perceived traffic safety. Ín order to increase the traffic safety in these areas, Mohan (2002) proposes traffic separation in the main streets, and traffic calming in others. *Traffic Calming* is a broad concept including different strategies to limit the nuisance of car traffic both by limiting the amount of vehicles, as well as their speed and the proportion of the streetscape which they claim (Zalewski & Kempa 2019).

Despite this suggested solution, most planners agree that traffic safety can be increased by giving more space to the unprotected road users and regulating traffic speed (Zalewski & Kempa 2019; Moan 2002; Zuniga-Teran et al. 2016). Features to implement for improved traffic safety are for exemple pavements, speed bumps and zebra crossings (Zuniga-Teran et al. 2016).

Fig. 49. Badly maintained urban vegetation often causes a feeling of insecurity.

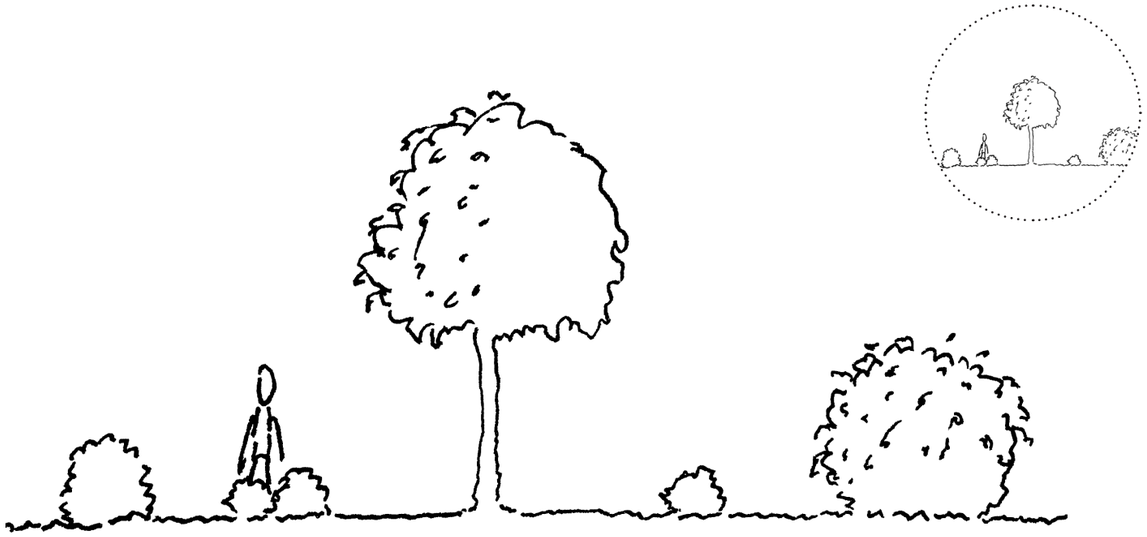


Fig. 50. Well-maintained vegetation is linked to increased feeling of safety and social cohesion.

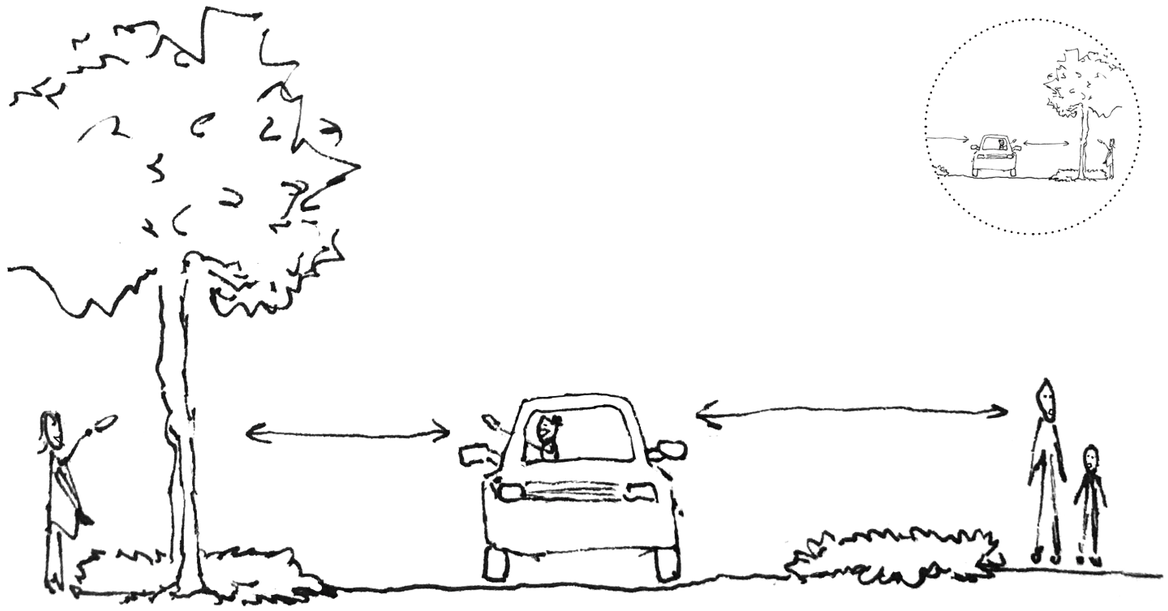


Fig. 51. Traffic safety is an important aspect of perceived safety. By regulating the speed and amount of traffic, a feeling of safety is generally increased. Also, unmaintained vegetation along streets may be a threat to traffic safety. Free sight can be created by regulating the vegetation along the roads to a maximum height of 1 metre.

Feeling secure but not entrapped

Zuniga-Teran et al. (2016) argue that surveillance is linked to high feelings of security. Residential housing with visible balconies, porches and/or front yards that are facing the streets may, together with good lightning, be beneficial (Paching et al. 2017; Boomsma & Steg 2014; Haans & de Kort 2012; Zuniga-Teran et al. 2016). However, according to Blöbaum and Huencke (2005) the feeling of entrapment in public spaces creates the strongest perceived danger. Better lighting does not always reduce the feeling of entrapment, hence it is important to design public spaces that do not feel enclosed (Blöbaum & Huencke 2005).

The desire to prevent a feeling of entrapment in public spaces can be explained by the *Prospect and Refuge Theory* presented by Appleton 1975. The theory proposes that humans, based on an universal behavior, seek places that allow good overview without risking exposement (Appleton 1984). According to Dosen and Ostwald (2018) the theory suggests that humans are attracted to environments where there exists a balance between openness and enclosement, prospect and refuge. This balance is mentioned by Forsyth and Musacchio (2005) who argue that a mix between open and enclosed, or a combination between high trees and low shrubs, can give a green apparence without creating strong feelings of entrapment and insecurity. This is also discussed by Stigsdotter and Grahn (2002), who write that the design and density of greenspace borders is important for the experience of the space and the perceived safety.

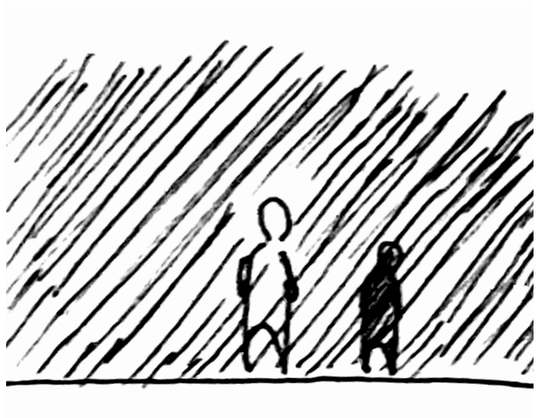


Fig. 52. Bad lightning might cause a feeling of insecurity.

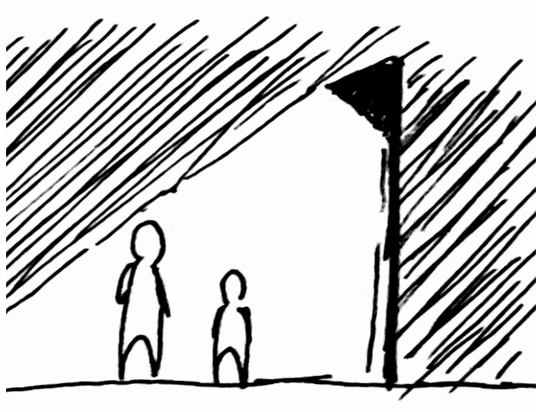


Fig. 53. Good lightning might make the visitor feel safer.

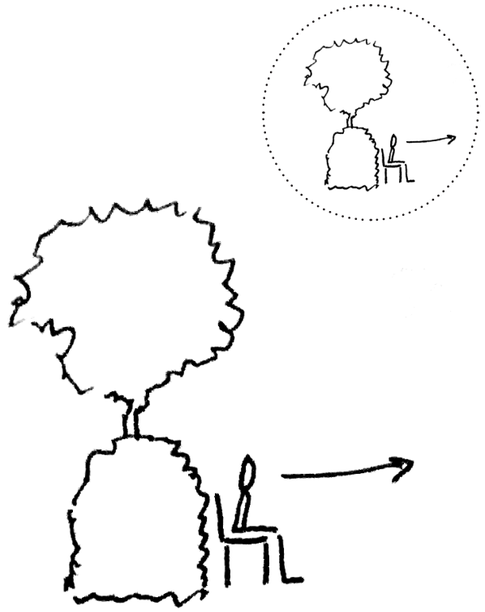


Fig. 54. Humans seek places that allow an overview without risking exposement. With this in mind when developing new and restoring already existing places, designers can avoid creating environments that evoke the feeling of entrapment.

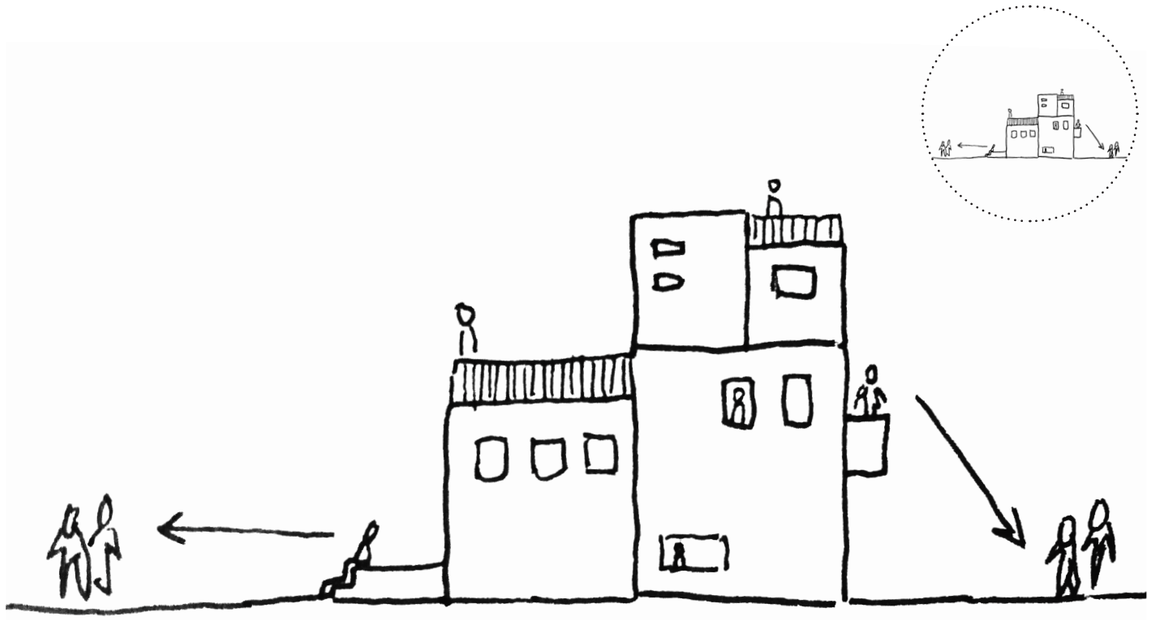


Fig. 55. Residential houses facing the streets are often linked to high perceived safety. Houses with balconies, a porch and/or front yards can be helpful when creating a safe atmosphere.

Key Findings

Size

Social interactions are supported in areas where people share and use the same public space.

Social interactions are promoted by slow paced movement and being able to see each other face to face on the same vertical level.

1,3 to 3,75 meters is a good distance for social interactions with familiar people.

The perceived size is dependent on the relationship between vertical height and horizontal space. For example, when a small park is surrounded by high buildings it can be perceived as smaller than it actually is.

It might be more beneficial to propose small scale urban vegetation as larger greenspace transformations risk green gentrification.

By designing multifunctional spaces, one site can attract people with varying interests. Different user groups may visit the same site although at different times of the day.

Multifunctionality can be added to a space by, for example, integrating movable furniture. Such additions also stimulates the flexibility and a chance of social interactions.

Accessibility

There is a specific relevance for giving the underprivileged the possibility to live close to greenspace as they might have fewer opportunities to travel and are therefore dependent on local availability.

Greenspace within a short distance from home can be referred to as doorstep green space. These places may bring the largest positive health effects due to frequent exposure.

Having front yards facing the streets might be a better way to foster social cohesion than having larger green areas located farther away.

Whether something is accessible is not dependent on distance alone.

People who are excluded from entering a site are not able to profit from the community feeling, therefore is physical accessibility crucial in any course of social inclusion.

Public greenspace should not exclusively attract one user group, instead flexibility and diversity needs to be implemented to a wider extent when planning accessible greenspace.

Safety

Vegetation needs to be well maintained in order to create a feeling of safety and support social cohesion. Keeping the vegetation to a maximum height of 1 metre along roads will increase the traffic safety.

High traffic safety can be achieved by separating unprotected road users from motor vehicles. Also lowering speed limits as well as implementing zebra crossings and speed bumps can help to increase traffic safety.

Residential housing facing the streets, preferably with visible balconies, porches and front yards, generally make areas perceive more safe.

Good lightning can be helpful in aspects of perceived safety.

Feelings of safety are often created in places where there is a good balance between openness and enclosement, prospect and refuge.

Reference projects

The literature study concerned several important aspects regarding the design of community garden streetscapes, however, findings on management and implementation are limited. Hence, successful reference projects have been used to broaden our knowledge. Also, due to the effects of Covid.19 we did not get a chance to visit the project area, thus information from other successful projects have been a crucial source of inspiration.

As we seek to gain knowledge regarding community gardens in the streetscape of barrios vulnerables in Latin America, we have chosen to look into one project from informal settlements in Brazil. This project mainly aims to increase food security, yet there are several interesting aspects which we can extract and learn from regarding possible cooperation and management strategies. We also see benefits using Swedish projects which we have more experience of. Thus, we have reviewed two projects in Malmö. Both Borthagaray (2020) and Janches (2020a) have, when it comes to development projects in informal settlements, stressed the importance of working with small scale and easily achievable solutions. The Swedish reference projects are temporarily put in place, one is an example of a temporary community garden and the other of a temporary street design.

Fig. 56. Reference project Sommargator (Backlund, Gösta 2020).

Fig. 57. Cantagalo favela (Flabbergast n.d. Licensed under CC BY-NC-ND 2.0.

Formiga Community Garden

Brazil is one of the leading countries in Latin America working with community gardens for increased food security (FAO 2014). Since the beginning of the 2000's, multiple community gardens have started to emerge in the urban streetscape and in the informal settlements, called favelas. In Rio de Janeiro there are today approximately 70 community gardens, founded by volunteers with support from the public sector and/or private companies (Caputo et al. 2019). Rekow (2015) calls them PPP:s, meaning that they are built on cooperation between the private, public and third party partnerships. One of these PPP:formations is the Municipal Department for the Environment's Hortas Cariocas program. The program develops organic community gardens together with residents of informal settlements (Rekow 2015). Within the program, five community gardens in the informal settlement Tijuca, north of Rio de Janeiro, have been created (Caputo el al. 2019; Rekow 2015).

The favela Formiga in Tijuca is characterised by poverty, unemployment and high gang rates. In 2008 the area became pacified, meaning returned to government control. Shortly after the pacification, the Hortas Cariocas program started a project called *Formiga Community Garden* and together with the local residents they built a community garden aiming to improve employment and ensure food availability (DeMarco 2018; Hwang 2016; Rekow 2015). The employed gardeners are previously unemployed, retirees and ex-offenders. Their tasks include gardening and teaching school children about growing food (Rekow 2015). As part of the project, half of all harvest is donated to schools and families with high socio-economic vulnerability. The rest is sold and the profit is reinvested into the project or returned to the partner (Rekow 2015; Caputo et al. 2019). In this way, the project has not only secured food availability, but also stimulated social development, reduced poverty and unemployment. Furthermore, it has led to less development of informal housing and dumping of garbage on vacant land (Rekow 2015). According to DeMarco (2018), much of the success can be linked to the fact that the project gives people the opportunity to take control of their own environment and everyday life.

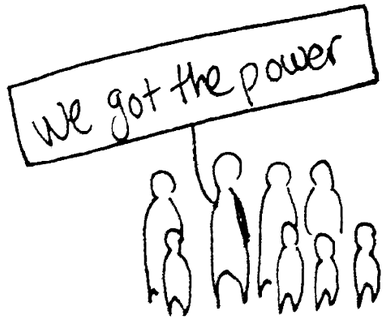


Fig. 58. Community gardens might help to empower the residents and ensure their right to the city.

Odla i Parken

In recent years, community gardens have made their way into public parks. (Middle et al. 2015). An example of such a project is *Odla i Parken*, in English *Gardening in the Park*, in Malmö. The project was founded by Malmö municipality in 2016 and involved the development of a community garden in Folkets Park, a public park located in the central part of the city (Stadsodling Malmö n.d.)

Community gardens in public parks can provide multiple benefits, for example, increased food availability, space for physical activity, educational opportunities and social interactions. Simultaneously they may cause challenges regarding unequal access and objections against that public land is occupied by private gardens (Middle et al. 2015). In Odla i Parken the municipality has solved this by letting the garden be open to the public. The community garden contains plots accessible for all, but also plots assigned to the residents in the neighborhood, local restaurants and associations. The cultivation boxes have been colour-coded so that it is clear who is allowed to use what (Folkets Park n.d.). Besides the cultivation boxes, the community garden also has a greenhouse and an outdoor classroom accessible for everyone to use. In the area there is also an outdoor kitchen which is accessible to the public but also bookable for certain private events or gatherings (Folkets Park n.d.).

Folkets park is a park in continual transformation. The area currently used for Odla i Parken will be redesigned for a new project called The people's garden. With this change, the community garden will be phased out, however the area will still be a green, public space. Odla i Parken is a temporary project which has had a lifespan of a few years (Karlsson 2020). It is not unusual to see design projects implemented for a shorter period of time. Temporary design as a method will be given more attention in the following reference project.

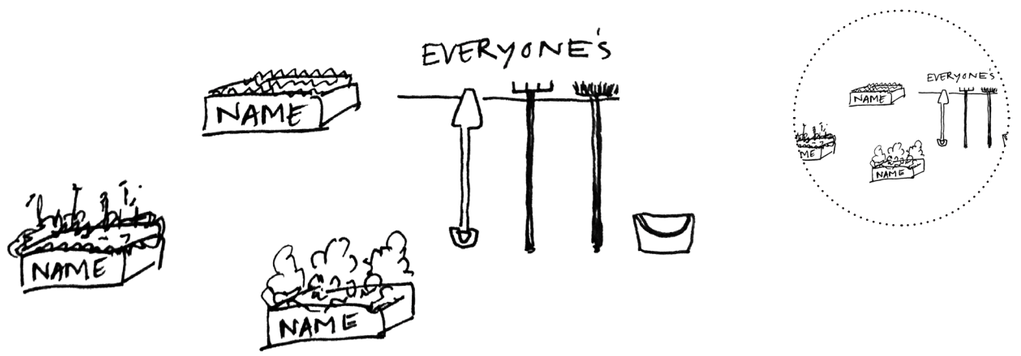


Fig. 59. The project Odla i Parken has used a colour-coding system to make division between plant beds more clear. They have cultivation boxes free for everyone to use as well as plant beds cared for by one specific family or organisation. This type of system can be linked to what Rogge & Theesfeld (2018) refer to as collectively shared and collectively divided.

Fig. 60. Reference project Odla i Parken (Folkets park n.d.).

Fig. 61. In Odla i Parken in Folkets Park, Malmö, they have created a clear distinction between private and public with colour-coded cultivation boxes.

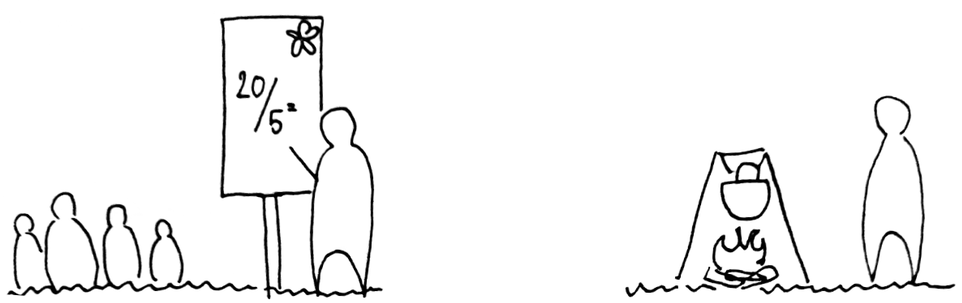


Fig. 62. Outdoor facilities in connection to gardens, such as outdoor classrooms and/or kitchens, may benefit social cohesion.

Sommargator

Malmö Municipality has since 2016 actively worked with what is referred to as *Sommargator*, in English *Summer Streets* (Malmö Municipality 2019). Between April and October (Malmö Municipality 2020), the municipality temporarily cuts off motorised traffic and redesign the streets into pedestrian zones, with hope of creating a more lively outdoor atmosphere (Malmö municipality 2019). The Summer Streets are during this period filled with café terraces, urban vegetation, public art and seatings (Malmö Municipality 2020).

Malmö Sommargator was conceived during the European Mobility week in Autumn 2016. That year Friisgatan in central Malmö became the first street where this new concept was tried out. Since then, they have gradually redesigned additional streets, four so far, and the project is set to expand further in the years to come (Malmö municipality 2020). According to Malmö municipality (2019), the project is generally appreciated by the residents. This project has proven to have a positive effect on public life in the streetspace as well as an upswing of people using public space. Furthermore, the ability to use the streets as "real-life" tryouts for urban street design has also been optimistically received. After every summer, the residents get to send in ideas for improvements. The municipality evaluate the comments from the public and based on the result they make additional changes in order to improve the design for upcoming years (Malmö municipality 2019).

Interestingly enough, the current pandemic caused by Covid.19 has created opportunities for governments and municipalities to temporarily redesign and change the use of urban streets (Søholt 2020). Nations in quarantine and with hard restrictions have led to a drastic decrease in traffic. The largest changes can be seen in San Francisco with a 50% traffic reduction and Italy with a 65 % reduction (INRIX 2020). The decrease makes it possible for planners to imagine what the streets could look like if the car became a less prioritised mode of transport. Recently, several cities have noticed this change in traffic and are temporarily expanding their pedestrian and bicycle infrastructure. For example, Bogota has cut off traffic on 585 km of street, also, New York and Mexico City have started similar projects. How the view of urban streets will have changed after the pandemic is impossible to predict, however it has created a possibility to test future street design and given planners important insights about our cities (Søholt 2020).

Fig. 63. In the reference project Sommargator in Malmö they temporarily transform a few streets every summer. They create pedestrian zones with seating and urban vegetation.

Fig. 64. Picture from reference project Sommargator in Malmö (Backlund, Gösta 2020).

Key Findings

Formiga Community Garden

In order for community gardens in informal settlements to be successful, there is a need for cooperation between public, private and third party partnerships.

A vital design strategy is to incorporate the residents so that they feel empowered and motivated.

This project has improved food security. It has also created employment by hiring workers to maintain the garden and teach school children horticultural skills.

Letting the surplus be reinvested in the neighborhood or the program might create "ripples on the water" which can generate large scale changes, for example less development of informal housing and dumping of trash on vacant land, as well as reduced poverty.

Odla i parken

Community gardens on public land might cause objection regarding the occupation of public space. However, community gardens do not have to be either open for all or totally enclosed.

To avoid potential conflicts, it might be a good idea to distinguish who is allowed to use what. This can for example be done by colour-coding cultivation boxes.

It is not only gardens that possesses potential for social interactions, infrastructure related to the garden does as well, for example outdoor kitchens and classrooms.

Sommargator

Imagining a street without cars, noises and pollution might be difficult. In a comparable way it might be hard to rethink the chaotic appearance of the streets within the informal settlements.

The project Sommargator is evaluated due to its concept of temporary use.

Small scale implementation has the benefit of leaving room for revaluation, improvements and change. In addition, a more undefined and movable design creates opportunities for the residents to interact with the space.

4. DESIGNING COMMUNITY GARDEN STREETSCAPES IN HURLINGHAM

This project suggests community gardens in the streetscape as a means of integration and interaction between the inhabitants in the informal settlements and in the formal city. Knowledge gathered from literature and reference projects has resulted in strategies for design and management of community garden streetscapes. These strategies will be presented in this chapter.

Hurlingham Streetscape

As the illustration (fig. 67.) shows, the informal settlements along Arroyo Morón are located in the urban periphery, far from social services and other types of centralities. Also, the size and structure of the streets within and around the informal settlements differ compared to streets surrounding the nodes. Figure 65 is an image from one of the centralities in Hurlingham and figure 66 shows a street on the border of Nuevo Parque Quirno.

As the images illustrate, the streets around the informal settlements along Arroyo Morón are generally small scale, less trafficked and have a larger amount of unpaved surfaces. Relating this to a possible implementation of community garden streetscapes, the characteristics just mentioned can be viewed as an advantage. This is discussed in the subchapter Mobility in Hurlingham.

Fig. 65. Central street in Hurlingham (Google Street View 2020).

Fig. 66. One typical street from the barrio populares in Hurlingham (Google Street View 2020).

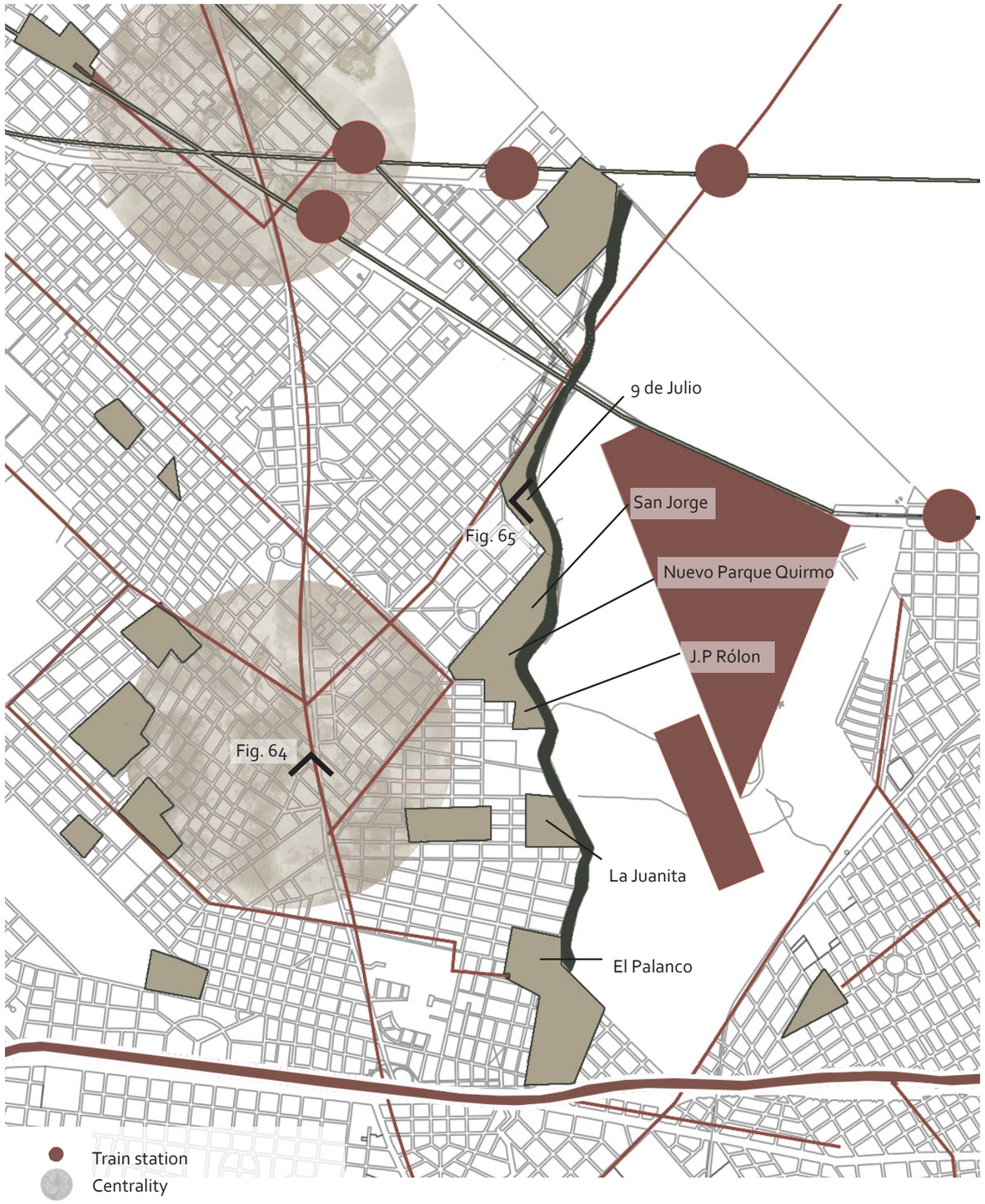


Fig. 67. Hurlingham streetscape. (The map is based on an illustration by Flavio Janches, 2020 and Boraei, Sara., Ma,Tianyue., Trilford, Brittany., Ling, Wenqian. and Feng, Siyun. Created within the framework of Curso Urbano 2018).

Developing Typologies

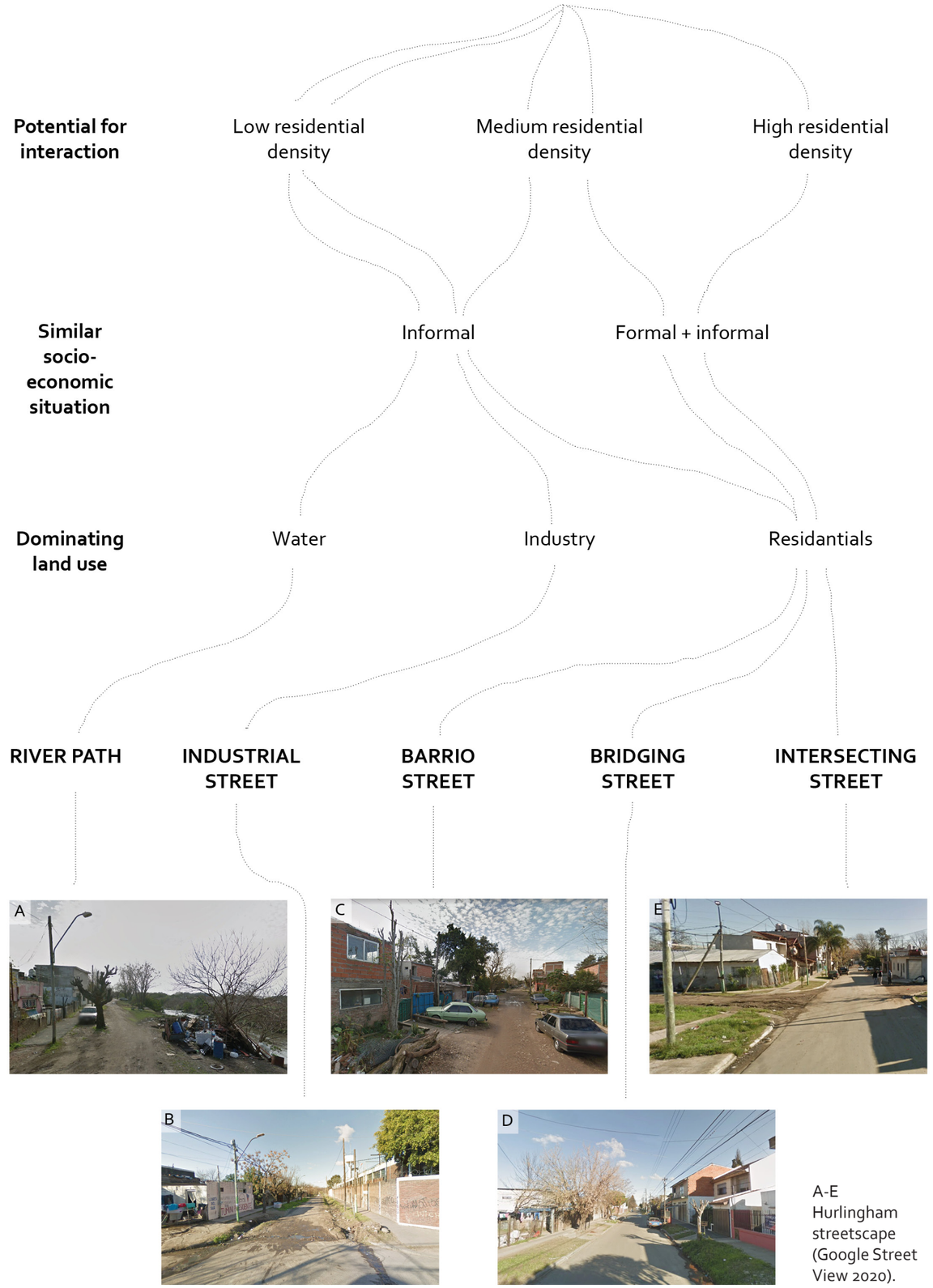
Looking more closely at the streets within and on the border of the informal settlements, differences between the streets can be noticed. In order to define the different features of the streets, typologies have been developed. These have helped us identify what certain streets may have incommon and what separates one from another. Using Google Street View as a tool, we have identified five street typologies within and around the barrios vulnerables along Arroyo Morón.

One goal with this thesis is to develop community garden streetscapes which promotes social cohesion. With this in mind, we have determined three different criterias which will support the classification of the streets. The first criteria: Potential for interactions, is based on the literature presented in the subchapter Why the streets?, where we argued that the chance of interaction increases if a higher number of residents share the same streetscape. Furthermore, as presented in the first chapter Buenos Aires Social Landscape, we have come to understand that the socio-economic situation separates the inhabitants in the informal settlements and the formal city. Hence, the second criteria: Similar socio-economic situation, which is connected to the location of the street, more specifically whether it is located within the barrios populares or if it is placed on a street bordering the formal city. As mentioned in chapter 2 under the subheading Blue and Greenspace in Hurlingham, the area along Arroyo Morón is very much characterised by the surrounding water and industrial landscape. As a final criteria we have therefore decided to divide the streets depending on dominating land use. The division separates streets located next to the river, industries or within residential areas.

This method has resulted in five street typologies: River Path, Industrial Street, Barrio Street, Bridging Street and Intersecting Street.

Fig. 68. Map of the Hurlingham streetscape (The map is based on an illustration by Janches, Flavio, 2020 and Boraei, Sara., Ma,Tianyue., Trilford, Brittany., Ling, Wenqian. and Feng, Siyun. Created within the framework of Curso Urbano 2018).

Streets within and on the border of the informal settlements along Arroyo Morón



A-E Hurlingham streetscape (Google Street View 2020).

Ideas for Community Garden Streetscapes

As mentioned in the second chapter, Community Gardening in the Streetscape as a means for Integration, there are varying purposes for why community gardens attract their members. Inspired by the checklist completed by Australia City Farms & Community Garden Network, ACFCGN, we have put together a checklist relevant for our research (see appendix). The checklist suggests that community gardens can be used for the purpose of education, food security, biodiversity, water management, recreation and/or community building. These points can all be linked to the UN's sustainable development goals (fig. 69).

Key findings from the third chapter, Social Cohesion and Greenspace, suggest that urban space with a high capacity to support social cohesion have the following features: be real-life small scale although perceive as larger, have high percived safety and be accessible. We have examined the five street typologies based on these aspects and will suggest different design solutions. The result are summarised and discussed on pages 108 - 116.

The design ideas are based on a combination of physical aspects and findings from the litterature study. As the following pages illustrate, the immediate purpose for community gardens in the streetscape might not always be to support social cohesion. Along the River Path, for example, we suggest it might be more suitable to implement community gardens focusing on stormwater management. The illustrations on pages 110 - 117 speculate regarding how community gardens, or related structures such as food markets, could become new features in the streetscape. Within the streetscapes of the four typologies: The River Path, Industrial Street, Barrio Street and Intersecting Street, community building is not the urgent focus, still we hope that the transformed streetscapes will invite new social interactions.

Also, to give the reader a sense of how community garden streetscapes might transform with the seasons, the illustrations represent different times of the year. River Path (fig. 71) and Industrial Street (fig. 77) visulises the Argentinian Springtime, the Barrio Street (fig. 72) Summer/ early Autumn and the Intersection Street (fig . 73) late Autumn.

In the end of this chapter we present the street which we believe best serve our purpose of fostering social cohesion between residents of the formal and the informal city, the *Bridging Street*. Because of its strategic location "in between", it is of specific interest. Furthermore, as discussed in figure 78 on page 116, the Bridging Street has certain assets such as high traffic safety, high surveillance from surrounding houses and high physical access, which generally enhances social cohesion. With reference to the benefits of the Bridging Street, we will provide more detailed design strategies for this street than we will for the other street typologies.

The Bridging Street illustration, figure 78, visulises the commuity garden streetscapes in Summer time.

Education
Food security

Education
Food security

Biodiversity
Recreation
Water management

Education

Water management

Community building
Education
Food security
Recreation

Biodiversity
Community building
Education
Food security
Recreation
Water management

Food security

Food security
Water management

Biodiversity

Fig. 69. UN's sustainable development goals. (The image is based on an illustration by UNDP, Wikimedia Commons 2016).

Fig. 70. Hurlingham current situation, path along Arroyo Morón (Google Street View 2020).

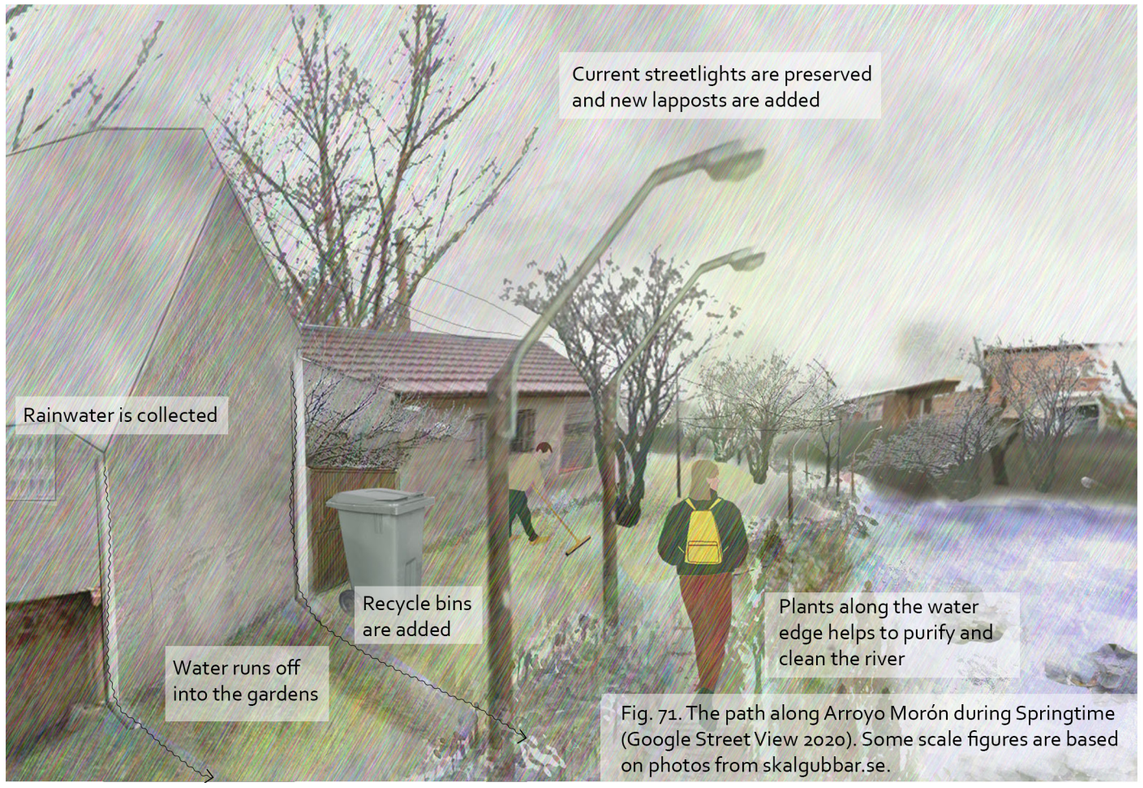


Fig. 71. The path along Arroyo Morón during Springtime (Google Street View 2020). Some scale figures are based on photos from skalgubbar.se.

Current situation

Alongside Arroyo Morón, the streets appear as unpaved paths, *River Paths*, with informal dwellings on one side of the path (fig. 70).

Located in the periphery, there is a low chance of surveillance from neighbours. In addition, the vegetation is unmaintained and the land is often used as a space to dump garbage (fig 70). According to Zuniga-Teran et al. (2016) these are features that might make an area be perceived as unsafe.

Furhermore, as illustrated in figure 29, under the subheading Housing in Hurlingham, there are high levels of pollution and risk of floods along the river Arroyo Morón. As mentioned in the subchapter Green and Blue space in Hurlingham, these problems are the result of bad sewage and water management.

Proposal

As previously discussed in the chapter Green and Bluespace in Hurlingham, greenspace possesses potential to infiltrate and store rainwater. Thus, we suggest to create community gardens along the River Path. The plant beds will infiltrate, clean and store water which simultaneously may decrease the risk of high water levels and lower the particulate pollution (fig. 71).

Moreover, as shown in the street view of the current situation (fig. 70), the area is currently used as a place where the residents dump their garbage. As the reference project Formiga community garden proves, implementation of community gardens can lead to lower crime rates, a reduced number of new informal settlements constructed and fewer people dumping their waste. Also, as discussed in chapter 2, subchapter Why Community Gardens?, the easthetic improvement brought to a place when developing a community garden can have a positive effect on the residents who live near by. One could hope that the residents will care to keep the neighbourhood tidy after such a transformation, hence, habits of garbage-dumping should change accordingly. Additionally, an attractive River Path may increase the feeling of safety. Chapter 3, subchapter Feeling secure but not entrapped, mentions the favourable aspects of having people around to "see" you. By creating activities along the path, more people will automatically circulate and make the area feel safer.

Barrio Street

Fig. 72. Hurlingham current situation, street within one of the informal settlements (Google Street View 2020).

Fig. 73. A Barrio Street during harvest time (Google Street View 2020). Some scale figures are based on photos from skalgubbar.se.

Current situation

The *Barrio Streets*, narrow and irregular, are characterised by their unpaved and often flooded surfaces. Located in the barrios populares, they lack the most basic infrastructure such as functioning sewage. The houses that surrounds the streets are normally one to two stories (fig. 72), inhabited by low-income residents. Also, the level of unemployment is high (Janches 2012).

Residents from the formal city rarely visit the barrio populares due to low perceived safety (Diedrich 2020). However, for the residents in the informal settlements, the streets are a valuable form of public space (Shu & Hu 2011).

Proposal

As mentioned in the first chapter, under the headline Informal settlements take form, the informal settlements are characterised by a chaotic and irregular structure where space is multifunctional and formed by complex territorial relationships. Inspired by the reference projects concerning temporary design, this illustration (fig. 73) shows how movable structures such as flower pots and furniture can be placed along the streets in the informal settlements. These temporary and movable structures are chosen for the ease of adapting and changing according to the complex territorial dynamics within the barrios vulnerables. Furthermore, as also discussed in chapter 1, subchapter Informal settlements take form, the residents in the barrios vulnerables generally have strong social bonds to each other. Thus, residents may not engage in community gardening in the Barrio Streets for the sole purpose of fostering social cohesion. However, as presented in Chapter 2, subchaper Housing in Hurlingham, the level of unemployment is high, as well as poverty and risk of crime. For this reason we believe that community gardens in barrios populares can be useful to raise the educational level regarding food production as well as improve food security.

Movable structures, as discussed in chapter 3, subchapter Percieved size or Actual size, increase the chance of social interaction, hence place attachment. By creating a possibility for the residents to grow their own vegetables, fruits and berries, food security might increase. As seen in the reference project Formiga community garden, this can generate certain spin-off effects such as a reduction in crime and enhance social cohesion.

The residents in the informal settlements are, as discussed throughout entire Chapter 1, Buenos Aires Social landscape, being denied their right to the city. Community garden streetscapes may give them an opportunity to appropriate their ”own” streets, which also can be reviewed as a way of retaking their right to the city.

Intersecting Street

Ditches are replaced with pipes or open stormwater management

Fig. 76. Hurlingham current situation, a street beetween an industry and the informal settlments (Google Street View (2020).

Current streetlights are improved to give a less messy appearance

New addition of well maintained vegetation

New zebra crossings and formal pavements are added, increasing the traffic safety

New meetingpoints are developed around the market stands

Exsisting benches are kept to preserve the local identity

Fig. 75. Intersecting Street between the formal city and the informal settlement (Google Street View 2020). Some scale figures are based on photos from skalgubbar.se

Current situation

Intersecting Streets are the main crossroads between the formal city and the informal settlements. According to Stöger (2016) there is naturally a greater flow of people in crossroads, thus higher chances for social interactions.

As illustrated in figure 74, the Intersecting Streets are partially surrounded by open land such as grass or other low vegetation. This limits the risk of obstructing the view for drivers and pedestrians. The maintenance level varies depending on the closeness to formal or informal housing (fig. 74).

With safety and accessibility aspects in mind, the Intersecting Streets are partially well functioning. As the streets are normally surrounded by residential housing, there are good opportunities for surveillance, however the traffic safety is frequently low due to the lack of pedestrian infrastructure (fig. 74).

Proposal

With the high accessibility and natural flow of people, we suggest this site to be especially suitable for food stalls and markets as they are regularly visited not only by the gardeners but also by people passing by.

By implementing social structures related to gardening, the Intersecting Streets may be developed into small centralities. Nodes, as illustrated in chapter 1, under the subheading Mobility in Hurlingham, are almost non-existing within and around the barrios populares today. New centralities within the Intersecting Streets might provide the inhabitants with services and commerce, for example outdoor classrooms, kitchens and local food markets. Inspired by the reference project, Odla i Parken, the illustration above (fig. 75) show examples of such features integrated in the streetscape.

The traffic in the Intersecting Streets we believe is more intense than in the other streets discussed. As mentioned in chapter 3, subchapter Safety, low percieved safety may negatively affect social cohesion. It is therefore important to keep the paving close to the street free from high vegetation. Also, by adding speed bumps, zebra crossings and formal pavements, the traffic speed will decrease and improved pedestrian infrastructure will be provided. With increased traffic safety, chances of a more lively streetlife and social interactions can increase.

Industrial Street

Fig. 76. Hurlingham current situation, a street beetween an industry and the informal settlments (Google Street View (2020).

Fig. 77. Industrial Street during the spring (Google Street View (2020). Some scale figures are based on photos from skalgubbar.se

Current situation

The informal settlements are commonly located next to industrial areas, hence a high number of streets are located in between the barrio populares and the industries (COMERIC 2018). As seen in the illustration above, figure 76, the *Industrial Streets* often have informal dwellings on one side and high walls, which surround the industries, on the other side. The streets are usually of low quality. Waste is seen lying around the streets and the vegetation is rather unmaintained.

According to literature findings in the third chapter, Social Cohesion and Greenspace, attributes such as poor street quality, low maintenance level, location and the lack of surveillance, will make the area be perceived as unsafe. However, as discussed with Diedrich (2020), it might be that there is a high flow of people here, for example workers around the industries, at certain times during the day (Diedrich 2020). This could temporarily increase the level of surveillance.

Proposal

Looking at the current situation in an Industrial Street in Hurlingham (fig. 76), the street has many challenges regarding safety and accessibility. However, one might speculate that the industrial workers would benefit from having food stalls close to their workplace. These may be of a more permanent or temporary character. Furthermore, as figure 76 shows, the Industrial Streets often have high walls on one side. The image above, figure 77, illustrates how vertical vegetation can change the appearance of the street. Depending on the plant material, this might increase the food availability and beautify the streets.

The addition of well-maintained vegetation, together with a higher surveillance level generated by market stalls, can increase the perceived safety. Hence, as mentioned in chapter 3, under the headline Safety, this increases the street's capacity to support social cohesion. This transformation will also give the street a more soft edged look, as previously mentioned in chapter 2, subchapter Why the Streets?, this may be beneficial when supporting social interactions in the streetscape.

Bridging Street

Fig. 78. Hurlingham current situation, street between the formal city and the informal settlement (Google Street View 2020).

Current situation

Within the *Bridging Street*, the residents in the informal settlements and the formal city share the streetscape. The roads are paved, although the appearance differs between the formal and informal side of the street. They have proper pavements on the "formal side", yet on the "informal side", unpaved paths are more common. The streets are often quite wide, with car lanes in two directions and pavements on both sides. The surrounding houses are one to two stories and have front yards facing the street. They are generally well maintained, although differences can be noticed between the "formal" and "informal" side, where the "informal side" tends to be more messy (fig 78).

As argued in chapter 3, in the subchapter Safety, separation of traffic, good surveillance from residential houses and a high maintenance level are aspects that make an area be percived as safe. Together with the fact that the Bridging Street is located close to a large number of residents, and is physically accessible with hard surfaced pavements, we consider this street to have good opportunities to support social cohesion.

Proposal

Out of the five street typologies that have been categorised, the Bridging Street presents a streetscape which offers the highest potential of fostering social cohesion between residents living in the formal city and the informal settlement. This proposal is based on design strategies extracted from litterature presented in chapter 2, Community Gardening in the Streetscape as a means for Integration and chapter 3, Social Cohesion and Greenspace. In contrast to the other street proposals just presented, this proposal will go more into detail. In short, the transformations of the Bridging Street will increase the accessibility for people with varying physical needs and encurage multifunctional as well as temorary usage. The street will also be perceived as safer than before with newly added streetlights and speed limits.

Design strategies

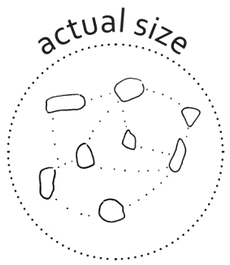
We have developed 11 design strategies for the community gardens. These are general principles, which means that they may be useful and adaptable to other neighbourhoods with similar conditions. They are exemplified in figure 84 in the illustration of the Bridging Street.

Accessibility

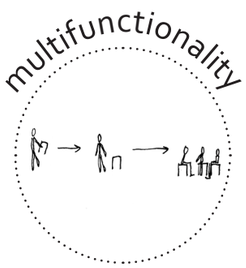
Locate nearby resident's homes.

Design with varied physical needs in mind, for exemple by using hard ground surfaces and raised garden tables.

Size



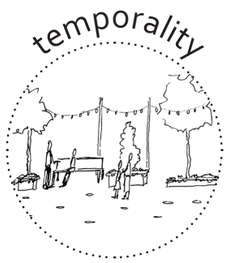
Create small scale greenery instead of large green belts to avoid green gentrification.



Add movable structures so that the inhabitants can interact with, and make use of, the street according to their own needs.

Design with percived size in mind. For exemple can low vertical structures to make the floor be perceived larger than it is.

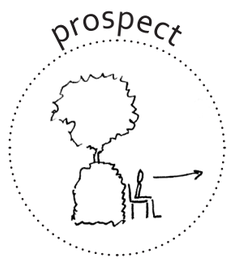
Consider the clarification of roles. Who are allowed to use what, and how can this be clearfield to deter conflicts between different users sharing the same, rather small space.



Add temporary and changeable structures to fit current wishes and needs.

Safety

Strive towards keeping the greenspaces well maintained.



Design with the prospect and refuge theory in mind. Place seatings with protection in the back and avoid creation of narrow spaces with high and dense walls and/or borders.

Design for increased traffic safety, for exemple by lowering the speed and give more space to the pedestrians.

Add a positive form of surveillance. This can be done by having windows and/or porches facing the street.

Visualising the Strategies

Fig. 79. Elevated garden tables provide physical access for people who might struggle with gardening at ground level. With this solution, people can choose to comfortably sit or stand whilst gardening. A few garden plots have been extended out into the car lane. These function not only as a garden, but also as obstacles. As they lower the speed of the cars they simultaneously increase the perceived traffic safety.

Fig. 80. Movable structures like flower plots and seatings make it possible for the residents to design their "own" street according to their wishes and local needs. This also creates opportunites for the residents to interact with space, supporting place attachment.

Fig. 81. By providing paths separated from the car traffic, the perceived traffic safety for pedestrians increases. The pavements preferably have a hard surface providing improved physical access. Also, by having the paths run through the garden plots, the gardens naturally become accessible to the public.

Fig. 82. The garden borders are kept below one metre to ensure that gardeners and visitors do not feel entrapped in the smaller plots. Additionally, the line of sight is kept free for traffic in the streets.

Fig. 83. Residential houses with large windows and balconies facing the streets may increase surveillance and feelings of safety.

Fig. 84. Bridging Street on a summer day. This street integrates the formal city with the informal settlement (Google Street View 2020). Some scale figures are based on photos from skalgubbar.se.

Management strategies

Based on literature findings in chapter 2, Community Gardening in the Streetscape as means of Integration, management strategies have been formed. The diagram below, figure 85, illustrates that different management styles put certain expectations on the gardeners and affects the level of which a community garden foster social cohesion. The management styles include aspects such as purpose of gardening, division of tasks, accessibility to a space, size, group formation and community gardens initiatives. The table on the right, figure 86, represents how well the management styles foster social cohesion.

Reviewing figure 86, the attributes which best support social cohesion are collectively shared, place-based, PAC-gardens that are created by bottom-up initiatives. However, as figure 85 illustrates, these garden styles require much effort by the residents in order to function well. Collectively divided, interest based community gardens created by top-down initiatives also possess good opportunities to foster social cohesion, although require less of the community. In vulnerable neighborhoods it might therefore be eligible to also consider these garden styles.

At this specific site, as discussed in chapter 1, Buenos Aires Landscape, large socio-economic differences exist between the residents in the formal city and the barrios vulnerables. Therefore, gardens with a complete bottom-up structure can cause social isolation if some residents might not have the resources required to actively take part in a community garden. This is discussed in chapter 2, under the subheading Garden Initiatives. Hurlingham municipality, we propose, should let the urban inhabitants appropriate the street using community gardening as an action. Yet, the municipality might need to assist the garden communities with material and tools. In order to establish good communication between the gardeners, as well as to educate the participants about establishing and maintaining a community garden we, based on recommendations by Australia City Farms & Community Garden Network (ACFCGN), suggest that municipalities should employ a coordinator.

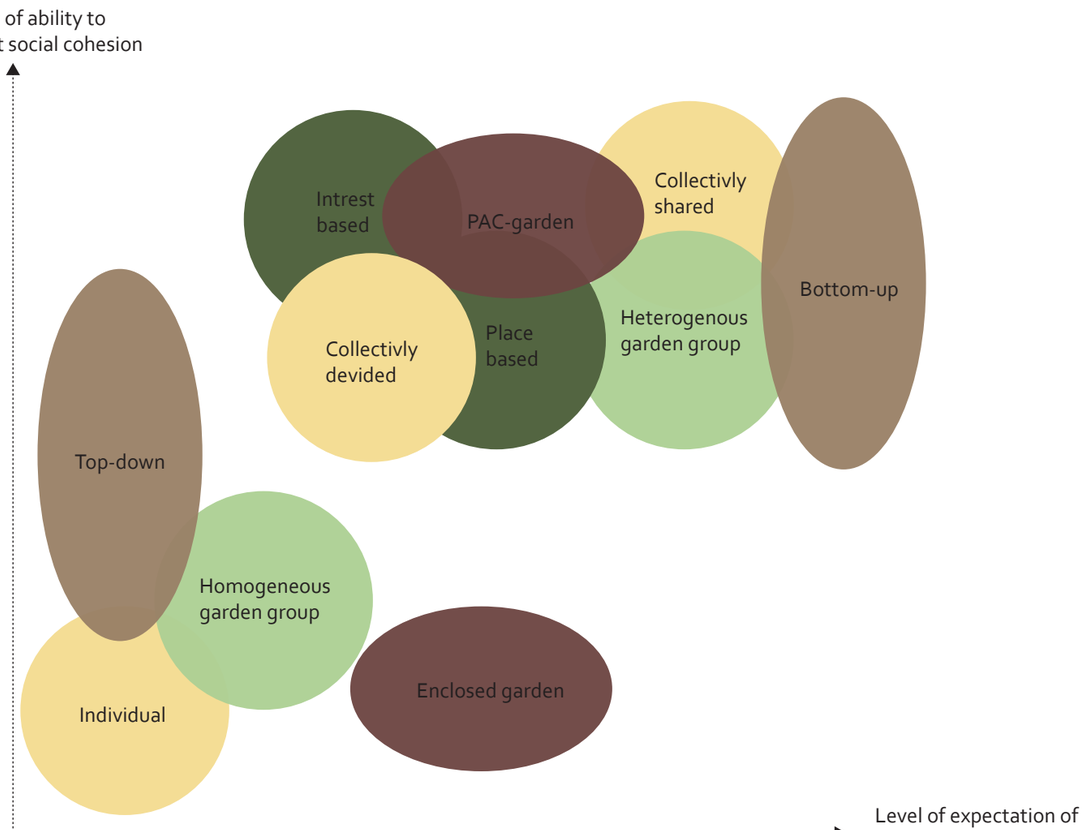


Fig. 85. This diagram shows how different management styles, level of accessibility and who takes the initiative to start the garden, affect the level of expectations that is put on their users. The figure compares the level of expectation with the ability to support social cohesion.

As discussed in chapter 2, Community Gardens in the Streetscape as a means for Integration, social interactions occur more often when the gardeners themselves manage the garden. Thus, instead of including a third party, we suggest that the residents themselves should have the responsibility of managing the streetscape gardens. The work in a community garden would include tasks such as: planting, harvesting, watering and removing weeds. Furthermore, as multiple sources mentioned in chapter 3, Social Cohesion and Greenspace, greenspace needs to be well-maintained in order to foster social cohesion. We therefore suggest that the municipality has the main responsibility to make sure that the streets have an overall maintained appearance. For example, the municipality would be in charge of cutting the grass between the gardens, taking care of potential street trees and removing waste.

Looking back at our reference projects, we also find inspiration in the Odla i Parken where there are different shareholders in a joint community garden. By letting some plots be available to the public and have others saved for the local residents, restaurants and associations to use, the area will be easier to maintain. As the management is divided between several gardeners, their work will become less heavy.

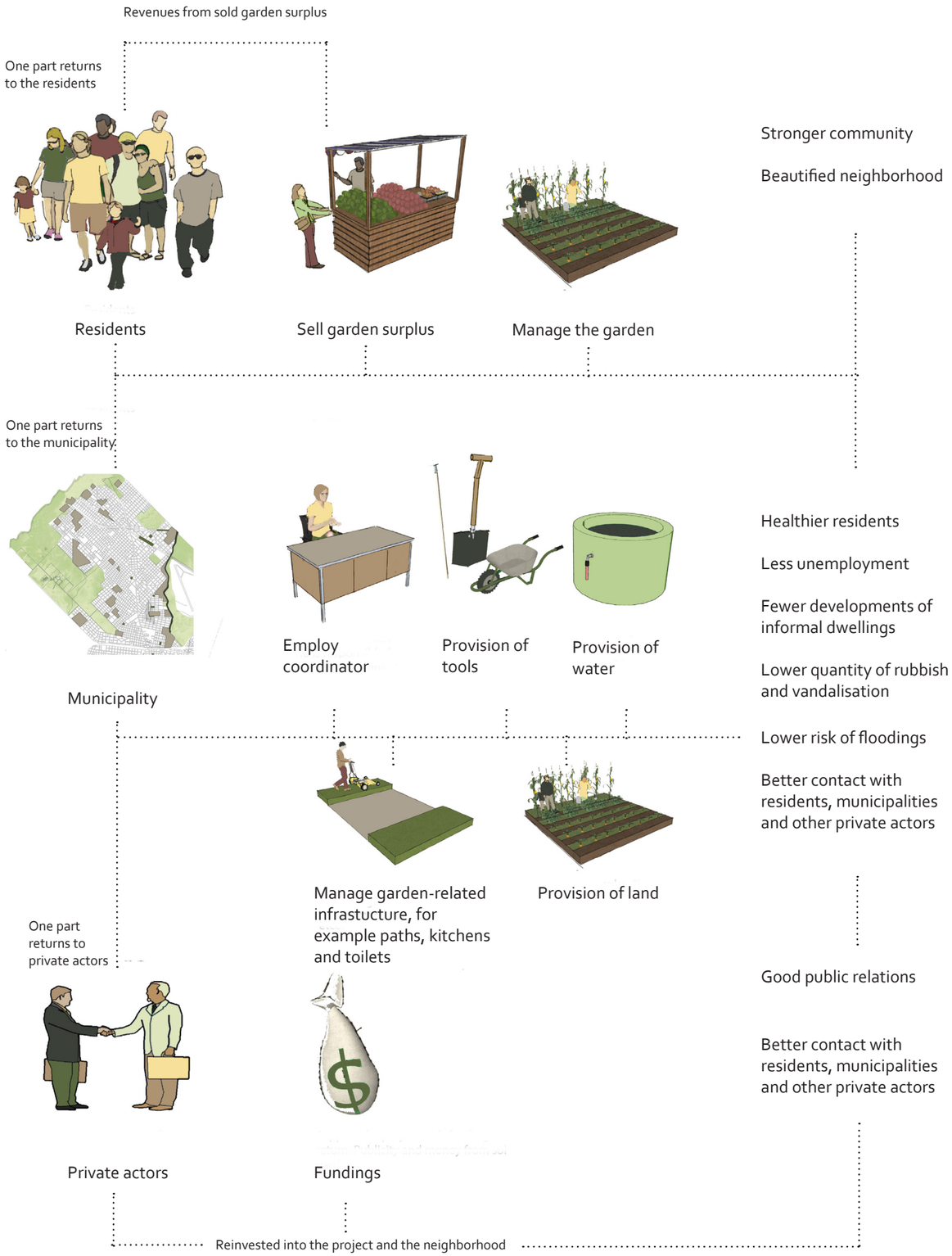
Community Garden Style	Community Building
Top down	→
Bottom up	↑
Enclosed	↓
Publicly accessible/ PAC-garden	↑
Heterogeneous group	↑
Homogeneous group	→
Place based	↑
Interest based	→
Individual	↑
Collectively shared	↓
Collectively divided	→

Fig. 86. The table illustrates how different types of management styles and varying regulations affect the ability to enhance social cohesion. ↑= high ability, → = medium ability , ↓= low ability.

Parties

Tasks

Wins



Potential collaborations

Undeniably, provision of land, employment of a coordinator, infrastructure management, equipment and plants cost money. In order for the project to be successful, external fundings and/or partnerships as well as collaborations might be necessary. Inspired by the reference project Formiga community garden, we speculate regarding possibilities for similar collaborations as a foundation for community garden projects in Hurlingham. This means that surplus from the garden can be sold and the profit be shared between the municipality, the community and the partners. By doing so, a win-win situation, where all parties profit from the project, can be formed. Thereby, the project can secure a small input of resources and economic support for a longer period of time.

With limited local knowledge it is difficult to gain a deeper understanding of potential collaborations. Therefore, our fellow course mates in Proyecto Urbano have been helpful. In a project completed in this course, a group of students recommend implementing a horticultural center in Hurlingham (Frias et al. n.d). Another group in the course proposes a concept called *Agroparque* (Videla et al. n.d). The suggested location for these additions are shown in figure 87. If these projects were to be realised, a similar collaboration to the one seen in the Formiga community garden could be formed. Like Formiga, the horticultural centre and the Agroparque could employ people to manage the gardens. Furthermore, this would be an opportunity to educate the residents in horticultural skills. Such projects could also lead to local food production which may increase food availability in Hurlingham. Moreover, by looking at Google Maps, we have done our best to identify existing potential partners. Figure 87 shows schools, churches and sport clubs located in between the major road in Hurlingham and Arroyo Morón. These might be potential partners of interest. Schools can make use of gardens for educational purposes and employ teachers with horticultural skills. Furthermore, schools, churches and sport clubs might have access to larger areas of land that can be utilised for food production or host temporary food events such as food festivals and markets.

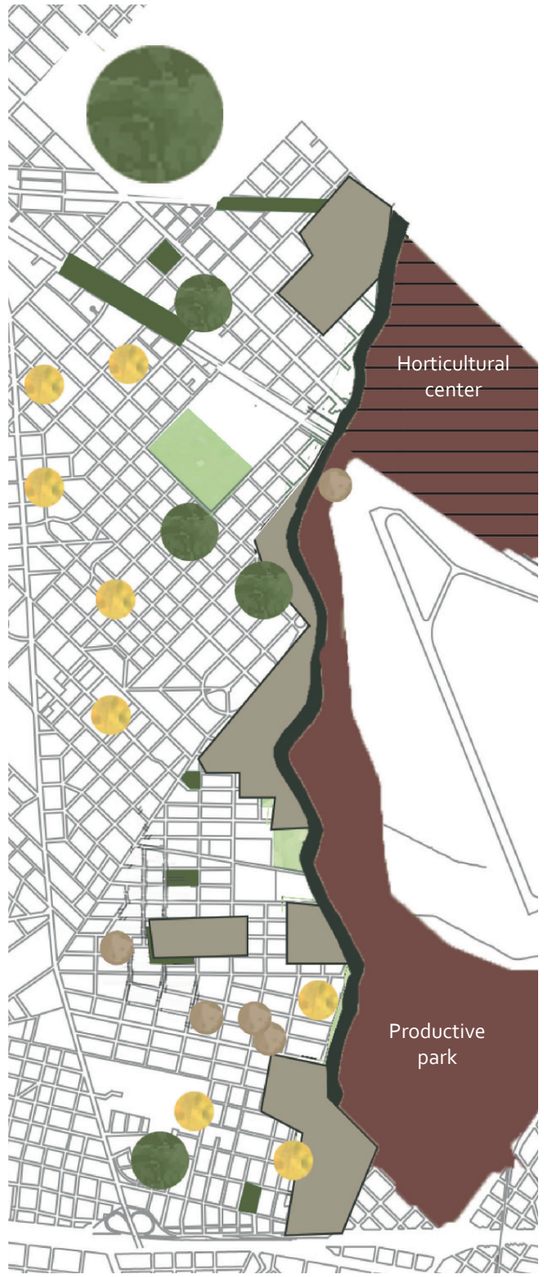


Fig. 87. Potential partners of collaboration in Hurlingham (The map is based on information from Google Maps 2020).

From Garden Street to Garden City

As previously discussed in the second chapter, under the headlines Why Community Gardens? and Community Garden Initiatives, community gardens might start out as small scale temporary projects placed on vacant land or leftover space. However, with time the gardens can develop into accepted and appreciated permanent places for community activities. If one person starts to perform gardening in the street, neighbours might become inspired to do the same. This is for example mentioned in chapter 2, subchapter Why Community Gardens?. With this in mind, we would like to suggest starting our project off on a small scale using temporary features. We are inspired by the reference project Malmö Sommargator where they started to incorporate their design in one street before trying it out in several.

Living Labs is a relatively new concept that has gotten worldwide attention in the past decade (Bervall-Kårborn 2009). It can be described as a habitat where the private and public sector can try new development strategies, concepts and technologies in a real life setting. By doing so, new ideas can be examined in an everyday environment instead of in a laboratory. This creates more accurate test results and the ability to get immediate feedback and response from the public (Alam & Porras 2018; Bergvall-Kåreborn 2009). Living labs can vary in size. It can be a building, as STPLN in Malmö, a cultural place that hosts exhibitions and do-it-yourself workshops in a "sustainable development-spirit". On the other hand, Groningen in the Netherlands, is an example of an entire city used as a real-life testing ground for research concerning environmental and social issues (Governance of Urban Sustainability Transitions & URBAN EUROPE n.d.).

As presented in this thesis, the issues in Hurlingham are intertwined and complex. The informal settlements here represent an image of what several of our fast growing cities struggle with today: environmental issues, social inequalities and segregation. Thus, Hurlingham could be suitable as a living lab to try out research, new development strategies and technologies. Inspired by the concept, it would be interesting to imagine the municipality of Hurlingham as a living lab, Hurlingham Garden City, where each street typology provides possibilities to try out different types of community garden streetscapes.

By starting small and implementing, one at the time, temporary gardens which are continously evaluated and transformed, the urban inhabitants will see immediate results. Together with a holistic view of the entire municipality as a living lab, this might change the municipality's identity and create something that the inhabitants in the informal settlements and the formal city have in common. The street gardening project can become a common goal which engages local participation. With the ability to try out new solutions, the project may in the long run lead to large scale changes and development of an entire garden city.

Fig. 92. Hurlingham Garden City.

Fig. 88. Gardening in the Bridging Streets.

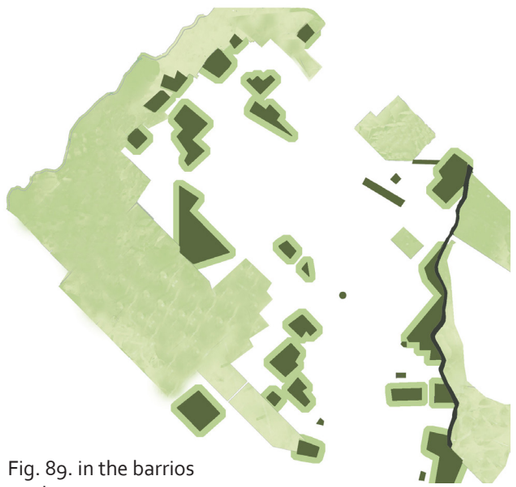


Fig. 89. in the barrios poulares.

Fig. 90. Connecting the informal settlements with the formal city.

Fig. 91. Connecting the barrios populares with each other through garden streets.

Conclusions

In this chapter we have explored a possible transformation of Hurlingham municipality, through community garden streetscapes. The proposal includes design ideas for the five identified streetscape typologies: Industrial Street, Barrio Street, River Path, Intersecting Street and Bridging Street. As figure 93 illustrates, the community garden streetscapes take various forms depending on the challenges of a specific street. The purpose of a community garden streetscape may for example be community building or stormwater management. Still, we highlight the importance of considering the design proposals and suggested strategies as one of many ways of handling the current situation.

The challenges in Hurlingham are partially an aftershock of a rapid urbanisation process (fig. 93). In order to mitigate the occuring environmental issues, technological inventions may provide solutions. To decrease segregation, development of schools, health care, public transformation is crucial. These are just a few points which together with cross-sectoral work are of great importance when working with intertwined problems such as those seen in Hurlingham. Importantly, as reviewed in the reference projects, we should never ignore the incredible power that successful developments and transformations of public space may have.

We believe that the suggested transformation of the streets can generate benefits such as higher recreational values, increased biodiversity and food availability, better stormwater management, education and community building (fig. 93). Such developments may lead to an improved quality of life for the people living in these deprived neighborhoods.

We hope that by upgrading the local environments of Hurlingham, global changes may occur. We believe community garden streetscapes to be a possible means of tackling global challenges on a local level (fig. 94).

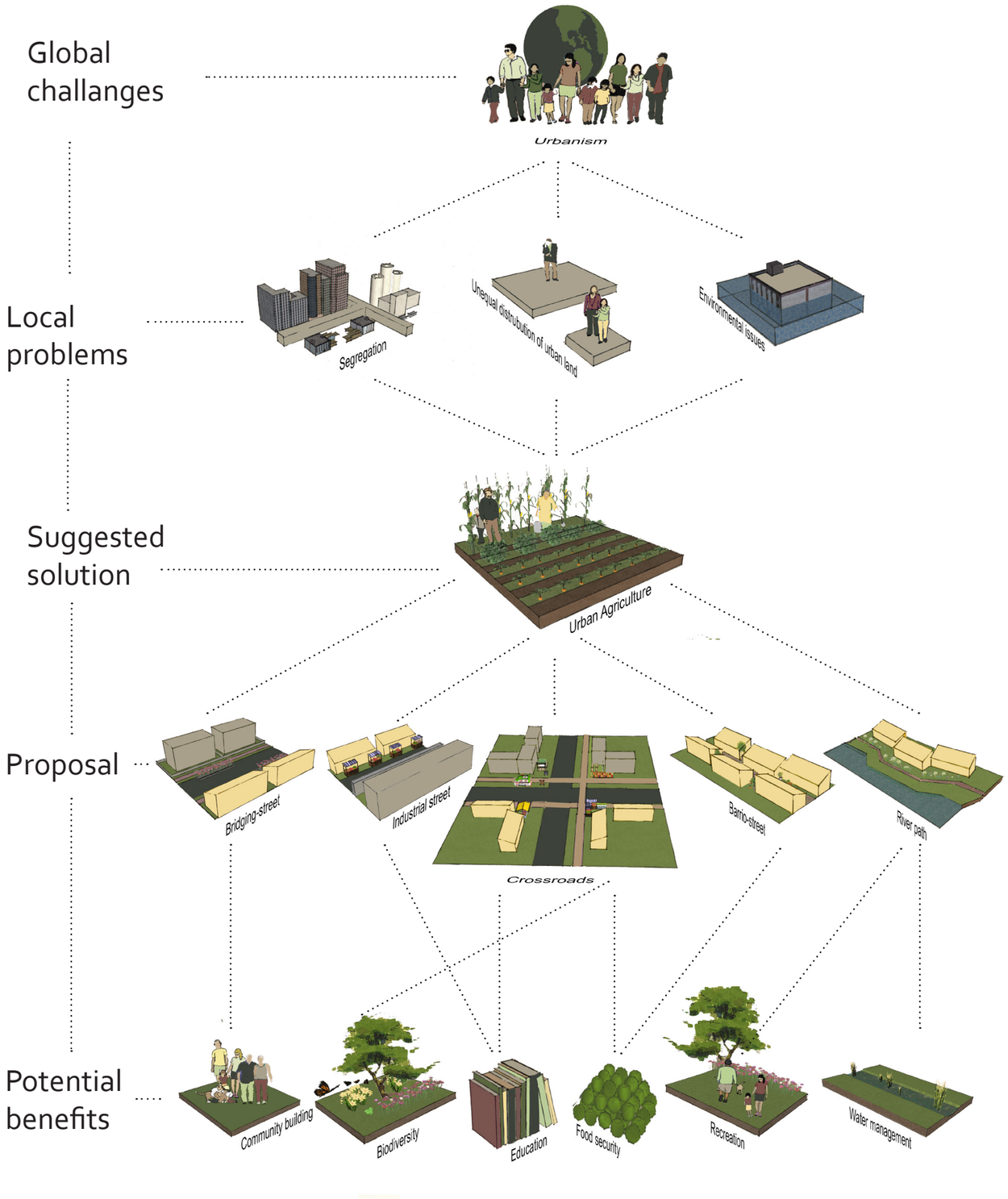


Figure 93. From global challanges to local solutions

5. TYING UP LOOSE ENDS

In this last chapter we evaluate the results based on the literature findings and methods used. In addition, we discuss interesting aspects to examine further. First, we return to our research question. Did we find an answer?

Returning to the Aim and Research Question

To answer our research question *'How can community garden streetscapes be designed to foster social cohesion between informal settlements and the formal city?'*, have we developed design and management strategies for community garden streetscapes. Furthermore, the streets of Hurlingham have been analysed regarding their capacity to promote social cohesion. Strategies are suggested depending on a street's qualities and challenges.

The design strategies regard the aspects size, access and safety as these three proves to be important when fostering social cohesion. Size as a strategy does in this case imply creating small scale places that are perceived as larger thanks to low vertical surrounding structures and a design with focus on multifunctionality. Access as a strategy involves locating the gardens close to the residents and making them physically accessible. The safety strategy aims to create high traffic safety, high maintenance, high levels of surveillance and low risk of entrapment. Detailed examples of how the design strategies may be implemented can be viewed in chapter 4, subchapter Bridging Street.

The management styles are general and concern the purpose of gardening, division of tasks, accessibility to a garden, group formation and community garden initiatives. How to create a community garden that best supports social cohesion is dependent on the site's precondition, the garden community's socio-economic situation and the main purpose of the garden. By using figure 85 as a guide, you can easily get a grip of how to combine the different management styles in order to create a community garden which best supports social cohesion in a specific case. For a more comprehensive explanation, return to chapter 2, Community Gardens in the Streetscape as a means for Integration.

Our process has helped us answer the question of how community garden streetscapes can be created to support social cohesion between the residents in the formal city and the informal settlements. Since the strategies are general, they indicate what to strive towards, although much is left to the designer to develop further.

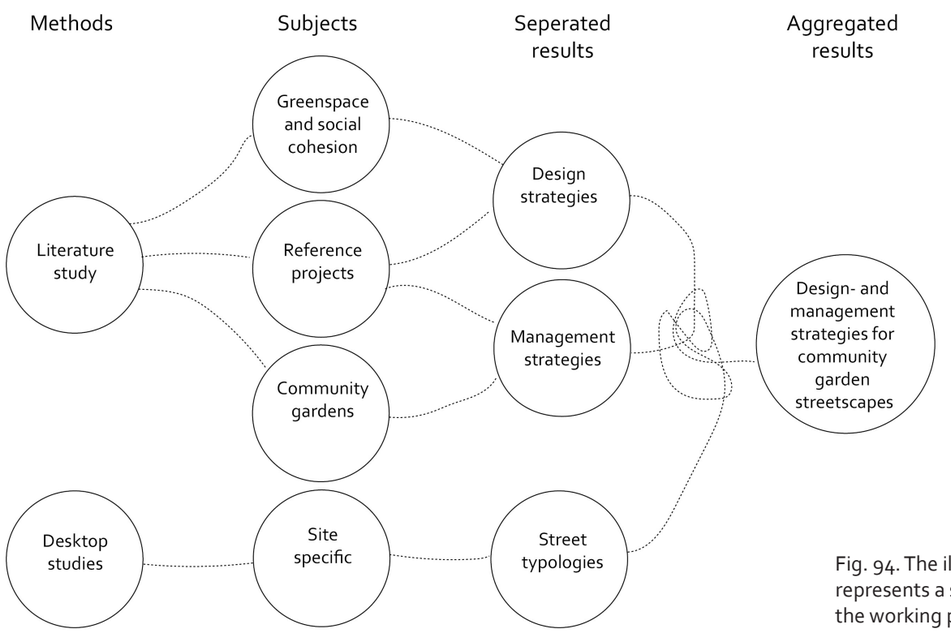


Fig. 94. The illustration represents a simplification of the working process.

The Dilemma of Designing a Space never visited

From the very start we pictured ourselves exploring new urban landscapes, unlike anything we have come across in Sweden. We could see ourselves gaining new insights regarding global challenges, cultural differences and planning strategies. This was one of the main reasons why we applied for the scholarship. We went to Buenos Aires expecting that we would have the opportunity to visit our project area, the informal settlements in Hurlingham, Buenos Aires. As we were about to enter a site with challenges we had never had to deal with before, we brought the theory of site specificity with us in the back of our minds. Unfortunately, the global pandemic, Covid. 19, made it impossible for us to go to Hurlingham. Having only seen parts of central Buenos Aires, this journey, both on a professional as well as on a personal level, did not turn out according to plan.

Arriving back in Sweden, we tried to find ways to understand the landscape from a distance. We did the best we could under the unfortunate circumstances. Even though we made use of Google Street View, remote lectures and previous research material, it turned out to be difficult. We were able to identify two site specific assets that we wanted to explore further, the public life in the streets and the strong social bonds between the urban inhabitants of the barrios populares. We realise that a site visit would have given us other insights, yet looking at it from another perspective, our process might have helped us to analyse the the complex areas more freely, making it easier to come up with ideas "outside the box". Movement of people, culture and atmosphere are all aspects that are important to consider when developing design strategies and management styles. These factors are difficult, if not impossible, to get a grip on when only having remote studies. We would probably have been able to develop more site specific strategies if we had visited the site. In spite of these troubling circumstances, we quickly understood that the site specific assets together with the problem regarding lack of space, were reasons for why we wanted to develop a community garden streetscape. However, the question of how to transform the streets has been more difficult to formulate during remote studies. Hence, this is given a speculative answer.

The aspects of safety, access and size are argued throughout our literature study as especially important when observing whether a space has the ability to support social cohesion. No site specific research was carried out in parallel which is why we highlight the speculative approach. Regarding the proposed management styles, the literature first and foremost discusses European and Australian perspectives, a matter we would like to argue the favourable and unfavourable aspects of. We find inspiration in Europe and Australia as we believe that the relatively long tradition of creating community gardens as a means for integration, make them reliable sources of inspiration. On the other hand, we have to consider that the Argentinian economic situation, a topic brought to our attention earlier in this thesis, is different from the Swedish situation. This needs to be taken into account when working in the informal settlements not the least, where the residents struggle financially. Also culturally, even if it is not examined specifically in this thesis, the two countries differ to a certain extent. With this in mind, we believe it is crucial to work with site specific design as a theory. Partly due to the unstable ecomony, we suggest starting on a small scale. This is discussed under the headline Hurlingham Garden City. Furthermore, the idea of implementing movable structures and using temporary design is also based on the local situation and economical uncertainties in the barrios populares. Moreover, creating small scale greenery in order to avoid green gentrification is especially important in deprived neighbourhoods.

The development of streetscape typologies have been very useful. This has helped us understand a complex landscape we have never visited. Google Maps and Google Street View are the tools we have used when trying to identify the differences between the streets. The literature study has helped us to understand appropriate aspects to consider as well as what

signs to look for in order to understand the streets preconditions. For example, are there any lampposts? If so, we predict that it would be perceived as safer than a similar streetscape without streetlights. The same goes for the number of residential houses in the area, where higher numbers can be assumed to correspond to higher levels of surveillance from surrounding houses.

We have adapted the suggested design strategies and management styles into the local structure. Regarding the design strategies, we have suggested various ways of working with the aspects of size, access and safety in the different streetscape typologies. In the Intersection Street, the immediate focus is increased traffic safety and the development of service hotspots. In the Industrial Street, more attention is put to creating physical accessibility for all and increasing surveillance. From the illustrations fig. 70 - fig 84., on pages 108-123 the reader will get an idea of what we propose a development should aim for. Although, in relation to our site, water management and biodiversity are aspects we are hoping to learn more about in a future project where it can be examined more thoroughly.

The local structure has also influenced the suggested management styles. We exemplify: community gardens that are created through bottom-up initiatives have proven to support social cohesion. However, in neighbourhoods with low-income residents, the community garden concept might be totally new. For this reason we suggest a top-down structure so that the residents can get guidance and financial support. We have also spotted potential collaboration partners within Hurlingham municipality and speculated regarding division of tasks.

Urban Agriculture and its Potentials

We started this thesis with the idea of exploring how community gardens can be used to support social cohesion. We were rather determined to limit the scope of the project to focus on social cohesion, and not other aspects like biodiversity or water management. However, throughout the work we realised that it would be impossible to not mention these aspects. Much due to the complex situation in Hurlingham, where the problems are intertwined, but also because we realised that community gardens can be used as a tool to buffer each of these challenges.

Community gardens can, as discussed throughout the thesis, increase food availability, recreation, biodiversity, community building and stormwater management. It has also been proven to have other positive spin-off effects such as lower unemployment and decrease transportation needs for goods. Perhaps the most important side effect in relation to our thesis, examined partially in this project, is that community gardens have been suggested to support place-attachment and people's right to the city.

In future research it would be interesting to further investigate the residents involvment in the design process of community garden streetscapes. We have touched upon this topic in our thesis, however, to scratch the surface is not enough. Also, we think it might be valuable to explore whether unhealthy levels of pollution can be found in connection to the traffic in Hurlingham. We hope that this is not the case, although if it is, we wonder if it can be problematic to have plant beds placed in the streetscape.

Another interesting topic to investigate further concerns the possibility to clean water from the river as well as store rainwater, which then can be used for watering the plants. This might be especially important in order to ensure water supply during dry periods, and to guarantee that even the urban poor, with limited access to water, have the opportunity to engage in community gardens.

Comprehensive material exists regarding community gardens in Europe and Australia. However, material from the Global South is limited. We look forward with excitement to what further research will bring to the table and how urban agriculture can come to transform our cities in the future.

Fig. 94. Huerta urbana (La Canasta Flickr 2020).

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Appendix 1 - Checklist for the Creation of Community Gardens

This checklist is inspired by guidlines created by Australia City Farms & Community Garden Network, ACFCGN. The list should work as a foundation when creating community gardens and give ideas of important questions to concidder early on in the design process.

1. What type of community garden do we want?

- A shared garden, communal plots, where participants share the garden and the harvest
- An allotment garden, individual plots, where participants garden their own plot
- A garden with both communal and individual plots

2. What will be the purpose of our community garden? Rate from 1-5 where 5 is the main priority

- Recreation
- Community building
- Food security
- Education, eg. courses for children and elderly
- Ecological sustainability
- Water management

3. Management structure

- Help from municipality, to what extent?
- Managed by the community

The surroundings, the overall maintenance of the street will be taken care of by the municipality.

4. Usage of equipment

- Collectively divided
- Collectively shared
- Private, bring your own

5. Built structure within the community garden

- Plant beds
- Sitting area (with shelter from rain/sun)
- Lockable shed for tools etc.
- Nursery for plant propagation
- Fireplace/barbecue
- Play area for children
- Public art
- Education signs
- Rainwater tanks
- Compost
- Outdoor faucet
- Place for Wheelbarrow?

6. Preferred site for the garden?

- Size of the area?
- Close to housing
- Access to sunlight?
- Rainwater?
- Wind protection?

7.Training/education needed? How will these skills be provided?

- Gardening skills
- Construction skills
- Design skills

People within the community might already have skills within any of these fields and can provide the other with his/her knowledge.

8. Funding and co-operation with the local government

- Construction, to what extent?
- Education, to what extent?
- Material, to what extent?

9.How will the water be conserved and managed within the garden?

- In the flowerbeds
- Additional stormwater management system
- No action taken