

A Bolder Vision for Belfast

Public consultation response

23rd December 2021

Exploring how Belfast could adopt a people and nature-first approach to mobility and public realm interventions, whilst unlocking wider green infrastructure derived benefits, by taking inspiration from *Barcelona Superblocks* and other European precedents.

Introduction

This response to the public consultation on *A Bolder Vision for Belfast* has been prepared by Linen Quarter Business Improvement District (LQ BID). It illustrates how the city's vision could be translated into bold action on the ground in the City Centre. By drawing inspiration from Barcelona's *Superblocks* initiative, alongside several other European precedents, we show a tangible way to maximise benefits for local residents, businesses and wider stakeholders in relation to sustainable transport, climate resilience, local business, city centre living and child-friendly public space.

It focuses directly on two of the four 'Key Moves': 'Creation of a Civic Spine with a Focus on People' and 'Promote City Centre Living', and indirectly touches on the other two areas. In particular, the LQ BID would advocate taking the City's vision several steps forward and to create Belfast's first superblocks in the Linen Quarter, covering several blocks to remove car-based through travel, promote active travel, transform the public realm to benefit both people and nature, and encourage mixed-use-led regeneration. This would simultaneously address a number of interconnected issues, as expressed in the following statistics for Belfast:

• **Poor air quality:** In 2019, Belfast ranked third highest in the UK for average annual PM_{2.5} concentrations,¹ with levels exceeding WHO guidelines by 29 percent, and second in the UK for

¹ IQAir (2019) - World Air Quality Report

PM_{2.5} emissions per capita.² Whilst across Northern Ireland, air pollution is deemed responsible for 800 deaths each year.³

- Lack of public green space: Although Belfast's total open space provision outscores the Field in Trust open space benchmarks, the City Centre Regeneration and Investment Strategy recognises a lack of public green space in the city centre.⁴ With 11,500 street trees⁵ and only 7 percent canopy cover,⁶ compared to 17 percent in Edinburgh⁷ and 20 percent in London,⁸ there's significant scope to increase tree planting in the city.
- Low cycling uptake and lack of cycle infrastructure: Only 12 percent of residents cycle once each week compared to 62 percent cycling each day in Copenhagen, a European frontrunner.⁹ Only two miles of physically separated cycle lanes were identified in a 2019 study.¹⁰
- **Car-dependency and vehicular traffic**: 53 percent of all journeys were by car, 11 percent by public transport, 29 percent by foot and only 2 percent by bicycle between 2015-2017.¹¹ In 2019, the city was ranked the second most congested city in the UK, with the average commuter spending 112 hours each year sat in traffic.¹²
- Land use mix: The Linen Quarter district is predominantly office space at both ground and upper floor levels, with some buildings in use as hotels; bars, cafés and restaurants; and shops. There's currently limited residential use in the area, making the area a relative monoculture and therefore less resilient to economic shocks.

² BEIS (2019) - UK National Atmospheric Emissions Inventory - https://www.centreforcities.org/reader/cities-outlook-2020/air-quality-cities/ ³ British Heart Foundation (2019) - Global Burden of Disease

⁴ Belfast City Council - Belfast Open Spaces Strategy

 ⁵ Belfast City Council (2020) - Belfast Resilience Assessment

⁶ UK Ward Canopy Cover Map - https://forestry.maps.arcgis.com/apps/webappviewer/index.html?id=d8c253ab17e1412586d9774d1a09fa07

⁷ Forest Research (2015) - Valuing Urban Trees in Glasgow

⁸ GLA (2015) - Measuring Tree Canopy Cover in London

⁹ Copenhagenize (2019) - Copenhagenize Index

¹⁰ Sustrans (2019) - Bike Life

¹¹ Belfast City Council (2020) - Belfast Resilience Assessment

¹² INRIX (2019) - Global Traffic Scorecard

Inspiration from Europe: Barcelona superblocks



Barcelona's superblocks (Images: CitiesToday & Municipality of Barcelona)

Overview: Concept and history

Barcelona's 'Superblocks' (*Superilla* in Catalan) are part of the city's vision to radically transform areas of public space within city blocks; to increase active and low-carbon mobility, support biodiversity and encourage greater social cohesion. They are 400 by 400 metre areas containing nine city blocks, where priority is given to pedestrians and cyclists. Closing streets to through traffic and implementing nature-based solutions and 'tactical urbanism' interventions such as painted cycle lanes, planters and street furniture, encourages more communal use of the public realm. The interior of 'superblocks' can be designed as 'shared space' streets, where vehicles and pedestrians coexist. Therefore, they are not pedestrian zones but aim to calm traffic. The streets within the block have a low (10 kilometers-per-hour) speed limit and allow access only for local residents, public transit, delivery vehicles, and emergency services. They are designed in such a way that vehicles can use them only to drive into the superblock and then out again. Bus services are improved along the periphery of the superblock to further enable alternatives to car traffic.



Eixample district superblocks model (Image: Municipality of Barcelona)

Originally conceived in the 1980s by Salvador Rueda, Barcelona's first steps towards *superblocks* were successfully implemented in 1993 in the historic El Born neighbourhood, with two further sites transformed in Gracia in 2006. At the same time, Rueda led the concept's first 'at scale' implementation in Vitoria-Gasteiz - capital city of the Basque Country with a similar sized population as Belfast - where 63 superblocks have been developed in the city to date, with plans for 48 more. Superblocks became a focus of Barcelona's Urban Mobility Plan (2013-2018), when Mayor Xavier Trias embraced the concept for widespread implementation in the 19th and early 20th century *Eixample* district with its famously regular street grid, which is heavily car-dominated. Two sites have been realised within the Eixample, in the Poblenou and Sant Antoni neighbourhoods. The intention is to develop 503 sites across the city, transforming 70 percent of the city to walkable, mixed-use public space,¹³ to reduce air pollution, noise and accidents from road traffic, whilst increasing access to green space and encouraging less sedentary lifestyles particularly amongst young people in the city.

For a more in-depth overview, see attached annex - Barcelona Superblocks Overview.



Sustainable mobility and urban reforms in Vitoria-Gasteiz (Images: Ayuntamiento de Vitoria-Gasteiz)

Impacts achieved

Increasing sustainable and active travel: Introduction of the superblocks has led to increased active travel within the areas they enclose. In Barcelona's Gracia district, travel by foot and by bicycle has increased 10 percent and 30 percent respectively, whilst vehicle travel dropped by 26 percent overall and 40 percent in internal streets. In Poblenou, through traffic has seen a 58 percent reduction. If implemented across all 503 sites, it's estimated that private car use could drop by as much as 80 percent across the city.¹⁴

Creating inclusive public space: In the Poblenou superblock, public space has been expanded by 74 percent, adding 13,350 m² for collective activities. Initially implemented in a provisional manner, via iterative solutions such as temporary street furniture and painted street markings, as part of a period of public consultation. This process contributed to a significant increase in green area from 9,722 m² to 18,632 m² over the course of the consultation.¹⁵ It also led to the effective reduction of daily car traffic from 2,218 to 932, which was in line with projections. The participatory process of designing outcomes has led to the creation of collective spaces that serve multiple purposes such as playgrounds, meeting

¹³ Vox (2019) - Barcelona wants to build 500 superblocks. Here's what it learned from the first ones -

https://www.vox.com/energy-and-environment/2019/4/9/18273894/barcelona-urban-planning-superblocks-poblenou

¹⁴ Eltis (2019) - https://www.eltis.org/in-brief/news/study-suggests-significant-benefits-barcelonas-superblocks

¹⁵ See Annex - Barcelona Superblocks Overview

spaces, picnic spots, sports infrastructure as well as temporary markets and literary tours. The provisional nature of implementation helped cut costs to one tenth of a conventional public realm project in Poblenou;¹⁶ for example, most street surfaces were not replaced but simply painted over and added to with planters, play equipment and other street furniture, using a playful design language.

Health, wellbeing and improved air quality: The initiative is also expected to have a significant impact on air quality. Studies have shown that it could lead to a 24 percent reduction in nitrogen dioxide levels across the city, contributing to improved health conditions among residents. In the Sant Antoni superblock, there's been a 25 percent decrease in nitrogen dioxide levels and a 17 percent decrease in PM₁₀ particulate matter,¹⁷ whilst average noise levels in Poblenou have dropped by 5dB. A notable impact of implementing the concept across Barcelona points to the potential prevention of 667 premature deaths annually, as a result of reducing nitrogen dioxide, noise pollution and heat.¹⁸ The broad increase in environmental quality is also expected to increase the average lifespan of inhabitants by 200 days.

Support for local economy: Studies show that retail activity increased by 30 percent in Poblenou superblock¹⁹. Across the Eixample district, less than 5 percent of customers access commercial premises by car.²⁰ The availability of more space for slow mobility has helped improve access to shops and businesses within the superblocks.

Adapting 'Superblocks' for Belfast

Overview

The superblocks concept complements the Linen Quarter's existing distinctive urban grid, whilst responding to the current lack of public space identified in *The Linen Quarter Vision and Guidance* by Belfast City Council. It could significantly enhance the Linen Quarter's role as a central point of arrival to Belfast, by integrating with the new Transport Hub on Great Victoria Street and reinforcing its status as a sought-after office location, whilst retaining and celebrating the area's important heritage and making the area more suitable for residential development.

Possible locations

The initial superblocks could branch from the proposed Civic Spine to create extended pedestrianised and pedestrian-priority zones alongside areas of hybrid public space for local residents, office workers and visitors to enjoy. Whilst the planned North-South Glider would connect the superblocks to areas further afield. Two locations could be developed, simultaneously or separately.

¹⁶ Public Space - https://www.publicspace.org/works/-/project/k081-poblenou-s-superblock

¹⁷ Agència de Salut Pública de Barcelona (2021) - Salut als Carrers. Avaluació dels àmbits Superilles

¹⁸ Simon De Boeck (2021) - https://issuu.com/mahsmaulp/docs/deboeck_simon

¹⁹ Eltis (2019) - https://www.eltis.org/in-brief/news/study-suggests-significant-benefits-barcelonas-superblocks

 $^{^{20}\,}https://ajuntament.barcelona.cat/superilles/en/content/questions-and-answers$



Proposed superblock locations in Belfast's Linen Quarter

Location 1

The area enclosed by Great Victoria St, Howard St, Bedford St, Bruce St; building on a number of improvement projects already underway:

- Pedestrianisation of a small section of Brunswick Street, and to upgrade the adjacent Blackstaff Square. This could be extended by the superblock to create a through traffic free heart to the area.
- b) The new Belfast Transport Hub and nearby Weaver's Cross district will improve connections to the Linen Quarter area and support a pedestrian-first and vibrant local neighbourhood.

Location 2

The area enclosed by Bedford St, Donegall Square South, Adelaide Street, Ormeau Avenue; building on projects already underway:

- c) A series of new parklets on Linenhall Street, in place of parking spaces.
- d) BBC building redevelopment, including a new public plaza towards Linenhall Street.

These initiatives could be taken a step further, with Linenhall Street fully pedestrianised, creating a high-profile heart to a new superblock.

e) Extended pavement, planting, benches and play equipment installed on Adelaide Street.

Like the Barcelona superblocks, we do not imagine them as pedestrian-only zones but as zones without motorized through traffic, with key features such as:

- Pedestrian priority and shared space where vehicles and pedestrians coexist.
- Low (10 kilometers-per-hour) speed limit and only allow access for local residents, public transit, delivery vehicles, and emergency services.
- Great emphasis on nature-based solutions, both tree planting and sustainable urban drainage systems (SUDs).
- Integrated children's play spaces and outdoor adult fitness equipment.
- Other street furniture to encourage communal use of the public realm, usable for both office workers, residents and visitors of all ages and abilities.
- Encouraging positive use of the public realm by adjacent ground-floor businesses, for example outdoor dining or pop-up events.
- Creative interventions using light-touch, low cost methods like painting over former street surfaces.

Benefits for the local area

As demonstrated in Barcelona and Vitoria-Gasteiz, implementing superblocks - in a way that's appropriate to the context of Belfast - could contribute to a number of local benefits:

A sustainable and active transport network: The superblocks can form a key piece in Belfast's citywide sustainable and active transport network, providing a point of focus for increased pedestrianisation, cycling infrastructure and accessible mobility within the city centre. They would be ideally located to connect to areas outside the city centre via the proposed North South Glider and Belfast Transport Hub, alongside the existing public transport network. They could link directly to the proposed <u>urban greenway</u> along Ormeau Avenue and cycle bridge across the River Lagan to Ormeau Park, thus encouraging use of public transport and cycling.

Air quality, health and wellbeing: The initiative can help to improve <u>Belfast's poor air quality</u> to meet WHO guidelines as experienced in Barcelona's Sant Antoni superblock, and in turn reduce annual deaths linked to air pollution. It could also contribute to wider health and wellbeing improvements from lower car use, higher participation in active travel and increased public and green space.

Supporting city centre mixed-use-led regeneration: Currently, ground floor land use in the Linen Quarter is predominantly office space, with some cafés, bars and restaurants scattered throughout the area and a limited number of shops. Whilst upper floors are similarly dominated by office space. There's only a small number of residential apartments, with significant space devoted to car parking or otherwise derelict or underdeveloped. The superblocks could encourage city centre mixed-use developments, reducing the need for car parking and contributing to a more vibrant, active and resilient neighbourhood.

Creating child-friendly and hybrid-use public space: The superblocks can further enhance the Linen Quarter's public realm, complementing the Streets Ahead phase 5 scheme, to create green and inclusive

public spaces for all ages and abilities. This could include play areas or sandpits for children; exercise and leisure space for local office workers; and flexible spaces for temporary events or dining.

Supporting local businesses: Increasing pedestrianisation could support increased footfall and average spend in the district, as experienced in the Poblenou superblock. It could also support the creation of a cultural hub within the Linen Quarter, attracting creative businesses, pop-up cultural events and open-air dining.

Benefits from nature-based solutions: Integrating nature-based solutions as an integral part of implementing the superblocks concept, including increased canopy cover and sustainable urban drainage systems (SUDs), could lead to a number of additional benefits and ecosystem services. These include local flood mitigation; reduced heat island effect; biodiversity support; and improved air quality, as well as improved mental health and wellbeing.

Wider benefits for Belfast

There are also additional benefits which may be experienced further afield:

Cities for people: Superblocks could become a core component of an integrated people-first approach to Belfast's public realm and transportation system. The modular concept could be replicated across the city, contributing to the creation of inclusive and accessible public spaces for all ages and abilities. Promoting city centre living; supporting a balance of work and leisure; and enabling active travel amongst local residents, office workers and businesses.

Zero-carbon and circular: The concept would support the longer-term vision for Belfast's systemic decarbonisation, contributing to the pathway for zero-carbon transportation and enabling more circular and local resource flows and nutrient cycles. The Linen Quarter can act as a demonstrator for a truly sustainable district in the heart of Belfast - providing inspiration locally, nationally and internationally. For example, it could integrate innovative food waste bio-digestion facilities at local scale, which could generate fertiliser for the green infrastructure. Secondly it could show how 'light touch' public realm changes can be undertaken with maximum re-use of existing features and materials (keeping existing street surface instead of replacing with new paving). Thirdly, it could spark a re-think of last-mile logistics moving away from vans to e-bicycles and other zero-carbon options (see Ghent case study below).

Climate resilience and biodiversity: Superblocks provide the opportunity to implement measures that support Belfast's climate resilience and positively enhance its urban ecosystems. Current widespread use of hard infrastructure and impervious surfaces could be reversed, with the superblocks used as a testbed to trial nature-based solutions before scaling successful approaches across the city. The introduction of permeable paving, SUDs and increased planting could provide flood mitigation, local cooling effects and encourage biodiversity within the city centre.

International image: The superblocks concept could highlight Belfast as a progressive city in terms of sustainability and climate crisis response, creating a positive international profile and helping to attract foreign direct investment, new international businesses and sustainable tourism.

Other European precedents

Barcelona is far from the only city pioneering transformative public realm changes. Below we show a few examples of how in northern Europe, similar approaches show what is possible in colder climates as well.



Sweden - Street Moves

Street Moves modular public realm elements (Images: ArkDes & Lundberg Design)

Overview

<u>'Street Moves'</u> - an initiative by Sweden's national centre for architecture and design alongside the state innovation agency, Vinnova - seeks to enable residents to travel no more than a minute to access everything from outdoor gyms, urban gardens to playgrounds and social hubs. Focusing on the street as the basic unit of the city²¹ and drawing inspiration from the 15-minute city, Sweden aims to implement the idea nationwide by 2030. The concept consists of a modular kit of parts, based on a timber structural platform, which can be assembled to create play areas and sandpits; outdoor seating and gyms; or bicycle and scooter storage, and adapted as local needs change.

²¹ Dan Hill (2020) - Slowdown landscapes: One-Minute City—Fifteen-Minute City



Street Moves project street - temporary remodelling (L) and more permanent interventions (R) (Images: Utopia Arkitekter)

Principles

A number of key principles behind the initiative are relevant to Belfast:

From tactical to structural: The experimental and iterative nature of 'tactical urbanism' can be used to test ideas and allow participatory engagement before deciding on and implementing more structural urban improvements.

Modular and circular: The timber platforms are designed to be reused in alternate configurations for as long as possible. Made from local softwood and designed to be easily assembled and disassembled, they contribute to a lighter and softer streetscape than conventional public realm structures.

Participatory: The project allows communities to decide where the kits should be implemented - for example local residents and school children worked with urban planners to co-design their streets.

Scalable: The modules are intended to be simple in design and appropriate for a wide variety of urban contexts. The aim was to develop methods and design guidelines that could be implemented in streets across the country and even abroad, with the help of a simple manual.

Ghent - City Mobility Plan & last mile logistics innovation

Overview

The Mobility Plan in Ghent was established to improve the livability and accessibility of the city focusing on circulation and parking as the two primary components. While the Circulation Plan aims to restrict through traffic in the city centre giving more space for slow mobility networks and public transport, the Parking Plan looks to deal with parking space use efficiently based on a *"The further away from the center, the lower the tariffs"* principle.²²

²² Stad Gent- https://stad.gent/en/mobility-ghent/mobility-plan

The Plan also gave rise to the opportunity to reimagine urban logistics and goods distribution through the *GentLevert* (Ghent delivers) platform which focuses sustainable consolidation and delivery of goods across the city. The platform is a multi-stakeholder collaboration, which functions as a collaborative experiment among the City and several private and civic sector partners in supporting delivery enabled by smart technology and mobility solutions, and supporting sustainable business start-ups.²³



Vehicle-free city centre in Ghent giving room for pedestrians & cyclists (Images: Steven Van Aerschot & GentLevert.be)

Further strategic opportunities to consider

The co-creation and collaborative implementation of the Bolder Vision paves the way for other interlinked, strategic opportunities that can provide added benefits to the process and outcomes as described below.

Green infrastructure and SUDs: The Bolder Vision provides the opportunity to integrate several green infrastructure and nature-based solutions of different scales within its interventions, weaving the design into a dynamic sustainable urban development with added benefits of urban green spaces in the city. This could provide the basis for the city and stakeholders to reimagine regulations around spatial planning and urban infrastructure for better environmental quality, whilst benefiting from the ecosystem services provided by nature-based solutions.

Examples: <u>TreesAI</u>, <u>Kessel Lo District Greening Experiment</u>

²³ GentLevert - https://gentlevert.be/en/about-gentlevert



Benefits & co-benefits of green infrastructures (Image: TreesAI)

River Lagan: The waterfront development and renewal is an excellent opportunity to utilise the potential of a natural resource to reintegrate surrounding communities with the city through sustainable mobility and leisure activities. This can broaden the scope of the Vision's impacts through flexible and iterative implementation of activities in the area. It adds to the co-benefits of green infrastructure solutions and creates a dynamic canvas to experiment with energy and heat generation; public realm and buildings. Example: <u>Oude Dokken Gent</u>, <u>Helsinki Energy Challenge</u>



Redevelopment of the Old Docks in Ghent with new infrastructure for slow mobility & public spaces (Images: StadGent)

Participatory planning: It is essential to establish open and collaborative mechanisms when reconfiguring spatial use in order to impart legitimacy in the process and create a sense of ownership among local residents. This can provide space for inclusive deliberation and decision-making around spatial justice by gathering different perspectives. It creates the opportunity to co-develop an inclusive public realm that can account for the needs of the elderly, children, disabled and other vulnerable communities through systemic transformations.

Examples: Guajira Systems Thinking workshop , OmaStadi Helsinki , Civic contracting Leuven



Systems thinking workshop in La Guajira (Image:UNDP Colombia, UNDP's Strategic Innovation Unit)

Integration with zero-carbon logistics: Cities like Copenhagen have managed to integrate investment and policies supporting sustainable urban transport with broader carbon neutral strategies to compound potential impact and benefits. With its target to achieve carbon neutrality by 2025, Copenhagen has established a development plan to ensure that *"no more than one third of trips that start and/or stop in Copenhagen should be by car, with bikes and public transport accounting for the rest. Including pedestrians, the target is for 75% of all trips to be on foot, by bike or via public transport." ²⁴ The Bolder Vision's multifaceted approach is in sync with several aspects of the net-zero concept and can be adapted to include specific goals and objectives with the same intent. It also provides the opportunity to adopt a circular economy approach in urban mobility, infrastructure design, procurement and implementation.*

Examples: Circular Economy Strategy Amsterdam , GentLevert

Ongoing monitoring: A parallel means to document and analyse the impact of the Bolder Vision's implementation is crucial. An open monitoring platform can help to validate decision-making and compare projected to actual impacts. This can help identify challenges and streamline efforts for new opportunities and solutions. Ensuring open and easy access to this platform to enable public feedback and participatory governance, aided by civic action, is fundamental to its implementation. A clear and inclusive communication strategy can help bolster the clarity and legitimacy of the process. Examples: Helsinki Climate Watch, Circular Monitor Amsterdam

²⁴ Maria Camila Ariza (2019) - https://blogs.iadb.org/ciudades-sostenibles/en/sustainable-urban-transport-what-can-we-learn-from-copenhagen/



Amsterdam Circular Monitor's framework (Image: Amsterdam Circular Monitor)

Public value capture: Public investment in common infrastructure - whether schools, stations or parks - often results in private profit through land value uplift, as experienced around the New York High Line. Implementing the superblocks concept could lead to unwanted land value and rental price uplift in Belfast city centre. This offers an opportunity to introduce mechanisms that help to retain this public value and prevent land speculation, whether through property covenants or community land trust models.

Example: New York High Line analysis and smart covenants proposal



Property price inflation around New York's High Line (Image: Dark Matter Labs & Center for Spatial Technologies)

Conclusions

The superblock model, in itself, is no silver bullet for Belfast's mobility, resilience and public realm challenges, but it can be a critical component of a broader and deeper systemic shift: a catalyst for creative innovation that can engage diverse communities, large and small businesses businesses and local government in Belfast's climate crisis mitigation and adaptation strategies. Learning from Barcelona's superblocks, alongside the other case studies presented, certain principles and infrastructures emerge as key elements which will be fundamental to the implementation of a similarly ambitious vision in Belfast:

- An **integrated and well-planned public transport network** to support alternative low-carbon travel options before phasing out cars can help to reduce opposition and friction during implementation. Superblocks must therefore be part of a wider traffic reduction and public transport improvement strategy.
- **Transitional and iterative experimentation** can enable faster implementation and impart greater flexibility in the design of interventions, informed by real impact with urban interventions evolving from tactical to more structural changes, with maximum use of playful, creative interventions for a more people-friendly, and in particular child-friendly, city centre.
- Integration with wider climate mitigation and adaptation strategies such as biodiversity enhancement, climate resilience, etc. to ensure broader, longer-term and more diverse co-benefits. This can further ensure buy-in and cohesion amongst stakeholders and help to create compounding effects from synergistic investments. The Linen Quarter BID can play a key role in coordinating such an integrated approach.
- **Inclusive community participation and deliberation** is essential to ensuring widespread buy-in, cohesion and commitment to creating a sustainable and fair mobility transition.
- Clear communication and mapping updates to ensure clarity and accessibility for new routes and prevent unnecessary frustration during implementation. For example, in the case of the Poblenou superblock, it took over six months for Google maps to be updated, leading to confusion amongst vehicle drivers. Here again the Linen Quarter BID can play a key role in facilitating a positive and proactive approach.

Proposed next steps

To assess the feasibility of the superblocks concept in Belfast, the Linen Quarter BID proposes the need for a detailed study to develop the idea further, identify a short list of suitable locations and analyse potential impacts in more detail. We suggest this could involve the following activities:

• Site assessments: Identifying a short list of potential sites, alongside those mentioned above, and conducting a feasibility assessment for each location. This would form the basis for more detailed studies of the shortlisted sites.

- **Traffic studies:** Conducting a study of current vehicle flows identifying private cars, taxis, delivery services, public transit and emergency services alongside current pedestrian and cycle flows within and around the periphery of each shortlisted area. Calculating potential impact on traffic flows based on local contextual data and evidence from Barcelona.
- Ecological assessment: Assessing the current green infrastructure provision using existing available studies e.g. tree survey or green infrastructure mapping and estimating potential impact of increased tree planting and SUDs implementation within the identified sites.
- Land and public realm use study: Mapping current land uses to identify potential for increased residential use, for example through development of underutilised space or change of use. Identifying current public space uses and their potential for child-friendly and accessible mixed-use public realm.
- Focus groups: Arranging a series of focus groups with expert stakeholders and community representatives across mobility, public realm, green infrastructure, local businesses and local residents to identify key requirements and define superblock implementation strategy.
- Stakeholder co-design sessions: Holding a series of participatory co-design sessions, open to anyone interested, to develop initial designs alongside urban planning experts and architects/designers.
- **Public consultation:** A period of open public consultation to share initial suggestions, whilst clearly communicating potential impacts using evidence from experiences elsewhere. Providing the opportunity for community stakeholders to engage more deeply and propose how specific ideas could be tested.

Contact

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ARUP

ANNEX

Barcelona Superblocks Concept Overview

Concept

Superblocks are urban cells of about 16-20 hectares, equivalent to rectangles with 400-500 metres on each side. The concept is designed to free up most of the areas that are currently occupied by vehicles, so that pedestrians can once again enjoy the city.

The interior of 'superblocks' can be designed as single-platform streets, where vehicles and pedestrians coexist. Therefore, they are not pedestrian zones but aim to prevent and calm

traffic.

<mark>Concept</mark>

Following the diagram, through traffic is permitted only on roads around the perimeter of each superblock, where new bus lines are installed to mop up residents who have abandoned regular driving.

The streets within the block have a low 10 kilometers-per-hour speed limit and allow access only for local residents, public transit, delivery vehicles, and emergency services. They are designed in such a way vehicles can use them only to drive into the superblock and then backtrack out again.

CURRENT SITUATION



SUPERBLOCK



400 meters

400 meters



The implementation of the superblocks, as well as the choice of their location, is linked to the deployment of a battery of sustainability indicators that seek to assess the impact of the initiatives associated over time. The superblock implementation model is therefore subject to a constant process of review based on its performance on each of the indicators defined.

	OCUPACIÓ DEL SÒL	Puntuació assolida: 11,5 Puntuació màxima àmbit: 20 Resultat: 57,4 %	C	eix 1 1/3%	QUALIFICACIÓ FINAL
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eix 2	MOBILITAT I SERVEIS	Puntuació assolida: 23,5 Puntuació màxima àmbit: 50 Resultat: 47,1%	D	Resultat parcial: 13,4% Puntuació: 91,4 punts (sobre170)	
COMPLEXITAT	COMPLEXITAT URBANA	Puntuació assolida: 20,9 Puntuació màxima àmbit: 40 Resultat: 52,4%	С	eix 2 1/3%	(suma % parcials eixos) ちれ つぬ
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	COHESIÓ SOCIAL	Puntuació assolida: 20,3 Puntuació màxima àmbit ¹ : 30 Resultat: 67,8 %	С	eix 4 Resultatat: 17% 1/4% Puntuació: 20,3 punts (sobre 30)	SUFICIENT

Concept

The main concerns that have led to the implementation of this model are:

- High level of traffic noise.
- Lack of green spaces in highly populated areas of the city.
- High level of road accidents.
- Sedentary lifestyles of the population, especially the youngest.
- Exceeding pollutant gas emission limits.

History | Vitoria-Gasteiz

Superblocks were first implemented in a large-scale context in 2008 by the psychologist, engineer and ecologist **Salvador Rueda in Vitoria-Gasteiz** (capital city of the Basque Country, 200,000 inhabitants).

Rueda is known as the world's leading proponent of "superblocks"—in which groups of commercial or residential streets are barred to through traffic, crisscrossed by pedestrian walkways, and carpeted with grassy malls. Thanks to his work, Vitoria-Gasteiz already has 63 of them, with plans for 48 more.

History | Vitoria-Gasteiz

In parts of downtown Vitoria-Gasteiz, the initiatives undertaken by Salvador Rueda have reduced the number of cars on the road by 27%, leading to a 42% reduction in the city's carbon dioxide emissions.

At the same time, the use of public transport, which was redesigned to adapt to the new traffic restrictions in the superblocks, has seen a 100% increase in the number of people using the bus every day. A full 50% of residents walk as their primary mode of transportation, and 15% bike despite of harsh local climate conditions.

International Awards

2019: Global Green City Award (Global Forum on Human Settlements) 2016: Biosphere Responsible Tourism certification

2012: European Green Capital 2010: Green Capital Award finalist (EU

Commission)

History | Vitoria-Gasteiz

To "create" a superblock, Rueda and his team typically start with nine square blocks totalling about 16 ha. Then they extend the sidewalks, plant trees, add bike lanes, and install benches.

Cars are not entirely forbidden (residents and delivery vehicles must abide by a speed limit of 10 kmph). Cameras clock the speed of cars and routes, and rule breakers are fined.

The average conversion for a single superblock costs about €5 million, and the total cost of superblock projects in Vitoria-Gasteiz, from 2008 through 2016, was €56.6 million.

History | Barcelona

Superblocks in Barcelona were initially proposed by Salvador Rueda in 1987. The first one was created in *El Born* in 1993 and the other two, in *Gràcia*, in 2006.

These three mature superblocks are now fully equipped with pedestrian improvements, wider sidewalks, and more street furniture. The advantages have gradually been perceived by locals and initial resistance has largely evaporated.

Focusing on the superblock installed in Gràcia, Rueda found that since 2007, walking had increased in the area by 10% and cycling by 30%. Driving in the superblock as a whole had fallen by 26%, whilst in the internal streets, it had fallen by 40%.

History | Barcelona

However, it was not until 2016 when the first "Superilla" (calatan name for superblock), in the way they are currently known worldwide, came to reality in the district of Poblenou, a former industrial area which has become the main tech hub of the city (22@) District). At first, basic mobility measures were applied, with temporary, reversible and quickly implemented actions.

At the moment, there are six superblocks spread throughout the city.

POBLENOU CASE STUDY

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Basic Network: streets that link the distribution of traffic at a city level and define the boundaries of the Superblock.

Local Network: streets on the traffic distribution network that enable access to the interior of the Superblocks, providing more flexibility than the basic model. The city's bus lines and bicycle routes are included in this network.

Pedestrian Network: streets within the

Superblocks that guarantee access for residents to all destinations.

Intermodal node: junction between two main streets.

Services node: the junction between a main street and a local or neighbourhood streets. Neighbourhood node: any other type of junction, meaning junctions between local streets, one local and one neighbourhood, or two neighbourhood streets.



Initially criticised for being carried out without prior notice, the Poblenou superblock has managed to double the amount of green space and more than halve the number of cars in the area. Moreover, it has transformed the area into a place of community coexistence, with art and games in the street.

As a result of its implementation, a process of evaluation and proposals open to the public was promoted in order to work together on the necessary adjustments to improve its performance and strengthen its potential. This process was carried out through open sessions and the creation of a working committee with the main groups and entities involved.

In the first phase, which lasted until the spring of 2017, "tactical urbanism" interventions were carried out. These included colourful paint on the streets, mobile urban furniture and turret trees to create and enhance the areas of relaxation and conviviality, especially those dedicated to children and citizen interaction.

After a turbulent start, characterised by initial complaints from residents, the Municipality agreed to dedicate a large part of the newly-created public space to activities proposed by the inhabitants themselves, such as a children's playground, a picnic area or petanque and table tennis courts.

In parallel to this participatory process, the green area grew significantly, from 9,722 sqm to 18,632 sqm, with 176 new trees. The goal of reducing traffic by more than 1,000 cars per day was more than achieved, from 2,218 to 932.

Super

And, above all, there has been no negative impact on commercial activity in the area. In fact, between 2016 and 2019 there was a **30.7% increase** in the number of commercial establishments

on the first floor, from 65 to 85.

This first superblock now has a total area of 56,665 square metres with 349 seats, a 2,483 square metre children's play area, a participatory play area, more than 1,000 square metres of cycle lane, an electric vehicle charging point and even a small athletics track.



Superilla Sant Antoni

In spring 2018, the second of these large pacified areas was inaugurated around the traditional Sant Antoni Market, between the districits of *Eixample* and *Raval*, close to the city centre.

The previous experience in Poblenou meant that it was more positively received than its predecessor, both by the residents of the affected area and by the general public.

89 CONFECCIONS, EL

Superilla Sant Antoni

Superilla Sant Antoni

The development of the Sant Antoni superblock is associated with an **improvement in the quality of the design** of the newly created public space.





Evaluation process

Poblenou 2016



ACTUACIONS

 Reducció de trànsit motoritzat i priorització de vianants i bicicletes en àrea de 3x3 illes Creació d'espais d'estada en trams i cruïlles alliberades de trànsit:

· Dues grans places Taules de picnic Recorreguts literaris · Espais per a mercats eventuals · Zones esportives i de joc

TIPUS DE METODOLOGIA UTILITZADA



ACTUACIONS

· Reurbanització de l'espai públic al voltant del nou mercat de Sant Antoni: Creació d'una gran plaça pública

Nous espais d'estada

Més zona verda.

· Pacificació dels carrers Comte Borrell (entre Floridablanca i Manso) i Tamarit (entre Viladomat i Comte d'Urgell)

Horta 2019



ACTUACIONS

· Reurbanització de:

 Carrers Fulton i Horta (entre plaça Elvissa i baixada de la Combinació): plataforma única i velocitat reduïda

· Feliu i Codina (entre Chapi i Eduard Toda) i Chapí (entre Feliu i Codina i carrer del Vent): plataforma única i velocitat reduïda Reurbanització de dues cantonades



ESTUDI	TIPUS D'ESTUDI	ÅREES ESTUDIADES	MESURES
P	*	 Salut general i benestar Salut mental Quantitat i qualitat de la son Activitat física Context social 	۹ ۲
	. •	Contaminació de l'aire (NOz i partícules)	•
()	. •	Contaminació de l'aire (carboni negre)	
·[•		Caminabilitat	
.Ąp	•	 Valoració global de la superilla Ús de l'espai públic Salut general i benestar Millores proposades 	×

Benefits

The Barcelona Public Health Agency has recently conducted a study* on the impact of the implementation of superblocks. Although the study notes that due to the short duration of the interventions, long-term health effects cannot yet be studied, it concludes that their large-scale implementation can have a major positive impact on the health of the population:

Reduction of noise levels and indoor pollution. Prevention of chronic ailments such as cardiovascular diseases, diabetes, cancer or obesity. Contribution to improve mental disorders such as depression or anxiety.

- Improvement of active mobility and social interaction.
- Improved sleep quality for residents.

For the report, different study methods have been used, both quantitative and qualitative. Thus, air quality and noise have been measured; surveys have also been carried out and focus groups have been analysed, among other resources.

According to this study, there has been a 25% decrease in nitrogen dioxide levels and a 17% decrease in PM10 suspended particulate matter, according to data collected in 2017, before the works, and in 2018, once the works were completed, inside the superblock. *Informe de resultats dels efectes mediambientals i en la salut del model Superilles a Barcelona. Projecte SalutAls Carrers (SAC).

Agència de Salut Pública de Barcelona. Barcelona, 2021.

Impact on commerce

There is no conclusive data available on the real impact of the Sant Antoni superblock on local commerce. This is due to the fact that shortly after its inauguration, the restrictions derived from the Covid-19 health crisis began. Therefore, there is no representative statistical series to evaluate its performance over time.

However, according to recent surveys, a large number of traders seem to have pointed out the need for more loading and unloading areas or extended hours to facilitate the provisioning of

businesses.

Impact on traffic

*Daniel Rodriguez-Rey, Marc Guevara, Mª. Paz Linares, Josep Casanovas, Jan M. Armengol, Jaime Benavides, Albert Soret, Oriol Jorba, Carles Tena, Carlos Pérez García-Pando, To what extent the traffic restriction policies applied in Barcelona city can improve its air quality?, Science of The Total Environment, Volume 807, Part 2, 2022, 150743, ISSN 0048-9697, https://doi.org/10.1016/j.scitotenv.2021.150743. (https://www.sciencedirect.com/science/article/pii/S0048969721058216)

Some citizens consider that the reduction of traffic is not enough and that it has led to an increase in the flow of traffic around the superblock. Regarding this issue, an article* by the Barcelona Supercomputing Centre, together with the Polytechnic University of Catalonia, was published in October 2021. The study concludes that the implementation of "superblocks" or tactical urbanism remains far from the pollution reduction targets set by the European Commission, if it is not accompanied by more ambitious large-scale traffic reduction measures.

The study also shows that when only measures related to reducing the space available for private transport, such as superblocks or tactical urbanism, are implemented, the changes in nitrogen oxide emissions (NOx = NO2 + NO) are negligible (+0.1%), as the measures have a rebound effect on neighbouring areas. According to the article, these restrictions lead to a redistribution of traffic along the network and therefore also to a redistribution of emissions at street level, with variations of nitrogen oxides of up to \pm 17% on specific streets as a consequence of new vehicle routes and variation in traffic flow and speed.



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Areas for improvement

Another study carried out by the municipal Health Agency and published in October 2021 shows that some citizens believe that the 'superilles' are not designed for all age groups. According to data from the same study, young people make little use of the space, unlike older people.

Some people surveyed believe that in certain areas the reduction of motorised traffic is still insufficient or that some feel that motorised traffic has increased in the surrounding streets. Families with children believe that the intervention gives a "false sense of security" because there are still too many cars.

In addition, there exist criticism regarding the appearance and design of the new public space. In a city that is an international benchmark for design, the use of temporary solutions and cheap materials in public space has met with a mixed reception from the public.

In addition, only 2% of women and 6% of men use the area for "vigorous" physical activity.

*Informe de resultats dels efectes mediambientals i en la salut del model Superilles a Barcelona. Projecte SalutAls Carrers (SAC).

> Agència de Salut Pública de Barcelona. Barcelona, 2021.

Next steps

CORCEGA

C/ ROSELLÓ

C/ MALLORCA

C/ PALLARS

At present, there are six superblocks throughout the city. Last year the municipal government of the Catalan capital presented a new plan, *Pla Superilla Barcelona*, which plans to replicate this idea on a city-wide scale.

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CORCEGA

The idea, in a decade's time, is to pacify 21 streets and horizontal (with traffic restricted to neighbours and services) and create 21 squares (of 2,000 square metres each).

Data sources and Links

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