

LIFE-CENTRIC CITIES FOR THE FUTURE*

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A vision of a healthy, holistic, and sustainable urban future is essential especially in the aftermath of global pandemic events which have placed extra pressure to rethink old expectations of urbanism and health practices. There is a rising demand, accelerated by the pandemic, for cities to respond to physical and psychological needs. Approximately 55 percent of the world's population lives in urban areas, but this percentage is expected to increase to 68 percent by 2050 [United Nations 2018]. As the world's population becomes overwhelmingly urbanized, cities' ability to sustain health and well-being is of critical importance. With the restructuring of priorities, now is the time to intentionally plan and design our cities to better respond to the needs of our population and the planet.

The life-centric city exists as the distinct intersection of well-being, nature, and the built environment. Green space remains an indivisible component of the life-centric city model and the foundation of the bolstering artificial ecosystems we know as cities. Through its restorative, environmental, and flexible properties, green space is an essential element of our everyday spaces and routines. Gone is the era of silos of mono-function and fragmented public spaces – interweaving green spaces and other life-centric measures in the urban fabric will be key to creating social, smart, compact, sustainable, and fair cities for the future.

The article will proceed in two sections, the first will focus on green amenities in the context of COVID-19 and health benefits they bring. This section will include a case study on park use increase and disparities in London, United Kingdom, and Milan, Italy in recent years. The second section will expand upon the vision of the life-centric city to radically transform urban life. This section will delve into importance of green networks in creating comfortable density and high value places.

Green Space in the Context of COVID-19

Parks, open space, and green spaces are becoming increasingly relevant and critical focal points in urban policy and public life in the era of COVID-19. The mental, emotional, social, and ecological health benefits resulting from parks has been well-studied in the past [Lar-

son et al. 2021; Maller et al. 2005; van den Bosch and Ode Sang 2017]. The global pandemic has only placed a larger spotlight on these benefits and has resulted in the need for public, open, green spaces to quickly rise to the top of both public and policy priorities. The urban form and long-term priorities within cities are beginning to reflect this dramatic increase in the perceived value and larger role of green space.

Before the pandemic, Fields in Trust reported that parks and green spaces administer over £34 billion of health and well-being benefits per year, in the United Kingdom [Norris and Bertonic 2020]. Parks also are estimated to save Londoners £950 million per year in health costs annually, based upon a decline in general practitioner visits alone, due to green spaces ability to bolster mental, emotional, and physi-

*) Český překlad článku bude spolu s plným obsahem celého čísla uveřejněn na webových stránkách časopisu.

cal well-being [Ball et al. 2018; Parks for London 2019]. Due to these types of health cost savings and recognized benefits, the World Health Organization recommends that a minimum of 9 m² of green space be available per individual [Russo and Cirella 2018].

Early in the pandemic, studies confirmed that it was much safer and healthier to be outdoors, because transmission rates outside are significantly lower than rates inside [Bulfone et al. 2020; Rowe et al. 2021; Shukman 2021]. These studies informed COVID-19 mitigation strategies, in which socially distanced outdoor spaces were some of the first places to re-open during and between lockdowns [Larson et al. 2021; Venter et al. 2020]. Due to these conditions, urban green spaces became both a popular meeting place and safe refuge for many during the pandemic.

It is likely that people also flocked to public outdoor spaces due to the lack of access to private outdoor spaces such as balconies and gardens. In major metropolitan areas like, such as London, parks are one of the only accessible green spaces available to the public. For example, only one in five households in London have access to a private or shared garden [Norris and Bertoncin 2020]. There exists a wide disparity between the 21 percent of Londoners without gardens and the larger United Kingdom context, which reports that only 12 percent of residents have no garden [The London Sustainable Development Commission 2020].

Hence, outdoor spaces and similar amenities, such as urban parks or plazas, provided desired space and environmental variety became increasingly important in urban areas while people were suddenly quarantined to residential spaces for lengthy periods of time.

Early reports suggest that this jarring change in routine and environment during lockdowns had a dramatic effect. The English Housing Survey reported that a third of adults in Britain reported mental or physical health problems due to the condition, or lack, of space in their home during lockdown [Smit 2020]. We are likely to see an increase

in the demand for flexible housing arrangements, as households re-evaluate how well their houses cater to their needs in terms of health, space, and overcrowding [Smit 2020].

In lieu of quality housing space and indoor recreation activities, parks and green spaces became a central social, mental, and emotional refuge, especially for urban residents who are more likely to suffer health impacts from the pandemic [Hubbard et al. 2021; Larson et al. 2021; Rader et al. 2020]. Research has begun to confirm what was already taking place, that parks offer relief and a sense of normalcy as a setting for social, cultural, and physical activities usually reserved for indoors, given the overarching health and safety standards implemented [Honey-Roses et al. 2020; Johnson et al. 2021; Larson et al. 2021; Ugolini et al. 2021]. Similarly, it was reported that those who maintained outdoor activity during the pandemic reported better health outcomes compared to those who did not [Larson et al. 2021]. The benefits derived from parks show that access to nearby nature increases restorative and stress-reducing outcomes, which increase overall emotional well-being and mental health outcomes [Mouratidis 2021; Portinga et al. 2021; Pouso et al. 2020; Shoari et al. 2020; Xie et al. 2020].

During and beyond the pandemic, parks make a lasting impact, especially during adolescence. For example, the University of Aarhus reported that childhood access to green space reduces the risk for developing an array of psychiatric disorders later in life [Rocchio 2019]. In particular, only socioeconomic status was an a slightly stronger indicator than exposure to green space, family history, and parental age when predicting mental health outcomes [Ibid]. Understanding park's potential as an early intervention tool for mitigating mental health problems is critical for urban policy makers given the onset of mental challenges continue to rise in both adults and children which have been exacerbated by the pandemic [Panchal et al. 2021].

Overall, studies have consistently shown that parks facilitate better mental health

outcomes in terms of mood disorders, depression, neurotic behavior, and stress-related issues [Rocchio 2019]. It is theorized parks provide psychological restoration as environments that offer decreased noise and air pollution, while also encouraging healthy behaviors like exercising and social cohesion [Ibid]. Parks play a unique role in encouraging both connection between people, people and their bodies, and people and the environment. Overall, public, open green spaces are holistically, essential spaces for enhanced health and well-being on a social, mental, emotional, and physical level.

Global Case Study

Park visitation surpassed pre-pandemic levels across the globe, even when accounting for varying international health policies as well as weather. Overall, there were two types of trends characterized during the upwards of park visitation. The first included countries such as, but not limited to, Italy, South Korea, and Spain which experienced severe COVID-19 outbreaks and reacted with stricter lockdown policies to contain the virus. In these types of situations, park usage plummeted during lockdowns, but increase up to 50 percent compared to the baseline after containment measures were gradually relaxed [Geng et al. 2020].

In comparison, there was an explosion of park usage in countries such as the United Kingdom, Denmark and Canada which experienced less immediate direct intervention or “recommended stay at home” as the central response policy [Geng et al. 2020]. Trends in these types of countries demonstrate that park visitation consistently outpaced previous trends by over 100 percent as access to parks was less inhibited [Ibid].

In either response or policy case, there was a global increase in the use of parks to varying degrees. As more data is collected from this period and from across the world, we expect current park use trends to become more distinct and possibly sustained compared to pre-pandemic patterns.

London Case Study

In the United Kingdom context, over 27,000 urban green spaces currently exist in which more than half the UK population regularly visits [Norris and Bertoncin 2020]. In London, alone, 40 percent of the city is public green space, comprising of 3,000 parks that span 141.6 kilometers square (35,000 acres) [McGlone 2013]. It is estimated that London's public green spaces have a gross asset value of more than £91 billion, and provide services valued at £5 billion per year (Parks for London 2019). Not only are London's green spaces of overall high value but remain a worthwhile urban asset. For example, for each £1 spent by local authorities and their partners on public green space, Londoners enjoy at least £27 in value [Parks for London 2019].

This interest in and value of green spaces has been encouraged by national and local policies. For instance, the UK government launched Parks Action Group in 2017 to help parks and green spaces meet the needs of communities now and in the future. London has expanded upon this green agenda by through a running list of policies, designations, and committees. In 2019, the Mayor of London officially declared London to be the

world's first National Park City. This designation encourages the city to be a place where people, places, and nature are better connected. The same year, the London Green Spaces Commission was established by the Mayor of London to oversee the delivery and management of London's greenspaces, in addition to execute to London's Environment Strategy enacted in 2018. The city also established the Urban Greening Factor, which is a planning policy that requires all major developments in the Greater London Area to include information about the quantity and quality of urban greening as a part of their development proposal. In tandem with these strategies and planning regulations, the city has developed tools like the Green Infrastructure Focus to map environmental quality over time.

These strings of policies reflect the public's use and value of parks. During the pandemic, the National Federation of Parks and Greens Spaces reported that most parks remained open during lockdowns which, in part, spurred park visitation in the UK to dramatically increased by over 100 percent [Geng et al. 2020]. The rates of park use remain high in 2022 compared to the baseline, in which some London boroughs like Newham and Harrow are still experiencing an increase of

over 100 percent of park use compared to the baseline [Google 2022].

UK residents in large metropolitan cities, London especially, have limited access to private green spaces like gardens and balconies, and therefore rely upon other public places for access to nature and wide-open spaces. For example, half of Londoners live within 400 meters, the maximum distanced recommended by the London Plan, of formally designated local open space (a public park of at least 2 hectares) [The London Sustainable Development Commission 2020]. Related, around 44 percent, of Londoners live within a five-minute walk of a park or public green space [Norris and Bertoncin 2020].

Alarming, approximately half of Londoners are without convenient public green spaces, and the positive psychological and physiological effects it provides. This statistic becomes even more consequential when factoring in race and socioeconomic status. In the United Kingdom, both lower income and Black and minority ethnic (BAME) households are at least four times less likely than white people to have outdoor space at home [Ibid]. This lack of access only continues, as approximately 40 percent of BAME households live in the United Kingdom's most green space-deprived neighborhoods, compared to 14 percent of white people [de Zylva, Gordon-Smith and Childs 2020].

Even when low-income communities of color have access to green spaces, the important health benefits reaped is often limited by the lower quality of the space provided [Larson et al. 2021]. The inequitable access to and quality of parks is then exacerbated by lack of time spent within urban green spaces. Low-income communities of color are likely to experience a fraction of the benefits of green space because longer exposure is correlated with greater mental health benefits [Rocchio 2019].

In the context of COVID-19, research suggests disparities in urban park use and access are magnified within vulnerable



Figure 1: Illustrates the user interface of the Green Infrastructure Focus mapping tool. The following map shows the composite score for London, based upon factors such as, but not limited to, air quality, pedestrian activity, and access to public open space. The lighter areas reflect which areas are currently underserved.



Figure 2: Illustrates park use in the United Kingdom since February 2020 per tracked by Google COVID-19 Community Mobility Trends. This map reflects the dramatic increase of park visitors over several years.

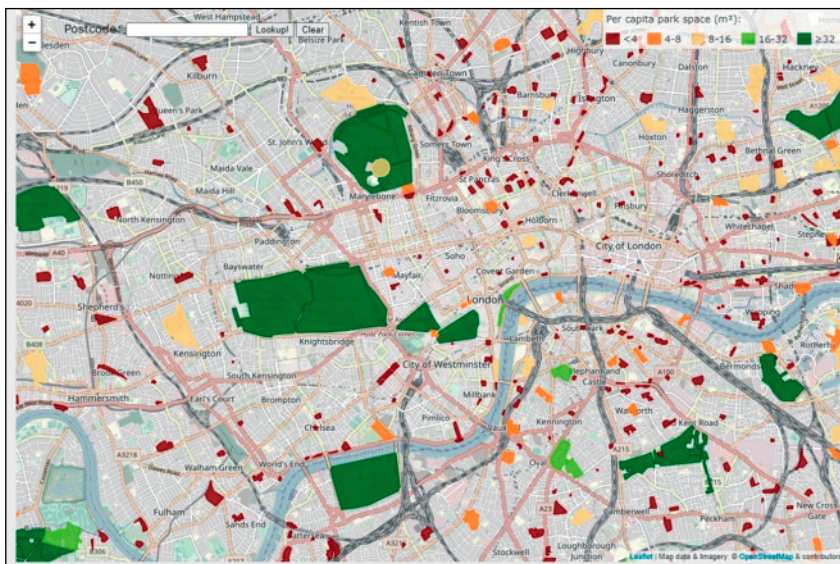


Figure 3: Illustrates parks space (m²) per capita. This map reflects the unequal park distribution in London, despite its title as the world's first National Park City. The east and north side is dramatically underserved in terms of both urban park size per capita (Pathways to Equitable Healthy Cities).

communities and the benefits of parks are not equitably allocated across the population [Jennings, Larson, and Yun 2016; Larson et al. 2021; Rigolon, Browning and Jennings 2018]. Vulnerable populations entered the pandemic with pre-existing disparities and have since been at a greater disadvantage under the brunt of inequitable access to parks and their health benefits during a moment in which

public green spaces have only become more important [Larson et al. 2021]. As the report Fair Cities Platform¹⁾ illustrates, the importance of utilizing productive conversations, practical tools for further engagement, and systemic orientation on spatial justice is increasingly important to combating these health and green space inequalities.

Milan Case Study

In the Italian context, access to public, green spaces, especially expanded past the context of an urban park, is increasingly important. In Milan, Italy, only half of the population has access to recreational space that's accessible 24/7 [Bazzoni et al. 2020]. An extensive study on Milan's public space reported that, on average, 290 m² of public green space per capita, which includes all types of urban public spaces [Ibid]. However, when strictly only public urban parks are taken into account the average amount per capita is reduced to than 80 m² per person [Ibid].

Not only are designated public green spaces are limited, but they are also located typically more than 15 minutes away on foot from certain swaths of the population [Bazzoni et al. 2020]. Overall, the distribution of medium and large public parks is unequally allocated across the city, leaving large areas of the city without access to open, green public places [Ibid]. Although the presence of other recreational areas acts as substitutes, public parks remain the central and popular option and thus its unequal distribution has led to massive crowding during the pandemic [Ibid].

However, in recent years the green agenda has become a high political priority. The nation has created two new ministries, the Ministry of Ecological Transition and Ministry of Sustainable Infrastructure and Mobility, which focus on climate change, sustainability infrastructure, and are overall engage in environmental issues. Milan goals and strategies reflect the rise in concern for the environment [Bergamaschi 2021]. Currently, the city boasts that 39 percent of its space is dedicated to a system of regional parks spanning more than 23.5 kilometers squared [Angelo Tere Gusti & Masperi 2017].

In many ways, Milan promoted and committed to the green agenda. The city is a member of the C40 Cities Climate Leadership Group, the global

1) Fair Cities Platform, a project by PLP Labs, Gehl and the Connected Places Catapult.

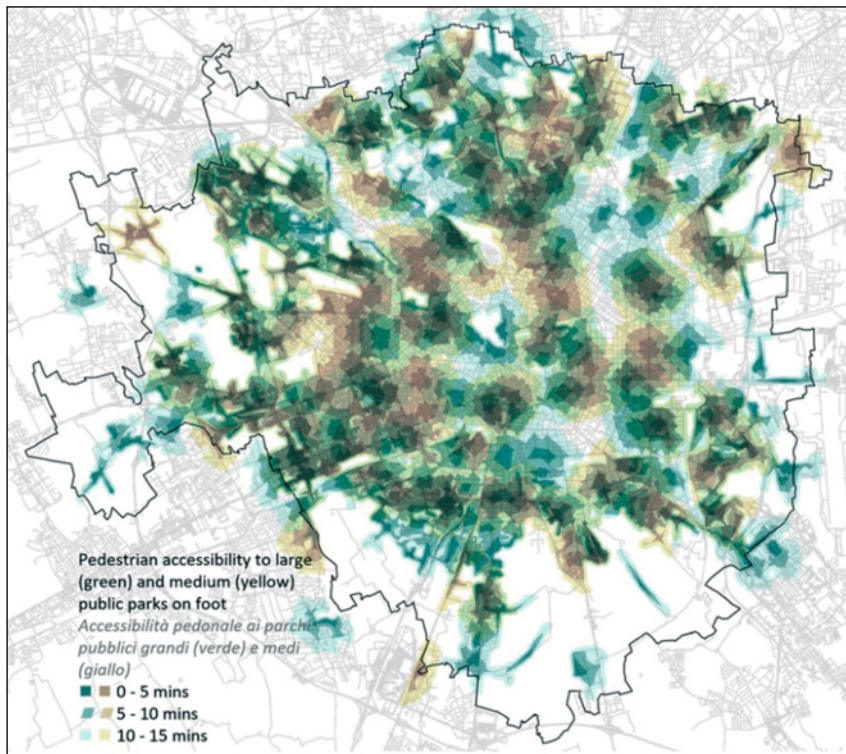


Figure 4: Demonstrates the allocation of large to medium parks in Milan and which areas of the city are currently underserved. The east side of the city is particular at a disadvantage (Bazzoni et al. 2020).

network ICLEI – Local Governments for Sustainability, and is a top city in Europe for Leadership in Energy and Environmental Design [CPD, n.d.; Stanley 2019]. As a member of these global organizations, Milan has made strides in executing the green agenda that encourages biodiversity and combats climate change. For example, the city has a history of incorporating innovative green infrastructure, such as the Library of Trees that offer 135,000 plants of a 100 different species and trees [Municipality of Milan, n.d.]. Similarly, the city has capitalized on vertical green networks like the Vertical Forest features 800 trees, 15,000 plants, and 4,500 shrubs within two residential tower blocks [Girardi 2019]. Furthermore, Milan was the only city in Italy to achieve the goals of the Paris Agreement on Climate Change by 2020 [Moscato 2021].

Eager to keep this momentum going, the city of Milan launched Foresta-Mi which aims to plant three million

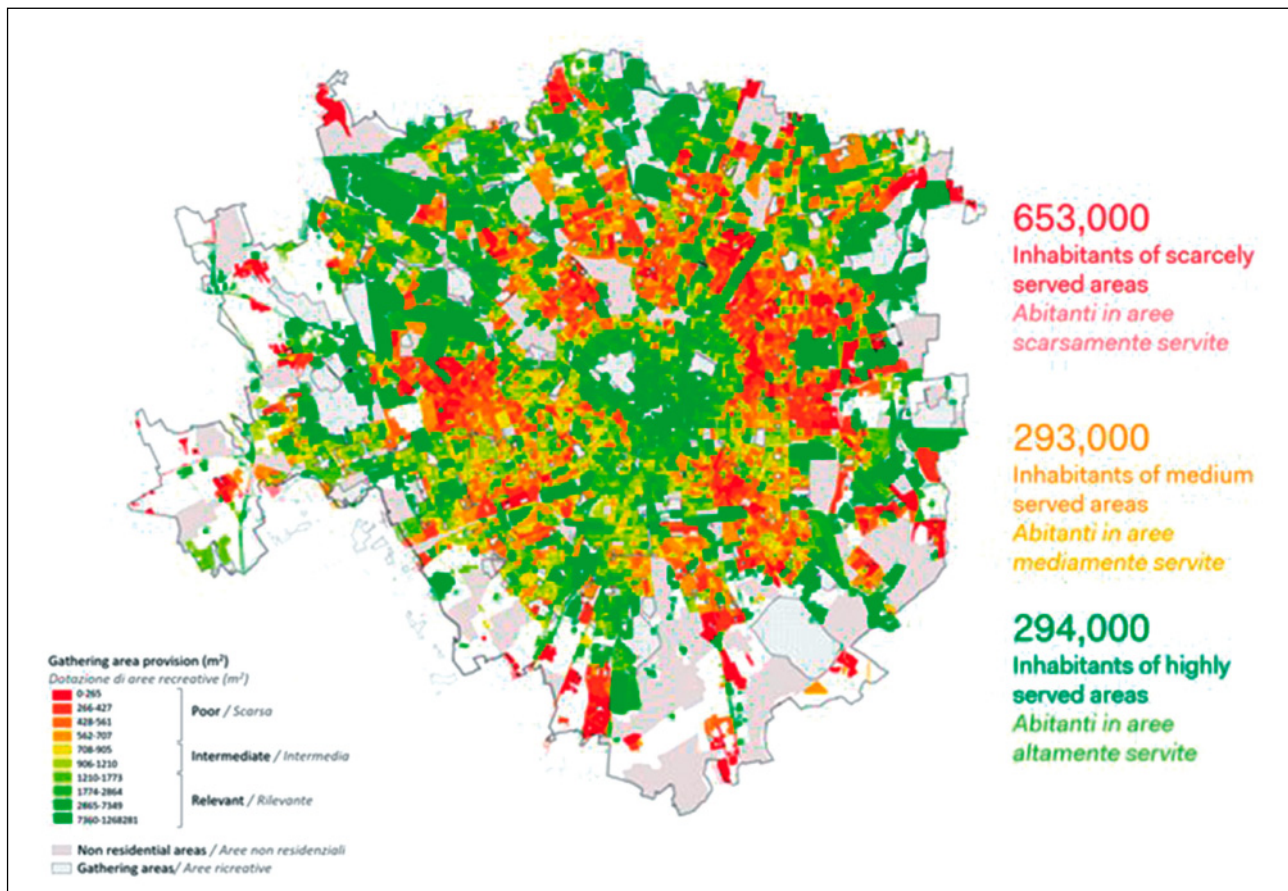


Figure 5: Illustrate pedestrian access to large and medium public parks by foot. This map reflects the unequal park distribution to a greater extent by highlighting the park amenities which are generally inaccessibility to pedestrians. Once again, the east side is dramatically underserved in terms of both urban park size and accessibility (Bazzoni et al. 2020).



Figure 6: Illustrates park use in Italy since February 2020 per tracked by Google COVID-19 Community Mobility Trends. This map reflects the dramatic increase of park visitors over several years during periods out of lockdowns.

trees by 2030 and has committed to transforming 30 to 40 percent of the built-up city surface into green spaces in accordance with C40 Cities [CPD, n.d.]. As part of this strategy, the city is planning 20 new urban parks, extend and enhance current parks, and revitalize seven abandoned industrial sites into green spaces [Girardi 2019].

Ultimately, wellness research on parks illustrates there are high stakes in terms of health and social costs for both children and adults when green spaces are inaccessible. The creation of an accessible, green, urban network is pertinent no matter the city, from London to Milan. The equitable distribution of quality urban green spaces is equally important as the benefits derived from these spaces. This

understanding of the benefits and spatial justice, beyond the pandemic, is critical within the life-centric city.

The Life-Centric City Moving Forward

The life-centric vision of a future city promotes sustainability, urban density, and social and cultural interactions through a symbiotic relationship between green networks and the built environment. At its core, the life-centric city is a meaningful investment which ultimately adds high-value returns in terms of well-being and resilience that are essential to the long-term success of urban settlements.

Green Networks

Green spaces are incredibly versatile, promoting well-being and health, being accessible around the clock and allowing a variety of social gathering and human interaction. Because of this adaptability, it became clear during the pandemic that green spaces are not just the ultimate flexible space, but the most resilient space in the city. Parks set the example for how to utilize a space for multiple purposes, times, and communities that can be applied to the abun-

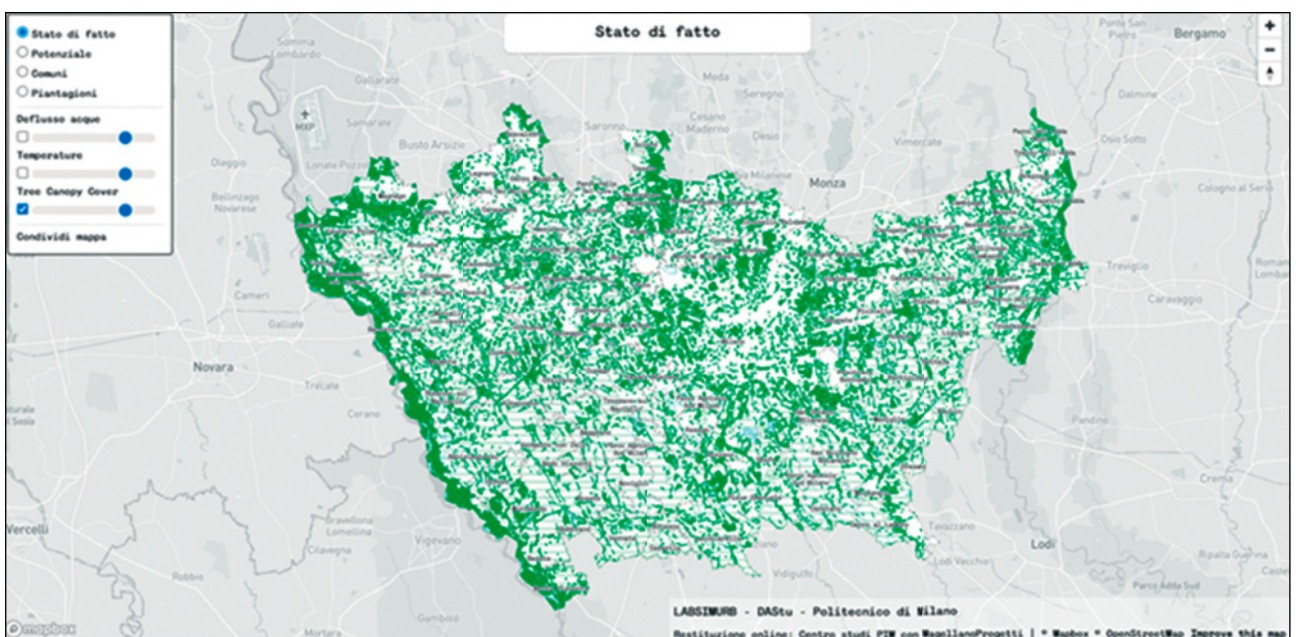


Figure 7: Interactive map of ForestaMi which demonstrates tree canopy cover over the city. The project, spearheaded by the Municipality of Milan, is using this interactive map and data developed by Polytechnic University of Milan to identify the potential planting areas.

dance of current single function spaces within the built environment. The life-centric city envisages the adoption of mixed-use development, versatility, and convenience. In this context, it is the connectivity and accessibility, rather than just a simple provision of isolated green spaces, which provide truly livable conditions.

To improve health outcomes, cities should be transformed into walkable environments. Our generation has a unique opportunity to radically rethink our attitude towards streets, by transforming them into green arteries of the city – true ecological bio-corridors of the city's wider green network. There are emerging projects around the world, such as Paris' Champs Elysees, Barcelona's superblocks, London's The Strand Aldwych, that will transform the width of the sterile, asphalt zones of many cities' roads back into lively, people- and nature-oriented streets. The components of the green network can take many forms, whether it be biodiverse corridors, public spaces and parks, community gardens, canals, green roofs. The Bankside Yards masterplan,²⁾ located on the Southbank in London, is an example of how urban space that was once isolated by its urban geography can be radically transformed into a connected, biodiverse series of public spaces that reconnects the wider neighborhood to the Thames riverfront and reforms the entire area.

The holistic integration of green networks within urban developments can also help to ultimately blur the boundaries between indoor and outdoor spaces. During the pandemic we have witnessed a much more creative use of external spaces, often born out of pure necessity and legal restrictions during lockdowns. Various makeshift canopies and structures helped to extend the length of time that outdoor spaces could be used during the day, in various weather conditions and seasons. What might have seemed like a temporary reaction was, in fact, an important manifestation of a pro-active response that challenges the hard build-

ing boundaries we see around us, between the open outdoor and the firmly protected and segregated indoor space. Life-centric cities should thrive to re-discover the power of "transitional spaces", these micro-climate buffer zones that help to soften the line between the exposed outdoors and the protected indoors.

There is further value in extending the green network into building design through the adoption of a biophilic approach. Beyond the value of human well-being and the positive psychological effect of the greenery, other green infrastructure elements, such as green roofs, reduce the heat island effect, where urban areas experience higher temperatures than the periphery. It is not only possible, but pertinent, to reinforce our cities against climate change by integrating greenery into buildings and other infrastructure that re-emit the sun's heat. Therefore, mitigating climate change through greenery in cities increases the security, livability, and overall value of development for years to come.

Urban Density

Density and green open space are not conflicting priorities, but rather are complimentary in creating vibrant and healthy places. First, density encourages the strategic allocation and reposition our assets, especially in cities where there is heightened competition for space. Green spaces are particularly important in this framework and are the key to sustaining the amount of densification in urban environments. In many cases, the introduction of natural and open space counteracts negative perceptions of density [El Akl & Davidson 2020]. For example, employing design tools such as biophilic design, creating pleasant living environments, or creating view corridors can help to increase the public's acceptance of dense urban environments [Ibid]. Essentially, green space facilitates comfortable density in which there exists a balance between

the anxiety of proximity that increased during the pandemic, competition for urban space, and well-being.

Increased urban density also brings opportunities to consider the integration of greenery as a three-dimensional green network of public spaces, responding to the vertical dimension of the urban form. For example, the recently unveiled Tokyo Cross Park masterplan³⁾ located in the heart of Tokyo, will act as a transformative urban connector, offering a multi-layered open green space experience, in which the vertical density of the development is complemented and activated by nature across multiple levels of publicly accessible open spaces, regenerating a large urban block adjacent to Hibiya Park and reconnecting it with its wider neighborhood.

Creating culturally and socially significant public spaces

Networks of green spaces are uniquely suited to encourage human interaction through arts and culture due to their versatile access and ability to bring together communities. From organized festivals to casual engagements in artistic endeavors, the life-centric city supports the integration of arts and culture in public green spaces. Arts and culture programming within public spaces provide high value amenities, especially in high-density areas, given their demand and reliable accessibility.

A key part of a creative strategy to revitalize economically deprived areas is providing more public amenities and open space so that all residents – adults and children alike – have somewhere to go outside of their home. As the ULI's publication 'Including Culture in Development' recommends, considering all stakeholders in cultural opportunities provides the right solution to achieve shared goals.⁴⁾ In this case, it is important to engage all ages

2) Bankside Yard, a mixed-use masterplan in London designed by PLP Architecture.

3) Tokyo Cross Park Vision, a masterplan and placemaking strategy in Tokyo by PLP Architecture.

4) PLP Labs led the creation of 'Including Culture in Development: A step-by-step guide' as part of a wider ULI (Urban Land Institute) team.

of the community within parks and cultural re-generation for community success. Children may not have space to play at home and adults may not be able to afford the gym or meet their friends at a bar –or everyone may be under strict a lockdown again. Hence, green spaces play a major role in cultural opportunities as one of the few spaces to congregate outside residences and without a fee. These kinds of places are vital to our personal and community development, as well as to increase the value of an area (Ibid).

The example of the High Line in New York⁵⁾ illustrates the transformative power of the regeneration of an existing and underutilized infrastructure, through the introduction of an attractive and connected green public space. Investing in a meaningful, green infrastructure in the city delivers increased benefits of value to the adjacent, as well as wider, local area.

In the case of the in-development Parco Romana masterplan in Milan,⁶⁾ an obsolete industrial railway station was reimagined into a high value, thriving biodiverse place complete with reconnected neighborhoods, a mixed-use district, and large park. The innovative and high value redevelopment was possible due to the inherent resiliency and versatility of greenery to connect and reclaim the once contaminated area.

Conclusion

To summarize, open public green spaces facilitate a variety of important physical, physiological, and environmental benefits. From early childhood development to strengthening communities, green networks are vital to urban areas and residents especially in the aftermath of COVID-19. The concept of a life-centric city capitalizes upon the high value of connected green spaces by prioritizing the greening of public squares, pedestrian zones, and green buildings.

The life-centric city is of high value because of its ability to support a range of activities from well-being, social life, activity and exercise, greenery, cultural events, to community activity for all through green networks.

The versatility, adaptability, and resilience of green networks is a meaningful investment for the future of our cities in which humans and the planet continue to thrive together.

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5) The High Line in New York is an elevated linear park, greenway and rail trail designed by James Corner Field Operations, Diller Scofidio + Renfro, and Piet Oudolf.

6) Parco Romana is an urban-scale redevelopment in Milan by a partnership of PLP Architecture, OUTCOMIST, Diller Scofidio + Renfro, Carlo Ratti Associati and Arup.

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ČESKÝ ABSTRAKT

Města k životu nyní a v budoucnu, Alex Davidson, Bernard Storch, Savannah Willits

Vize zdravé, celostně koncipované a udržitelné budoucnosti měst je obzvlášť významná po skončení globálních pandemických událostí, které vyvinuly tlak na revizi dřívějších očekávání urbanismu a zároveň zdravotnické praxe. Narůstá potřeba, aby města reagovala na potřeby fyzického a psychologického rázu, jejichž nástup urychlila právě pandemie. Přibližně 55 % světové populace žije v urbánních oblastech, přičemž se očekává, že tento podíl naroste do roku 2050 na 68 %. S nárůstem podílu urbanizovaného obyvatelstva získává zásadní význam schopnost měst udržovat fyzické a duševní zdraví. S přebudováním priorit nastal čas účelně plánovat a projektovat města tak, aby lépe odpovídala potřebám svých obyvatel i celé planety. Koncepce měst k životu představuje soulad zdraví, přírody a zastavěného prostředí. Zelený prostor je neoddělitelnou součástí tohoto modelu a základem posilování umělých ekosystémů, které známe jako města. Díky svým obnovujícím, ekologickým a zároveň flexibilním vlastnostem je zelený prostor základním prvkem našeho každodenního života a místa, v němž žijeme. Rozloučili jsme se s érou, kterou charakterizovala jednocelová síla a fragmentované veřejné prostory. Naopak protkáni zelených prostorů s opatřeními, která jsou vlastní městům pro život, bude klíčem k tvorbě sociálně přívětivých, kompaktních, udržitelných a spravedlivých budoucích měst. Následující článek sestává ze dvou oddílů, z nichž první se zaměřuje na městskou zeď v kontextu koronavirové pandemie a svého významu pro veřejné zdraví. Tato část obsahuje i případovou studii využití parků v Londýně a Miláně a jejich disproporcí. Druhý oddíl přechází ve vizi měst k životu jako radikální přeměny urbánního života. Tato část se zabývá významem zelených sítí při tvorbě vysoce hodnotných míst a jejich hustotou v urbánním prostoru.