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CITIES

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ISSUE 6, August/September 2023 – BLUE MIND
ISSUE 7, October/November 2023 – EDUCATION
ISSUE 8, December 2023/January 2024 – WELLBEING
ISSUE 9, February/March 2024 – SEN/DIFFERENCES
ISSUE 10, April/May 2024 – ENVIRONMENT
ISSUE 11, June/July 2024 – LEISURE/HOTELS
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Final word

This issue is dedicated to my mother, Carol Champion-Smith who loved the birds and the bees, was an passionate ecologist, outspoken protector of Hedgerows and supporter of many wildlife and environmental charities. She was the author of The Trepets childrens book series which introduces children to nature through fun fictional stories, a reprint of these will be available in the summer.

WELCOME

Welcome to the fourth edition of The Journal of Biophilic Design.

Thank you for taking the time to read this issue. For me, and as you will see, for hundreds and thousands of others, bringing Biophilic Design into the very fundamental fabric of cities is vitally important, it is the reason why we include a section dedicated to cities in every issue.

I was born in Highgate in London (many years ago!), and I still feel that pull towards the city. Before my time there was such pollution and “smog” in the city that people’s lungs were full of pollutants and poisons. Then along came more and more cars clogging up the city’s arteries, trees and plants began to be cut down as people tarmacked their gardens in the city so they could park their cars on a driveway in front of their homes. Before you knew it, more gridlock, less greenery cleaning the air and here we go again: pollutants and cacophony.

There is, however, a change. And it is a change for the better. In this issue you will find examples, businesses, designers, architects, and communities coming together to create happier and healthier cities using Biophilic Design as a leading principle to make this change.

When I was a child, my parents took me regularly to Highgate woods and they encouraged me to embrace the natural world in all its guises. I was

lucky. As a city kid, we kept chickens in our back garden, I grew veg (including a kamikaze marrow which I was convinced jumped spontaneously off the windowsill when I was 10). I studied a little Collins bird book (which I still have) until I knew every bird in it and then I would run through the woods with my Jack Russell collecting blackberries and crunching the leaves underfoot, relishing the sweet smell of mushrooms and enjoying lying on my back staring up through the leaves above me at the sky.

I wish that every child living in any city anywhere around the world would have that opportunity. Being allowed to explore these wild, tree-crammed places, feel free, think openly and embrace and appreciate the natural world.

It is vitally important also, that all stakeholders understand that nature is for everyone. No one has the right to deny anyone access to the beauty of our natural world.

Biophilic Cities can establish this urban equity, improve biodiversity, support wellbeing, reduce the impacts of climate change and so much more. I hope this issue inspires you.

Vanessa Champion PhD, AMRSPH
Editor and Founder

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HIGHLIGHTS

Each edition of The Journal of Biophilic Design has regular sections. We highlight them here so you can navigate your way around the Journal. If you would like to contribute to a future edition, please do contact our editor we would love to feature your research and case studies.

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Details of our contributors can be found on our website.

Each edition of The Journal of Biophilic Design is published every other month.

Next issue’s focus is **Creativity**.

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Future editions will focus on Blue Mind, Education, Wellbeing, SEN, Environment, Leisure, Retail, Childhood

CITIES





The Biophilic Cities Network

A Global Collaboration of Cities, Scholars, and Advocates

“A biophilic city is a green city, a city with abundant nature and natural systems that are visible and accessible to urbanites. It is certainly about physical conditions and urban design – parks, green features, urban wildlife, walkable environments – but it is also about the spirit of a place, its emotional commitment and concern about nature and other forms of life, its interest and curiosity about nature, which can be expressed in the budget priorities of a local government as well as in the lifestyles and life patterns of its citizens.”

JD Brown, Program Director for Biophilic Cities

I had a desire when I was younger to live in a place that was immersed in nature and beyond the streetlights. In the U.S. (and most other places), this means accepting significant driving to and from everyday places of work, school, and life. Then, I experienced living in a city where forested trails were outside of your door, where nature could realistically become an element of your daily life, and my perspective changed completely. Some years later, I met Tim Beatley at the University of Virginia and it all clicked into place.

The Seeds of Inspiration

In his 2011 book, *Biophilic Cities: Integrating Nature into Urban Design and Planning*, urban planning theorist Tim Beatley first explored the vision of a biophilic city (Beatley 2011). Through an exploration of the science and research underlying

the concepts of biophilic design and numerous case studies from global cities, Beatley argued that nature in cities is not optional but essential to the health of cities and their residents. Expanding on the work and perspectives of biophilia pioneers E.O. Wilson and Stephen Kellert, Beatley proposed that a biophilic city could extend the concepts and benefits of biophilic design to the scale of planning and designing cities. From the individual building site to the spaces in between and their interconnectivity across urban landscapes, biophilic cities offer the opportunity to integrate nature at scales commensurate with daily life.

The Easy Case for Biophilic Cities

The globe is rapidly urbanizing. The U.N. estimates that upwards of 70% of the world's population will live in cities by 2050. When cities are identified as

as drivers of environmental degradation and biodiversity loss, this feels like an alarming prognosis. However, it can also present a tremendous opportunity to change the course of present unsustainability by providing meaningful access to nature and functioning ecosystems in the places that so many call home; places that traditionally have had the least access to nature and where such access can have an exponential positive impact on health, wellbeing, and quality of life (Mitchell and Popham 2008).

The evidence of the myriad benefits of nature is compelling and demonstrates nature as critical infrastructure for cities.

- **Health + Wellbeing** – Contact with nature improves baseline physical and mental health through the prevention of chronic health problems such as obesity, anxiety, depression, diabetes, and cardiovascular disease (Frumkin et al. 2017).
- **Resilience** – Biophilic city planning aids in resiliency by fostering social and landscape resilience in the face of consequences of climate change, natural disasters, economic uncertainty, and various other shocks (Beatley and Newman 2013).
- **Biodiversity** – There remains significant biological richness within the borders of cities. Opportunities exist for cities to conserve and enhance unique and native ecosystems, allow for connectivity across the urban landscape, and inspire a connection to the larger living world (Beatley and Brown 2021).

- **Nature and Economic Prosperity** – Biophilic city planning supports cost-effective investment in sustainable infrastructure in the form of nature-based solutions that, with maintenance, will not depreciate overtime like traditional gray infrastructure alternatives. Evidence documents that this biophilic infrastructure additionally creates new value in the form of job creation, property values, worker productivity, and commercial vibrancy (Brown and Santiago Fink 2022).

Formation of Biophilic Cities Network

From Beatley's initial formulation in 2011, the focus on biophilic city planning has grown and continues to find adaptation at the global scale. As a result of a research project initiated by Beatley at the University of Virginia School of Architecture, representatives from global cities convened in 2013 to explore the concepts of biophilic city planning and to share case studies in best practices. From this 2013 convening, the **Biophilic Cities Network** was launched. From this initial agreement to collaborate, a global community of city government representatives, nonprofit partners, and individual practitioners has grown. As of early 2023, there are now 30 official partner cities, an equal number of partner organizations, and a community of thousands of individuals who have pledged to advocate for a biophilic vision in their own communities.

What Success Looks Like

Planning and designing biophilic cities is alive and flourishing in network cities.

- In Richmond, Virginia, the city seeks to address a history of exclusion by guaranteeing equitable access to nature and prioritizing nature-based investments in the communities with the lowest existing tree canopy percentages as an element of its comprehensive plan (Richmond 2020).
- Edmonton, Canada, has developed wildlife passage engineering guidelines that, within three years, decreased wildlife vehicle collisions by 51 percent, despite an increase in population and development within the city.
- The City of San Francisco has adopted a sidewalk permit system that allows residents to request permission to transform paved areas into innovative biophilic landscaping to promote wildlife habitat, reduce stormwater flooding, and improve quality of life.
- In Portland, Oregon, to address water pollution from combined stormwater and sewer overflows, the city chose to forego

a traditional large scale stormwater pipe infrastructure project by creating small scale biophilic, neighborhood green street improvements on the east side of the city. The successful Tabor to River program resulted in an estimated \$63 Million in cost savings compared to the traditional infrastructure project alternative. (Shandas et al. 2010).

- Curridabat, Costa Rica, is addressing inequities through its internationally recognized “**Ciudad Dulce**” (Sweet City) initiative, through which the city is cultivating pollinator habitat in neighborhoods to increase access to nature, and to improve the availability of fresh quality food in economically marginalized communities and to engage these communities in the co-design of public “sweetness spaces”.

In sum, there is much to be optimistic about in the aspirational vision of biophilic cities and its implementation in the diverse culture and ecosystems of the cities of the Biophilic Cities Network.

Biophilic Cities
<https://www.biophiliccities.org>

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Portland Tabor to the River



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RENZO PIANO - GENOA

*"Arriving in Genoa you will see an imperious city crowned by
rugged mountains, superb for men and walls. Lady of the Sea."*
Francesco Petrarca

Odile Smith

Genoa is an important city on the Ligurian coast in Italy, the birth town of Cristopher Columbus. A fortified city and once one of the most important marine republics of Italy together with Venice and Pisa. Over the centuries Genoa has thrived with its merchants, bankers and nobel families.

Genoa is a city of many hearts but one soul and this soul is strongly connected to the sea.

As Renzo Piano the famous genoese architect says water makes everything beautiful!

"Water makes things beautiful and belongs to us. Genoa is made of stone and water, slate and limestone; but also of salt water, breezes and sun. Let's not forget that. A city that offers itself over twenty kilometers, half is stone and people and half is sea and fish."

Enhancing the connection to the spirit of place is one of the key principles of biophilic design; Renzo Piano with the love for his birth city and as a true Genoese really has this embedded in his

DNA, and has often stated that he prefers projects with water and when water is not there he tries to bring it in.

30 Years after the "Porto Antico" which he designed for the universal exhibition of 1992. Renzo Piano once more gives back to the city, designing a visionary project to uplift the the soul of the the city by reconnecting it to the sea.

Drafted in keeping with Renzo Piano's vision, the **Waterfront di Levante** project developed by RPBW and OBR creates a new landmark on Genoa's seafront, with new urban and port functions, both public and private. These include a large urban park, a new dock, residences, offices, student housing, retail facilities, apart-hotels and the new sports hall.

It is an urban regeneration project that transforms what was previously the back of the port, not accessable to the public, into a new urban front on the sea, reconnecting the East and West, Corso Italia and the Old Port, filling the gap between city and sea caused by the port's development in the postwar period.



By decreasing the pre-existing volume by about two-thirds and halving the built-up area, the project seeks to enhance the quality of the intervention with great care lavished on the open spaces overlooking the sea. The view becomes a suture between city and sea. The Port Canal and the Urban Park together become a condenser of energies, welcoming multiple activities throughout the year and by day or night.

There is a Genoese saying ... “nothing is wasted, nothing is to be thrown away”

and this concept has transcended onto this project.

Genoa aims to regenerate the whole waterfront once cut off by industrial buildings and returning the sea to the city right up to its walls – Genoa is regaining part of its lost soul.

The Details

So let's look a little bit more in detail at some of the features that will be gained.

The Urban Park

The Urban Park (covering some 16,000 square meters) forms the link between city and port, between the historic city walls and the new Port Canal.

The Urban Park is designed as a linear garden along the historic walls, making these places safe, without barriers or fences but with adequate active safety systems.

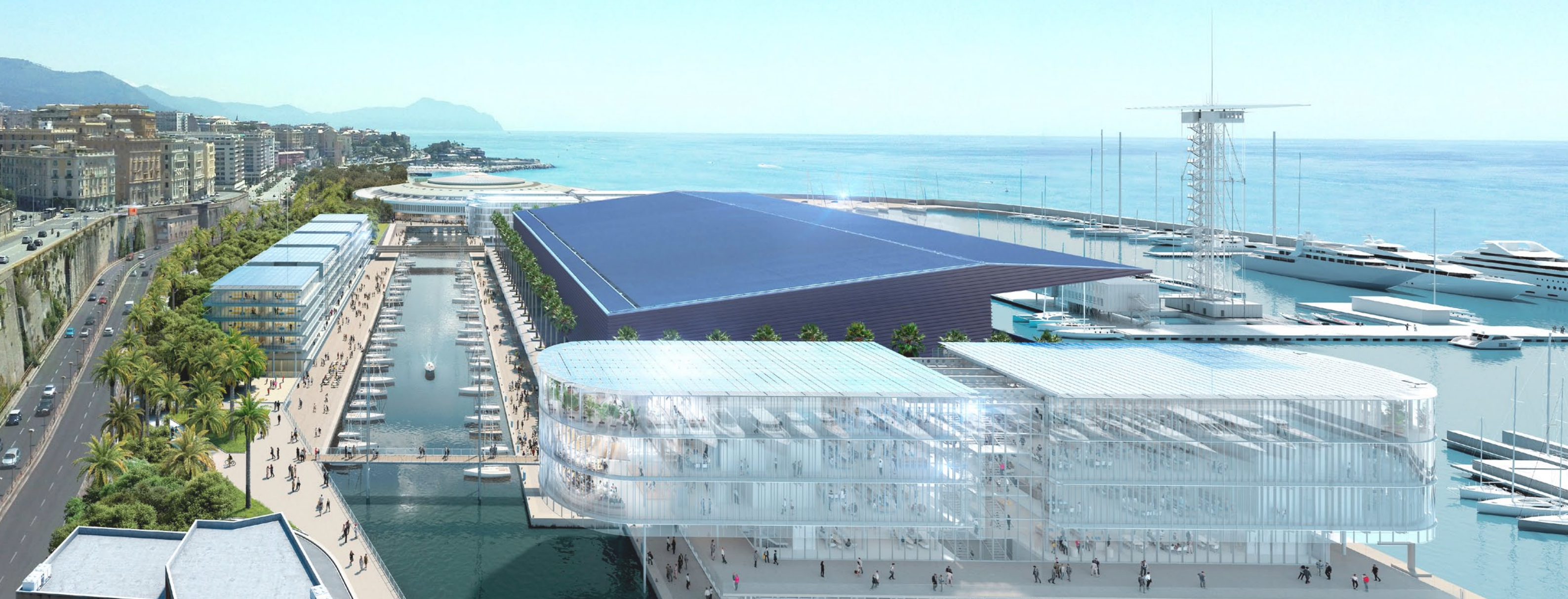
The Urban Park is built at an elevation above sea level of +5.50 m, partly on the ground and partly in a hanging garden above the underground parking garage. It is planned to plant over 100 trees, with

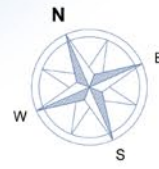
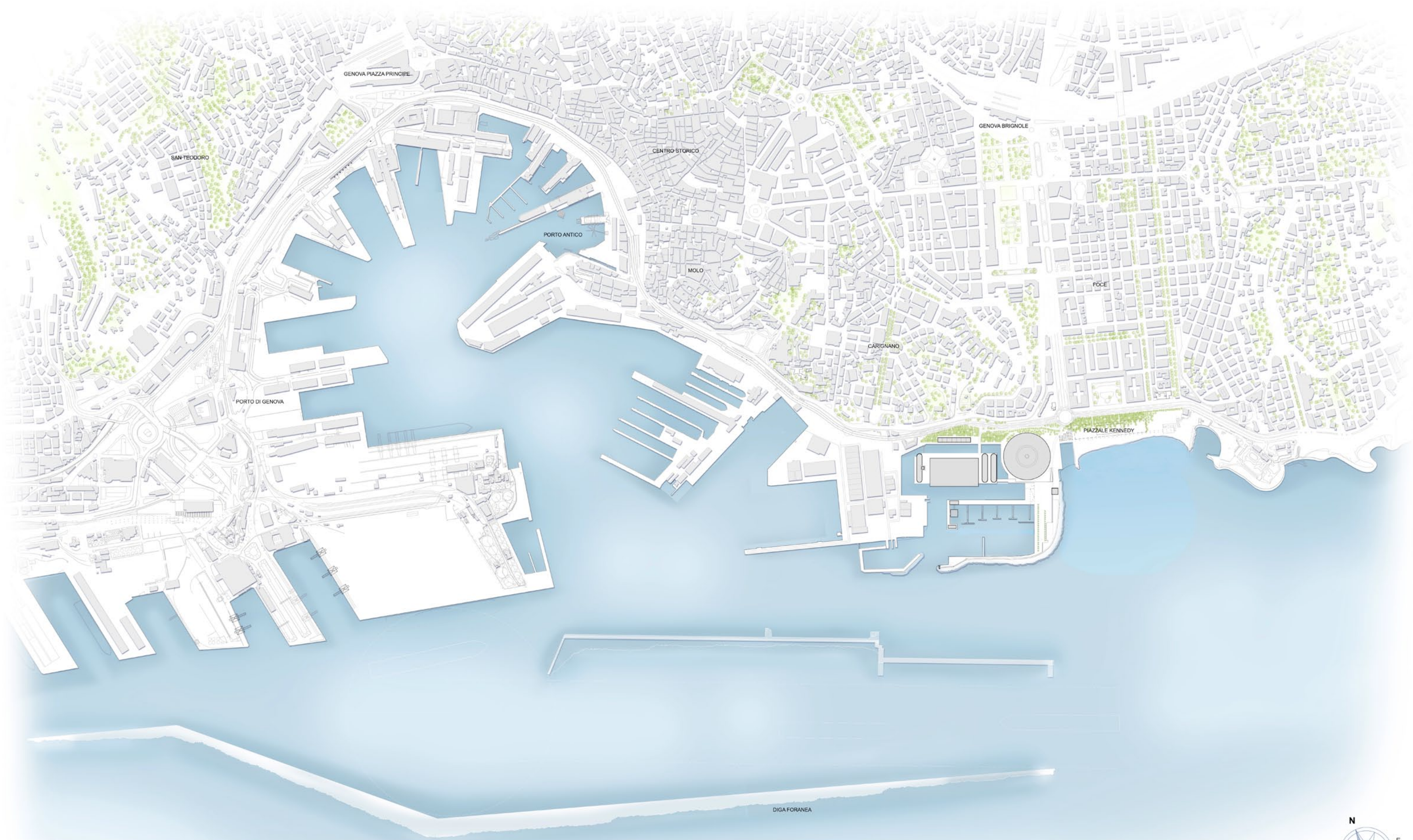
a density of at least one tree to every 60 square meters, the aim to create a feeling of an urban woodland.

It will be the second biggest park of the city

The Seafront Promenade

Along the Urban Park is the Seafront Promenade this will extend and reconnect right up to the present promenade “Corso Italia” on the left and eventually with the idea that it extends right up to the “Porto Antico” and the right, creating a continuous promenade crossing the whole city sea front.







In addition to the east-west axis from Boccadasse to the Porto Antico, the north-south axis from the train station Brignole towards the sea is enhanced by a public cycle-pedestrian path stretching from the mouth of the Bisagno river right down to the Waterfront di Levante project, and arriving at the *Casa della Vela* (1,643 sq. m UFA) which, with its belvedere, overlooks the regatta courses like a true “yachting

stadium”, enhancing the connection with the sea.

To preserve the *visual transparency* from the Urban Park towards the sea, all the buildings have transparent, see-through and open ground floors set at an altitude of +5.50 m, with the windows sufficiently set back to create a visual effect of “suspension”, emphasizing the lightness of the volumes.

Alive!

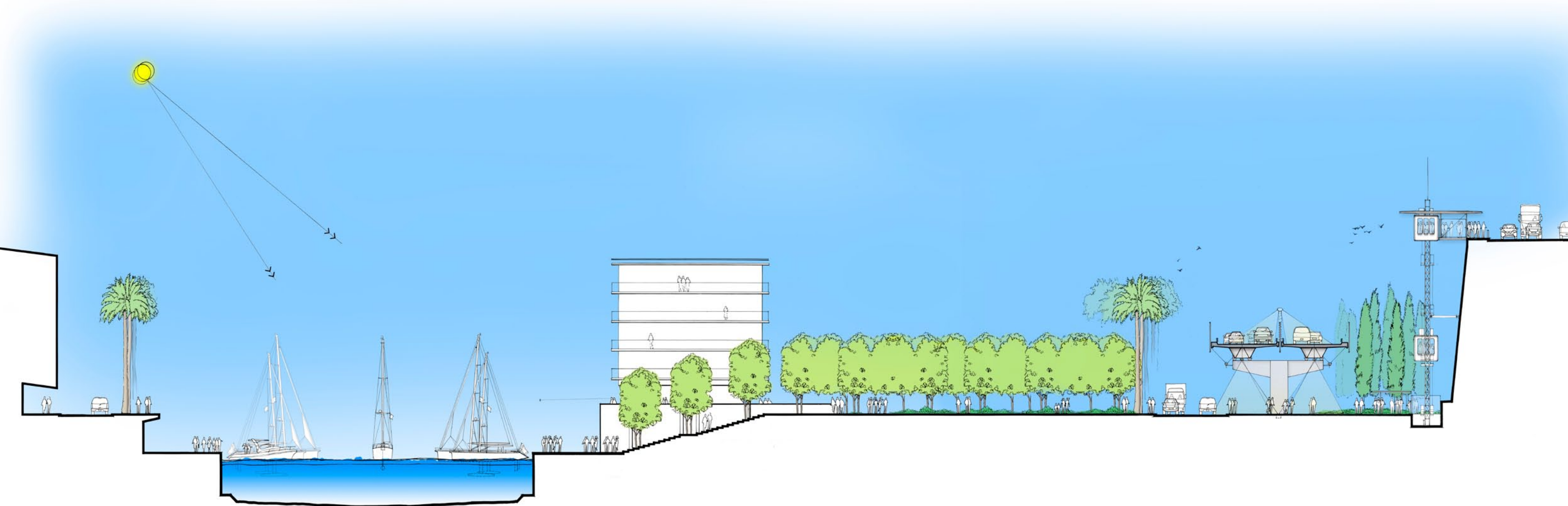
What I find interesting is that in designing these new cities, they are projected to be living entities.

According to Renzo Piano to be living, it is necessary that they include different functions, workspaces, entertainment and socializing areas but also residential. That way the spaces live 24hrs.

On the 19th of March 2023 the project opened to the city to allow citizens to see the development of a project that will transform their city. This initiative was extremely welcome and confirmed that everything will be ready according to plan by 2024.

Change is possible, Change is happening!!

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Waterfront di Levante

Municipality of Genoa
Mayor Marco Bucci
Councilor for the Budget and Public Works
Pietro Picocchi
Councilor for Urban Planning Simonetta Genci

Liguria Region
President Giovanni Toti

Port System Authority of the Western
Ligurian Sea
President Paolo Signorini

Archaeological, Fine Arts and Landscape
Superintendency of Genoa
Superintendent Emanuela Salvitti
Architectural Heritage Carla Arcolao

Investor and developer:
CDS Holding S.p.A.
CEO Enrico Biffi
Director General Massimo Moretti
through CDS Waterfront Genova S.r.l. and
Waterfront di Levante S.r.l.

Ideation:
Renzo Piano

Designers of the Waterfront di Levante:
RPBW and OBR

Designer

Sports hall: OBR and Starching

Landscape Design Consultancy:
AG&P

Project Manager and Urban Planning:
Starching

Public Works Project: Technical Area – Design
Directorate of the Municipality of Genoa



Bringing nature to the office in the City

— CASE STUDY —

“All too often, biophilic design is reduced to an afterthought in the creative process; but for the design of Dojo’s headquarters in the iconic Brunel building, the green elements were intended to be functional as well as beautiful.”

Staffan Tollgård

At the concept stage, together with architects BDG, our clients agreed that the green layer would have to be an inherent architectural feature. One of the fastest-growing fin-tech companies in the UK, the company is intent on attracting the brightest and the best minds in their industry. For them, a company consists of people working together in a room. In a great company, the people matter. And so does the room.

Further reiterating the importance of the biophilic layer, the green insertions would not only have to help the space connect to its environment but would also have to provide moments of peace for its people. Using the planting and foliage

as soft divisions between the working spaces allowed us to create moments of connection and calm across the building. Other examples of the greenery acting as softened interior architecture were the foliage covering the wall of meeting rooms, which offered our clients additional privacy as well as a verdant and inspiring display. To keep this green thread visible throughout the project, we knew it would be key for the clients and their people to see a touch of green from every vantage point in this space. We introduced fauna in every area, from the tops of staff lockers to the bottom of storage spaces. These refreshing reminders of nature encourage creativity, connection, and calm for the building’s inhabitants.







The residential, timeless, and mid-century feel of the interiors helped evoke the warmth of home for our clients but also provided the perfect foundation for the planting and foliage. We chose classic and future heirlooms, including Gerrit Rietveld's Utrecht chair for Cassina, Florence Knoll's iconic coffee table and pieces from the Canadian studio Man of Parts. We also introduced the sculptural planters of South African maker, Indigenus to create another focal point that celebrated the biophilic touches in this space. Working in harmony, the furniture and greenery help create an office space that feels both contemporary and professional but also reflects the innovative and inspiring atmosphere of the client's business.

The project was shortlisted in the Central London Regional category, for the BIID Interior Design Awards 2022. <https://biid.org.uk/design-practice-tollgard-design-group-and-bdg-architecture-design>

About Tollgard

Born out of a shared passion for design, the Design Group is run and managed by Inchbald-educated, husband-and-wife team, Staffan and Monique Tollgård. A background in feature film and documentary production characterises our

work: a commitment to the power of storytelling, to the narrative that our clients bring, to the history of the buildings in which we work and the shared stories of the design objects we curate.

Increasingly we have become interested in how to help our families live more meaningful, balanced and connected lives together. While the balance of form and function is at the head of our practice, you might say the heart of our work is about how to create spaces and opportunities for family time and personal growth. Music, reading, gardening, cooking, homework, games... these are some of the family rituals that a well-planned house can design in.

We are clear that family-centric design means spending time with your family. We have reorganised our working life so that one of us is always able to pick up and fetch the kids, working from home those days. Our clients and our kids can always expect a Tollgard. They just might now know which one if they change the date of a meeting. We feel that this experience of juggling work and home life is invaluable to our clients. We speak knowledgeably about the importance of the rituals of home life and the space and functions required because we are busy crafting them at home too.

<https://tollgard.com>





ADAPTING TO CLIMATE CHANGE WITH URBAN NATURE

Ross O'Ceallaigh

"As we find ourselves at 1.2 degrees Celsius of global average warming, and rising, the effects of climate change are becoming obvious."

Local weather is becoming more extreme and unpredictable. In 2022, heat waves and record-breaking temperatures scorched Europe while one third of Pakistan was buried under floods. Over decades, the focus of climate action has been on mitigating climate change by reducing greenhouse gas emissions. However, as greenhouse gas emissions continue to rise globally, we are now forced to adapt to a new climate reality.

Climate adaptation involves changes to behaviour or infrastructure in response to climate change. You might think of flood defences and storm shelters, but adaptation can be much more biophilic. Enhancing urban nature is a proven effective method of minimising heat waves and floods. Ecosystem-based adaptation is a way of working with nature to reduce the impact of severe weather while providing many other benefits to local people.

Cities by their design are especially vulnerable to extreme weather. Concrete, steel and glass absorb heat and release them slowly at night. In winter, this can be beneficial as it keeps temperatures at a more comfortable level and reduces heating bills (and emissions). In the summer, however, this 'urban heat island effect' can often raise temperatures in cities by 10 degrees Celsius higher than the surrounding countryside. This can turn a hot day into a dangerous situation for vulnerable people. Sadly, many elderly and sick people die during heat waves every summer, especially in cities, where escape from the heat can be almost impossible.

Cities are also particularly vulnerable to flooding. In natural areas, when rivers overflow or rainwater pours, water slowly sinks into the soil. However, cities are covered in impermeable surfaces like concrete and tarmac, which results in flooding when drainage infrastructure gets overwhelmed. This is happening more and more as climate change intensifies, with a resulting loss of life and property.

There is a clear solution to these problems: replacing urban human-made materials with soil and vegetation. Urban trees reduce temperatures by creating shade and adding moisture to the air (called evapotranspiration). A study of Baltimore City in Maryland, USA found that the city's tree cover saves the lives of over 500 people annually by reducing heat stress. Restoring nature outside of cities can also help. In Southeast Asia, restoring coastal mangrove forests has been found to protect communities from storms and coastal erosion. And just think about all the other benefits these trees bring in terms of biophilia, biodiversity, food and recreation.

A warming climate is a double-edged sword for trees (and plants in general). A study published in 2017 found that urban trees have grown 14%-25% more quickly since 1960, possibly due to an increase in temperatures and carbon dioxide in the air. This is an example of a negative feedback loop; nature's way of keeping balance. As carbon dioxide levels increase, photosynthesising plants simply absorb more and grow quicker to pull

it out of the atmosphere.

However, since we are emitting carbon dioxide at a much faster than normal rate, and deforesting the planet simultaneously, this effect won't be enough to mitigate dangerous climate change. In fact, we may be heading towards tipping points that cause mass declines in tree species as their habitable range shifts further towards the poles. If that happens, then cities could lose many shade-giving, flood-reducing trees just as we need them most. This is leading some scientists to call for the planting of tree species from warmer climates that are heat and drought-resistant; advice that flies in the face of ecologists' mantra for prioritising native species for their biodiversity benefits. It's clear there will be no easy answers as we enter a new climate era.

The geographer Mark Pelling describes three kinds of climate adaptation; resilience, transition and transformation. This framing can help us to make sense of our adaptation options.

Resilience is the first level and can be defined as bouncing back to normal after experiencing shocks and stresses. For cities, resilience is about maintaining stability through a changing climate so life can go on as normal. Investing in ecosystem-based adaptation like urban tree planting can certainly contribute to this. However, we must also ask ourselves the question: if business-as-usual got us into this mess, why do we want to keep going as normal?

Image: Ross O'Ceallaigh
Pocket Park Kings Cross



This is where level 2 of adaptation comes in: transition. Transition is about incremental change that guides us from our current state to something better. For urban nature that might mean an increase in urban agriculture and allotments or local residents taking the initiative to green their neighbourhoods. An example of this is the 'greening permit' in Paris. To deliver on their ambitious urban greening targets, the city of Paris offers a special permit to residents that gives them permission to take stewardship of a local green space to grow food, plant trees or otherwise improve its ecological richness. This successful idea could be easily replicated by cities worldwide to transition towards a greener city while offering urbanites some much needed nature connection.

As the climate crisis intensifies, there are now growing calls for society to skip to the third level of adaptation: transformation. Transformation involves radical changes to our lifestyles, systems, and values to create a truly sustainable way of life. Proponents of transformation argue that resilience will

only lock us into the unsustainable status quo and transition is too slow to avert the worst of climate change.

Once we start thinking transformatively, we realise there are many more options open to us than we usually think. Transformation invites us to ask fundamental questions like: why do we need lawns? Couldn't we turn our parks into biodiverse forests? What if we banned cars and rewilded streets? What if every neighbourhood had a local food growing cooperative that everyone contributed to and benefited from? What would happen if we designated our city as a national park? Could we capture rainwater locally and use it during periods of drought?

These 'what if' questions may sound fantastical. But real examples exist for all of them, which means they are possible. It's just a matter of opening our minds, thinking bigger, and embracing the transformations that we know are necessary.

<https://greenurbanistpod.com/>

Image: Ross O'Ceallaigh
Sustainable drainage London

A Study of Urban Walking Trail Use in the Cradle of the US Industrial Revolution

“The city of Lowell, Massachusetts established itself in the 1820s as the first large-scale factory town in the United States. Today it is known as the Cradle of the American Industrial Revolution and for its proximity to the prized city of Boston. Lowell’s ongoing rebirth as a post-industrial city includes redevelopment along canals that once powered its industrial mills. This article focuses on a revitalized section known as the Hamilton Canal District and, in particular, use of a central walking trail that follows this winding canal.”

Kimberly K. Merriman, PhD and Thuy Nguyen
University of Massachusetts Lowell

At first glance, Lowell, Massachusetts looks like many other former industrial cities in the United States. Its downtown is full of older buildings and little obvious green space. You have to walk to experience the city’s biophilic linchpin – the canalways that once powered its textile mills.¹

As the designated cradle of the American industrial revolution, Lowell’s legacy canal system is preserved as a historic park that anchors trails and greenways. Along the winding paths, one is privy to water views, green space, naturalized vegetation, animals, birds, historic buildings, monuments and sculptures.

Urban trails like Lowell’s infuse city life with nature. In turn, data shows a range of beneficial effects when people are exposed to urban green space, including healthier heart rates, reduced crime, and improved attention, mood and physical activity.² Urban walkability also plays a significant role in people’s feelings of belongingness towards their city.³

However, urban trails fail to reach this potential if underused. A successful city trail is one that engages people. The following is an instructive case drawn from Lowell. It identifies how cities might leverage their own urban landscape to cultivate trail use.



Research Process

Throughout fall 2022, my research assistant and I systematically recorded trail use along the Hamilton Canal segment of the Lowell trails. This is part of a one-mile loop connecting downtown areas. Our observation point sat across from the new Lowell Justice Center, a LEED Platinum courthouse with biophilic elements that include views of the trail’s natural features.

Observations took place over a ten-week span of attractive foliage and moderate temperatures. We collected data on number of trail users, their activities, demographics, and attire as a proxy to distinguish local workers. Observations totaled 83.6 hours over 36 periods. We sampled the weekday windows of 12:00-2:00 PM, 8:00-11:00 AM and 3:00-6:00 PM, and Sundays between 9:00-12:00 or 1:00-4:00. Counts were converted to hourly increments for analysis.

Key



POINTS OF INTEREST



CONCORD RIVER GREENWAY



FUTURE PATHS



WATER FLOW



Riverwalk Ramble
1.6 Miles



Waterpower Walk
1.2 Miles



Heritage Hike
1 Mile



Redevelopment Rove
1 Mile

North



0 0.1 Kilometer 0.2 0.3
0 0.1 Mile 0.2 0.3

For detailed descriptions
of these routes and
points of interest, visit
<http://go.usa.gov/YDc9>





Key Findings and Recommendations

Functional versus Recreational Emphasis

Synergy of surrounding uses matter more than we imagined. Based on our findings, activity relied heavily on the trail's utility as an accessway. Use was significantly higher during the week versus weekend, and highest overall during the weekday lunch timeframe.

Throughout weekdays, people accessed services such as the health clinic and primary school from areas connected by the trail. Strollers and shopping carts passed through. High school students emerged in the afternoon, ostensibly heading home. Nearby workers traversed the trail en route to lunch options in both directions. Leisure-attired users also frequented at lunchtime, a likely indicator of work-from-home locals.

This functional emphasis differs from the recreational focus of non-central trails. It aligns though with a study of trails within three other US cities, which found that the more successful urban trails in terms of usage are positioned as corridors between significant destinations.⁴

Going to the Dogs

We also found that dogs matter a lot. Dog walking was significantly more prevalent than other activities such as biking. Dog ownership ballooned during the pandemic and urban dwellers in particular look to their neighborhood for dog friendly green space.

We observed more dog walking during weekdays than weekend and particularly during lunchtime. This bolsters the notion of work-from-home trail users. Indeed, a newer 125-unit apartment building along

the trail has common areas ripe for remote work and welcomes dogs. Proximal housing is clearly part of the symbiotic recipe for effective urban trails.

Nature-Safety Tradeoff

Counterintuitively, nature is positive only to a point. It adds to the aesthetic quality of space, but also diminishes perceived safety.⁵ The study segment earns high marks on balancing nature and visibility with the exception of a curved inner section that is shielded by dense vegetation.

No coincidence that this shielded section is also, anecdotally, a spot for dubious activity. In keeping with the keen observations of urbanist Jane Jacobs, a city public area shielded from view does not thrive. The evident best practice for urban trails is to intersperse nature strategically with urban views to maintain open sightlines.

Engaging Users via Micro Parks

Qualities that make a trail desirable for functional use do not necessarily offer recreational appeal, and vice versa. This was evident in the study trail's significantly lower weekend use. Lowell's trails host intermittent weekend tours and events, but urban trails require consistent activity to provide the predictable safety and vitality sought by would-be users.

The study trail's primary recreational amenity is an interactive sculpture housed on underused green space. It is a micro park in need of more attractions. Compatible ideas from other cities include installations geared to selfies, a dog watering station, a bird watching micro-habitat, a fitness station, or fixed tables for dominoes, chess and checkers.

Micro parks by design layer onto underused spaces to enhance rather than replace the existing purpose. Their small scale lends itself to trial testing and reinvention. Essentially any urban corridor can host a micro park.



Final Thought

Thoughtfully designed biophilic trails provide cities with ecological, social and economic benefits. Cities are full of public corridors with unfulfilled potential, just waiting for a strategic reimagining. Contact me at kkm@kkmerriman.com to learn more about this research and how to apply it in your own community.

1 Photos courtesy of UMass Lowell. Map by US National Park Service.

2 Kondo, M. C., Fluehr, J. M., McKeon, T., & Branas, C. C. (2018). Urban green space and its impact on human health. *International Journal of Environmental Research and Public Health*, 15(3), 445.

3 Oishi, S., Koo, M., & Buttrick, N. R. (2019). The socioecological psychology of upward social mobility. *American Psychologist*, 74(7), 751.

4 Reynolds, K. D., Wolch, J., Byrne, J., Chou, C. P., Feng, G., Weaver, S., & Jerrett, M. (2007). Trail characteristics as correlates of urban trail use. *American Journal of Health Promotion*, 21(4_suppl), 335-345.

5 Ibid.

DESIGNING ATTRACTIVE CITIES

“What are the criteria you would use when designing cities?”

Dr Nigel Oseland

Part of my day-job is speaking at conferences, so I get to visit a lot of wonderful cities around the world. The people and culture are fundamental prerequisites of a good city, but design and planning also play an important role in creating an attractive city. Back in 2018, I wrote a blog listing the dozen design features that I found are indicators of the cities that I most prefer – they also form my view of place-making criteria. This approach is quite unusual for me, as I usually develop my views (particularly in published papers) using research and evidence, but the criteria below are based on introspective personal views only.

1. Water – easy access to either a river, the sea or a canal system (with obligatory boat tour).
2. Landmark historic features – an old town, a castle or a cathedral etc.
3. Public squares and piazzas – with outdoor eating and drinking (and the occasional statue or fountain) or at minimum streets with wide pavements facilitating al fresco dining (also a sign of good weather).
4. Well-connected tram system or alternatively a funicular or cable car.
5. Pedestrianised areas – not just for shopping but for exploring, preferably with narrow streets, cobbles, alley ways, winding steps, nooks and crannies.
6. The right size – small enough to walk (or cycle) around in one day but large enough to have plenty of places of interest.
7. Green spaces – a park or ample green refuges for chilling and contemplation, and preferably tree-lined avenues.
8. Nearby hill or mountain – for exercise, exploration, fresh air and views out.
9. Markets – for food or bric-à-brac, with independent stalls and shops.
10. Culture – including interesting museums on local history along with free art galleries.
11. Cuisine – tasty local cuisine, speciality national dishes and heart-warming comfort food preferably served outdoors or in historic buildings.
12. Beer – preferably craft beer and dedicated craft beer bars, or regional speciality beers – I appreciate this is quite a personal view, but it is important to me.

City:	Water	Landmarks	Piazas	Trams	Pedestrianisation	Size	Green spaces	Hills	Markets	Culture	Cuisine	Beer	Score %	Rank
Barcelona	5	5	4	4	5	4	3	4	4	5	4	5	87	1
Amsterdam	4	2	4	5	5	5	4	1	3	5	2	5	75	2
Ljubljana	3	3	4	2	5	5	3	4	5	3	3	4	73	3
Prague	3	4	4	4	4	4	3	3	4	4	3	3	72	4
San Francisco	4	3	3	4	3	3	3	3	3	3	3	4	65	5
Copenhagen	3	3	4	1	3	4	4	1	3	5	3	5	65	5
Istanbul	4	5	4	2	4	3	3	1	5	4	3	1	65	5
Budapest	4	3	4	4	3	3	3	3	3	3	3	2	63	8
Edinburgh	3	4	2	2	4	4	3	4	2	3	2	4	62	9
Brighton	5	3	2	1	2	5	3	2	5	3	3	3	62	9
Stockholm	5	4	2	3	3	5	3	2	2	3	3	2	62	9
Bangkok	3	5	3	1	3	2	3	1	4	4	5	3	62	9
Seattle	3	4	2	2	3	4	3	3	2	2	3	5	60	13
Venice	4	3	5	2	4	4	2	1	2	4	4	1	60	13
London	3	5	2	2	3	1	5	1	2	4	3	5	60	13
Helsinki	4	2	2	3	2	4	2	2	2	3	4	4	57	16
Bergen	4	2	1	3	2	5	3	5	2	3	2	2	57	16
Lisbon	5	3	3	4	3	4	2	2	2	2	3	1	57	16
Kyoto	1	5	1	3	3	2	4	2	2	5	5	1	57	16
Paris	3	5	3	2	2	1	2	1	3	5	4	1	53	20
Milan	1	3	2	3	3	1	2	1	3	5	5	2	52	21
Singapore	4	1	2	1	3	4	2	1	4	2	4	1	48	22
Hong Kong	3	2	3	2	3	3	2	1	2	2	4	1	47	23
Delhi	1	4	2	1	1	1	3	1	3	5	5	1	47	23
New York	3	4	2	2	3	2	2	1	2	1	2	4	47	23
Lagos	5	2	1	1	1	2	1	1	1	2	2	1	33	26

You may notice (and I was surprised too) that architecture isn't on my list. I am not quite sure why I did not highlight it, especially as it's the dominant field that I work in, and as I do believe good architecture affects the attractiveness of a city. Whilst architecture didn't specifically appear to be one of my main dozen criteria for selecting a city to visit it is part of the historic features and landmarks, but maybe I am more focussed here on

how architecture contributes to the urban landscape and place more than individual buildings per se.

Having revisited the post, I can see with hindsight that most of my design features actually relate to biophilic principles, especially 1, 3, 5, 6, 7, 8 and possibly 11 and 12. We have a natural affinity to nature and that includes water. Waterways break up the urban environment, provide space

for nature, offer pleasant soundscapes (lapping waves) and facilitate leisure activities and the calmer ones offer tranquillity. Parks and green spaces also break up the city and reduce its density, whilst providing more space for nature, and they offer the opportunity to pause, contemplate and rest, and research (such as that on shinrin-yoku) shows they can reenergise, restore us and improve our health. However, green spaces and historical monuments also allow us to explore and satisfy our innate inquisitive urges. Furthermore, green spaces along

with piazzas support al fresco eating. Socialising, sharing drink and food is also an innate preference harping back to the days when we gathered and shared knowledge through stories, and also shared food as a sign of caring for our friends and family.

So, based on my above criteria, my memory and the limited cities that I have actually visited, my top cities are shown in the table. I have visited many more cities, but I have only included the ones most memorable for different reasons.



Barcelona (please don't call it "Barca") hits all the buttons for me. It has fantastic landmarks like the Sagrada Familia (and plenty of other Gaudí architectural masterpieces), access to the beach, several great art galleries (with some of my favourite artists), Las Ramblas with street stalls and plenty of parks, and tree-lined avenues, plus piazzas for further exploration with outdoor dining and tapas. The craft breweries and bars have also taken off in Barcelona, particularly around the university. There is not only a good tram system (and cable car) but you can easily get around by "donkey bike".

London is placed mid-table but, whilst that is correct according to my criteria, I would not place it there. Whilst my criteria are mostly based on physical features, the perception of a place is based on much more than the physical

elements. I have already mentioned the people and culture, but here I am referring to the basic environmental psychology (Lewinian) principle that our perception is determined by our expectations and experience as well as the physical elements. I visit London regularly to work, rather than just visit there on holiday or in good weather, and of course familiarity breeds contempt. Regarding the UK, I am more a fan of, and visitor to, the countryside and smaller towns than cities but would opt for Brighton, Edinburgh, Bath, Chester or Llangollen over London.

Try the criteria out against the cities you have visited. Have I missed any key criteria, and have I missed any attractive cities I need to visit?

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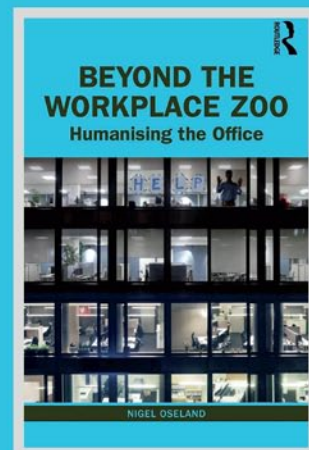
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Dr Nigel Oseland



ARCHITECTURE AND THE DREAM OF THE WESTERN WORLD

"I'm more and more convinced that our only hope of saving our planet is if we begin to have different feelings about it: perhaps if we became re-encharmed by the amazing improbability of life; perhaps if we suffered regret and even shame at what we've already lost; perhaps if we felt exhilarated by the challenges we face and what might yet become possible. Briefly, we need to fall in love again, but this time with Nature, with Civilisation and with our hopes for the future."

Brian Eno, July 2022

Robert Bedner

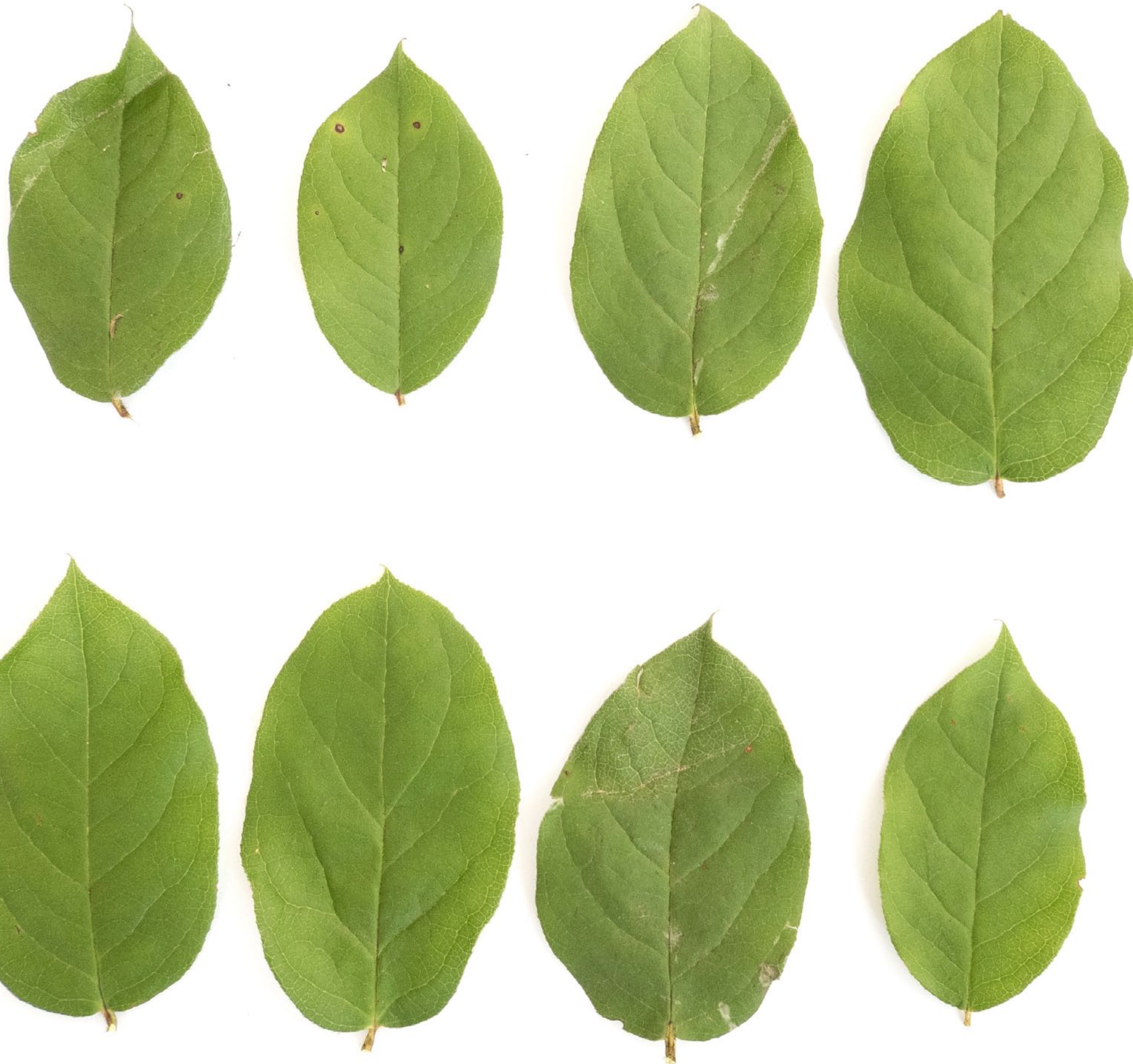
As I drive down a local road I can't help but notice all the builders and construction related vehicles and be struck by just how many of us are actively involved in building or construction of the built environment in some way. So many of us are actively engaged either changing or leaving an imprint (either positively or negatively) on the planet in either small or big ways.

Thinking about this together with the quote above and it reminds me of the idea that architecture begins with a belief in ourselves and in our culture and in our future. In the form of an equation simply put:

nature + civilization + love and hope
= **architecture**



CITIES



CITIES

As the architect Stefano Boeri writes “*Cities are the first cause of climate change. Cities are the first victims of climate change and cities are the first resource for climate change*”.

Following this reasoning, the future of architecture in cities is a biophilic one as it embraces and protects and enhances nature and biodiversity both for nature's sake and for our own present and future well-being.

Returning to Brian Eno's quote – we need to fall in love again but this time with nature and with civilization and with hope for the future:

I would say perhaps, one way to do this – would be for all of those builders' vans I'm driving by, all of those surveyors, all of those architects and architectural technologists, all of those landscape architects, all of those ecological consultants, all of those structural engineers, all of those drainage engineers and mechanical engineers, all those lighting consultants, all those window and boiler and wood burner suppliers, all of those politicians, all of those bankers, all of those developers, all of those city planners, all of those designers and writers and photographers, all of those architectural digital image makers, and last but not least all of those clients – to try and get them somehow – to begin to wonder – what if I could build, just a little bit different – something that doesn't hurt all the trees and the wildlife – something that shows “that I care” or that “I believe” or even in some cases something that shows that “I love” this glory that is nature that surrounds me morning noon and night – what was that thing I heard about – biophilic design?

www.curadesign.com



CREATING SENSORY RESPIRE IN A CITY

Claire Francis

“Cities, by their very nature, can feel overwhelming and overstimulating. Bodies, vehicles and buildings jostle for space placing our senses on high alert. Any space that must cater to a large density of people and activity involuntarily brings increased levels of noise, light and smell.”

We are sensory beings; our senses, therefore, are constantly working away in the background, receiving raw information from the experiences we have and interpreting the world around us.

Smell is arguably the strongest human sense. It has the power to dredge up long-forgotten memories when we least expect it. From a teenage first date to a neighbourhood bakery from our childhood, smell memories can be powerful and vivid. Many cities can be characterised by their smells, both good and bad, in fact, smell mapping of cities has been practised for many centuries. Jean Noël Hallé can be seen as the godfather of smell mapping as he set about to map the unpleasant and noxious smells of Paris in 1790, all in the name of hygiene and disease. Thankfully, times have moved on and our cities' smells (mostly) present less danger and more emotion and nostalgia.

When Jason Logan walked the length of New York city mapping smells in his Scents and the City project he reported that some were 'singular and sublime' whilst others were 'revoltingly unique'. Nearly all the smells, however, produced powerful emotions, some dredged up old memories and some laid down new ones. But what about the other 18 or so senses that are subconsciously constantly whirring away in our brains?

Thermoception or the sense of warmth is instantly activated in the city. Buildings are closer together, pavements absorb and retain heat and air conditioning units or extraction fans blow out onto pavements creating a sense of stuffy oppressive heat.

Consider the sense of proprioception, your body's ability to sense movement, action, and location. Being able to walk without looking at your feet, dodging pedestrians or traffic and generally being able to right yourself if you become off balance can certainly be more challenging for many when navigating a city.

With all this sensory input it can be hard for many people to find respite. Enter urban greenspace. From large, majestic parks to pocket gardens and canal towpaths, nature provides an important space for calming the senses and reconnecting with nature. A strong focus at the Sensory Trust is educating and guiding city planners and urban designers in the value of applying an inclusive, sensory-rich design approach to greenspaces. A sensory-rich approach can be about creating a particular sense

of place from a quiet sheltered spot under trees to evoke a sense of calm to a more open, energetic space with a spirit of sensory discovery.

Even small-scale interventions can have a big impact. For example, our braille plant markers invite blind and partially sighted people to touch and smell plants. Interventions such as these acknowledge that we are all different and use our senses to interact with greenspaces in different ways.



Urban parks and greenspaces are great, you won't hear us saying anything different but, why should they bear all the load that sensory unfriendly cities burden us with? With their concentration of investment, diversity of users and density of people, cities present opportunities for innovation in design. Millions of people every day are disabled by urban design. From stairs and kerbs to cluttered visuals and congested spaces our cities must try harder to be more inclusive. This doesn't just mean more ramps and accessible entrances; good design should consider all of the senses including a sense of safety and familiarity with space.

When a city responds to the diversity of people living in it, we find places become more appealing to everyone. A good example of this is the Paralympic village in Barcelona. Designed to be inviting and accessible for disabled athletes the village was well thought out and intuitive. Consequently, when the games finished and the village was placed on the open market there was a high demand to live there. When people were asked why they responded to say that as human beings in that space, they can relate to it. It made sense.

Cities and nature need not be mutually exclusive. By weaving nature and green-space into urban spaces we can create more sensory appealing and calmer spaces. At a recent lecture given by Helle Søholt, for Cornwall Architectural Trust, Helle talked of soft cities and how greenspace needs to act as the 'connective tissue' amongst the hard and often restrictive city landscape. This Soft City principle was distilled down into three main points:

1. Allowing for partial or open socialisation, giving people the choice of how public or private they wish to be, e.g. creating common outdoor space in the middle of a housing block.
2. Making walking a priority! Streets must be a safer and a more accessible experience for all.
3. Blur the line between indoor and outdoor – flexible building 'edges' with adaptable windows and doors, to help invite indoor activities out and outdoor activities in.

Soholt, H 2020. Gehl Architecture (Cornwall Architectural Trust Autumn Lecture)

Cities present a concentration of money, a diversity of people and a wealth of innovation and creativity. It's time for cities to be more playful with sensory planning and design so that everyone can feel at home.

Sensory Trust is a national charity and leading authority on inclusive and sensory design. We offer a range of consultancy services around urban greenspaces, including advice on sensory-rich design, sensory planting schemes and inclusive design.

sensorytrust.org.uk

Reaching Tree Equity: how can trees help 'level up' our cities?

"We often talk about "levelling up" as an issue of north vs. south. Wealth and jobs are heavily concentrated in the southeast of England, and the health and educational outcomes correspond accordingly. We might focus on the different opportunities available in Oxford and Glasgow, for example, but it's also true that there are vast differences within these regions, and even within a single city."

Vicki Brown, Centre for Sustainable Healthcare

As the UK Government's **Levelling Up policy paper**ⁱ states, "These disparities are often larger within towns, counties or regions than between them. They are hyper-local and pockets of affluence and deprivation may exist in the same district. Indeed, many of the worst areas of deprivation are found in the UK's most successful cities."

This imbalance is visible to anyone wandering around a British city centre, where crumbling council estates back onto affluent avenues, and high rises loom over sprawling, gated mansions. Data maps reveal other divisions, too – as health outcomes, air quality and income

levels within these areas correlate closely with the provision of publicly accessible green space.

This is, perhaps, no surprise; mature trees and public parks are all too often viewed as luxuries, in much the same way as we view private gardens. These are features associated with wealthy neighbourhoods, not poor ones: they are something to aspire to. The problem with this mindset is that trees and nature are not just "nice to have" – they are key to breaking down health inequalities. A 2008 study revealed that where people have greater access to green space, **income-related health inequalities are narrower**.ⁱⁱ

The message is clear: we need to start thinking about trees as critical infrastructure, not just street decoration.

Calculating tree equity

Until now, there have been no publicly available tools to help us understand the relationship between tree canopy cover and deprivation in the UK. But a new partnership between the [Centre for Sustainable Healthcare](#), the [Woodland Trust](#) and [American Forests](#) is set to change that.

American Forests, a US non-profit organisation, has been analysing the relationship between tree canopy cover and the factors contributing to inequality in major American cities to calculate the level of tree equity in each neighbourhood. This evaluates metrics such as existing tree canopy, income, population density, surface temperature and race, to create a **Tree Equity Score**ⁱⁱⁱ of between 0 and 100. This score uses a scientific approach to determine the tree canopy cover needed for everyone to experience the health, economic and

climate benefits that trees can provide.

The organisation is now bringing this tool, and the associated datasets, to the UK, enabling trees to be planted in a highly strategic way.

Given the existing imbalances, it is evident that not all trees are equal. Those planted in a street with no trees, with high levels of air pollution, increased surface temperatures, and where few residents have private gardens, can have a much greater impact on public health than trees planted in an already leafy suburb. Trees can create better places for people to live and work, and the greatest benefits are to be found in the greyest areas.

The potential of the NHS estate

It can be complicated to secure land where trees can be planted in highly built-up areas. The land needs to be available now – and safe from development well into the future. It needs to be managed; young trees need frequent watering and mulching, and more established trees need pruning and checking for disease and damage.









This is where the Centre for Sustainable Healthcare (CSH) comes in. Through its [NHS Forest](#) initiative, CSH supports healthcare sites to expand and enhance their green estate – particularly through planting trees. Hospitals and GP surgeries are often located in or near to densely populated areas, and they are open to all, regardless of age, income, employment status and race. They are, of course, frequently visited by those with chronic health conditions, whether mental or physical. There is a great potential to combat existing inequalities through planting trees on the NHS estate, through lower temperatures, cleaner air, and access to resilient green space.

Trees for climate justice

During the heatwave-ravaged summer of 2022, the UK saw a high number of excess deaths, with mortality peaking when the temperatures did. Across Europe, the WHO estimates that there were [at least 15,000 deaths](#)^{iv} specifically due to heat, with more than 3,200 in the UK alone. By 2050, it is anticipated that this number could [more than double to 7,000](#)^v if action is not taken. Trees play a crucial role in lowering surface temperatures, and they are more prevalent in wealthier, whiter neighbourhoods. In addition, air pollution is responsible for [an](#)

[estimated 28,000-36,000 deaths](#)^{vi} every year in the UK, with more deprived communities and ethnic minorities more likely to live in highly polluted areas.

These communities will therefore be disproportionately affected by rising temperatures, and tree planting is urgently needed in the spaces where they live.

The government's Levelling Up agenda pledges to protect health and wellbeing, to reduce the gap in healthy life expectancy, and to improve wellbeing. As noted in its [Levelling Up paper](#),^{vii} "One of the gravest inequalities faced by our most disadvantaged communities is poor health."

Planting urban trees seems like an easy win in terms of tackling these health inequalities – especially with the data to ensure those trees are situated where they will bring the greatest benefits. Joining the dots between these socioeconomic, health and environmental datasets will enable us to do just that: striving for Tree Equity across our diverse cities.

Find out more about the NHS Forest and the wider benefits of tree planting on healthcare sites at www.nhsforest.org

i <https://www.gov.uk/government/publications/levelling-up-the-united-kingdom/levelling-up-the-united-kingdom-executive-summary>

ii Effect of exposure to natural environment on health inequalities: an observational population study, Dr Richard Mitchell, PhD and Frank Popham, PhD

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iii <https://www.americanforests.org/our-programs/tree-equity/>

iv <https://www.who.int/europe/news/item/07-11-2022-statement---climate-change-is-already-killing-us--but-strong-action-now-can-prevent-more-deaths>

v <https://committees.parliament.uk/committee/62/environmental-audit-committee/news/100427/heatrelated-deaths-set-to-treble-by-2050-unless-govt-acts/#:~:text=Prediction%20that%20higher%20temperatures%20which,matter%20of%20life%20and%20death.&text=The%20Environmental%20Audit%20Committee%20publishes,%3A%20adapting%20to%20climate%20change>

vi <https://www.gov.uk/government/publications/air-pollution-applying-all-our-health/air-pollution-applying-all-our-health>

vii <https://www.gov.uk/government/publications/levelling-up-the-united-kingdom/levelling-up-the-united-kingdom-executive-summary>



Thinking of Cities as Organisms, Not Machines

Professor Michael Batty

100 years ago, Le Corbusier (1923), one of the founding fathers of modern architecture, argued that a key principle in good design was that a house should be 'a machine for living'. The idea that good architecture should be produced in the same manner that much of industrial society had come to be organised around the factory during the 19th century seemed to echo the spirit of those times, and the idea that cities should be built in simple, clean, and clinical lines, bereft of any superficial ornamentation, became the hall mark of the modern movement in architecture. The messy fabric of our cities which was largely produced by a rapidly industrializing society led to a reaction against the vernacular and a plea for organizing our cities in much more disciplined ways, more like the machine technologies that had emerged during the first and second industrial revolutions.

The idea that we could think of cities as being like machines, rapidly took hold during the first half of the last century. At one level, cities looked ordered. Spatially most cities had well defined central business districts as they were called in the US, they seemed to decompose themselves into a hierarchy of retail centres and neighbourhoods, and they were held together by networks of communications systems of various kinds from road to rail. Most cities appeared to be in equilibrium in that as they grew, their structure remained intact, and it was assumed that any massive disruptions to their fabric would be quickly absorbed into their form through various kinds of negative feedback. This model of the city was embraced by what came to be called 'the systems approach', which argued that for planning to achieve better cities, it should operate from the top down, acting in the same way a controller might be used to direct a machine. The urban planning system that evolved during the first half of the 20th century embodied these ideas and by the mid-century, the great experiment to recast our cities in ordered ways was underway.

Although the quest to produce better housing and better transport systems was motivated by a concern for producing a better quality of life for all our citizens, the experiment was largely a disaster. A managerial state which implemented urban change in the name of better planning could not embrace the sensitivity needed to produce livable environments and the public housing program that was implemented top down could not be maintained. In fact by the 1960s, the idea that cities were machines came to be questioned with one of the most vocal critics Jane Jacobs (1961) railing against modern planning (and architecture) in her book *The Death and Life of Great American Cities*. The idea that a good analogy for cities was no longer the machine gradually gained ground and the systems approach fell into disrepute. By the late 1970s, the great experiment in public planning, at least in Britain, appeared to be over and a new paradigm for thinking about cities slowly emerged.

This was the idea that cities were more like organisms than they were like machines. When you look at cities, they appear more like biological systems with their plan forms dominated by transport routes of many kinds often appearing tree-like with these routes providing the means by which energy and transport are distributed within the city. Their centres look more like the beating hearts in the same manner they appear in a variety of natural organisms. From a more abstract viewpoint, they appear to grow and evolve more like animals and plants, indeed like ourselves, than like the way we construct machines. What happened in the last quarter of the 20th century was the development of a new theory in science – complexity theory – which treated

systems like cities as complex systems which evolved from the bottom up rather than being planned from the top down. In fact rather than mechanics as constituting the way we might organize the function of cities, processes such as allometry that pertain to how cities change in shape as they grow became the watch word of a new urban science that is still being rapidly developed at the present time (Batty, 2013, 2018).

When you look at cities at least from the air – from the top down – it is hard to see them as planned artifacts – they look more like spreading organisms, usually benign but sometimes rather aggressive, like cancers, or slime molds. Where you do see evidence of planning which is usually in terms of clean lines and Euclidean geometry, it clearly stands out and is usually a very small proportion of the whole. In this sense, the city is more than the sum of its parts, patterns emerge at different levels which are clearly generated from the bottom up. If you dissect the growth of a city, you can only see it as a massive constellation of local decisions occasionally peppered with large scale but still small, planned developments. To show this contrast, let us look at the machine city as envisioned by Le Corbusier in his plan for Paris in the early 1920s compared with the actual development of Paris north of the Seine. There is no way the construction on the left of Figure 1 could be generated from the bottom up like the plan on the right side of the Figure. Paris is much more diverse in its form than Le Corbusier's vision. In fact there is no way Le Corbusier's plan for Paris could be implemented anyway using top down dictates. The only way to produce it is to grow the city organically and it has taken many centuries for us to come to this conclusion.



The idea that we should appeal to the natural rather than the physical sciences to think about how cities grow and evolve is certainly a step forward but as with all our theories about complex systems, it is only half the picture. Much of what we like to observe in cities is hidden from us and we are unlikely ever to be able to fully peel back the curtain to reveal their inner workings. This is as much because it is our own behaviours that we ourselves find hard to explain that define the way cities grow and evolve from the bottom up. And although the biophilic approach focusses on immensely important issues pertaining to how we might build better cities, we need a variety of different perspectives to make progress. Indeed past perspectives such as the systems approach, ideas about the economy of cities, and questions of how our aesthetics and intuitions determine good design, will continue to enrich our understanding in terms of the ideas put forward here and in related commentaries in this journal.

Professor Michael Batty CBE FRS FBA,
Chairman, Centre for Advanced Spatial
Analysis (CASA)

<http://www.complexcity.info/>
t@j michaelbatty

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Pictures:

Top left: Le Corbusier and his Plan for Paris (1924)

Below left: the Location of the Plan on the Actual Form of Inner Paris

(source: https://commons.wikimedia.org/wiki/Category:Plan_Voisin#/)

PNAT and the Prato Urban Jungle

“Climate change is bringing more frequent and extreme weather events such as summer storms, flash floods and heat waves ... The sustainability and resilience of urban areas to climate change can be greatly enhanced by restoring natural systems and integrating nature-based approaches with conventional infrastructure.”

PNAT

Ilaria Comini

Garden and green spaces benefit human health and Biodiversity and it is well known that a tree not only provides shade from the sun on warm days but is also essential for many different ecosystem services and life on earth. Green implementation provides urban climate with air filtration, regulates the water balance and decrease noise pollution. Plants are simply the most efficient and effective means we have to decrease carbon dioxide in the Atmosphere.

So why are our cities still covered up with concrete walls, roofs and asphalts? Why didn't we succeed with a massive integration program of vegetation within

urban contexts? While modern cities have not generally been designed to put the greening process first and foremost, the scientific evidence regarding their benefits has yet to be translated into an architectural language.

Founded as a spin-off of the University of Florence by Prof. Stefano Mancuso together with agronomists and botanists Elisa Azzarello and Camilla Pandolfi and architects Antonio Girardi and Cristiana Favretto, PNAT is a multidisciplinary company composed of botanists, architects, agronomists and engineers who designs solutions to integrate plants into the city and buildings.

Nature Based Solutions

PNAT's goal is to shape future cities based on the NBS (Nature Based Solutions, a term often used in the scientific literature). Their first step in achieving this goal started in 2018 by drawing up guidelines for a plant-based design of Prato, an historic Italian city situated in north-eastern Tuscany.

The Prato Urban Jungle project is putting the city at the forefront in Europe for green design management.

PNAT wants to promote creative and visionary projects to re-naturalise Prato's neighbourhoods in a sustainable and socially inclusive manner. Urban Jungles (high-density green areas, immersed in the urban structure, that multiply the natural capacity of plants to break down pollutants, while restoring unused soil and space for community use) will be developed in four specific areas as an innovative solution to address the problems of sustainable land use within the city. The Project has been supported by the European program “2019 UIA_ Urban innovative action”, with a funding of 80%.

“The first action was the creation of a rating system to measure the effectiveness of NBSs. This experimental system – called the Urban Jungle Factor – is based on pioneer studies carried out by a number of European and North American cities, to score NBS actions. The Urban Jungle Factor was used as a guideline for the design of three building interventions” PNAT stated.

Planning

Starting with the Covered Market building, PNAT planners divided the interiors into two areas: one for the sale of local agricultural products, the other for the preparation and serving of products. The latter area (approximately 250 square meters) has been transformed into an indoor forest which is not only aesthetic but improves also the overall air quality of the space.

The Air Factory

In fact, PNAT integrated their own air purifying technology, the Air Factory, into the project. The Air factory is a unique botanical filtration system that purifies the indoor air of pollutants through the use of plants. The main façade of the covered Market building was also redesigned as a large, low-maintenance green wall with integrated seating.

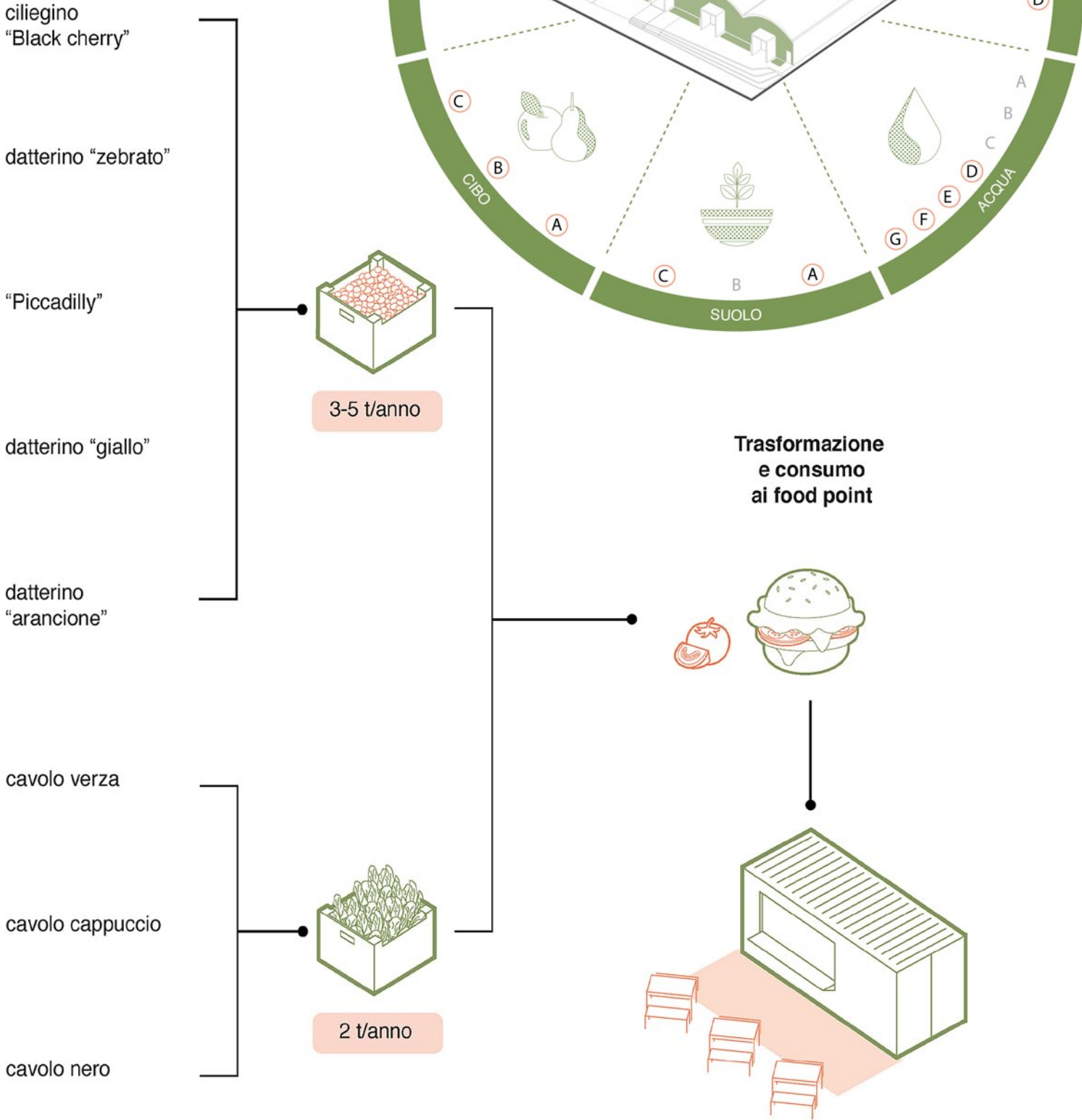
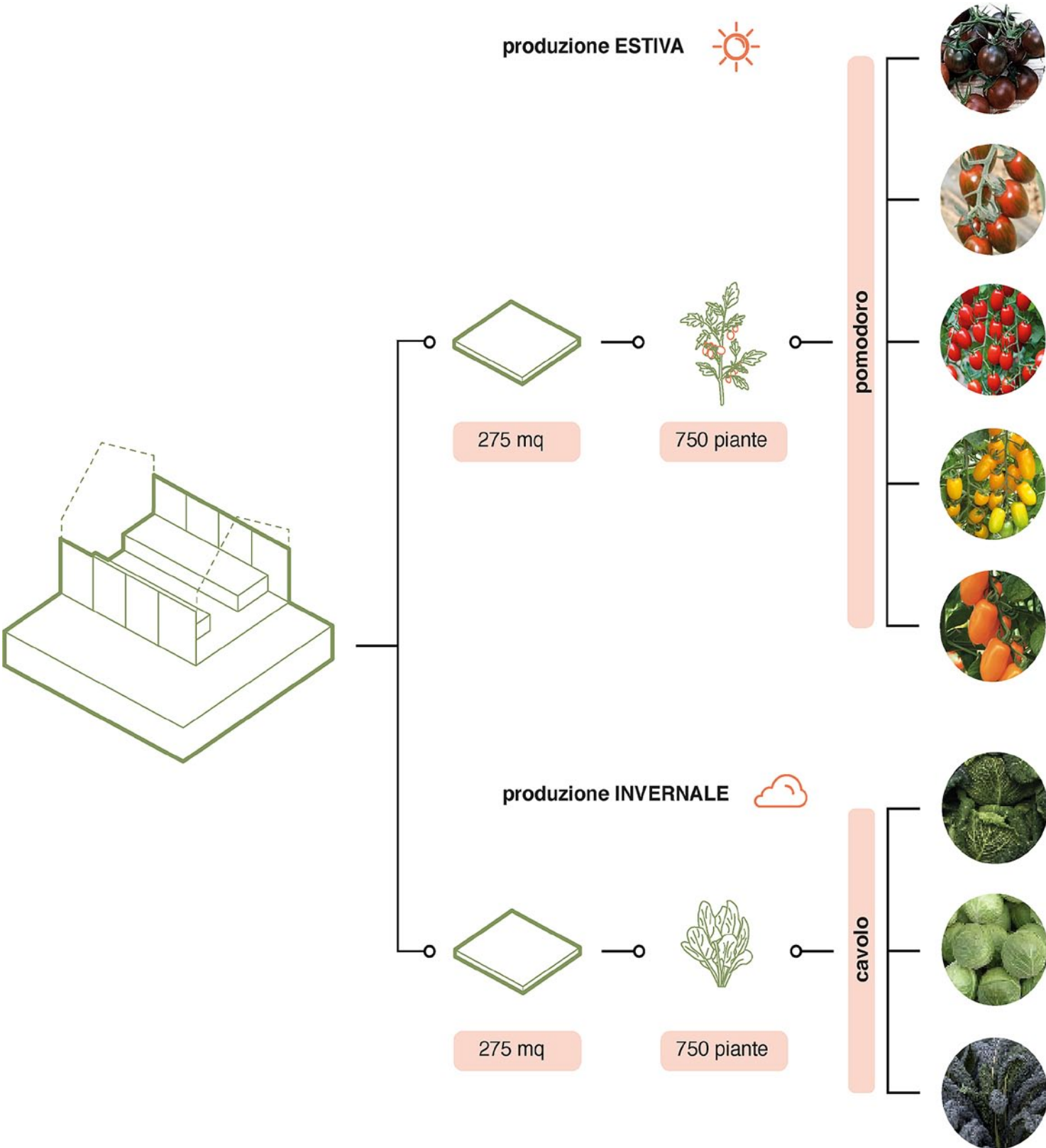
Food security

In addition to the redevelopment of the Covered Market, PNAT has worked on two other projects that aim to generate economic and social benefits and create spaces for gathering and work, through the food cultivation in the city. PNAT has developed two innovative greenhouse systems for growing crops: one in a social housing estate in via Turchia and one included in a bigger project called Farm Park in via delle Pleiadi. The Farm Park would also hold facilities for the preparation and selling of food at KM 0.

COVERED MARKET – Macrolotto 0. The enhancement project for the new Mercato Coperto building envisages two different urban forestation interventions. In fact, greenery will be an element present both outside

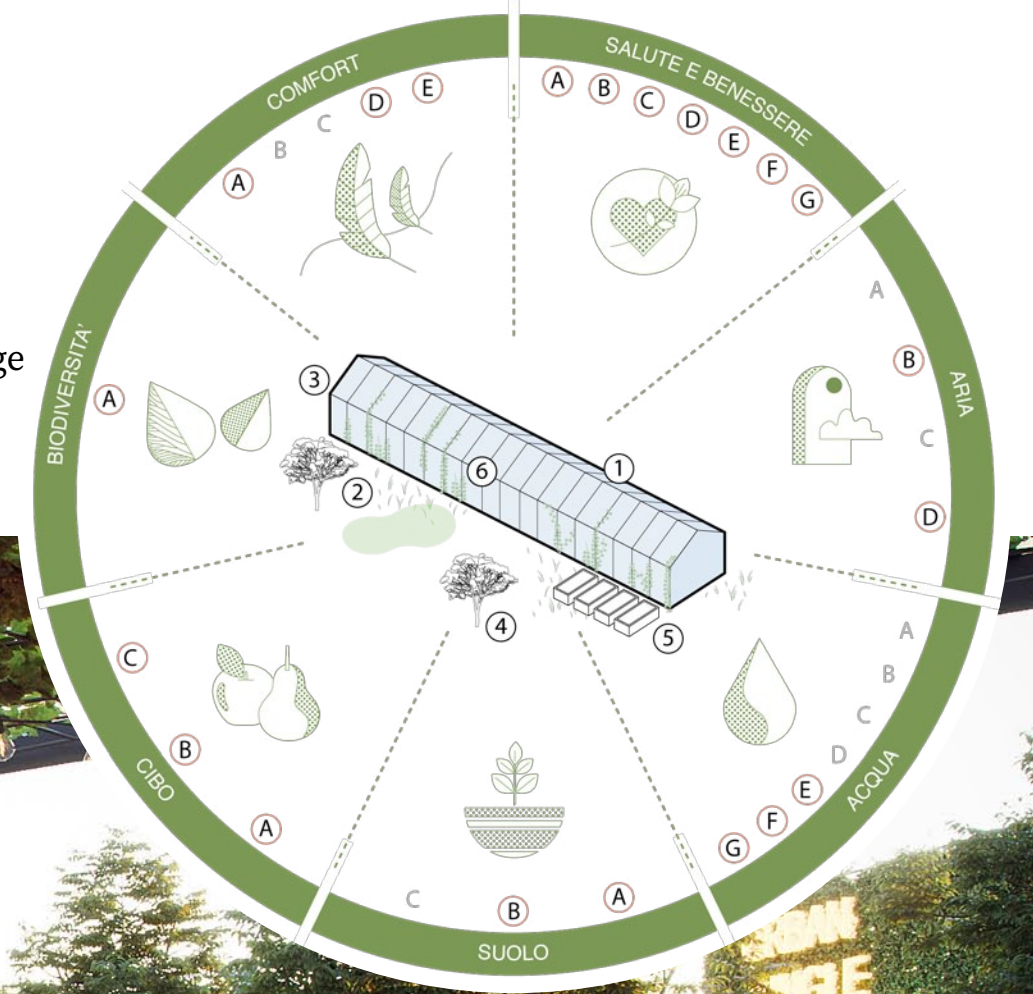
the building volume, covering the main façade, and inside it, making vegetation not only part of a characterising environment but above all a biological machine capable of purifying polluted air.





THE FARM PARK – The project expresses the Urban Jungle concept, which consists of a series of design elements: a high-performance, cold-type, urban technological greenhouse for hydroponic bag cultivation, which accommodates double services open to the public and the greenhouse and food point staff, a workshop area and a seedbed refreshment area for

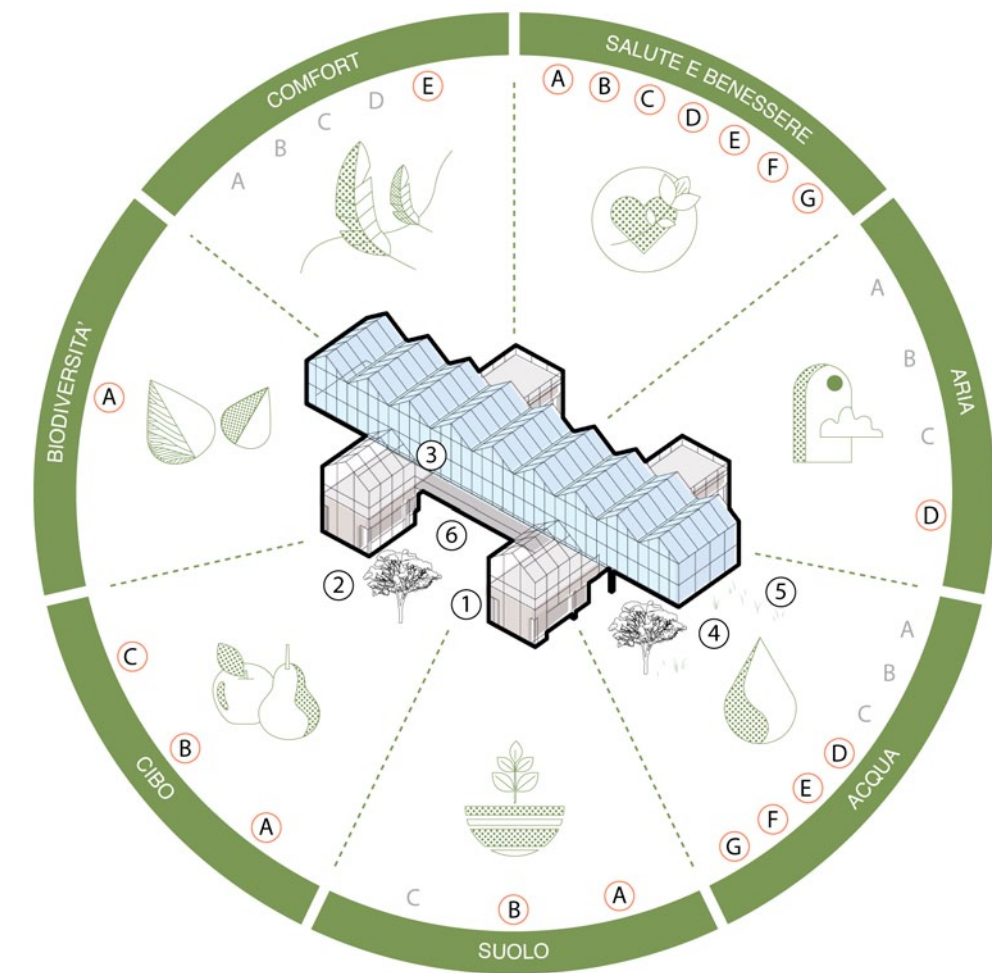
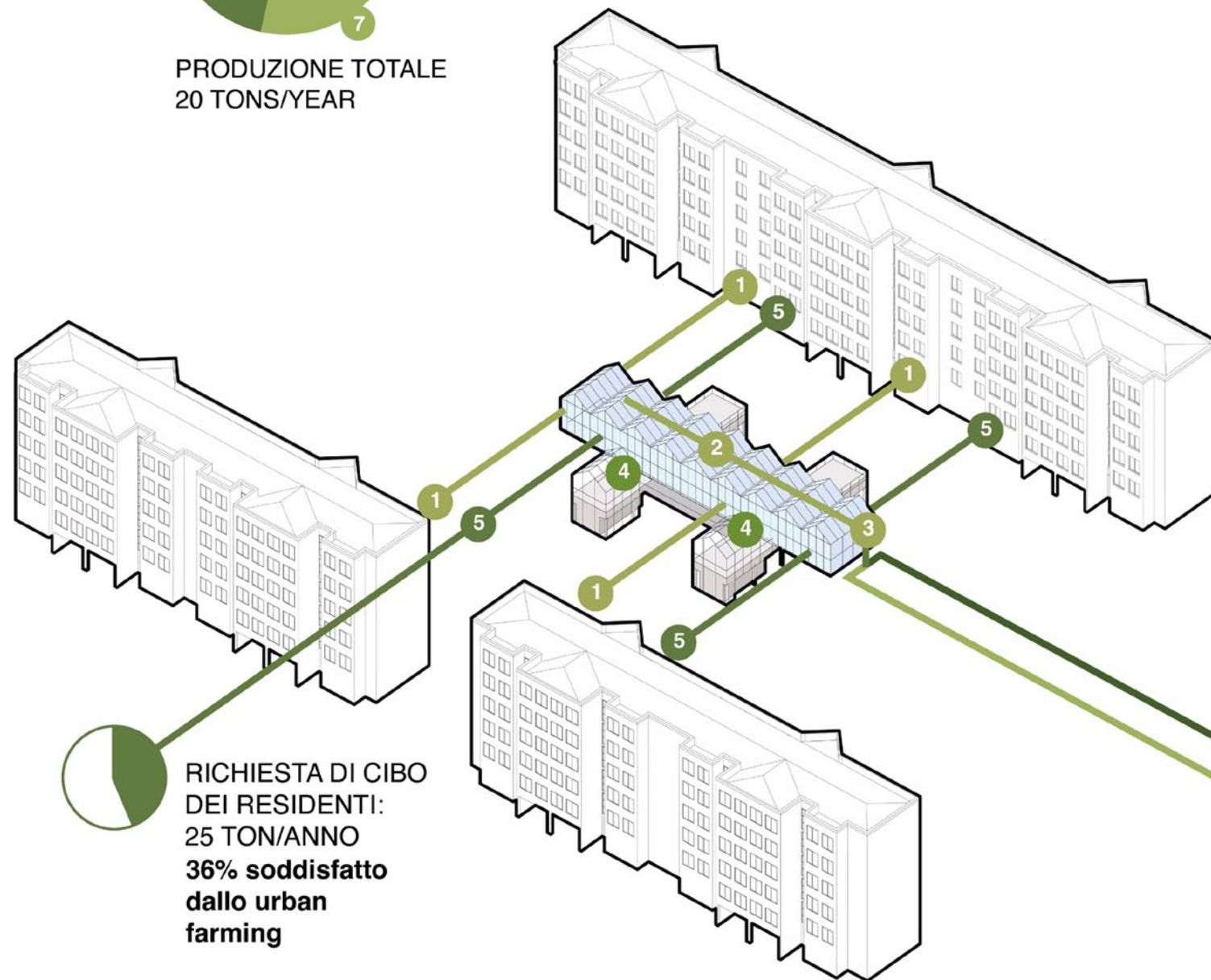
serving food and drinks to park users, taking advantage of the restoration of old containers converted into food points.



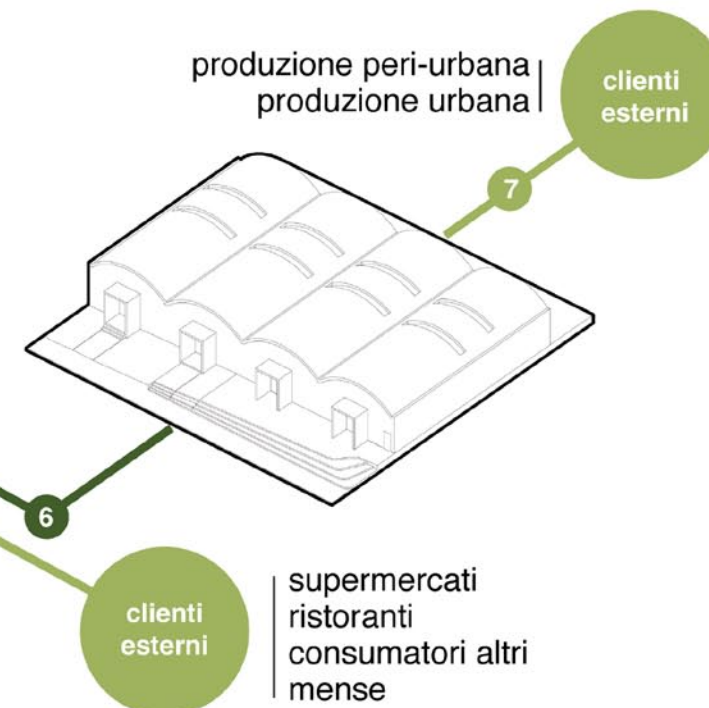
THE GREENHOUSE in via Turchia is a project for a productive greenhouse in a social housing complex, with the aim of creating social innovation through urban agriculture. The high productivity agricultural greenhouse project is also an opportunity to rethink the common spaces of the complex.



schema della produzione



- 1 forza lavoro 2 associazione Via Turchia 3 preparazione e confezionamento
4 vendita diretta - cibo per: 5 residenti 6 Mercato Coperto 7 clienti esterni



The 15-minute city

All these interventions and preliminary studies on the green areas in urban landscapes have led to a more wide and redistributed concept of cities.

As the co-founder and coordinator Stefano Mancuso stated: *“Today, it would be essential to imagine cities without centres: either completely decentralised or at least multi-centred, so that everything related to transport, the ability to have at a short distance what one needs – that famous 15-minute city – can be designed precisely starting from the network and the decentralised model of plants... Another thing to bear in mind is that our historical centres are actually almost completely devoid of plants. Tree cover is usually low, probably less than 10 %, and this is clearly not compatible with the global warming taking place.”*

There are many NBSs that can be used in the Urban contexts (let's think for example of demineralisation interventions, parklets and green roofs). Plants and green innovations in urban landscapes inspire sustainable solutions to reverse the effects of global warming.

Thanks to the preliminary scientific studies carried out by PNAT, about the local tree species, their properties, the benefits and the simulations, that the project took a rationally turn that would convince even the biggest sceptics to be in favour of transforming urban cities into urban jungles. The Urban Jungle Factor helps users through an easy-to-understand score by simply making a building's performance visible like classic certification systems (Breeam, Leed, etc) have served to guide the construction industry towards more sustainable and resource-efficient solutions.

This scientific approach which puts causes, effects and solutions on paper, may be the real turning point to change the course of our history.

<https://www.pnat.net>

<https://www.linkedin.com/in/ilaria-comini-1a5a70119>



PBS guideline is a book designed for the municipality of Prato, but also applicable to other urban areas. Until now, plants were incorporated into urban-scale projects for mostly aesthetic or street furniture reasons. Only recently have we realised that the integration of plant systems in the city is one of the most efficient alternatives we have for addressing problems related to water regimentation, soil stabilisation, rising temperatures and air quality.

Pnat (www.pnat.net) is a multidisciplinary team of architects and plant scientists founded by Prof. Stefano Mancuso together with agronomists and botanists Elisa Azzarello and Camilla Pandolfi and architects Antonio Girardi and Cristiana Favretto.



THE SCIENCE BEHIND

BIOPHILIC DESIGN



How can we make public places more sensory inclusive for autistic people?

“Although there are many regulations to ensure that public places are accessible for everyone, there is currently inadequate recognition of sensory-related barriers that are disabling autistic people and excluding them from many places.”

Dr Keren MacLennan

Autism is a neurodevelopmental difference that affects the way that people communicate and interact with the world around them. Differences in sensory processing are highly common in autistic people, with up to 94% reporting that they experience some kind of difference in the way they react to sensory input, such as lights, sounds, and scents. Although some sensory experiences can bring joy and pleasure, there are also many experiences that are extremely painful, distressing, and overwhelming. We are becoming increasingly aware of the challenges autistic people face when navigating a world that has not been built with them in mind. Although there are many regulations to ensure that public places are accessible for everyone, there is currently inadequate recognition of sensory-related barriers

that are disabling autistic people and excluding them from many places.

There are many public places that autistic adults have identified as disabling sensory environments. The most disabling are:

- 1) Supermarkets
- 2) Eateries (e.g., restaurants, cafes)
- 3) High streets and town/city centres
- 4) Public transport (e.g., trains, buses)
- 5) Healthcare settings (e.g., hospitals, doctor surgeries)
- 6) Retail shops/shopping centres

These spaces expose people to a barrage of challenging multisensory input. For instance, when in a supermarket you are likely to encounter lots of visual information, such as bright unnatural lighting, shelves full of bright packaging,

and lots of signage. There is auditory information, such as customers and staff conversing, shelves being stacked, checkouts beeping, overhead announcements, and trolleys and baskets clanging. On top of this, there is further sensory information, such as people brushing against you, scents from food counters, uneven or slippery flooring, and cold temperatures from refrigeration systems. For autistic people, this can be extremely distressing and overwhelming, especially as it is often uncontrollable and inescapable. This can mean they are unable to remain in these spaces for any length of time without it impacting their wellbeing, or they cannot access these spaces at all. Below is a quote from an autistic person describing this experience:

“... sometimes I have meltdowns and shutdowns in supermarkets because of the constant noises, or the crowds, or simply because something I always eat (same food) isn't stocked, like bagels and baked beans. Squeaky trolleys, plastic bags/wrappings being handled and brushed against each other, smells of fish and seafood, and young children who are running around, are some of the things that can trigger me.”

In addition, there are related factors that can make challenging sensory environments more or less disabling and inaccessible. For instance, many of

these disabling environments are busy and crowded, they are uncertain and unpredictable, there aren't spaces to sit and take a break and recover, they do not provide adjustments for people to support different pace or communication needs, and the staff are not trained to understand autism or sensory challenges.

However, there are also many public places that autistic adults have identified as being more enabling sensory environments. The most enabling are:

- 1) Outdoor spaces
- 2) Retail shops
- 3) Museums
- 4) Concert venues/clubs
- 5) Cinemas/theatres
- 6) Stadiums

Although some of these spaces, particularly outdoor environments, have less aversive sensory landscapes, many of these spaces still expose individuals to more intense sensory experiences. This highlights how these related factors, such as certainty, quiet recovery spaces, adaptations, and understanding staff, may be key to improving inclusion in more burdensome sensory environments. Below is a quote from an autistic person telling us their perspective of this:

"I think that having like a quiet room can apply to like so many different places, even places like concerts, concert halls and things like that, and I think a lot of people might think, well, if you have these sound sensitivities then why would you be going to a concert? But I think that we should have, like the equal opportunity to still like enjoy those things, but also have kind of, a backup area if we get overwhelmed."

British Standards Institute guide

There is increasing awareness of how we can adapt, design, and build inclusive sensory environments, considering sensory input, such as lighting and acoustics, but also these wider sensory-related factors. This is exemplified in the recently published British Standards Institute guide: *Design for the mind – Neurodiversity and the built environment*. This guide also highlights the benefits of incorporating biophilic design principles, as connection with nature and the outdoors, and incorporating natural light, shapes, and colours, are supportive of a sensory inclusive space.

Redesigning public places

By applying these principles and working in partnership with autistic people we can redesign public places that are currently disabling, which is an approach we have taken to reimagine the supermarket as a sensory inclusive space (see image). Prioritising sensory inclusive design could create public spaces that are more enjoyable for all but, most critically, will ensure that autistic people are enabled by these spaces.

The Sensory Street (sensorystreet.uk) project brings together researchers and autism community members to produce research and education that aims to make public places more inclusive sensory environments for autistic people.

Based on our recently published research: MacLennan, K., Woolley, C., @21andsensory, E., Heasman, B., Starns, J., George, B., & Manning, C. (2022). "It is a big spider web of things": Sensory experiences of autistic adults in public spaces. Autism in Adulthood.

Dr Keren MacLennan is an Assistant Professor in Neurodiversity in the Department of Psychology at Durham University. Her primary research areas are autism, sensory processing, and mental health. She is particularly interested in understanding how autistic people experiences both enjoyable and challenging sensory input and how this relates to mental wellbeing and the development of inclusive environments.

<https://www.durham.ac.uk/staff/keren-maclennan/>

HOW CITIES SHOULD INCORPORATE BIOPHILIC DESIGN

“Biophilic design recreates (conceptually, at least) the sorts of natural spaces where we were comfortable when we were a young species, living without the conveniences that define our lives today.”

Dr Sally Augustin

Biophilic design calls to mind an era when humans somehow existed without electricity, plumbing, weather-tight shelters, and certain water supplies, for instance, all while dealing on a daily basis with other life-critical challenges such as carnivorous beasts that thought we looked like an oh so tasty lunch.

So, can any findings from research in modern metropolises possibly be of interest to biophilic designers?

Yes.

As it turns out, much in-city research supports biophilic design actually helps us better understand how we should be designing biophilically.

So, more specifically, what urban planning-type research should pique the curiosity of biophilic designers? Studies in cities have shown that . . .

There's a lot more to creating a mentally restorative space than just planting a few trees and shrubs and letting some sort of turf spread over the ground.

Sure, it's revitalizing to look out of a window, anywhere, onto nature, but when what we're looking at has got fascinating details to draw us in, our minds are refreshed even if there's not a plant in sight.

Research has shown, for example, that when urban places are attractive to us, featuring buildings with intricate detailing that draws us in, we explore them with our eyes and they fascinate us (these places might be in historic districts, for example). When we're taking a look at something that captures our full attention without requiring us to do much logical reasoning type work (in other words, they're easy for us to understand or fascinating) the cognitive reasoning “muscles” in our brains get a break, which gives them the opportunity to restore themselves so that they ultimately functioning to their full potential again. Seeing anything we find fascinating refreshes our brains in the same ways that the nature images/views do that we normally tie to mental restoration, for example, the scenes of burbling brooks or Spring meadows that are featured in so many at-spa artworks.

We get a particularly strong restorative charge from viewing scenes with at least some gently moving water in them, whether that water is in fountains in otherwise empty courtyards or burbling streams moving across flower-dense fields.

Prospect and refuge are important.

Being in places with prospect and refuge has a powerful effect on our wellbeing wherever we are. In city plazas people feel great in the areas along the edges of these spaces, the ones where there's no open space behind them, particularly when these areas have a view out over the nearby world. Research has shown that these are the seats that people choose first and stay in longest.

Crime Prevention

Urban design research shows that we feel and actually are safer when the sightlines from where we live or are just spending time stretch far enough into the world around us to clue us in to how safe it is for us out in our neighbouring world (a lot of this research is categorized as “crime prevention through environmental design” or CPTED for short) – which is no surprise when you think about how our earliest ancestors survived.

Control => Good Experiences

In urban places we do like to have choices, just as biophilic design indicates we should. We like options, and our perceptions drive our responses to the choices we have more than any sort of objective reality does. We do best psychologically when we can sit in the space that feels right at the moment (the sun or a shaded area so we can see our screens, for example) and

when we perceive we could relocate, for instance. Our experiences in a plaza start to degrade, for example, when more than 70% of the seats there are occupied, for instance.

So, in urban spaces where we live our best lives we have options, ones that we can achieve, and we value achieving. The same goes for biophilic environments where we can choose conditions at a particular time that provide us with resources or experiences, we feel we need at the moment. So many of our bedrooms are above ground level today in part because we felt safer and more in control of our existence when we could climb up into the branches of a tree to sleep, especially when that tree was near the water hole where we'd just had a refreshing drink or bath. Today, in mixed use urban areas, we can access many of the things that we need to live a good life easily, we can manage our experiences efficiently and effectively in them. Without much traveling to and fro, we can move from the grocery store where we just bought dinner to the dentist, to deal with the consequences of last night's dinner, to the health club where we alleviate other repercussions of dinner last night, and finally move on to our workplace where we can earn the money we need for tomorrow's dinner.

Moderate visual complexity is valued.

In-City research makes it clear that people feel best and do their best mentally and socially when they're in a space with moderate visual complexity, in other words, a space that's not stark or visually overwhelming. Biophilic researchers have reached the same conclusions – with the origin of our preference for moderate visual complexity no doubt coming from our ancient need to spot approaching danger. Biophilic researchers have found that residential interiors designed by Frank Lloyd Wright have moderate visual complexity and comparing any place to one of FLW's residential interiors is a quick and effective way to assess how much is happening visually in it.

People are social animals, but . . .

Research consistently shows that people can enjoy spending time with other people when they feel like doing so. Research in urban environments confirms that humans can relish the opportunity to be in the same place at the same time with others when the time and the people are right, with various sorts of seating configurations, etc., best serving our needs in particular circumstances (when we're trying to make or more easily avoid eye contact, for instance). We also need our privacy from time-to-time, away from others acoustically and visually, at least sometimes in a territory that we feel that we "own" (permanently or temporarily) – which aligns closely with the togetherness/interaction on demand supporting aspects of biophilic design. We respect the spaces that others "own," particularly when we realize they are owned, being less likely to trespass on them, drop litter on them, etc.

People know what's best for themselves and others.

Research has shown that when people are free to exercise their own judgment when driving or walking in cities, for instance, they're apt to drive and walk in ways that are safer. When there are lots of traffic signs, we get caught up in doing what they instruct, regardless of the actual situation in which we find ourselves, for instance. When street signs in cities are removed, people tend to walk and drive more safely as drivers and pedestrians both focus more on the conditions around them, and everyone follows the same socially established rules – which means all are safer than they are when drivers and walkers defer responsibility for their actions to a set of posted signs. Biophilic design similarly teaches us that when one of us is safe, more of us will be – if one of us draws the attention of a lion, the pride will be drawn to where we are and, if we're unlucky, more than one of us might become lunch; when all of us can get up into a cave quickly, using the rules our society has established, that pride will get out of our area faster.

Design can make us much healthier when it gives us a reason to take action.

Biophilic design can bring our stress levels way down and so can urban design when it features the right sort of colours and lines, for instance, as discussed in previous instalments of this series, which makes us healthier – but we can also think about how space can activate us to act healthy. We take health encouraging actions, such as walking about, when we feel we have good reason to do so. Urban and biophilic researchers have both found that we will follow a curved path onward if

we're having a positive experience where we are at the moment – we move on because we have a reason to do so, we're going to continue to have a satisfactory time. Urban walkability research indicates that we will lace up our sneakers and head out for a walk when we have a reasonable goal that we could possibly achieve, one that is personally meaningful to us, which might be getting some of our favourite pizza, visiting a museum exhibit that intrigues us, or something else entirely. A walkable place is one where we have things to do that we want to do.

People are much the same, no matter where they live.

As many things become more divisive, it's reassuring to note that urban design research has shown that people respond in the same general ways to urban nature, wherever they live, for example. Biophilic design principles have also been supported by studies conducted worldwide.

In-City and everywhere else research makes it clear: Wherever they are, in cities or not, people's minds and bodies respond positively to biophilic design.

<https://designwithscience.com>

See also the Cities Living focus 2023 March on the Space Doctors

<https://thespacedoctors.com>



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ERGONOMICS, BIOPHILIC DESIGN, AND HOW HYBRID OFFICES CAN BETTER SUPPORT WORKERS’ WELLBEING

“Following the widespread post-pandemic pivot to hybrid working, how can ergonomics thinking and biophilic design help workers feel comfortable in multi-purpose, multi-user spaces in our cities?”

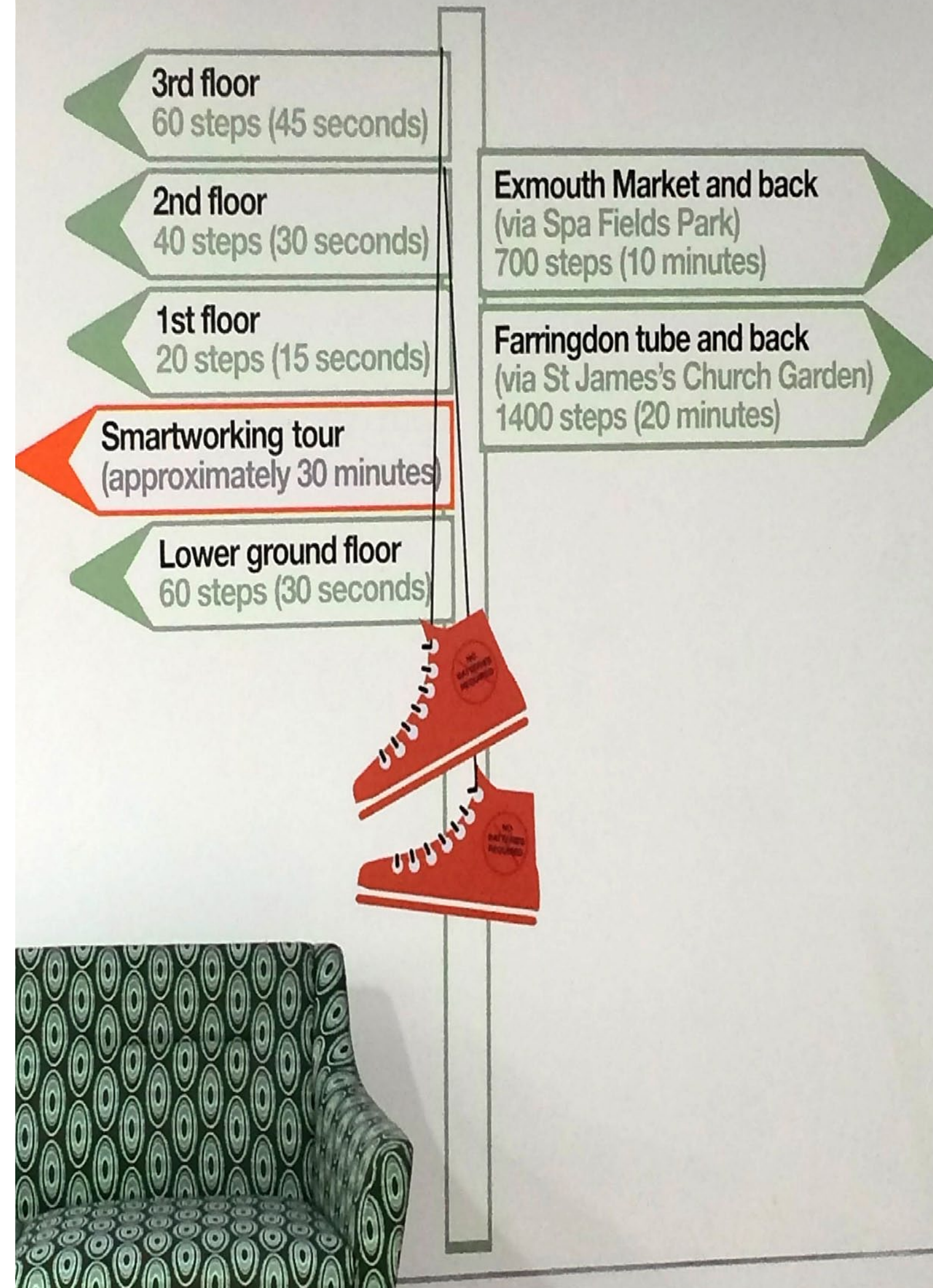
Guy Osmond

For decades, businesses have invested in tailored workstations to support their employees’ health and wellbeing, considering the user’s anthropometrics – from their sex to their height and weight, to their build and measurements, as well as the activities they’ll be undertaking. Workspaces could further be personalised by individuals too, who would furnish their space with plants and photos.

But with the post-pandemic pivot to hybrid working, the office has changed.

With fewer people ‘in’ at any one time, many businesses are jettisoning real estate, relying on smaller offices and multi-purpose spaces.

But where does that leave ergonomics? How can you design spaces to accommodate multiple personalities, body shapes and activities and still support the physical and mental wellbeing of individuals? And what part can biophilic design play in helping these hard-working spaces feel inviting, comfortable, and conducive to working behaviours for all who use them?



Flexibility of form and function

When it's difficult to predict how a space will be used over time, the best solution is to choose furniture which can be reviewed and redeployed as required.

For example, mobile pods are becoming popular. These units, comprising a table and integral seating, can be moved about on castors, used alone for a private workspace, or combined to create an enclosed meeting area for four or more people.

Keeping areas flexible is key so filling them with heavy plant pots is rarely a practical option. But when floor space is under pressure, vertical surfaces can be used to incorporate greenery and create that sense of connection with nature – for example with large photo murals of forest scenes, or green walls. Even those made of realistic-looking plastic plants can have the same positive effects.

Biophilic thinking extends beyond plants (plastic or otherwise). Natural materials such as wood and stone with colours, textures and patterns from nature can all be incorporated relatively easily. For example, using fabrics depicting webs or leaf structures, wood grain or natural stone finishes, even just choosing colours which occur in nature - greens, browns, yellows – can all tap into biophilia's mood-boosting benefits.

We are now seeing some very clever design innovations and these tick multiple boxes – flexibility, customisability, acoustic properties, aesthetics and biophilic design too. Sofas which incorporate planting behind the backrest, mobile pods clad in natural shades, multi-adjustable side tables with a wood finish.”

One product launching this month (April) is the OTTO table, designed by an ergonomist to overcome the “perched laptop problem” so commonly seen in coffeeshops.

It looks like an ordinary side table with a solid metal base for stability. It has a height-adjustable table top, with integrated, extendable laptop platform so, even with low, soft seating, you can achieve a better position for both the screen and any wireless keyboard and mouse you might be using.

For video calls, the laptop can also be set to a higher position, so the built-in camera is not pointing straight up the user's nostrils!

It also comes with a wood-grain finish, making it a good fit for a biophilic design aesthetic.

Paying attention to acoustics and sound-proofing is another key element in improving comfort in a shared space. High backed seats, or enclosed pods and booths, can help. So can the inclusion of natural elements such as screening plants and green walls, which also have natural sound absorption properties.

Water features, or simply playing recordings of running water or other natural sounds like birdsong, serve both to mask office noise and create a sense of being in nature. This has a dual impact on workers' ability to focus in a space.

Shared desks

When it comes to shared workstations (where they still exist), the first challenge to overcome is physical – that of accommodating different body shapes and different tasks, in a standard desk and chair.

Adjustable chairs and desks are a good start, but in this context it's worth remembering that, whilst postures can be better or worse, most people will have no issues if they keep changing position and they're not maintaining a bad posture for too long.

The Capisco chair for example, is height adjustable so you can work sitting, standing or perching. It comes with a saddle seat which can be used forwards in the traditional way, or backwards, when the backrest becomes a chest support.

Put simply, having a variety of postural options is going to enable more people to feel more comfortable for longer.

But as well as trying to ensure individuals are comfortable physically, there is also a psychological challenge – how can you help them settle, feel relaxed and able to focus, in a workspace that isn't ‘their own’?

We know biophilic design is associated with improved human wellbeing, performance, concentration and stress reduction, so it makes sense that when you incorporate natural elements into an office design, people feel better and more able to work productively.

By tapping into the benefits of biophilia, you can ameliorate some of the issues which might arise with multi-user hybrid working spaces – for example without the option to personalise a space, it's a shortcut to help people feel ‘at home’ and relaxed in a shared environment.

Getting people moving

One of the benefits of the rise of home-working has been the opportunity for workers to design their time better, with

many finding space to incorporate wellbeing-boosting activities such as daily walks into their routine. With thoughtful tweaks, a hybrid office space can support workers to maintain that beneficial part of their day when they're office-based too.

Whilst you want to create offices which give people a sense of connection with the natural world, that is still no substitute for being out in nature, including urban parks and green spaces. A hybrid office needs to support a culture of getting outdoors, not just bringing the outdoors in through elements of its design.

For example, some companies offer their staff walking and running routes in the area around the office, encouraging walking meetings, or giving their employees a friendly nudge towards walking more during their commutes. A simple idea is to provide signs or fingerposts that direct people to the nearest stations using the number of steps as the metric, rather than the distance in metres or kilometres.

Even techniques to make the lifts less prominent than the stairs, or slowing the lifts down, can encourage people to move more inside the building.

An inviting space

The successful hybrid office, rather than being a place where workers are compelled to be, functions more like a magnetic hub, drawing colleagues together. The focus is on engaging staff with spaces which will enhance key working behaviours – zones where communication and collaboration are made easy, as well as quiet zones like phone boxes and booths, where more focused work can take place.

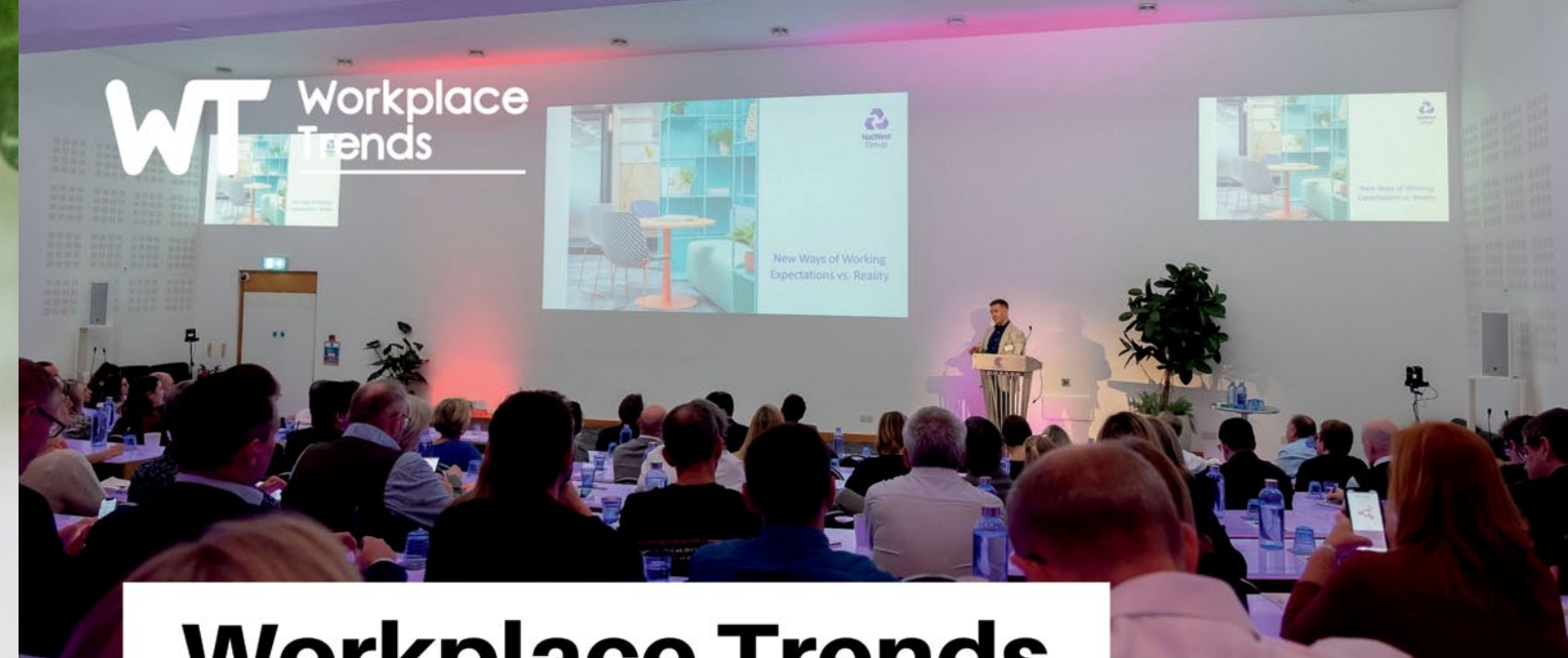
Similarly, when you're too focussed on practical considerations, and making a space function well, you run the risk of neglecting emotional and psychological wellbeing.

But if you begin by focussing on how people will use a space, and how you can optimise their comfort and wellbeing while they are there, you won't go far wrong.

In that sense, ergonomics and biophilic thinking are the basis of good design for any space – not just the hybrid office.

<https://ergonomics.co.uk>

While they might never be 'all things to all people', ergonomics thinking and biophilic design can help multi-purpose, multi-user offices meet the needs of as many people as possible. When you're trying to make an office space look bright and appealing, it's easy to forget about the fact that people will soon get uncomfortable on a sofa or chair which, no matter how good it looks, provides poor support.



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PLANTS

One of my favourite cities is Paris. This is for many reasons, not least for the cafe culture and jazz, the arts, the architecture and the cheese and wine, but mainly for the ability to wander through the streets on foot and to enjoy the many little parks and tree-lined streets that are dotted all over the city.

My home city, London, is full of greenery. Ross O'Ceallaigh wrote in our first issue "Workplace", that London was designated a National Park City, and indeed you can pick up a map now which has all the green spaces in the city laid out for you to find. The iconic London Plane tree is a tree many of us may have walked under without knowing how beneficial it has been to the city and inhabitants. The London Plane not only soaks up a lot of the pollution in the city, but also excess water. Sadly, even in my lifetime, their numbers have dwindled from having a 60% coverage of the city to just 4% now and even less in the outskirts. Originally planted in London in around the early 16th century the London planes have been resilient enough to withstand the dust and grime emanating from the transport and building works that seem ever to pervade London. Sadly, a fungus has caused them to be felled (as they have in Paris). Wouldn't it be lovely to see these gorgeous trees back again? Either way, we need to ensure we continue planting our cities with trees to help reduce the temperatures in our cities, provide shelter for wildlife, and shade and beauty for people passing by. Do you have any examples of urban forests and tree planting you can share with us?

In our regular section, we look at vertical gardens and two case studies where plants are making a difference.

Scindapsus Devils Ivy



Image courtesy of The Joy of Plants

This enthusiastic, heart-shaped leaf plant is fast growing, eagerly reaching ‘to see’ new places as it grows. It makes the perfect plant for covering spaces that you want to disguise or to cover well like a plant screen.

It’s been described as the perfect plant for hanging or climbing which it does naturally and fast! This also makes it the perfect plant for an indoor green wall.

Sometimes referred to as Pothos, the Scindapsus or Devil’s ivy, makes itself at home anywhere indoors whether hanging or climbing. Its beautiful and distinctive heart-shaped leaves instantly make the space more beautiful and colourful as they grow from long tendrils that help it to climb and connect with other structures as it climbs or hangs.

The diversity of Scindapsus is not just in how it grows but also in the colours it shows from shades of green, golden yellow and silver. Add to that, it is easy to care for and difficult to kill which makes it perfect for a green screen or wall.

These plants are member of the Araceae family growing naturally in south-east Asia, Indonesia and on the Solomon Islands.

Caring for Scindapsus

- Scindapsus prefers a light spot that isn’t draughty
- It loves damp soil but doesn’t like standing in water
- Feed every three weeks to keep plant beautiful and healthy
- Mist with water occasionally
- If the tendrils get too long, simply cut them off

Scindapsus is a lucky plant helping to bring its owner wealth and good fortune. Sounds perfect to us!

Visit the Journal each issue for regular plant tips from our friends at

plants@work



VERTICAL Gardens

DANIEL BELL VERTICAL GARDENS

Daniel Bell is an award winning landscape garden designer and champions this incredibly low-tech vertical garden solution which uses recycled clothes as a two-layered felt carpet, into which you cut little pockets for the plants to sit in. There is an irrigation pipe at the top, and they don't need compost, in fact they are better without. Check out the videocast on the Journal of Biophilic Design (also viewable on YouTube).





Where is this project?

Mayfair, London

What were the challenges?

The main challenges were to control the water, running down the façade as the bottom can easily become overwatered. Understanding the levels of pollution was a really interesting lesson in seeing which plants were affected by the pollution. Choosing plants which also grow out leaving behind foliage, which will die off due to being covered in particles from London's, quite frankly, polluted air and replace with new fresh growth keeping them alive. While yet another species, just could not cope with the levels of pollution on Piccadilly.

What difference has this made to this area in the city?

I was allowed by the very supportive owners of the hotel to let this become a very natural landscape, and this is not only hugely beneficial to the wildlife, it has also made quite a landmark in central London. You do come across very well-manicured living walls, where species such as Hedera, Pachysandra and Liriope are over used creating a flat palette that is often unnoticed. In contrast, this wild and natural looking facade has had such a positive effect with locals and tourists, taking photographs every day.

Why did you choose these plants?

I chose the plants firstly found my favourite species. Secondly, the old adage, right plant, right place and thirdly as mentioned earlier, I chose plants that will tolerate the pollution. It is also important for me to get as much diversity in my gardens as possible. This not only benefits the wildlife, but without doubt it benefits the appearance. It gets people noticing the space, which is of course important in a commercial sense for the building. Plants include: Heptacodium, Solanum, Choisya, Hydrangea, Fuchsia, Hosta, Cyrtomium, Sambucus, Juniperus, Aucuba, Acanthus, Erigeron, Lavandula, Mahonia to name a few.

What do you love most about this installation?

I love the scale. To imagine that some of these plants have grown to way over 2 meters in height and width. All of these are just growing from some blankets of recycled clothing. That is not what one would expect.

What other city projects have you done?

I am currently completing a vertical garden just off the Kings Road in Chelsea. That is over four times the size of this project.

I have been lucky enough to install vertical gardens in some quite unusual places, such as Trump Tower, Baku in Azerbaijan and the mall of Iran in Tehran, also, having lived in Sweden for 13 years I have gained a deep understanding of using plants in extreme conditions. Scandinavia and Iran, are two good examples, where we have extremely warm summers and very cold winters. The cold winters are extremely challenging as the bright winter sun, which is so welcome for as humans is absolutely not welcome for many Evergreen species.

<https://daniel-bell-vertical-garden.format.com>



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Biophilic Design - Why living walls are the way forward for our cities

“Richard Sabin, Managing Director at the UK’s leading living wall manufacturer, Biotecture, explores the importance of biophilic design in our cities, and asks whether living walls might be the way forward for urban greening.”

Richard Sabin

Cities have long had a difficult relationship with nature. Many urban centres across the world have simply been cut off from nature, with skyscrapers and traffic islands forming the dominant landscape. Yet human beings possess an intrinsic and instinctive need to be close to nature, and bringing more greenery into cities goes a long way towards combatting the negative effects of city life.

‘Cities are a relatively new development in human history. At the beginning of the 20th century, just 14% of the world’s population lived in cities. Today, that figure stands at more than half, and is expected to increase to around two thirds by 2050.

There are good reasons for this growth.

Cities provide opportunities to lift people out of poverty. They account for 80% of the world’s GDP, despite only covering 3% of the earth’s surface.

However, many people view the expansion of cities negatively, particularly when it comes to their impact on nature and biodiversity.

It’s true that when cities are unplanned, the urban sprawl can lead to the decimation of natural resources and with it biodiversity. But these days, policymakers, planners and architects know much more about how the built environment affects nature, and we have developed better ways to design our cities so that they co-exist with the natural world and even enable it to flourish.

Planning the cities of the future

When designed well, cities provide opportunities for us to live more efficiently and can even reduce our carbon footprints through a shared use of natural resources.

Biophilic design has a vital role to play in planning the cities of the future. Green infrastructure such as living walls, roofs and pocket parks, can increase green space and biodiversity where they’re needed most.

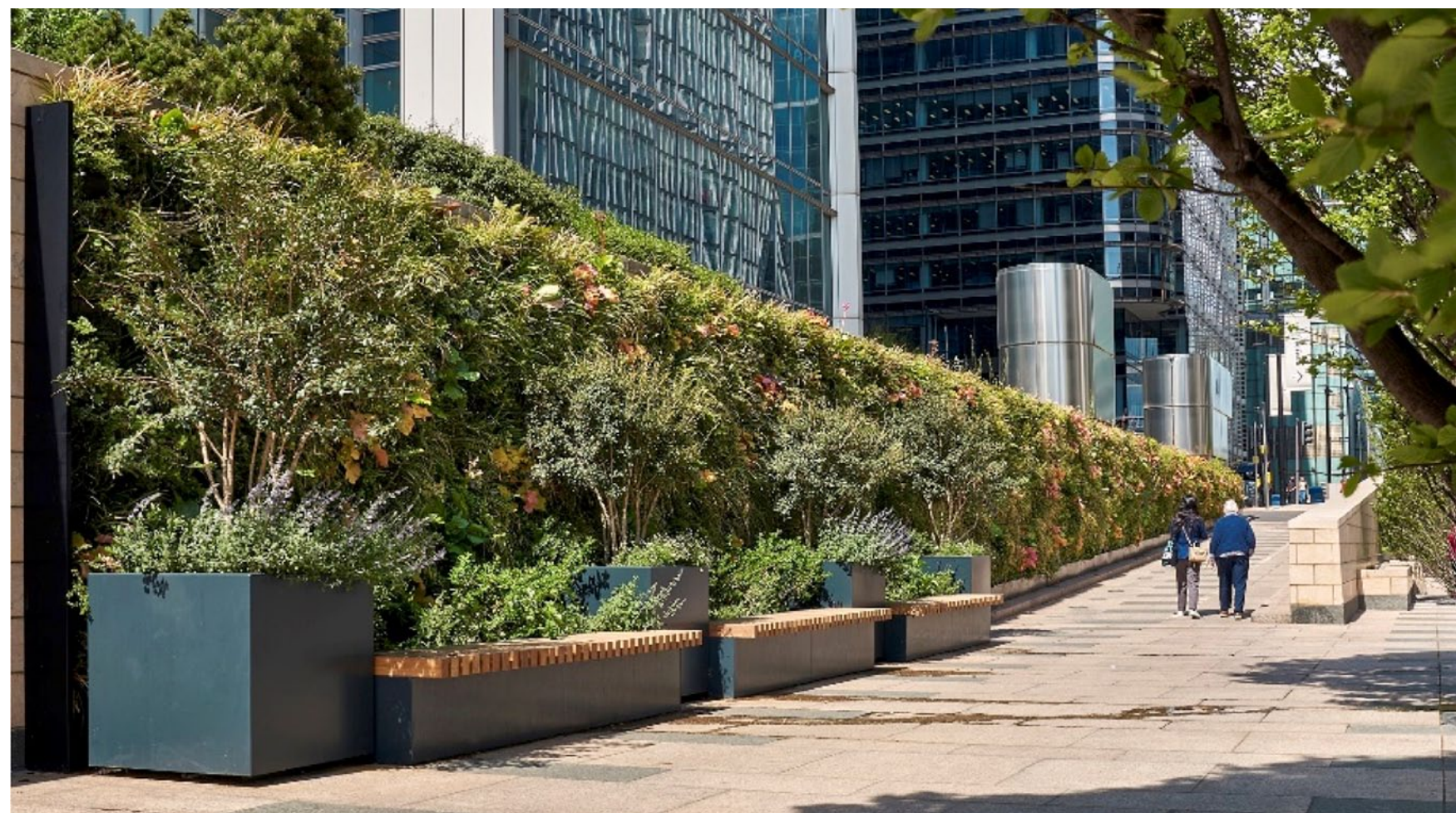
Vertical, outdoor living walls, in particular, can transform barren spaces in the heart of our cities, even where space is at a premium both physically and financially, and deliver a host of benefits, including the removal of air pollutants, the reduction of energy consumption and urban temperatures, less noise, improved biodiversity, and better health and wellbeing.

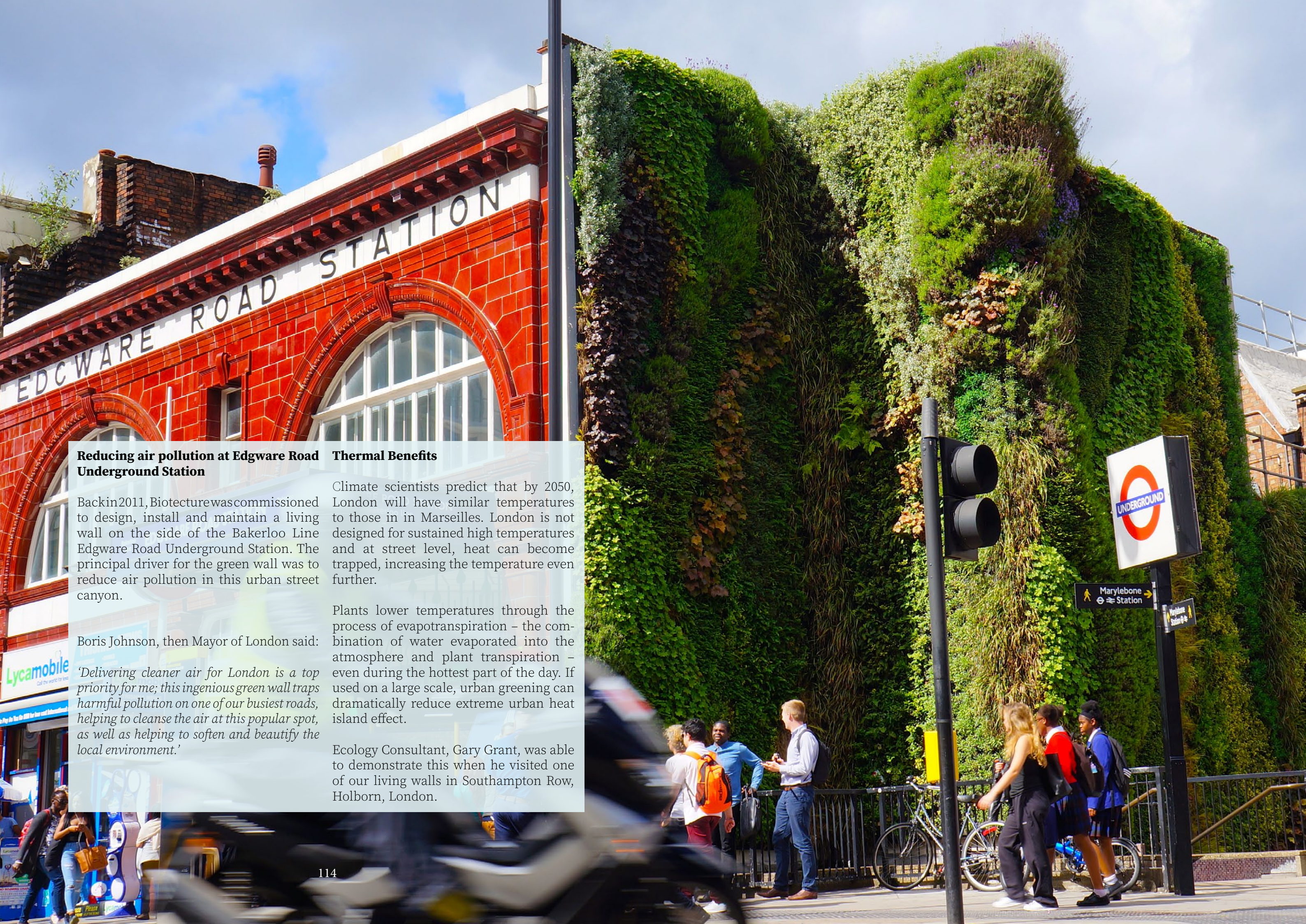
Improved air quality

Among the many health benefits provided by living walls, improved air quality has perhaps the most far-reaching implications.

In a 2016 study, the World Health Organisation cited poor air quality as being linked to more than 5.5 million premature deaths annually, and in 2020, a coroner made legal history by ruling that air pollution in London caused the death of a nine-year-old girl.

In densely populated, high rise areas, pollutants can become trapped in urban street canyons. Green infrastructure has been shown to reduce these pollutants, which is one reason why urban greening is now specified as a mandatory element of any new development in the London area.





Reducing air pollution at Edgware Road Underground Station

Back in 2011, Biotecture was commissioned to design, install and maintain a living wall on the side of the Bakerloo Line Edgware Road Underground Station. The principal driver for the green wall was to reduce air pollution in this urban street canyon.

Boris Johnson, then Mayor of London said:

‘Delivering cleaner air for London is a top priority for me; this ingenious green wall traps harmful pollution on one of our busiest roads, helping to cleanse the air at this popular spot, as well as helping to soften and beautify the local environment.’

Thermal Benefits

Climate scientists predict that by 2050, London will have similar temperatures to those in Marseilles. London is not designed for sustained high temperatures and at street level, heat can become trapped, increasing the temperature even further.

Plants lower temperatures through the process of evapotranspiration – the combination of water evaporated into the atmosphere and plant transpiration – even during the hottest part of the day. If used on a large scale, urban greening can dramatically reduce extreme urban heat island effect.

Ecology Consultant, Gary Grant, was able to demonstrate this when he visited one of our living walls in Southampton Row, Holborn, London.



The living wall covers the building with a heat-absorbing canopy, producing a shading effect that stops the building's surface from absorbing solar radiation and re-radiating it back into the environment. The living wall acts as a buffer against both high summer temperatures and the cold of winter, which can even reduce the building's energy consumption as well as improving urban temperatures.

Increased Biodiversity

Living walls not only increase the biodiversity of urban spaces through plant life, but they also offer vital shelter, nesting areas and food for birds and insects. Bees and butterflies can often be seen on living walls within days of installation.

In association with Buglife, we have designed and developed our own integrated habitat boxes. They slot neatly into our living walls and provide refuge for several species including solitary bees, butterflies, lacewings and ladybirds. Our 1,800m² living wall on the Veolia Energy from Waste Facility in Leeds includes 750 of these boxes, helping to create a balanced local ecosystem.

Reconnecting people with nature

As human beings, we share an instinctive bond with nature. Spending time around plants improves our health, wellbeing and productivity. However, this bond is often severed by the demands and conditions of urban life, to the detriment of our health and wellbeing. While traditional planting is not always practical in densely populated urban environments, living walls offer a practical and affordable way to reconnect people with nature.

The importance of this connection with nature was underlined by recent research we carried out.

We surveyed 2,000 people living in urban areas and found that two thirds (66%) of respondents who live in urban environments want to see more nature where they live, with over a quarter (26%) feeling demotivated by the lack of green space in their area and one in five (20%) feeling isolated.

51% stated that there is not enough investment in urban greening and 43% believe there is too little space available for nature. A huge 78% said that greenery improves their mental wellbeing.

Recognising that there is simply not enough horizontal space to build parks and open spaces, 57% said they'd welcome more vertical greenery, such as living walls, to make up for the lack at ground level. 43% wanted more trees, 38% flower beds and 36% grass.

A large number of city dwellers (79%) said they enjoy living in a city, due to the career opportunities, convenience and social life. Yet the research also found that 67% would consider moving to a greener suburb or the countryside to be closer to nature. Of those looking to move, 40% wanted cleaner air, 39% were looking for a calmer life, 34% craved more space, and 32% wanted to be able to get outside more.

However, 62% said they'd think about remaining in the city if there was more investment in urban greening, citing the key benefits as cleaner air (47%) and more wildlife (45%).

Through intelligent planning and biophilic design, including the increased use of living walls, it's absolutely possible to bring nature back to our cities and, in doing so, make them vibrant, green and healthy places where people can not only live and work, but thrive.

<https://www.biotope.uk.com/>

Mount Vernon Cancer Care Centre utilising an 'outcomes' and 'co-design' approach

The Centre for sustainable Healthcare (CSH) is proving how we can create green spaces for people in the centre of a city. Here Mount Vernon's Nature Recovery Ranger shares with us how the program is benefitting staff, patients and the wider community through nature intervention, while offering tangible solutions to the climate crisis and the NHS Green Plan.

— CASE STUDY —

Billy Styles

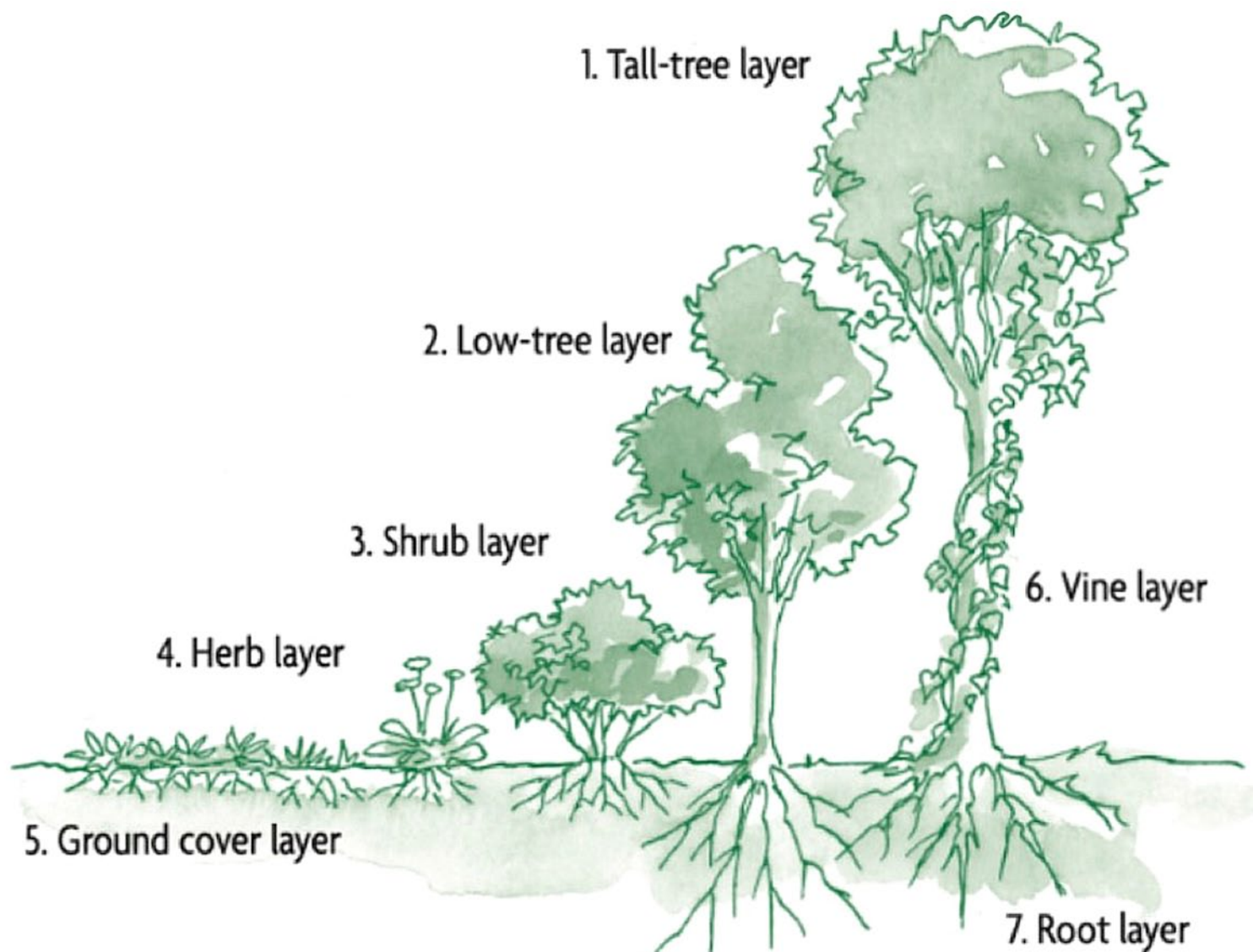
The Nature Recovery Ranger programme is unlocking the benefits of green heritage at a number of health sites. NHS hospitals are permanent local landmarks and are often well loved by their nearby communities, who have an interest in both their landscapes and the social history attached to them. The scheme has the potential to make these NHS sites into green hubs for local residents, while also improving wellbeing for patients and staff.

In Spring 2021 the Centre for Sustainable Healthcare embedded Nature Recovery Rangers at hospital sites in three locations – Bristol, Liverpool and West London. With support from the Green Recovery Challenge Fund the rangers are running multiple projects at these sites to improve biodiversity while helping patients, staff and community members to enjoy nature. Through their outreach work they involve new volunteers at the hospitals and enhance the sites' green spaces.

Building on the success at Mount Vernon Cancer Centre in London, where a large close-cropped lawn was turned into a wildflower meadow and staff took part in 'Primp Your Patch', a site-wide initiative to create thriving green corners close to where staff work, there are more projects planned for the Cancer Centre. But as Billy explains, one of the keys to its success is that it is all based on outcomes and a co-design approach.

Forest Garden

To be located on the edge of the already established woodland walkway, further enhancing the space, providing engagement with patients, carers, staff and volunteers. A forest garden is a designed agronomic system based on trees, shrubs and perennial plants mixed together to mimic the structure of a natural forest – the most stable and sustainable type of ecosystem in this climate.



By spacing the trees in such a way, walkways and sit spots are situated around 7 layers of plants increasing biodiversity and resilience. Crops produced fruits, nuts, edible leaves, spices, medicinal leaves, herbs, poles, fibres, honey, fuel, fodder, mulches, and sap. This is all designed to be a low maintenance system that combats drought and floods, and is an extremely therapeutic atmosphere throughout the year.

In addition the space created can support pre-hab and post-hab initiatives delivered for cancer patients encouraging self-help techniques and supporting their health and wellbeing in the long-term. Using the space will highlight to patients and staff the benefits of accessing outdoor space for their health and wellbeing. Outdoor space is accessible and available to most people in their community and the project will encourage staff and patients to continue accessing outdoor natural spaces when not on site.

This will benefit the family and friends who accompany patients on site, particularly when there are occasions when they cannot access the hospital due to covid restrictions on the number of people permitted indoors. The majority of our patients are accompanied by family or friends.

Future learning outcomes would feed into the green space design of potential new hospital sites, with a focus being around the framework of staff well-being and enabling patient self-management to reduce the need to access services. This project and any future potential projects would work closely with Hillingdon Council in developing a structure around Green and Blue Social Prescribing.

Other projects closely linked include a collaboration with an intervention/prehab programme for the lung immunotherapy patients, to encourage staff and patients to make more use of outdoor spaces and promote exercise and help deliver group sessions regarding planning, needs analysis and health and safety.

Plans for the outside space are to feed into the design of the staff well-being room, reinforcing the symbiotic relationship of nature recovery. Providing an indoor relaxing space where staff have the opportunity to gain knowledge about events and updates on current issues. Nature reading material, wildlife charts and bulletin board.

A 'Nature and Wellness' week incorporating the following interactive session, including

- Site tour with Nature England and Hillingdon Council focusing on Green Social Prescribing.
- Sapling aftercare, Seed sowing and Hugelkultur making for pimp my patch.
- External professional leading on butterfly transect, herbalist workshop, Qi gong and Relaxation therapy
- Wild flower Meadow upkeep



Mount Vernon green space. Photo David Dunham

<https://sustainablehealthcare.org.uk>

Ginnie Abubakar, Community Engagement Manager at Mount Vernon Cancer Centre comments: *“After only eight weeks with a Nature Recovery Ranger in post, it has been incredible to see the level of engagement from staff in the project. From the number of staff teams who, on top of their busy working lives, are involved in improving their local outdoor patch, to the discussions stimulated at an executive level about the importance of incorporating green space design at a new site. At all levels of our organisation staff have been invigorated and are taking part in the project. This should not in fact be surprising as it is a demonstration of the evidence - the benefits of connecting with nature in action. With plans in place for more initiatives for our patients (outdoor waiting rooms and weekly woodland wanders, to name just two) and the involvement of our local community, I am excited about the impacts we will continue to be able to validate. The network of rangers provides valuable support to progress the project still further.”*

Polytunnel

To support ongoing environmental projects and the N&E Herts Green Plan in creating a system where staff, patients and volunteers are given the skills to interact with nature all year round, significantly increasing biodiversity and connectivity through varying ecosystems in close proximity, while providing outdoor therapeutic bookable spaces. Other ecosystems compose of a wildflower meadow, a lake, a forest garden and an ancient woodland.

- The polytunnel will significantly increase interaction with the Woodland Walk and Fern Garden via providing a space for patients and staff to grow plants from collected seeds or propagated cuttings, rather than buying in expensive plants during the summer months only.
- This outdoor hub will act as a catalyst for any future environmental project saving huge amounts of carbon in enabling individuals to produce more and consume less.
- To be used by Staff and Patients under supervision or trained individuals undergoing health and safety, with each activity being risk assessed beforehand.

Outcomes:

Success Metric Category	Y/N	Brief explanation of how project will contribute towards outcome
Increased amount and quality of the NHS Green Estate	Y	Create a 5 eco system approach to increasing biodiversity including a polytunnel, a lake, a forest garden, a wildflower meadow and an ancient forest
Staff knowledge, attitudes, behaviours and actions / practice	Y	Planned workshops, courses, drop ins showcasing sustainable and regenerative practices
Patient opportunities / experiences	Y	Work with service providers in a therapeutic space.
The wider system / local / national; culture / infrastructure and relationships	Y	Create a model for other hospitals to follow and learn from with a feedback incorporated into the design process

Integrating Nature into Cities

***Humankind is inextricably linked to our natural world
and it is imperative that we build and expand our cities
in ways that work harmoniously with nature.***

— CASE STUDY —

Sarah Janjua

Unifying our approach to design, planning and development in a way that recognizes the social, environmental, and economic value of living architecture and to make our urban areas more resilient to climate change and inequities is at the core of what Urbanstrong, an NYC-based company, is setting out to do.

Founded in 2014 by Alan Burchell (P.Eng, MSc, MBA, GRP, LEED AP, Principal at Urbanstrong), the company is a full-service green building firm on a mission to integrate nature back into our built environment for the myriad of social, environmental, and economic benefits. The Urbanstrong team is well-versed in green building technology solutions that aim to increase profitability and productivity, boost health and wellness, and showcase commitments to sustainability. Urbanstrong offers design-build-maintenance services for green/blue roofs, solar-integrated green roofs, and living walls in the Northeastern United States and beyond. Having installed hundreds of thousands of square feet of green roofs and walls, Urbanstrong stands by being technology-agnostic, meaning they have tested the leading systems on the market to be able to offer the best solutions based on a project’s design parameters and budget.

Having nearly a decade of experience, Lily Turner (WELL AP, Director of Green Walls at Urbanstrong) has worked with varying technologies, climates, and applications when it comes to Living Walls. She feels that “Living Walls are one of the modern world’s greatest new art forms, symbolizing a future where nature, technology, and humanity thrive together.” Furthermore, Turner explains “*Living Wall technology is a great example of how nature and development can not only coexist but present a unique juxtaposition in our built environment.*” Since joining Urbanstrong in 2019, Lily has spearheaded the design, installation, and maintenance of Living Walls in and beyond the Greater New York City area, from both indoor and outdoor Living Walls for private residences to a prominent yoga studio and more.

PLANTS

Project: Corporate Office

Project Location: Union Beach, New Jersey, USA

Size: 575 square feet, spanning two floors

Irrigation: Non-recirculating, multi-zone

Plant Species: 27 different tropical plants

Number of Plants: 2,700



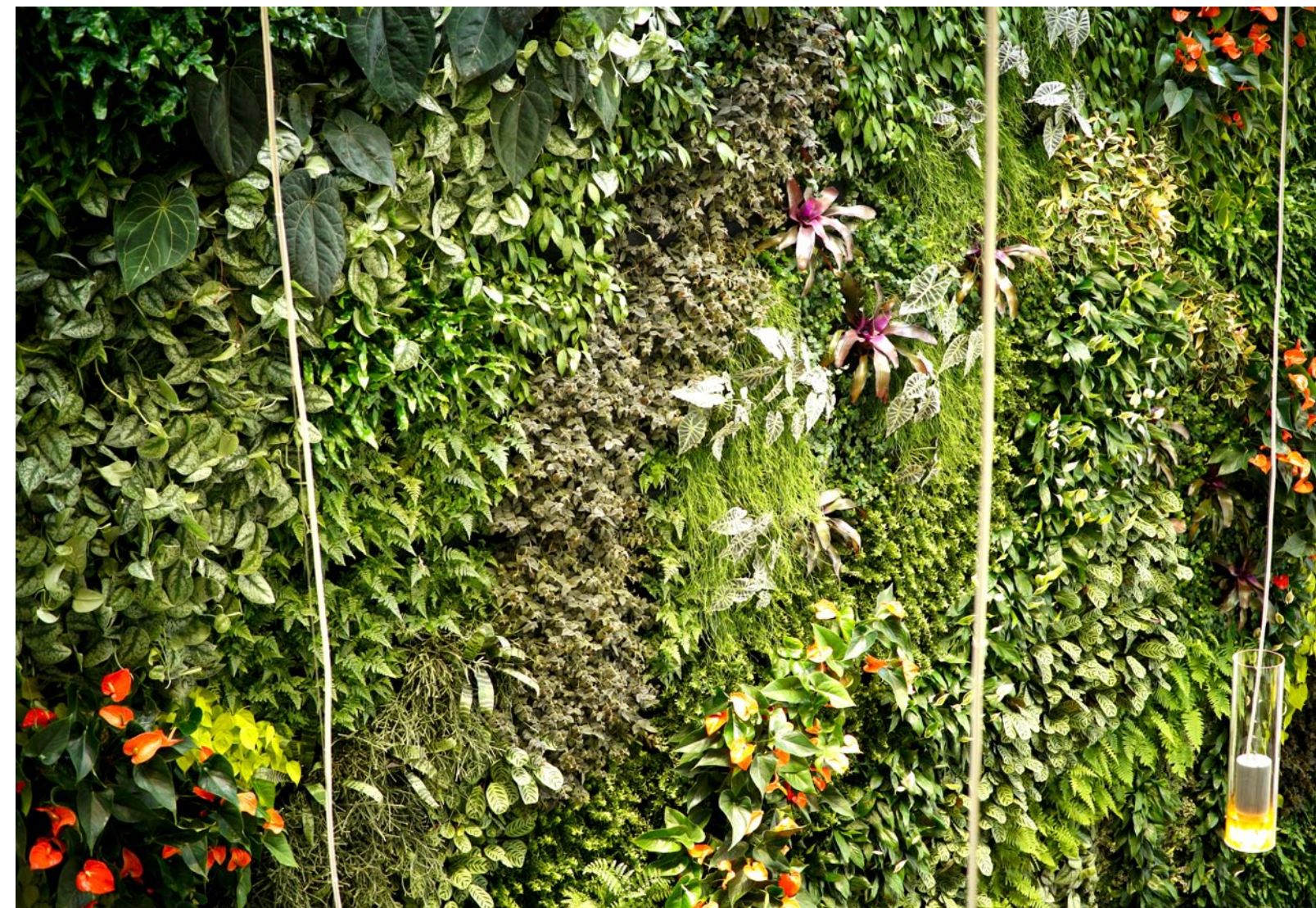
Photo credit: Alan Burchell, Urbanstrong

Urbanstrong and team members EcoWalls and Parker Plants installed an award-winning 575 square foot living wall at a corporate office R&D facility in New Jersey, USA.

Having received the Award of Excellence for Highly Eco-Sustainable Living Wall Installation from Green Roofs for Healthy Cities, this 24' x 24' hydroponic Living Wall is located in the lobby of an American corporation's research and development facility just outside of New York City in Union Beach, New Jersey. The Urbanstrong team consulted the client on all living wall systems available on the market, and upon factoring in design goals and available infrastructure, ultimately landed on a living wall solution that complemented the rest of the Cradle to Cradle Certified™ building materials and finishings.

The Living Wall was designed and conceived in a manner that improves its energy and water performance while also providing the benefits of biophilic design for people working in the building. The Living Wall is a welcome addition for the building's visitors and tenants on multiple levels, especially as it provides sound attenuation in a highly trafficked communal space.

PLANTS



The plant palette was selected to appeal to a broad range of senses, including depth, colour, and texture. Furthermore, 10% of the wall is dedicated to featuring plant species that the company is working with, including Hoyas that give off a chocolate-like scent and vanilla orchids. Overall, it is central to the lobby's biophilic design, one that offers people a link to the natural environment.

Each of the living wall's 3-foot by 3-foot modular panels are 100% recyclable and made from recycled materials. The 9 square-feet of flexible planting space doesn't restrict system designs to grid-like patterns. Further, plant roots are free to migrate throughout the entire volume of each modular panel allowing for the lush greenery to thrive indefinitely and virtually eliminating wilting and dying plants. The result is a near-zero plant turnover rate and, in fact, the primary maintenance feature being occasional pruning.

The Urbanstrong team likes to call the system "the Tesla of living walls," said Alan Burchell, Founder and Principal at Urbanstrong.

<https://urbanstrong.com/>

The plant palette for this Living Wall was chosen to appeal to a broad range of senses including colour, depth, and texture.

ENVIRONMENT PEOPLE PLANET

What does your city look like?

Is it green, full of trees, rivers, lakes and ponds teeming with life. Are there walkways and cycle paths that meander across the city encouraging you to abandon the car and motorcycle and enjoy the beauty around you? Is the air clear? Is the noise pollution from the cars absorbed by gorgeous hedgerows and abundant leafy plants? Is there birdsong above your head and butterflies dancing across your path?

In all likelihood it's a no to most of these questions. There may be elements of it in pockets of certain districts, maybe in those areas where affluence and private funding has enabled landscaping and greater citizen control. But what about for the rest of the city? How do we bring about equity so that everyone has access to nature?

Another reason we advocate implementing Biophilic Design in an urban context is that, as well as creating community spaces, safer walkways and improves wellbeing, it also goes a long way in helping mitigate the adverse effects of climate change. For instance, planting trees helps reduce flooding, reduces temperatures in cities by preventing heat islands, encourages biodiversity and restores natural ecosystems.

The reason we have dedicated a whole issue to Cities and will definitely revisit it in another separate publication in due course (as well as have a regular section in each issue of the Journal), is because if we all put our heads together to explore urban design and encourage a more nature-centred approach, we might inspire greater conversations between us all, whether we are planners, architects, businesses, designers or families and nature-inspired design might then also filter into buildings.

Wouldn't it be amazing to see nature and nature-inspired design as we walk to and from work, as we approach hospitals, walk to school, relax at lunchtime? It would go some way into giving us a more positive outlook on life and our experiences throughout the day, helping reduce our cortisol levels, blood pressure and actually, you know, bring some joy into our lives. Not every day is perfect, so at least if we can find a moment of respite on our commute then life has to be a little better doesn't it? And our beautiful planet will love us more too.

Why cities need Biophilic Design

*“Humans need access to nature to thrive.
And that’s not an opinion, it’s a fact.”*

Becks Treharne, Biophilic Urbanism Consultant at Planted

By 2050, 68 percent of the world’s population will live in cities. According to the United Nations, that’s an additional 2.5 billion inhabitants compared to 2018, placing associated demands on urban infrastructures. More people will require housing, schools, hospitals, parks, public amenities including water, workspaces and so on. And in many cases, this additional infrastructure needs to be delivered within the city’s existing footprint. The problem is, too often this increased density is accommodated at the expense of green infrastructure.

Why is this a problem?

Humans need access to nature to thrive.

And that’s not an opinion, it’s a fact. There are over 30 years of evidence to support, and it’s rooted in the concept of biophilia – humans’ emotional affiliation to natural spaces. Research shows it is crucial to improving our health and well-being while also strengthening our resilience and connection to local areas. Surely then, if the natural world has such a positive influence on our daily lives, nowhere is the need for the human-nature connection to flourish more important than where

most people live and work; in cities.

But our cities starve us in so many ways of this much-needed connection with nature.

Design too often takes on an unnatural form, competing against, instead of harmonising with, nature. Buildings are copied and pasted, high rise apartments restrict our ability to get outside and organic development is replaced with rigid networks that initiate our lazy autopilot functions. Much of what we love and need from nature gets designed out of cities, leaving us with the urge to ‘escape’.

Running parallel to this is the impact cities have on our climate and wildlife. Urban areas are responsible for about 65 percent of global greenhouse gas emissions. They’re also notoriously hostile environments that restrict the ability of wildlife to reside, whilst creating large scale fragmentation of habitats, resulting in negative impacts to species survival.

This triple effect of environmental emergencies requires a solution focused on reconnecting cities with the natural world. And this can be done through biophilic design.

Journal of Biophilic Design
THE ENVIRONMENT

Biophilic design is an evidence-based approach to embedding nature into the very fabric of our cities; all the way from our buildings and street networks, into our own homes and gardens. It brings the complexities of the natural world into our urban settings in ways that can alleviate the pressures placed on our climate, wildlife and own health, not just for now but for generations to come.

Research shows biophilic design can improve health & wellbeing, reduce stress and make people happier. And these benefits transcend across the city in the form of boosted productivity, speedier

healing times, more comfortable internal environments, heightened concentration, improved exam results, fewer sick days, more motivated workforces and so on. The benefits within our economy are endless. Biophilic design makes commercial sense.

The same goes for our natural world. Biophilic design can help create wildlife corridors and stepping stones for nature across urban landscapes; reduce the coverage of hard surfaces to support flood prevention and reduce the urban heat island effect. It also can offer potentially lifesaving foraging opportunities for wildlife.





And when combined, these benefits can create powerful synergies that enable a circular system of continuous benefits in the longer term. The more we encourage nature back into our cities, the more humans will be able to interact and connect with them. This fosters a sense of responsibility and stewardship that feeds back into protecting and enhancing the natural world. Biophilic design is a win, win. For our planet, and for our people.

The opposite, however, is a lose, lose. The less we engage with nature, the fewer opportunities we have to boost our health & wellbeing and the more the planet suffers. We're part of a holistic system, so when one part is failing, it has the potential to bring the rest down with it.

The question we should be asking then, is why are we not doing more to embed nature into our cities?

I'd like to end with a quote from Terry Tempest Williams that for me encapsulates the reason we need to marry the natural and urban in our cities going forward, which biophilic design does.

"To be whole. To be complete. Wildness reminds us what it means to be human, what we are connected to rather than what we are separate from."

What does it take to be a Biophilic City?

Not simply a green or sustainable city, but a truly biophilic one.

Going beyond simple green infrastructure, a biophilic city embeds our biological need to connect with natural environments into its very fabric. It mimics the complexities of the natural world in order to create quality, biodiverse habitats. And it works

in harmony with nature to support and strengthen the natural world while also thriving itself.

And when combined, these benefits can In order to create a biophilic city there needs to be an emphasis on designing as a holistic ecosystem. This means the city needs to be considered as a whole and not disaggregated parts. Buildings, streets and neighbourhoods of a biophilic city need to mutually reinforce each other while connecting people to the natural world in a way that simple green infrastructure cannot.

To achieve this, two important questions must be answered: how do you design a biophilic city? And whose responsibility is it?

To answer the first question, four principles should be considered:

1. **Retain Biophilic Design principles & attributes**
Applying these principles and attributes on a city scale
2. **Continuity**
Ensuring coherence and legibility
3. **Connectivity**
Linking up destinations across the city
4. **Play to local strengths and optimise local assets**
Create a unique, localised plan

<https://planted-community.co.uk>



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GOOGLE'S TREE CANOPY TOOL

*At the end of March 2023, Matt Brittin, President for Google in Europe, Middle East and Africa, was a Keynote speaker at the Economist's **Sustainability Week**. His speech, titled "How is AI helping people, communities and businesses in the fight against climate change?" contained new announcements related to extreme heat.*

The Economist

"Concurrent heat waves fuel devastating wildfires and threaten millions of people – and they're becoming more common as global temperatures rise, with scientists warning that summers like last year's could become the norm.

So today, we're announcing two new tools globally – including here in Europe – that can help people and local authorities prepare for, and combat, heat waves."

The announcement includes the **roll out of new extreme heat alerts in Google Search soon**. Provided in partnership with the **Global Heat Health Information Network**, the alerts will provide people searching for information on extreme heat with information about when a local heat wave is predicted to start and end, tips to stay cool, and related health concerns to be aware of.

Brittin also announced the expansion of Google's Tree Canopy Tool to nearly 350 cities globally, including 90 in Europe. Tree Canopy helps local authorities to identify, combat and prevent heat islands – patches of a city that are much hotter than others because of their surrounding infrastructure.

Heat islands are linked to poor air quality, dehydration, and other public health concerns, and can be reduced by increasing their tree coverage. The tool, which is part of Google's Environmental Insights Explorer, combines AI and aerial imagery so that cities can understand their current tree coverage and plan better urban forestry initiatives.

The tool has already been successful in the US, with the city of Austin, TX using the tool to place bus stops in tree-shaded areas, and plant trees in vulnerable areas of the city.

Brittin also referenced Google's new "cool roofs" project, which is in its early stages of development. The project aims to lower indoor temperatures – using AI and aerial imagery to help cities identify where sunlight on buildings can be deflected and estimate the impact of doing so. Matt Brittin also covered the ways Google and other companies are using AI to become more sustainable, saying that: *"AI can now give governments, businesses and citizens the tools and information they need to make systemic change – including fighting the climate crisis"*.

One of the interesting developments is how technology and AI can help monitor and measure nature-based solutions. This is actually helping make implementation of Biophilic Design an even more compelling solution because businesses, investors and others, including citizen stakeholders, can really get their heads around the benefits and therefore understand why we need nature-based solutions in our cities.

AI technology has allowed Google to optimise its own operations as part of its ambition to operate on 24/7 carbon-free emissions by 2030. Google used AI models to improve energy efficiency in its data centres by 30% and uses a daily carbon-intelligent platform to time computing tasks to take place when the most clean energy is available on the grid. As a result, Google data centres use 50% less energy than most others, with five operating at nearly 90% carbon free.

Google has also provided us with a short list of "5 ways AI is helping people, businesses and governments to become more sustainable", which includes examples of AI tools that help reduce emissions; protect nature and build cleaner environments.

5 ways AI is helping people, businesses and governments to become more Sustainable

AI is a transformational technology that is already bringing meaningful and positive change to people and societies around the world.

Put simply, AI is an effort to build machines that can learn from their experiences, spot patterns and make predictions better than any computer has been able to do before. Using this technology, we can now give governments, businesses and citizens the tools they need to make systemic change, like meeting the climate challenge.

Here are five ways that we and our partners are using AI to help reduce emissions, protect nature and build cleaner environments:

1/ Helping communities to predict and prepare for natural disasters

We're already seeing the impact of climate change in communities around the world, with natural disasters affecting millions of people each year. Being able to predict, prepare for and respond to these crises can be lifesaving. AI can now help us to predict the trajectory of hurricanes, typhoons and **floods** – so that we can share forecasts and advice on how to stay safe on SOS Alerts and Maps. And by combining satellite imagery with AI analysis, we're able to identify which areas need help after a disaster has struck – helping rescue organisations reach those most in need quickly.

2/ Recovering global wildlife populations

Recovering global wildlife has never been more important – and that's precisely the aim of **Wildlife Insights**. The tool uses AI to help conservationists and nonprofits to better track, understand and share insights on wildlife populations. Conservationists rely on camera traps to monitor wildlife populations. But one camera can take hundreds of thousands of pictures every month – and processing and analysing them is time consuming and inefficient. That's where Wildlife Insights comes in. It uses AI to analyse and classify each photo – so that users can instantly filter to see photos only of a particular species, or location. And, through Google Cloud, different organisations from across the world are uploading, storing and sharing their findings on the platform – removing silos and helping assess results on a global level. In the Philippines, ZSL is using Wildlife Insights to track endemic species –

while in Columbia, the WWF and UNDP are helping build a wildlife corridor for jaguars.

3/ Cleaning up fashion's supply chain

The fashion industry is **one of the largest contributors** to the global climate crisis, with much of their impact occurring at the raw materials stage of the supply chain – like when cotton is farmed, or trees cut down. But when brands source these materials, they often have little visibility on their environmental impact. Enter Global Fibre Impact Explorer: a tool built in partnership with Stella McCartney, NGIS, Textile Exchange and WWF Sweden to give companies the data they need to make more sustainable sourcing decisions. The tool, which launches formally later this year, uses Google Cloud and Earth Engine to help brands identify the environmental risks of over 20 fibres, and provides recommendations for risk-reduction activities – including opportunities to work with local communities.

4/ Helping prepare for extreme heat

Cities across the world are trying to reduce 'heat islands' – patches of a city that become particularly hot in a heat wave. Heat islands are caused by their surrounding infrastructure and lead to poor air quality, dehydration and other public health concerns. Tree Canopy – part of Environmental Insights explorer – uses aerial imagery and AI to help local authorities identify heat islands, and plan tree coverage to combat them. The tool, which is now being rolled out to nearly 350 more cities globally, has already been used across the US to plant trees in vulnerable areas and parkways, and place bus stops in tree-shaded areas.

5/ Giving you more sustainable options

You're probably already **using AI** to reduce your emissions without even realising it. Google Maps uses AI to give you the best walking or cycling routes – and to **suggest the most fuel-efficient routes** for journeys where you need to drive. For electric vehicle drivers with Google built-in, we're now using AI to recommend the best charging stop for you – based on factors like current traffic, your charge level and expected consumption. And since 2011, Google's Nest Thermostats have saved over 120 billion Kwh of energy – enough to power 1 million electric vehicles for over 320,000 miles each. The thermostat uses AI to learn user schedules and adjust the heat accordingly – even turning it off when you're out.

How Green is Your City?

Researchers at MIT, in collaboration with the World Economic Forum, launch TREEPEDIA, a new platform that uses Google Street View data to measure and compare the green canopy in cities around the world.

Researchers at the MIT Senseable City Lab have developed an interactive website that uses Google Street View data to measure the urban 'Green Canopy', or the aboveground portion of trees and vegetation in cities around the world. Treepedia will allow city dwellers to view the location and size of trees within their communities and to submit input to help tag, track, and advocate for more such trees in their cities. Developed in partnership with the World Economic Forum's Global Agenda Council on the Future of Cities and its Global Shapers Community, Treepedia is available at the URL: <http://senseable.mit.edu/treepedia>

The green canopy is an important and integral part of urban life. Trees help mitigate extreme temperatures, provide a natural respite from traffic, noise, and congestion, and improve the quality of life for those living in urban environments. However, the average citizen is often removed from understanding the individual features of their unique environmental habitats. How, then, can citizens be better engaged in this process so that they can play a more

integral role in helping to shape the green canopies in their neighborhoods?

In order to address these questions, the MIT Senseable City Lab has developed an innovative metric utilizing Google Street View (GSV) panoramas, called the 'Green View Index' – by which cities can evaluate and compare green canopy coverage. The Green View Index enables scientists and city dwellers to monitor the urban tree coverage – and take action to improve it. They can play a more active role in addressing concerns about the adverse effects of climate change, and to campaign on behalf of the landscapes they dwell in.

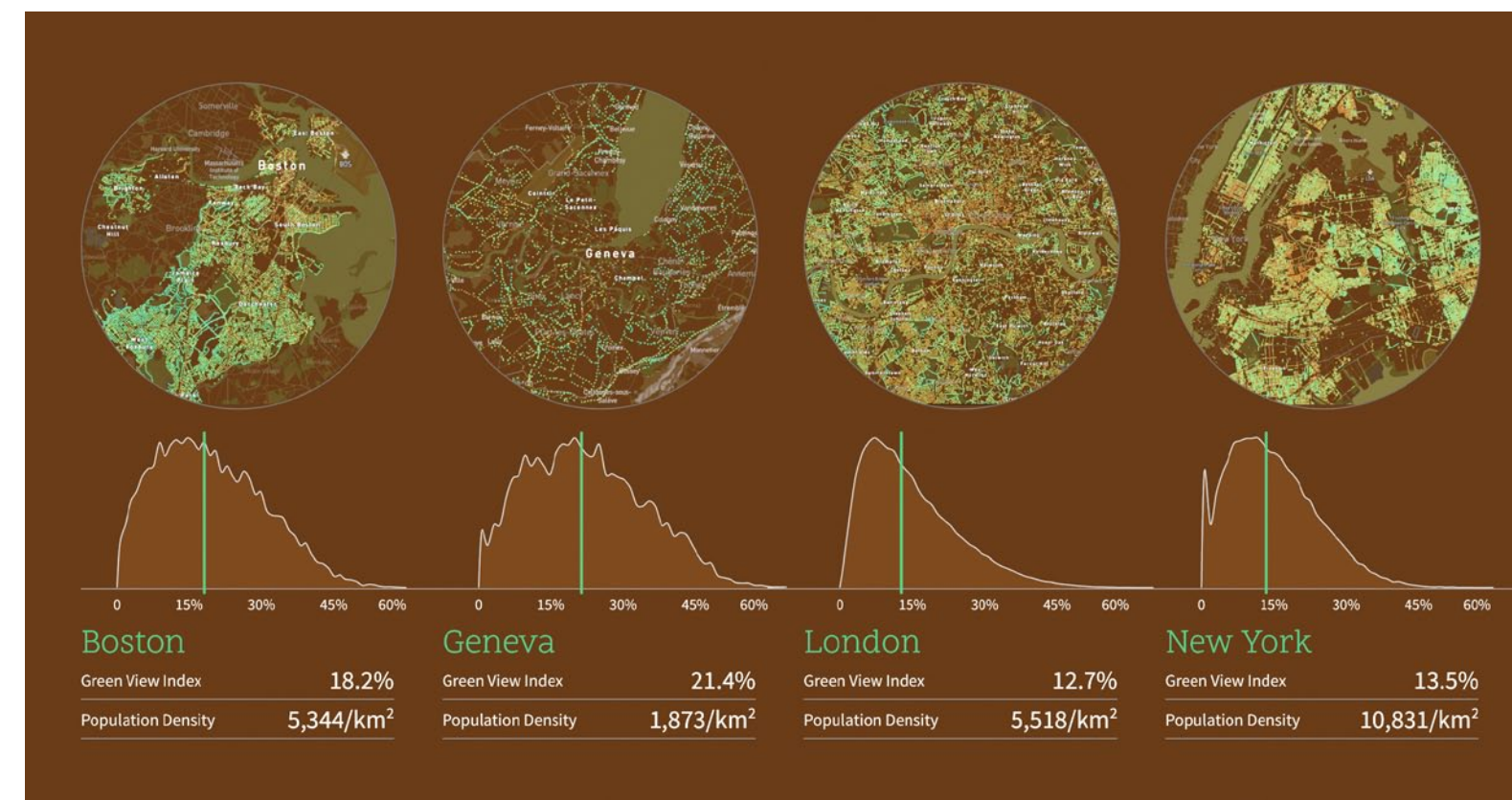
"As many cities experience warming temperatures, increased storm frequency, and continued air pollution, the well-being of our urban trees has never been more important. We present here an index by which to compare cities against one another, encouraging local authorities and communities to take action to protect and promote the green canopy cover," says Carlo Ratti, Director of the Senseable City Lab.

Initially, Treepedia launches in 10 global cities including Geneva, Tel-Aviv, and Boston and will continue to expand in more municipalities across the globe. Users can immediately perceive which areas are green and not green in a city, investigate the amount of green coverage at a given point, and compare their city to different cities around the world. In the future, users will also have the possibility to add unique tree information on an open-source street map and engage with city officials in order to request that new trees be planted in certain areas.

"The future of cities cannot be one of unsustainable expansion; it should rather be one of tireless innovation. In this context, Treepedia builds on the work undertaken by the World Economic Forum's *Global Agenda Council on the Future of Cities*

and in particular the 'Adopt a Tree through Your Social Network' innovation in the *Top 10 Urban Innovations* report, to leverage technology to enable citizens to explore the green canopy of their city. We hope that this endeavor will give citizens a greater appreciation of their city's green canopy and appreciate that the green canopy can assist in responding to climate change." Alice Charles, Council Manager, Global Agenda Council on the Future of Cities, World Economic Forum

Treepedia's team at MIT includes Newsha Ghaeli, Wonyoung So, Xiaojang Li, and Ian Seiferling. The project was carried out in collaboration with the World Economic Forum's Global Agenda Council on the Future of Cities and World Economic Forum's Global Shapers' Community.



Dozens of cities worldwide demand new treaty to end the fossil fuel era

“The modern built environment is increasingly separate from nature, needing more and more energy to power taller buildings, fulfil the cooling and heating needs of people plus allow them to travel further distances than generations prior could have ever imagined. Unfortunately, much of that growth is fuelled by the biggest drivers of the climate crisis: coal, oil and gas.”

Seble Samuel

The world is already on track to produce twice as much fossil fuels than would be permissible for a liveable planet. Science has made it impossible to ignore the threat that fossil fuels pose not just to our health, but to the future of the planet. This was made clearer than ever by the latest release from the UN’s Intergovernmental Panel on Climate Change. In no uncertain terms, this body of the world’s leading climate scientists explains that “there is a rapidly closing window of opportunity to secure a liveable and sustainable future for all.”

If we want to make it through that window the science is certain – we can’t allow new fossil fuel development and we need to phase out what’s already under production. There is a huge role for cities in making that happen.

Cities occupy a complex place in the struggle for climate justice. Dominating global energy use, cities are responsible for “two-thirds of global energy consumption and more than 70% of annual global carbon emissions.” But cities are also on the front-lines of the climate crisis, with oil and gas drilling surrounding the neighbourhoods of marginalised communities, and surges of climate disruption from flooding to heatwaves to wildfires wreaking havoc on the lives of urban residents. But cities are also laboratories of climate solutions, stopping extractive projects, ending fossil fuel sponsorships, electrifying local grids, restricting the social license of the fossil fuel industry, and protecting their communities from climate chaos.



This is why we’re seeing cities step up. More than 80 cities and subnational governments around the world*, from London to Lima, Vancouver to Kolkata, Sydney to Los Angeles, and Paris to Belém, have joined the campaign for a [Fossil Fuel Non-Proliferation Treaty](#). This global initiative calls for an end to fossil fuel expansion, a fair phase out of coal, oil and gas, and a global just transition to renewable energy for all.

While climate policies can be complicated, the math is not. Coal, oil and gas are responsible for 86% of all carbon emissions released in the last decade yet they are dangerously absent from global climate

legislation. The Fossil Fuel Treaty would fill an important gap by tackling the root of the climate crisis as a complementary international mechanism to the Paris Agreement.

History proves that cities are essential players for social change. Just as cities in the 1970s and 1980s declared themselves Nuclear Weapons Free Zones (NWFZ) to build collective pressure in the nuclear disarmament movement, cities endorsing the Fossil Fuel Treaty are growing momentum and influencing national governments to phase out fossil fuels and transition to renewable energy.

Learn more about the global cities who are demanding an end to the fossil fuel era and a global just transition by calling for a Fossil Fuel Non-Proliferation Treaty.

Vancouver

In October 2020, Vancouver became the first city in the world to endorse the call for a Fossil Fuel Non-Proliferation Treaty. As a pioneer of this global campaign, Vancouver's policies show there is no space for fossil fuels in a habitable future: the city council has put in place multiple freezes and moratoriums on new fossil fuel infrastructure and a ban on new major fossil fuel terminals. Vancouver's climate emergency action plan tackles the city's main source of carbon pollution — transport and buildings, by creating a zero emissions building plan and promoting active mobility and public transportation.

Belém

Belém became the first Brazilian city and the first Amazonian city to endorse the Fossil Fuel Non-Proliferation Treaty, in November 2022. Brazil is home to two-thirds of the Amazon rainforest, and one

fifth of that forest cover has already been lost in the past fifty years, equivalent to more than 750,000 square kilometres. In fact, the Amazon has now reached an apocalyptic tipping point in which the rainforest emits more carbon dioxide than it absorbs. Belém has therefore, in its declaration in favour of the Fossil Fuel Treaty, called for the Amazon to become a Fossil Fuel Non-Proliferation Zone.

Los Angeles

Los Angeles became the first city in the United States to endorse the call for a Fossil Fuel Non-Proliferation Treaty, in April 2021. The megacity supported the vote unanimously and has since passed legislation to end oil and gas drilling and phase out all existing oil and gas wells, as well as the discriminatory policies that uphold them, positioning these projects in the neighbourhoods of the most marginalised communities. California Senator Gonzalez has now put forward a Senate Joint Resolution calling on the State of California to endorse the Fossil Fuel Treaty proposal, end fossil fuel dependence in the state and promote a just transition for all workers.

Kolkata

Kolkata became the largest city in South Asia to call for a Fossil Fuel Non-Proliferation Treaty, in September 2022. The megacity is placed among the top 10 cities in the world facing multi-hazard climate risks including cyclones, floods and droughts. The transport sector's capture by the fossil fuel industry has also led to deadly air pollution levels, making a call for the Fossil Fuel Treaty a necessary decision to protect human health, and indicating the city's desire to move away from coal reliance.

Amsterdam

The Dutch capital declared their support for a Fossil Fuel Treaty in February 2022, becoming the first European capital to join the growing movement of cities for fossil fuel phase out and a just energy transition. As one of the largest energy ports in Europe and a major historical exporter of coal, Amsterdam's support for the Fossil Fuel Treaty shows a directional shift away from fossil fuels. The Port of Amsterdam has pledged to go coal-free by 2030, and grassroots organisations are holding the city accountable by pushing

for a ban on fossil fuel advertising with Reclame Fossilvrij and an end to fossil fuel sponsorships of the arts sector with Fossil Free Culture NL.

Your city can join the 80+ local and subnational governments that have called for a Fossil Fuel Non-Proliferation Treaty by passing a resolution in city council or through a mayoral declaration. Find out more here or reach out to Seble Samuel, Global Cities Campaign Lead for the Fossil Fuel Treaty at seble@fossilfuel treaty.org

** Joining these cities in the call for a Fossil Fuel Non-Proliferation Treaty are a bloc of Pacific island nations spearheaded by Vanuatu and Tuvalu, the European Parliament, 101 Nobel Laureates, 3000+ scientists, 600 parliamentarians from 79 countries, 1400+ health professionals and institutions including the World Health Organisation, hundreds of faith institutions, leading youth climate activists, more than half a million individuals, and 2,100+ civil society organisations from 117 countries.*



For the love of a place

“If we were to determine a single root cause for our current global crises, such as ecological degradation and cultural erosion, it would have to be fractured human-nature interactions.”

Ann Rochyne Thomas

The objective of biophilic design is to satisfy human needs with a minimal ecological footprint while fostering a strong positive relationship between people and their environment. **Positive emotions of empathy and compassion that biophilic design has the potential to evoke may contribute to better environmental ethics.**

Our understanding of a healthy environment is built on our early impressions of what is ecologically normal. As the rate of environmental deterioration accelerates, each generation confronts a new (and worse) baseline for environmental indicators. The changing baseline alters the normality for each generation. The environmental generational amnesia promotes lower standards for what characterizes a healthy ecosystem, hence intensifying extractive, consumptive, and exploitative behaviours.

Place Blindness

The vast majority of people today suffer from place blindness or inattentional blindness as a result of the constant barrage of stimuli. Because we are primarily an indoor generation, we have sealed our spaces and minds from natural elements, disconnecting ourselves from nature. Future generations will need to form a positive relationship with their natural environment if they are to value and conserve natural resources. It is pivotal for our planet's future that children be exposed to more natural environments. This makes it critical to develop places with functions that are vital to contemporary society while preserving the robust time-tested principles of biophilia that have proven effective for millennia. A successful biophilic design must enable people to interact with nature continuously and consistently.

The ‘place’ is a vital feature of biophilic design. A place's relevance to a community is determined not only by the quality of its biophysical environment – its natural and built structures and their interconnections, but also by its social connections. Biophilia is typically perceived as an evolutionarily informed, intrinsic psychological response to environmental information about a place's viability, while topophilia or the ‘love of place’, evolves from an individual's lived experience to develop place attachment. Topophilia is what transforms a space into a place for us. Biophilia intersects with topophilia as it informs us of our socio-physical landscape and inspires a love of place. A sense of place fosters attachment to our surroundings, shapes identity, and makes environmental action more meaningful in a local context.

Biophilia- inspired planning and design

Designers can help reshape societal behaviour since the design of the built environment influences individual and collective experiences. Biophilic design can assist policymakers, planners, and architects in better defining nature's role in sustainable cities and improving community nature literacy. This will encourage engagement and appreciation of natural capital, as well as its responsible use in alignment with regional ecosystem dynamics.

When an ‘either/or’ strategy is employed to decouple environmental preservation from development, support for sustainable solutions weakens. Biophilia-inspired planning and design tools can be used to not only improve the aesthetics, economic value and ecological quality of a place, but also to engage people in

activities that build social capital and improve pro-environmental behaviours. Biophilic designs can foster topophilia in a community, strengthening its socio-ecological resilience and creating a shared vision for climate positive, sustainable, resilient and equitable cities.

Ann Rochyne Thomas is a cross-disciplinary biologist and ecological spatial planner. She is the founder of the Centre for Climate Resilience – a sustainability and climate change advisory.

www.linkedin.com/in/rochyne

www.ccradvisory.org

www.bionovasolutions.com



Living Systems make Thriving Cities

“Our cities and urban areas are beautifully complex. We experience ‘place’ through an infinite number of connections between people and the interactions with our built and non-built environments.”

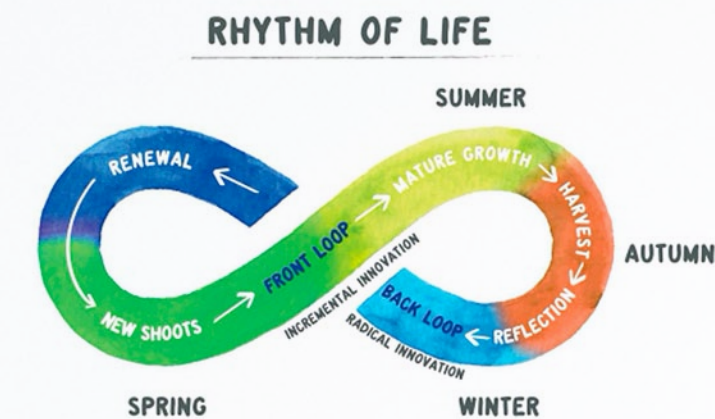
Jaime Blakeley-Glover

When we visit a thriving piece of city, we know it. We can see, hear, touch, smell and in many cases even taste the energy of a place. It is in every sense a living system, interconnected, constantly shifting, and evolving. Urban environments where the absence of energy is palpable are equally noticeable. Places where there are buildings and people present but somehow

less alive. New developments that looked vibrant on the architects’ drawings and where the finances ‘stacked up’ on paper, but the place never came to life.

So, if thriving cities are indeed thriving living systems, what can we learn about how we shape and curate our cities from living systems principles?

1. In nature, living systems are complex networks of independent but interconnected organisms and processes. A significant challenge is that many decisions that shape our cities are focused on individual success, short termism, or linear thinking. When we develop the ability to understand and leverage connections, we can sense and respond to the needs of the place. To do this we need to bring different modes of thinking and working into the built environment. Ultimately, this comes down to paying attention to, and developing awareness of the living system. We draw on co-sensing practises such as Theory U (Otto Scharmer) and Warm Data (Nora Bateson) to provide inspiration for the sort of approaches that can deepen our understanding of place and sit alongside traditional data sources to inform decisions. Both represent an experiential approach to learning and a commitment to immerse ourselves in the living system that we play a significant role in shaping.



Rhythm of Life in Regenerative Leadership
(Hutchins, G. & Storm, L. 2019)

2. Living systems work through a constant process of adaptation and regeneration that occurs through an endless cycle of emergence, growth and decline responding to changing environmental conditions. Giles Hutchins describes this as the Rhythm of Life ...

There are so many learnings that we can take from this living system principle into how we shape our cities that are simply not possible to do justice to in a short article. However, if we turn our attention to what is visible in cities, there are examples of less-than-vibrant urban environments where the thinking behind the ‘place creation’ process would have been driven solely by securing lettings to strong covenants with the sole intent of maximising investment value. These approaches jump straight to the ‘mature growth’ phased of Giles and Laura’s model without attending to the important process of learning from the place, reflection, and emergence.

Conversely examples such as Cargo at Wapping Wharf in my home city of Bristol demonstrate the benefits of an approach more aligned to living systems. The now semi-permanent ‘prototyping’ spaces within the shipping containers of Cargo have enabled businesses within the local ecosystem to experiment and emerge. Anyone who visits, can feel and certainly taste the energy and diversity. This represents an interesting reframe of a meanwhile strategy or initial lettings policy using living system principles ... what if we saw this stage of a project as an opportunity to engage with the system and open the opportunity to experiment? What if we trusted this more emergent process to regenerate a place through unveiling what the place needs rather than locking in long term problems through short term, linear thinking? For an interesting exploration of the long-term legacy of short-term thinking, read Social Impact Developer Stories’ founder Paul Clark’s take on Somers Town in London in *The Deals Beneath* (2020).

At a wider level, taking a living systems approach also enables us to sense and respond to changing environmental conditions. By connecting with the evolving social or environmental needs of the ‘place’, we can respond to it and work in the interests of the community. Social examples include approaches to address inner

city loneliness such as the excellent work of the Loneliness Lab or providing space for the energy of a burgeoning creative or food industries grow into. Environmental examples such as climate and biodiversity crises are well known but still unaddressed at a place scale.

To bring positive change in places, it is critical that the process of adaptation and regeneration flows from a genuine connection to these environmental and social contexts rather than simply responding to a set of planning requirements or hitting an industry standard at the minimum cost possible. It means taking ownership within the 'place' of carbon neutrality, building in biodiversity, and moving towards circular models of consumption and production.

3. Constant feedback loops happen everywhere in natural living systems. They build the connection between diverse organisms and create resilience and build adaptive capacity. Many good property managers and asset managers are adept at shaping relationships with their tenants, and property companies like Bruntwood do this within an ecosystem of office and workspace in Manchester beyond. This more systemic mode of thinking underpins the resilience of their business model.

Applying this approach to all stakeholders in a 'place' unlocks these feedback loops and builds connection with the widest possible lens. It enables those parties owning and occupying buildings to adapt over time to the shifting social, environmental, and economic context. This approach requires moving beyond notional consultation to a committed, intentional approach of engaging with and actively supporting participation of the local community. Where development schemes are concerned this means a shift from a mindset of seeing the community as an adversary and source of frustration to approaching it with a curiosity of what can be learned about the 'place', and what needs to emerge within it.

By recognising our cities are living systems it points to a different way of seeing, exploring, and shaping them. Indeed, learning from the principles that enable natural systems to thrive, adapt and regenerate can provide inspiration for different ways of approaching our work in the built environment as 'place-keepers'. When we look through this lens we can see what genuine regeneration that comes from within the place looks like. This is regeneration that responds to the place and community through a process of adaptation versus the stark gentrification that comes when we pay no regard to life beyond the 'Red Line' and financial appraisal.

There are plenty of excellent examples of where a 'living system' approach has created thriving places as well as those where a linear, short-termist decision has blighted a place for decades. Yes, financial sustainability is important but those of us working in the built environment have a responsibility to act in the interests of a

place rather than solely making a quick 'turn' on a deal. Fantastic models exist that allow us to integrate living systems principles into our decision making albeit putting them into practice requires a fundamental shift in mindset, skills and how we view the world and collaborate with it. We can look to nature's living systems to inspire our work in cities, but we also need to start by developing different ways of knowing our places and working within them if we are going to honour their beautiful complexity.

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Listen out for our podcast with Jaime. Jaime also spoke at the regular Workplace Trends Research Summit held in London. Bookmark the event which takes place twice a year.



WHAT CAN PLANNERS DO FOR OUR MOTHER EARTH?

“I believe the fundamental objective of the planning profession is to create a balanced system for people, nature and society to co-exist in harmony.”

Dr Wei Yang

Spring has arrived in April, just as [International Mother Earth Day](#) does every year on the 22nd of April.

The designation of the day by the United Nations General Assembly in 2009 aimed at raising global awareness of the interdependence between people, other living species, and our planet. It also recognises [a shared responsibility](#), as stated in the [Rio Declaration of 1992](#), to promote “harmony with nature and the Earth in order to achieve a just balance between the economic, social, and environmental needs of current and future generations of humanity”.

I believe the fundamental objective of the planning profession is to create a balanced system for people, nature, and society to co-exist in harmony. If we imagine the Earth as our birth mother, soils are her muscles, river systems are her blood vessels, woodlands are her hair, then cities, towns and villages are her organs. Everything is a part of an holistic, integrated and interconnected eco-system.

The theme for Earth Day 2023 is “Invest in Our Planet.” According to IPCC’s [Sixth Assessment Report on Climate Change 2022](#), over 45% of the world’s population live in land areas of high conservation importance, which are priority areas for nature

conservation. However, so often, development priorities have been given to economic growth at the expense of ignoring the limitations of our planet and its boundaries. As [UN Habitat](#) pointed out, in many regions, “urban planning has been instrumentalised by property developers and other economic and political stakeholders.”

I see planners as doctors for our Mother Earth. “Invest in Our Planet” needs to include professional capacity investment for planners. The climate emergency and biodiversity crises are two sides of the same coin, if the right approach is taken, we can find “high nature and low carbon” place-based solutions.

There is a great urgency to reimagine the role of spatial planning and planners. We need a modernised planning profession which is empowered by digital technology and supported by other specialists and key stakeholders. This would enable the correctly skilled planners to conduct comprehensive and intelligent health checks and coordinate various single-issue plans into long-term integrated strategies which put the environment and nature at the top table. At the same time, planners can plan human-scaled mixed-use neighbourhoods with accessible eco-corridors and localised social infrastructure; maximise opportunities



for onsite renewable energy and connections to decentralised low-carbon energy networks; and ensure that new developments are delivered in locations and densities that maximise the potential for low- and zero-carbon energy and transport infrastructure.

All of us who live on this planet are children of our Mother Earth. Our future generations have the right to enjoy the love of Mother Earth as much as we do. We want to leave them a place in harmony with nature, as the [Wellbeing of Future Generations \(Wales\) Act 2015](#) set out – a place which “maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change” – that’s exactly what planners can do for our Mother Earth.

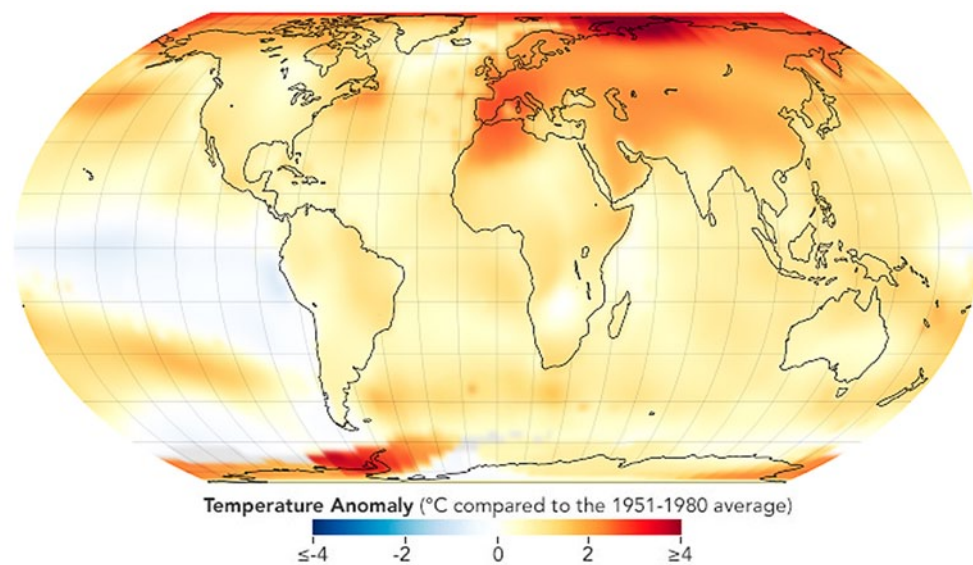
Let’s be imaginative and reinvigorate planning profession as a positive force to “Invest in Our Planet” for our Mother Earth!

Dr Wei YANG FAcSS FRTPI, Chairman, Wei Yang and Partners, and CEO, Digital Task Force for Planning, is an internationally renowned town planner and urban designer, who champions a place-based whole systems approach to tackle the grand challenges. She was President of the Royal Town Planning Institute in 2021 and will become the UK Construction Industry Council’s first female Chair in June 2023. She is Global Planner Networks (GPN) representative at the UN Habitat Professional Forum, and Professionals Co-Chair of the UN Habitat World Urban Campaign Steering Committee.

www.weiyangandpartners.co.uk

Watching the World Heat Up: Reflections on Climate Change Over the Years

Alexander Verbeek



(Image: NASA, 2023)

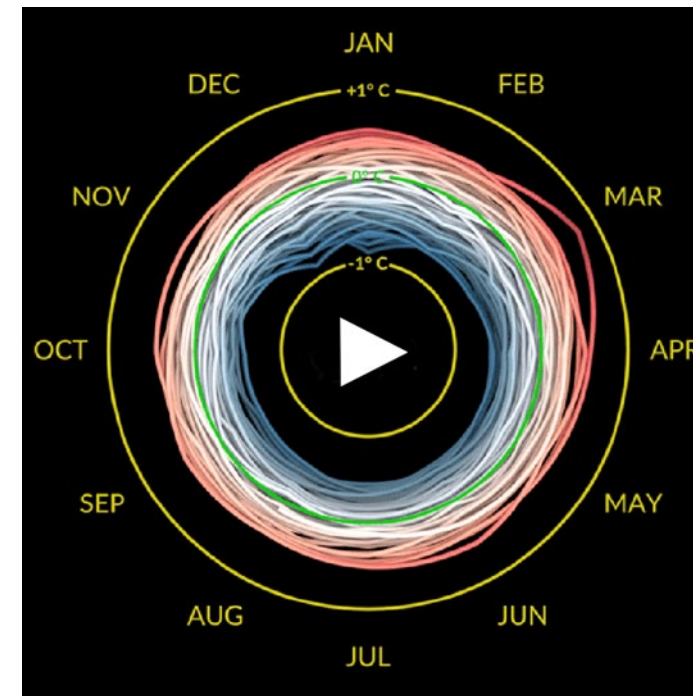
NASA has updated its well-known climate spiral visualization by adding 2022; the spiral keeps growing and getting dark red, indicating a warming planet. It made me wonder how I experienced climate change in my lifetime. And you may ask yourself that question too. If you search for the YouTube video “Nasa Climate Change Climate Spiral 1880 – 2022” (<https://youtu.be/LFGbWGMsuYY>), and watch until the end you will see the 3D version.

You will likely have seen earlier versions; the visualization shows monthly global temperature anomalies in degrees Celsius between 1880 and 2022. Temperature anomalies are deviations from a long-term global average. In this case, the period 1951-1980 is used to define the baseline for the anomaly.

As the years count up, the line spirals through the months of the year and around the circle. It turns to blue hues when temperatures are below average and red and orange hues when temperatures are above average. As the spiral progresses, the lines form a deformed circle that becomes predominantly redder, indicating Earth's warming up to more than 1.1 degrees Celsius above average.

1980s: optimism

The last flip of the image gives an exciting and frighteningly new perspective of the expanding column. It has made the change in our climate since the early 1980s much more visible. You may remember it as the decade that we (rightly) feared dangers like nuclear destruction and AIDS but were not



While I was in Bonn, there was a preparatory meeting for a COP on another global challenge: climate change. The activity fell under the then still young and hopeful UN climate change treaty, the UNFCCC. The Kyoto Protocol had just been adopted, but it would take another seven years before it entered into force.

I remember it triggered me to get more interested in climate change in those days and reading reports about it during long evenings in my small furnished rental apartment in Bad Godesberg. I still feel that place's dated and kitschy vibe, especially the excessive use

of dark oak wood that dominated every corner of the living space. Removing the hideous carpet from the bulky dining table did little to reduce the ugliness since the tacky copper lamp still hung above it. The central painting on the wall resembled the unique genre of the sad little boy with a tear on his cheek.

yet worried about the existential threat of the slowly but surely rising temperatures of our oceans and atmosphere. For me, these were my student days in Utrecht, the Netherlands; I mostly recall the optimism of those days and a belief in constant progress, especially in the second half of that decade.

1998: the global perspective

A decade later, in 1998, I worked on environmental issues during a short diplomatic posting in Bonn in the last days before our embassy moved to Berlin. Our primary focus was regional environmental challenges like acid rain or bilateral issues on rivers, pollution, or even as local as noise from an airfield across the border. It is not that we completely ignored the global perspective; the leading worldwide environmental problem that received attention was the ozone layer's destruction. The good news was that countries had agreed on a solution.

For a few months, I lived in this uninviting place, and it was there that I read all I could find about climate change. When I returned to The Hague just before Christmas, I was convinced of the severe threat that climate change posed. And rightly so; you can see how NASA's graph expands in this period. However, I don't recall being struck with the sense of urgency as I feel it now. It's not that the studies weren't unequivocal that we shouldn't waste any time and that the best window of opportunity to change course was now. But it felt different than today since I didn't see climate change's impacts in my daily life.

Looking back, I found it hard to imagine the sheer scale of the climate change impact that was about to take place worldwide. For example, the famous ice skating “eleven cities tour” could only be organized during harsh winters in the Netherlands. And the year before, we still enjoyed this most significant sports event in the Netherlands. It’s an ice-skating race that measures about 220 kilometres (135 miles) on the canals connecting the eleven cities in the Friesland province of the Netherlands. Why should we worry if it still gets that cold? I realize now that it would be the last time there was enough ice on the Dutch lakes to organize it. A wake-up call similar to my recent experience in *Ottawa*, where for the first time, the famous world’s biggest skating rink couldn’t open because of a lack of ice. I didn’t expect to ever write that the winter in Ottawa isn’t cold enough.

2006: An Inconvenient Truth

Fast forward another decade, and we were all watching Al Gore’s documentary ‘An Inconvenient Truth,’ it was nearly a decade after those early days in Bonn. It was also after the Kyoto protocol but still before the failed climate summit of Copenhagen. In the video, you can see that the spiral was undeniably starting to spin out of control. However, this was also when most of the media still didn’t get it and fell for the confusion created by the fossil fuel industry.

I lived in Vienna, in a bright apartment with my own furniture. I got my first internet connection at home, drilling holes through the walls for the cables in the pre-wifi days and hearing daily the dial-in sounds of my modem. The primary source for news was still printed media and television, and I remember how the world’s top news channels were

doing their utmost to be ‘balanced’ in their reporting. This meant, for instance, that the presentation of a deeply worrying report by the chairman of the IPCC, representing the peer-reviewed science of the world’s best climate scientists, got just as many seconds on the evening news as a self-declared expert who expressed the ‘other opinion’ and sold nonsense to the world’s television audiences with self-drawn graphs and cherry-picked data.

During my years in Vienna, I focused on the impact of climate change. I remember the presentations in the Hofburg, once the palace of the emperors of Austria, and our discussions about how a changing climate would impact security in Europe. Every Thursday morning, I enjoyed breakfast with some EU colleagues in the historic Cafe Central, where we speculated about increasing drought and extreme weather. But it was still an incomplete patchwork of worries; we missed many interconnections and didn’t expect much change in our lifetimes.

Looking back, the scientist’s predictions proved surprisingly accurate on the rise of atmospheric temperatures. Still, it seems even the best experts had not expected the system to be so dynamic that dramatic changes would already occur at the scale that we witness now.

2023: Finally, many feel a genuine concern about climate change

And now, we are in 2023. NASA has just added the latest data for 2022. As you can see in the ever-expanding and increasingly red spiral: the past eight years were the warmest eight years ever measured on the planet. What has changed compared to previous decades is that many people have finally accepted climate change as something to be concerned about.

For example, a Yale Program on Climate Change Communication poll in 2022 concluded that 51% of Americans believe global warming will harm their families. Still shockingly low, but it seems reality starts to sink in. And in the past few years, I noticed that my friends now finally talk about climate change, which is easy to understand since you must be blind not to recognize nature’s changes around you. In my talks and writings, I noticed that I shifted this decade from referring to scientific reports to talking about my own experiences. I hope this makes it easier to recognize the changes we all see in our lives. And I spend much more time nowadays sharing the stories of the beauty we still have. For example, I write about being in nature and tell others how much I enjoy hiking and photographing the beauty of the natural world.

The details are often still there to be enjoyed. Think of finding the first blossoming flower after the winter, which is still as stunning as before. But zooming out to the bigger picture has become painful, and NASA’s spiral shows the extended time frame and the global scale; it hurts to see our planet’s, and thus our future’s, destruction mapped so clearly.

This small, crowded planet is more vulnerable than you may realize. Yet, it is probably much more beautiful than most acknowledge. So, two ways of viewing our world go hand in hand: appreciate our planet’s beauty and thus be more motivated to preserve our precious home.

<https://worldfellows.yale.edu/person/alexander-verbeek/> <https://theplanet.substack.com>



A photograph of a forest floor in spring. The ground is covered with a dense carpet of small, purple-blue bell-shaped flowers (bluebells). Several large, mature trees with thick, textured trunks stand in the background. Some trees have bright green, newly sprouted leaves, while others are still bare. Sunlight filters through the canopy, creating dappled light on the flowers.

WELLBEING

Our cities should have all the elements we need to survive, thrive, and flourish. Tree and plant-lined walkways to give us some beauty and calm before we arrive at work, home, or school, as well as pockets of parks and green spaces with benches and meandering paths to allow us some downtime from a busy office, hospital or homelife.

With the statistics saying that 68% of the world's population will be living in cities by 2050 we really do need to make sure there is the infrastructure in place to ensure we don't add burden the already burgeoning infrastructures already there.

Making sure we ALL have access to nature and green spaces, with homes and workplaces, healthcare facilities and schools nestled within green spaces. Did you know there is an 80% reduction in crime if there are trees and green spaces in cities? Did you know that we need less antidepressants if we have trees around us, reducing stress and anxiety?

Creating more nature-inspired spaces with seating, picnic spots, benches and even mini urban farms can bring communities and people together as well as providing quiet space for those who just want to chill.

As regular readers of the Journal will know, we look at Biophilic Cities in every issue. In this issue in our Wellbeing section, we look at why we need to create flexible nature-inspired spaces in offices themselves, bringing in the green directly into the city's buildings themselves, plus ensuring we take time to have a wander and take time to look around us, look at the trees, hear the bird-song, study the little flowers: observe, absorb, and enjoy what we see.

Things that bind us

Cities have two sides ... which do you see?

Anicee Bauer

I have a confession to make. When I wanted to start writing this column, I procrastinated like hell. Yes, even more than usual! The deadline passed and I still hadn't written a word. Another week went by and I started to wonder, why I felt so uninspired when it comes to the subject of cities. I had looked up all kinds of "researchy stuff" like the benefits of trees in cities, innovative design ideas about how intelligently trees can be integrated into the city planning, or Utopian fairy tale "tree cities", like for example Lothlórien in Lord of the Rings. While I was scrolling through the research, I also learned that Amsterdam is one of the cities with the highest number of trees (one million!). In 2012 it even won the "European City of Trees" title, that is awarded to a city by the European Arboricultural Council. Paris apparently merely has 95.000 trees.

What I found somehow didn't seem to add up to what wanted to be written. It didn't

make my heart sing. Or bleed. The truth was I didn't want to write about cities. Cities make me nervous. They make me impatient, stressed, annoyed. Not all the time. But more often than I care to admit. I live in a city. In Amsterdam. Lucky me. And of course, it is not the city that makes me do or feel anything. I realize that. But something does happen ... Let me tell you about my visit to London in July 2022.

When I walked out onto the street from the train station St. Pancras, I didn't know what hit me. I crashed against a wall of noise, cars, gasoline smell, concrete, hurrying people and frown eyebrows. I took a breath and started to make my way to the Airbnb, that I thought was within walking distance. The walk turned out to be longer than I had anticipated, but I kept on moving, putting my perseverance to the test. After a while I started looking for a bench to have a rest and when I finally found one, I sat down and looked around.

Just a minute or two later I spotted a homeless man a little bit further down the street. And he wasn't alone. He had not one but two big shopping carts full of stuff ... clothes, bottles, blankets, shoes ... He pushed one cart a few meters down the street, then walked back and did the same thing with the other one. I was fascinated and stunned at the same time. The man obviously was tired. And he was wearing a mask. Whether he was still afraid of COVID or didn't know that masks were no longer required, I couldn't tell. When he had pushed his two carts in the proximity of the bench, he walked over and sat down next to me. Without looking at me. Without saying a word. He just sat there, staring out in front of him. Tired. Quiet. Muzzled.

After I had seen some people walking by and glancing at us with a quick look, I started to ask myself what they were thinking. Were they wondering about the man? About me? Did they care? Did they even notice? I looked at the two shopping carts and imagined what it must be like to live this life – his life. I couldn't. Instead, I caught myself pitying him – while somehow being impressed at the same time. It was confusing. I was scared of him. And I was scared for him. What happened to this man? How did he get here? And what was it that scared me? Was it the thought of losing everything that seems indispensable in life? And then to find out that it isn't.





Then yet another thought entered my mind: what did he think of me? Could it be that he was annoyed at me? Maybe because I was occupying the bench, where he wanted to go to sleep on? Was he waiting for me to get up? This thought made me curious and something urged me to make contact with him. And so, I asked: "Is this the bench, where you sleep?" ... He didn't react. Had he heard my question? He just sat there. Slowly breathing through his mask. I asked again. Nothing.

Eventually, after a short while, I got up and left the man and his life behind. Diving back into my own life with my own many many (mental) shopping carts. And a couple of hours later I found myself leaning against a tree in Regent's Park. Relaxing, restoring, resting ... I had forgotten about the man. Instead, my attention got drawn to something else: three foxes were scampering their way through the bushes just a few meters away from me! I was awestruck! I felt blessed, excited, and grateful. How extraordinary! Never would I have expected to see foxes here. In a city. In this city.

So, yes: something does happen. In German we have an expression: "himmelhoch jauchzend zu Tode betrübt", "rejoicing sky high, saddened to death". This is what happens in a city. It gives and it takes. It shows us opposites. It offers extremes. The past and the future. Our fear and our love.

Our secrets and our lies. It stretches our boundaries. And in all that, it binds us - as a reflection of us as human beings. With our whole array of emotions, thoughts, beliefs, and behaviour. We are bound to the city because it helps us grow. If we pay attention, that is. And if we choose to let it ...

Do you see the homeless man in your city?

Do you see the foxes?

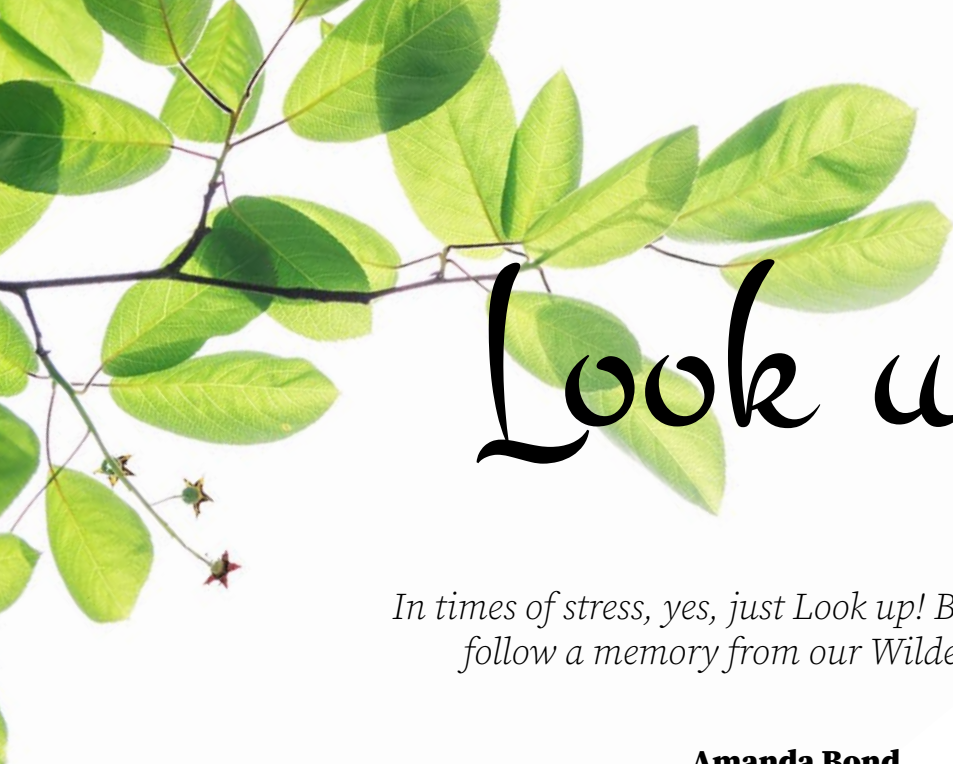


*"You take delight not in a city's seven or seventy wonders,
but in the answer it gives to a question of yours."*

Italo Calvino

(from *Invisible Cities*)

<https://humansintrees.com>



Look up!

In times of stress, yes, just Look up! Be inspired as we follow a memory from our Wildedge Walker

Amanda Bond

Many years ago, now, I was in London for the day, arriving on the ‘red-eye,’ to see someone who I hoped could help me find ways to deal with the tremendous, life-changing, stress I was experiencing.

Feeling empty and numb, I navigated my way from City airport to the West End, walking the last few streets to Harley Street, head down, hardly aware of the people to-ing and fro-ing around me.

I had been given the appointment at the last minute, a cancellation, everything falling into place like clockwork. I felt so on edge, rattled, and now on the doorstep, I hesitated, was this a huge mistake?

I rang the doorbell and was welcomed in, the receptionist doing her best to make me feel at ease. My nervous system was so charged though, anxiety off the scale I could hardly sit still.

After a short wait I was ushered in to see the man who claimed he could transform this state of being. I don't recall much of the hour I spent, listening mostly, hearing about his travels, and his consequent

shift away from the medical training he had undertaken to become a doctor, to offering some breathwork techniques and grounding exercises. However, the thing that persists to this day, as I readied to leave, was his instruction to “Look up, and notice what you see, pay attention!”

I stepped out again into the street. I now had a whole day in front of me, with no plans. It was April, a sunny day, with a hint of chill in the breeze, a remnant of winter. I remembered other spring days in London, and turned south, figuring I'd walk to Hyde Park. Slowly, I got my bearings, and then paused...and looked up.

The sky was clear blue, with fluffy white clouds high in the sky, the contrast with the redbrick buildings striking. I stood still, gazing at the movement of the clouds, and soon became aware that I was feeling lighter, less frazzled. I looked around me, noticing the grand old buildings, the classic white frontages, painted railings, at street-level, the 1st floor balconies, and tall windows. The upper floors, either stone or brick, the whole facades elegant, telling stories of a bygone era.

I remembered that this had been an old habit of mine, looking up at city buildings, of being fascinated by the rooftops rising away from the more modern shopfronts, delighting in the details of architectural design, features from classic periods of the ancient past.

I walked on, through Marylebone, an area of London that I loved, having spent some time there on an intensive cookery course years before, its small lanes, quirky, creative shopfronts, full of colour, inviting you to stop and look.

The streets lined with trees, now in leaf, the bright yellowy green of new growth, shimmering in the sunlight. London's trees, always making an impact, whatever the season. Portman Square, and the delightful garden, behind tall railings, an oasis of green, containing hidden pockets of quiet rest from the noise of the streets. Interesting sculptures, capturing my imagination, wondering at the thoughts of the sculptor when creating.

Marble Arch, the beauty of its grandeur and statement of place, amidst the crazy turmoil of movement, traffic, people busy getting to places. Stand still, just like stone, not wavering, watching, listening, hearing, but not being moved by the bustle.

Passing through the gates into Hyde Park, space opening, the wide Carriage Drive, lined by an avenue of mature trees. People walking, chatting, time slows here. People on horseback, out for a daily ride, always amazing to me in the centre of this great city. Wandering, breathing in the scents of the trees, plants, blossom...I sat on the grass for a while, taking it all in, noticing my breath was not so ragged. A hint of calm.



Something stirs within, urging me toward the Italian Gardens, its fountains, the Long Water. I've always been drawn toward water in grief, in sadness, this time was no different. Meandering, the quiet flow of water here slows my inner emotions, eases tension. Softens the pain. Releases tears, gently.

Time drifted, until I felt the urge to move again. Following the water, crossing the Serpentine Bridge, I headed across the park toward Kensington. Suddenly, aware of the need for food, I found a French bakery, enjoyed a coffee and patisserie, the sweet delicacy nurturing, the aroma of freshly brewed coffee stimulating.

Senses reawakened, I felt ready to return home.

Met off the plane, everyone commented, what happened? You're smiling.

Amanda Bond MA MBACP, Nature and Forest therapy Guide, Ecopsychologist

www.wildedgewalker.earth

Four tips on how to grow your own in the City

Remember ... plants can be grown in any location, as long as there's the right requirements for them to grow, eg. correct soil conditions, light, water, nutrients and in the right climate.

Here are four tips on to help you create thriving small spaces in cities.

Lara Cowan

1. I cannot stress enough how important it is to use slow-release fertilizers during the majority the growing season for plants in your pots outdoors and indoors. To help plants grow healthy and strong they need consistent applications of liquid and slow release fertiliser. I use homemade compost (from nettles) and indoors I use Gro-sure All Purpose 6 months Feed.
2. Make smaller spaces seem bigger by layering up the walls with three layers or more of plants. So, grow climbers up trellis along the walls, then add a layer of a tall plant and another layer in front of a shorter plant. Taking up space with this planting strategy actually makes the space feel bigger. Try Jasmine, then a potted Cordyline with small pots of Rosemary, Thyme, Lavender in front of them.
3. Indoors the Mother's Tongue (*Dracaena trifasciata*) is a plant that is easy to keep and difficult to kill. It is so hardy that it can survive if you repeatedly forget to water it. Just make sure you do at least every two weeks.
4. Sow spring onions (*Allium cepa*) into containers or pots on the windowsill from March onwards for harvests through summer and Autumn. Just add compost mixed with sand to within about 3 cm from the top of the container before lightly scattering seed over the surface and covering with 1.5cm of compost. Water sparingly to keep the soil moist and you'll soon have a tasty crop to enjoy. The presence of antioxidants in spring onions helps to prevent damage to DNA and cellular tissue by inhibiting the action of free radicals. They can also reduce cholesterol levels in the body, so they really are a vital source of good health.

For more growing and cooking advice head to our Instagram @botanicshed and look for our Soil to Soul video series. We take one plant each week to inspire confidence and creativity in the garden and the kitchen.

We bring meditation into the frame to support both exercises and hope to help you experience life with a kinder, calmer mind. I've been inspired by Satish Kumar's weekly meditations and want to share valuable meditation and self-care skills with you. These foster a stronger love for nature and critically a deeper love and respect for your own body.

Having a diverse range of stimulus to support your life experience plays an important role in nurturing creative thinking and ways of thinking that will help you out of challenging times.

www.botanicshed.com



THE CASE FOR BLENDED BUILDINGS

“As our cities continue to grow and evolve, the way we utilize our urban spaces must adapt to meet the changing needs of our communities.”

David O’Coimin

In the face of the rapid changes in the world of work, it is becoming increasingly important for cities to find innovative ways of making better use of, in particular, office space.

With the rise of remote work and the increasing popularity of flex-office and to a lesser but growing extent co-working spaces, the traditional office model is being challenged like never before. The next ten years will see every single organisation reevaluate its office footprint as rental break options come around.

The traditional concept of office spaces as single-use areas for businesses to operate in will eventually become a thing of the past. So why should we wait?

One way to accelerate the evolution is by opening office space to blended use now. This could be to other potential occupants or activities, depending on the fit, such as start-ups, sports, overnight stays, leisure, workshops, pop ups, crafts, music, culture, expositions, and more. The benefits of this approach are numerous.

Entrepreneurs, variation, collaboration and innovation

By providing space for entrepreneurs, social and cultural organizations, and

other non-traditional users, cities can create a more diverse and vibrant urban environment.

This, in turn, can stimulate interaction between different users, creating opportunities for collaboration and innovation.

When people with different backgrounds and skillsets come together, serendipitous discoveries can happen, leading to new ideas, products, and services. Together, people are stronger, and by opening up office spaces to a wider range of users, we can create a more resilient and dynamic city. This, in turn, can help to stimulate economic growth and job creation.

Many start-up businesses struggle to find affordable and suitable office space, which can be a barrier to their growth. By opening up office spaces to blended use, start-ups can share resources and collaborate with other businesses and individuals, which can provide them with valuable support and mentorship opportunities.

When people are brought together in a shared space, they are more likely to discover unexpected opportunities and connections. This can lead to new collaborations and partnerships, as well as the creation of new ideas and initiatives.









Keuk

Environment and income

Moreover, opening up office spaces to blended use can also have significant environmental benefits. By sharing resources, there is reduced demand for energy, materials, and buildings. This can help to reduce the carbon footprint of cities and contribute to the fight against climate change.

Additionally, this approach promotes the optimal use of what we have, reducing waste and inefficiencies. Many office spaces sit empty after business hours, leading to wasted energy and resources. By opening up office spaces to after traditional hours usage, the same space can be used

for multiple purposes, reducing the need for additional buildings and reducing the amount of energy and resources needed. This, at scale, can have a huge positive impact on the environment and reduce the carbon footprint of cities.

This approach can benefit all users of the blended building and nearby buildings by helping to build a sense of community and belonging, through cultural exchange, new shared experiences. Simpler communications can be achieved as well as overcoming the general ignorance of what is available and making it nearby so discovery threshold is lowered and the convenience maximised, which both drive up participation.



In addition to the environmental benefits, blending use can generate income for building owners and operators. By opening up office spaces to blended use, building owners can increase occupancy rates, allowing them to generate more income from the same space. This can be especially beneficial for building owners in areas where demand for office space is low. Sharing the costs of fixed expenses such as rent, utilities, and maintenance can also be beneficial for tenants, reducing the burden of operating costs.

Dynamic spaces

To enable high levels of dexterity and usability, products such as Nook pods and flexible furniture elements such as mobile walls, moveable planters and benches, sofas, and work desks can be used.

These products enable building operators to quickly and easily adapt spaces to meet the changing needs of tenants/users. For example, Nook pods can be used to create private workspaces, podcast booths, one to one training space, workshoping booths or meeting rooms, while mobile walls can be used to divide larger spaces into smaller work areas.

This flexibility allows building operators to maximize the use of available space, while also providing tenants with a comfortable and functional space.

By creating a dynamic environment that encourages interaction, creativity, and innovation, a building can become a hub for entrepreneurs, creatives, and innovators. This can attract more tenants, which can lead to increased income for building owners and operators.

It can also enhance a city's reputation by building a positive image, helping in the fight to attract talent and investment, which can help to stimulate economic growth and job creation.

In conclusion, opening up office spaces to blended use is an innovative approach that can help cities make better use of their resources. This approach promotes a more efficient natural ecosystem with lean space usage and harmonious use of resources.

It provides space for entrepreneurs, social and cultural organizations, stimulates interaction between different users, creates serendipity, reduces demand for energy, materials, and buildings, generates income, shares the costs of fixed expenses, enhances reputation, and enables high levels of dexterity and useability.

By embracing this approach, cities can create a more vibrant and dynamic environment that is conducive to innovation and creativity, which can help to stimulate economic growth and job creation.

Ultimately, this approach can help to build a more inclusive and sustainable society. So let's get going.

More information: usepace.com

Example: <https://openhoteldag.com>

<https://nookpod.com>

LUMINOUS SPACES BIOPHILIC DESIGN PRINCIPLES

Maureen Calamia

Over the years, several models have been developed for biophilic design guidelines. One of biophilic design's co-founders, former Yale professor emeritus, Stephen Kellert, continued to refine the set.

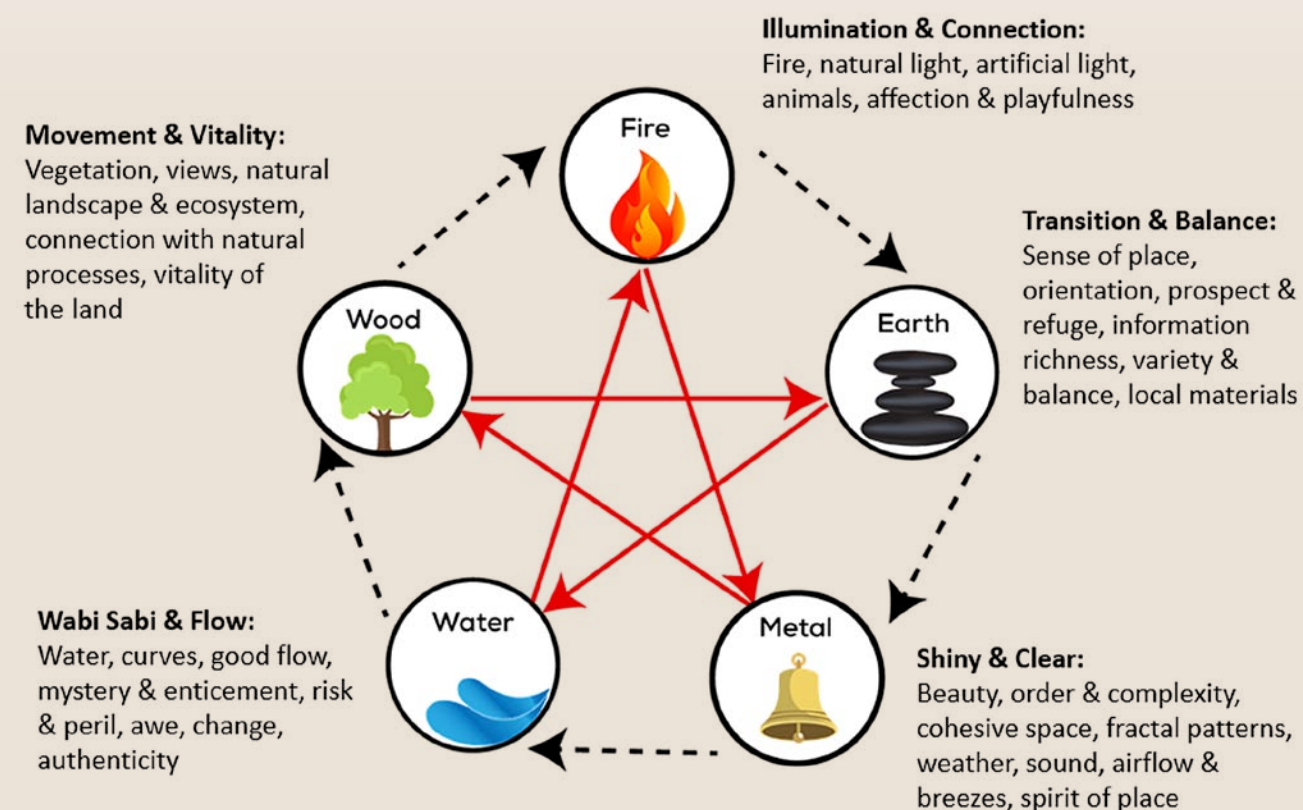
I'm partial to most recent version, called the Kellert-Calabrese model, but have added back in a few items in one of Kellert's earlier models, which are more intangible and spiritual.

Inspired by biophilic design and its connection with feng shui, I decided to write a book. But for nearly ten years, I struggled to find the right structure for the chapters. Then, I finally realized the key to the structure of the manuscript. A concept that was a common thread throughout my ideas: the five elements of Eastern philosophy.

Suddenly, I was able to write my book through the lens of the five elements. I created the Luminous Spaces Biophilic Design Principles.

Creating Luminous Spaces: Use the Five Elements for Balance and Harmony in Your Home and in Your Life (Conari Press) was quickly finished and published in 2018.

Natural materials, colours, patterns for all Five Elements



Fire: Illumination & Connection

In feng shui, Fire represents our enthusiasm, movement, and aliveness. It is our passion! Fire in the built environment gives birth to new ideas and opportunities. Fire is the most yang of all the Five Elements and rules the summer season and midday.

Our Sun is the primal symbol. It is luminous, hot, intense. Its power is all-consuming.

In biophilic terms, Fire is illumination of all kinds (natural and artificial). Orientation to natural light and the lighting of spaces for the appropriate mood.

Fire's yang energy relates to all living beings and therefore, interaction with animals and other humans. Views of wildlife, as in bird feeders and baths, open expanses of landscapes. Social, gathering spaces.

Fire is the love of our other-than-human occupants in our homes as well as emotions of affection and playfulness – and how our spaces can embrace these qualities.

Earth: Transition & Balance

Earth represents security and stability; the ability to feel grounded and balanced. It is the foundation upon all other elements rest. It provides us nourishment and support. Earth rules the season of late summer/early autumn and late afternoon.

In feng shui, Earth is known as the 'transitional' element, which is placed at critical junctures of the Five Element Cycle. Earth follows Fire, which represents summer, and is the peak of yang chi. It also traditionally follows the Water element, or winter, the peak of yin chi.

Earth provides a stabilizing factor that allows transformation to take place.

In biophilic terms, the Earth element is all about balancing the qualities in a space (yin and yang), so it requires variety in shape, textures, colour, height, weight, material, etc.

All matters of placement and orientation are associated with Earth. Earth requires incorporating a sense of the land itself, through the use of local materials and references to cultural, historical, and geological connection to the land. Earth is essentially features of the land, including mountains, hills, valleys, and deserts, as well as the soil and geology of the location.

Metal: Shiny & Clear

Metal represents form and function, beauty, and order. It helps us create the structures of society as well as creating beauty in our lives. Metal rules the late autumn and early evening. Crisp fall air and the falling of leaves.

Metal is an element, along with Wood, that is unique to the Chinese system of elements. Metal is said to represent the purity of the precious minerals found deep within the earth after millions of years of compression, heat, and pressure. As it relates to Chinese Medicine, Metal is associated with the lungs, therefore, the breath, air and open skies.

In biophilic terms, Metal is associated with the wind and movement in the sky. The ability to witness the approaching weather, and movement of the sun. It is associated with the airflow in our spaces and the quality of sound.

Metal reminds us of the importance of cohesiveness to our feeling of comfort and security. To make sense of our spaces.

Metal symbolizes the importance of beauty and order in our lives. We are

reminded about the fractal patterns and structure that we find in the mathematics in all of nature: hence, complexity and order.

These patterns are found in the natural materials, such as the grain of wood, or the spiral of a nautilus shell. Metal connects us with the genius loci, or inherent spirit of place,

Water: Wabi Sabi & Flow

Water is the most yin element in feng shui and the most precious substance for life. It is associated with winter and midnight. Space for inner contemplation, peacefulness, and rest. It is our creativity and imagination that springs from this deep well.

Water is formless yet powerful. It can be the roar of tidal wave or fall gently as rain. It can be the expanse of the ocean or a puddle in the street. Water is mysterious and dangerous. Water gives and sustains life yet can destroy it.

In feng shui, Water symbolizes chi and its flow through our buildings. Water brings life and abundance to the body and to our spaces.

In biophilic design, since Water is yin, it is related to feminine energy. Curved shapes, ovals, and arches are shapes that mimic the yin quality. They provide a natural, authentic flow for chi throughout our spaces.

Water is danger, therefore connected to those qualities of risk, peril, awe, and mystery, satisfying our deep human need for stunning emotion in small doses.

Water flows to the deepest levels and reflect an authenticity, or wabi sabi, of nature. Objects and materials that show the passage of time are demonstrating the qualities of the Water element.

Wood: Movement & Vitality

Just like a tree, Wood represents our ancestors who root us to the past while enabling us to reach up to the future. It simultaneously is our foundation and striving to achieve, with new ideas and motivation. Wood rules the spring and morning hours.

In nature, Wood is the vegetation covering the earth, providing nourishment to all beings on the planet. Wood provides shade and oxygen. It is birth and gives a sense of life and vitality of the land.

In biophilic design, Wood is all aspects of the landscape and vegetation. It is our views to nature and bringing nature inside with plants and wood materials. Wood is also connected to the health of the ecosystem and ways to incorporate more sustainable practices to the built environment. To help restore what was once there.

In biophilia, we recognize that our feeling of health and vitality is connected to the vitality of the land itself. When we experience a place for the first time, we have a quick intuitive knowing about it that is a combination of the input from all our senses. A place that is alive gives us a feeling of wellbeing.

It is my hope that I've spurred an interest to learn more deeply about practice of feng shui and its role in our modern world. Just as we reach back to learn the wisdom of ancient philosophies, feng shui has a wealth of wisdom to help guide us in deepening our quest for connection among the natural world, the built environment, and our lives.

Learn more in this online certification course, Luminous Spaces Biophilic Design.

<https://www.luminous-spaces.com/biophilic-design-online-course/>

Listen out for our podcasts with Maureen on The Journal of Biophilic Design.

BOOK REVIEWS

Each issue you will find some excellent book recommendations, suggested by the dazzling book and gift shop Folde in Dorset

Folde Dorset

Bestselling nature therapy books



Islands of Abandonment by Cal Flynn

A thought-provoking read, *Islands of Abandonment* explores what happens to abandoned places when humans retreat and nature is allowed to reclaim its place. Don't let the title fool you into thinking that these are paradise islands of romantic escape, however; they are places that humans have left, or fled, or made uninhabitable for themselves, such as the radioactive exclusion zone around Chernobyl and the abandoned whaling stations of South Georgia Island.

Weaving together scientific research with personal anecdotes and storytelling, Cal Flynn paints engaging and immersive pictures of these eerie places, describing the haunting silence and unexpected beauty found in the ruins of human civilisation.

The book touches on many important issues, such as the impact of human activity on the environment, the concept of wilderness, and the potential for rewilding and restoration. Flynn does not shy away from the darker side of human history, including the consequences of colonialism, industrialisation, and war. And yet, in spite of our propensity to trash our planet, she finds surprising glimmers of environmental optimism about the resilience of the natural world.

By turns haunted and hopeful, this luminously written world study is pinned together with profound insight and new ecological discoveries that together map an answer to the big questions: what happens after we're gone, and how far can our damage to nature be undone?

Buy the book:

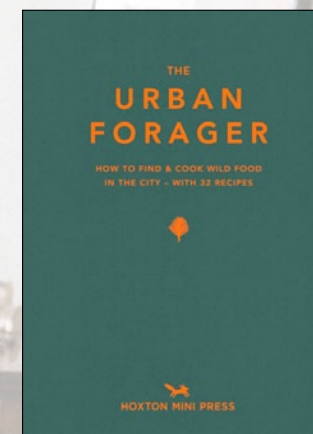
<https://uk.bookshop.org/a/8995/9780008329808>

The Urban Forager

Hawthorn berry ketchup, cherry blossom shortbread, nettle ravioli, elderflower fritters ... these are just some of the tasty and surprising dishes you can make from wild food found in your city. With expert advice from professional forager Wross Lawrence alongside elegant photography, this pocket-sized hardback explains how to identify 32 easy-to-find plants in the city and cook up a wild feast.

Buy the book:

<https://uk.bookshop.org/a/8995/9781910566695>



Sylvan Cities: An urban tree guide

We're surrounded in cities by trees, quiet colossuses that most of us don't know by name. Does that matter? It's certainly possible to appreciate a tree for its beauty, its shade and its shelter without knowing whether it's an alder, an elder, a lime or a beech. But look harder, and we begin to see the beauty beneath the bark – the tales of how trees are integral to medicine and art as they are furniture and firewood; the stories of why wild figs grow on the banks of Sheffield's rivers and why the ash tree is touched with magic and mischief. As well as being an illustrated guide that will help you identify some of the species you see around town every day, Sylvan City is also a potted-journey through our cities' woody places and a literary hunt for where their wild things are.

Buy the book:

<https://uk.bookshop.org/a/8995/9781786493644>

Urban Wild: 52 Ways to Find Wildness on Your Doorstep

Learn how to de-stress, relax and connect with the wildness you can find on your doorstep even in urban and suburban settings. Increasing workload, nervous tension, trouble sleeping? Today's urban living makes it easy for us to feel divorced from nature. This practical book is filled with 52 varied and inspiring activities illustrated with beautiful colour photographs that will get you out and about whatever the weather. Featuring a combination of creative, culinary, herbal and mindful projects, all with nature at their heart, you'll be surprised how much wildness you can find on your doorstep when you know where to look.

Organised by month, Urban Wild's simple, seasonal, step-by-step activities open the door to nature in urban and suburban landscapes to help you increase your potential for health and wellbeing and take your first steps on a journey of discovery towards a lifelong connection with the natural world.

Buy the book:

<https://uk.bookshop.org/a/8995/9781472990969>



Come into the Folde

Online www.foldedorset.com

Instagram [foldedorset](https://www.instagram.com/foldedorset)

Images of
Folde Dorset
by Matt Austin

At the end of every podcast we ask the same question:
"If you could paint the world with a magic brush of Biophilia, what would it look like?"
 For this issue, we asked people to focus on cities.

Paula Rowntree, Head of Workplace Design; Office, Branch & Home Future Workplace; People & Places; Lloyds Banking Group

"More green cities, that would be my magic wish. I would like to see the tops of every building having planting, with bee hives and pollination. Imagine if you looked down on tops of buildings, it would look green ... Rooftops that could be gardens. Let's put nature back into city spaces and see if we can get carbon levels down and oxygen levels up, It's a very simple thing that could be done."

Alexander Verbeek, Dutch environmentalist, public speaker, diplomat, and former strategic policy advisor at the Netherlands Ministry of Foreign Affairs

I dream of a world where cities could be painted with the magic brush of biophilia. The touch of that brush would instantly create a greener, liveable world where our urban landscapes would look vastly different from what we know today. Green cities should reflect our innate love for nature and the desire to connect with flowers and trees. Imagine how you would feel in your city if greenery, water, open spaces, and life were brought back into the concrete jungle.

Imagine cities with more parks and gardens, where people could connect with nature and enjoy its beauty. Cities where children play on the grass and bicycles replace cars as the primary mode of transportation. It would make cities cleaner, quieter, and more liveable. Less traffic, less pollution, and more green spaces would create a healthier environment for city dwellers who would breathe fresher air, walk on greener paths, and live closer to nature.

One city that has successfully undergone this transformation is Utrecht, the fourth largest city in the Netherlands. I studied there in the 1980s, and since then, I have followed how Utrecht has transformed itself into a green city that has prioritized making cycling a convenient, safe, and accessible mode of transportation, leading to a significant reduction in the number of cars on the road. Utrecht is a beautiful city to stroll around, especially now that the highway west of the city centre has been restored to the traditional canal that was once there. Rowing boats now float on the water where cars stood bumper to bumper just a decade ago in a semi-permanent traffic jam. So, if you want to see relaxed and happy people connecting with nature, just walk along the canals of Utrecht.

The city's commitment to biophilia has made it a more liveable place for its residents and attracted more tourists, boosting its economy. Utrecht's transformation into a green city is a shining example of what can be achieved when cities embrace biophilia and prioritize their connection to nature.

Utrecht is a prime example of a city that has successfully made a green transformation and serves as an inspiration to other cities looking to embrace biophilia. With a more connected and harmonious relationship between cities and nature, we can create a better future for ourselves and the planet.

What would your city look like?

How can we support climate resilience, biodiversity and enhance citizen wellbeing through biophilic design?

We are lucky enough to live near Ashridge Forest in the Chiltern Hills, and I love nothing better (apart from sand between my toes and the rolling waves of the sea!), to take a picnic blanket and just sit and watch the trees sway in a soft breeze, listen to the bird song and the rustle of pheasants in the undergrowth around me. So, for me, my magic brush would include "to be close to a forest," like the lucky people who live in the Peak District who have access to our National Forest (did you know the UK had a National Forest?).

(For information on the National Forest:

https://www.tdag.org.uk/uploads/4/2/8/0/4280686/national_forest_health_and_wellbeing_-_tdag_22.pdf)

There are many wonderful groups that are bringing together voices of change, to help make our cities more liveable, happy, safer, healthier, more biodiverse and enable people, wildlife and planet flourish.

Here are some that will kick start your connections and own research. Let us know of any others who you would recommend.

WE THOUGHT WE WOULD ALSO MENTION SOME RESOURCES THAT YOU MIGHT LIKE TO EXPLORE

Biophilic Cities is a wonderful organisation, which outlines its own Biophilic Cities Network Declaration of Action for Global Biodiversity Conservation, acknowledging "the critical role cities can and must play in biodiversity conservation now and in the future." You city can join this network and there are lots of things you can do yourself to get involved too.

<https://www.biophiliccities.org>

Nature Based Cities calls for: "A future with green open space. A call to action for developers and property leaders to incorporate green open space in their projects for a greener, more sustainable future."

<https://naturebasedcities.com.au>

The Trees and Design Action Group (TDAG), "brings together individuals, professionals, academics and organisations from wide ranging disciplines in both the public and private sectors to improve knowledge and good practice to support the role of urban trees through better collaboration in the planning, design, construction and management and maintenance of our urban places." Look up and support these wonderful people: <https://www.tdag.org.uk>

These are creating a forest for learning and advocate:

"Spending time in nature delivers proven benefits for mental health and wellbeing."

Green social prescribing – the practice of supporting people to engage in nature-based activities to improve their mental health and wellbeing.

Green social prescribing enables more people to experience nature as an effective way of improving mental resilience and supporting mental health."

Share your vision - if you could paint your city with a Magic Brush of Biophilia what would it look like? Tag us on social media
#magicbrushofbiophilia

Nature-based Solutions for cities – “Rapid urbanisation is placing mounting pressure on the ecosphere but carries promises of renewal – an opportunity to reimagine the built environment and, by extension, our very civilisation. Nature-based solutions can help cities to realise this opportunity.”

<https://www.iucn.org/our-work/topic/nature-based-solutions-cities>

UNEP Report: Smart, Sustainable and Resilient cities: the Power of Nature-based Solutions

<https://www.unep.org/resources/report/smart-sustainable-and-resilient-cities-power-nature-based-solutions>

The Nature of Cities – TNOC’s Mission: “We believe the route to cities that are better for both people and nature is through transdisciplinary dialogue and collaboration. The mission of The Nature of Cities is to curate joined conversations about urbanism across ways of knowing and modes of action. We create transdisciplinary, publicly available, and widely disseminated programs, events, knowledge, and engagements for green city making. We strive for cities worldwide that are resilient, sustainable, liveable, and just.”

www.thenatureofcities.com

Scotland – Nature-based solutions: Find out how urban nature-based solutions can help Scotland’s towns and cities mitigate and adapt to climate change.

<https://www.nature.scot/climate-change/nature-based-solutions/nature-based-solutions-urban>

The C40 Knowledge Hub – Cutting-edge insights and practical resources from leading climate cities. Nature-based solutions: How cities can use nature to manage climate risks.

“From extreme heat to floods, the impacts of climate hazards on urban lives and livelihoods are **already worsening**. Nature-based or ecosystem-based solutions¹ can help to **tackle many of these risks, while offering additional benefits** for health, wellbeing and urban economies. Efforts to create or revive urban nature are already reducing negative climate impacts and boosting people’s quality of life around the world. This article explains how your city can design and implement nature-based solutions (NbS) to climate risk.”

To kick off your assessment: **Identify green assets, gaps and opportunities as part of a climate risk assessment.**

https://www.c40knowledgehub.org/s/article/Nature-based-solutions-How-cities-can-use-nature-to-manage-climate-risks?language=en_US

Biohabitats – Reintegrating Urban Ecology. Professor “Tim Beatley believes that sustainable and resilient cities represent our best hope for addressing today’s environmental challenges. For more than 25 years, Tim Beatley has studied, taught, and written about the subject of sustainable urban communities, and creative strategies by which cities and towns can fundamentally reduce their ecological footprints while becoming more livable and equitable places. He is the author or co-author of more than **15 books**, including **Ethical Land Use**, which was declared one of the “**100 Essential Books in Planning**” by the American Planning Association.” Excellent conversation with Teresa Heinz Professor of Sustainable Communities Department of Urban and Environmental Planning, School of Architecture, University of Virginia in Biohabitats way back in 2013. We are still learning lessons even after all this time.

<https://www.biohabitats.com/newsletter/reintegrating-urban-ecology-2/leaf-litter-talks-biophilic-cities-with-timothy-beatley-reintegrating-urban-ecology/>

Earth.org – Environmental News, Data Analysis, Research & Policy Solutions.

There are some interesting articles on there for instance: *Biophilia Design and Biophilic Cities: Can Hong Kong Become One?* “Biophilia design is a new but steadily growing phenomenon around the world. In Hong Kong, the concept is also gaining momentum, but many challenges persist in incorporating nature more fully into existing urban spaces. What lessons can Hong Kong take from other biophilic cities around the world such as Singapore to achieve its development goals such as improving public wellbeing and sustainable growth?”

<https://earth.org/biophilia-design-biophilic-cities-hong-kong/>

Cities Biodiversity Center – ICLEI – *Local Governments for Sustainability* is a global network of more than 1,500 cities, towns and regions committed to building a sustainable future. They aim to help the ICLEI Network to become sustainable, low-carbon, resilient, ecomobile, biodiverse, resource-efficient, and productive, healthy and happy, with a green economy and smart infrastructure, we impact over 25% of the global urban population. For instance this is an interesting read to spark discussion on what local cities can do: How cities are using nature-based solutions for sustainable urban development

<https://cbc.iclei.org/cities-using-nature-based-solutions-sustainable-urban-development/>

European Commission – Sustainable use of land and nature-based solutions in cities.

https://commission.europa.eu/eu-regional-and-urban-development/topics/cities-and-urban-development/priority-themes-eu-cities/sustainable-use-land-and-nature-based-solutions-cities_en

Utilities solutions – there are companies out there like UPM who are making some headway into shifting our dependence on fossil fuels, which means that cities can implement things differently. They just need to look for alternative solutions.

We have to remember that what we do today is not just for today, but for all time.

Have a read about Three pioneering cities, one sustainable future: This is how our lives will change if cities realize their climate goals

<https://www.upm.com/articles/beyond-fossils/22/three-pioneering-cities-one-sustainable-future/>

ZSL – the international conservation charity “*driven by science, working to restore wildlife in the UK and around the world by protecting critical species, restoring ecosystems, helping people and wildlife live together and inspiring support for nature.*”

Excellent article: **Nature at the heart of global decision making – NATURE-BASED CLIMATE ACTION IN CITIES: A NO-BRAINER TO BOLSTER URBAN CLIMATE RESILIENCE**

<https://www.zsl.org/news-and-events/feature/nature-based-climate-action-cities-no-brainer-bolster-urban-climate-resilience>

The Royal Society – Philosophical Transaction of the Royal Society- Biological Sciences. Nature-based approaches to managing climate change impacts in cities.

<https://royalsocietypublishing.org/doi/10.1098/rstb.2019.0124>

Design Challenge: Biophilic Cities, Making Urban Environments More Diverse and Sustainable

“In this **classroom-ready activity**, students will research action steps cities around the world are implementing to restore nature and biodiversity into the urban landscape. They will evaluate their own cities (or favourite cities to visit) and develop action plans to make their cities greener and more nature-friendly.”

<https://www.half-earthproject.org/biophilic-cities/>

Nature-based Solutions for Sustainable Urban Planning, Greening Cities, Shaping Cities – Book, 2022. Includes analytical methods to support city-wide decision-making for NBS in urban regeneration processes. Illustrates lessons learned on how to effectively mainstream NBS in urban planning practice and policies. Reports experiences of co-creation processes of NBS in the urban context.

<https://link.springer.com/book/10.1007/978-3-030-89525-9>

State of Green – Case study, following Denmark’s green transition:

From challenge to opportunity. State of Green’s work is built on international partnerships, solutions, and insights within energy, water, cities, and circular economy. Through decades of experience, Denmark has turned challenges within these four areas into opportunities.

<https://stateofgreen.com/en/>

Connecting Nature is a great source of inspiration, information and connections. It’s aim is: **BRINGING CITIES TO LIFE, BRINGING LIFE INTO CITIES**

“Coordinated by Trinity College Dublin, Connecting Nature is a consortium of 30 partners within 16 European countries, and hubs in Brazil, China, Korea & The Caucasus (Georgia and Armenia). We are co-working with local authorities, communities, industry partners, NGOs and academics who are investing in large scale implementation of nature-based projects in urban settings. We are measuring the impact of these initiatives on climate change adaptation, health and well-being, social cohesion and sustainable economic development in these cities. We are also developing a diversity of innovative actions to nurture the start-up and growth of commercial and social enterprises active in producing nature-based solutions and products.”

<https://connectingnature.eu/abc-activating-biophilic-cities>

Do you have a go to source to support Biophilic Cities?

If you would like to work with us to coordinate research on a voluntary basis to support what we are doing here, please get in touch with our editor on editor@journalofbiophilicdesign.com

We are also looking for sponsors to support our work here at the Journal. If you are feeling philanthropic or can help connect us please get in touch. Thank you.

FINAL WORD

Dr Vanessa Champion
Editor

The beauty of nature, the minutiae, the variation, the variegation, the harmony, the wonder, the challenges, the wildness, the fierce storms, the serene calm seas, the fish in the sea, the birds in the sky, the worms that aerate our soils, the bees that buzz and pollinate, the overlooked teeny tiny insects, the hidden creatures and cephalopods in the depths of the sea, everything in nature has a purpose. As do we. We have a purpose. We are nature, we are part of the eco-system. We are responsible for designing the places we live and work so that they do not damage these eco-systems, that we design places to help every living entity flourish, so we and those that come after us can flourish.

Everything is interdependent in nature; we are dependent on natural systems just as nature is dependent on us.

I hope this edition inspires you to have conversations with friends, colleagues, businesses, governments, and neighbours. We can only bring about change if we listen, learn, understand, and then do the right thing.

Every time we invest, every time we have a choice, we have the power to do it better.

What will you do? Let us know. Can we help?

An aerial photograph of a massive ocean wave, showing the dark blue water and the white, turbulent foam of the crest. The wave is breaking, creating a sense of power and movement. The text is overlaid on the upper right portion of the image.

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EDITION

LOOK OUT FOR OUR UPCOMING
BIOPHILIC DESIGN CONFERENCE
IN 2024

A full-page photograph of a forest floor covered in a dense carpet of purple bluebells. Several tall, slender trees with green foliage stand in the background. A narrow dirt path leads from the bottom center towards the middle of the image. The sky is visible through the tree canopy.

JOURNAL *of* BIOPHILIC DESIGN

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