Sustainable Infrastructure

UPDATE 20

Newsletter by GreenBlue Urban

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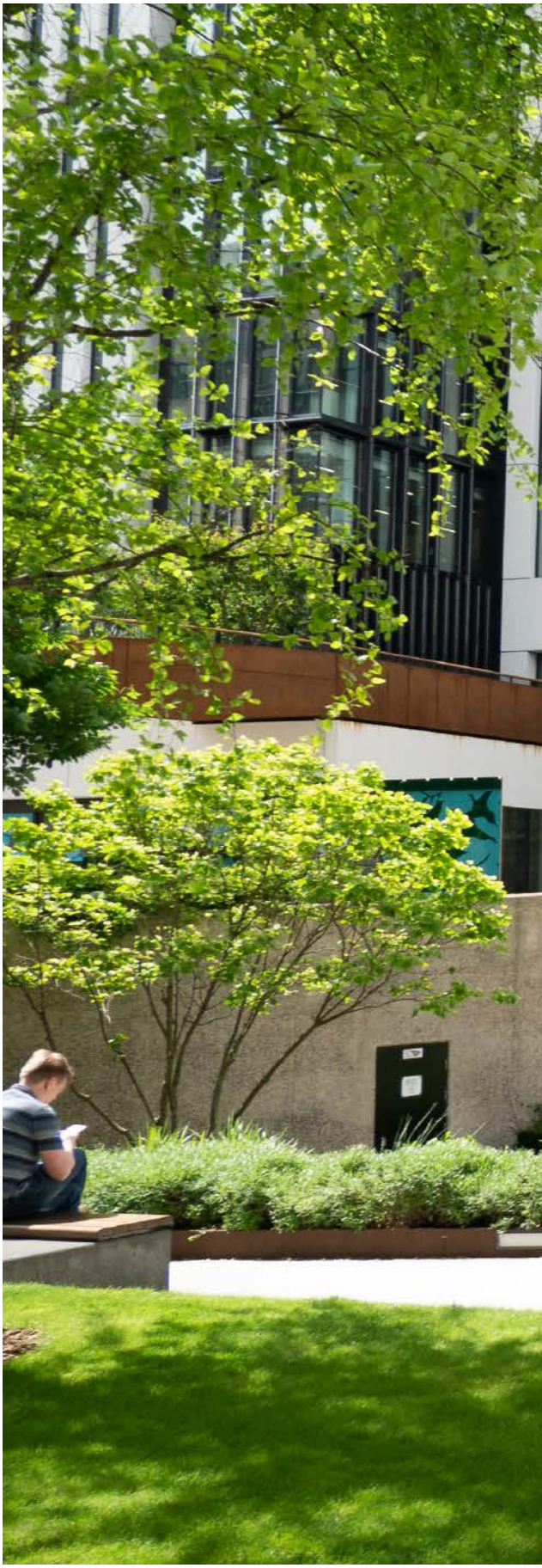
GreenBlue® URBAN

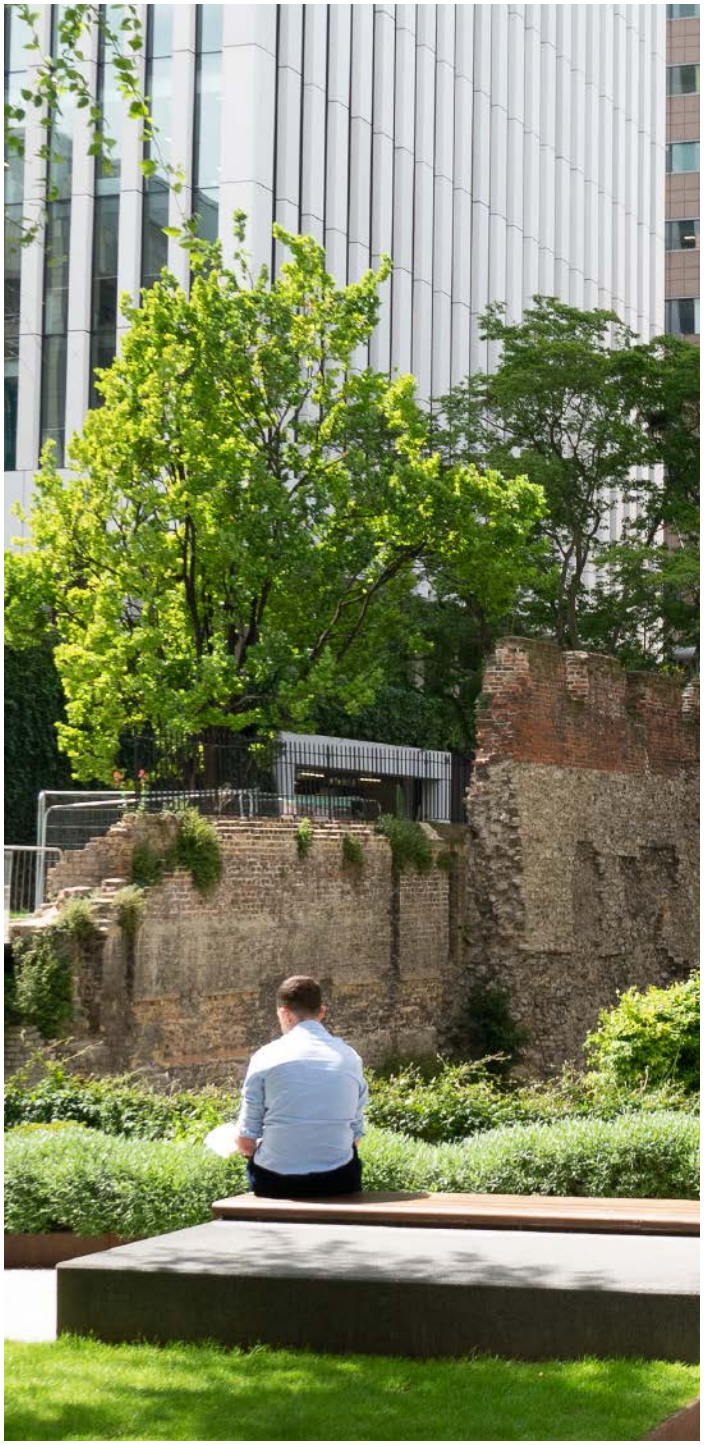
Establishing the future urban landscape

London Wall Place

This multiple award-winning development right in the heart of the city has released a new piece of public realm in the most ancient part of London. Previously the modern concrete and glass commercial building dominated the adjacent St Alphege Gardens, the site of the pre-Norman St. Alphege Cripplegate church, and public access was difficult. **Make Architects** won the project to create new commercial space in this historic area, with new public space available to all by opening up the central area of the site, including the remnants of the Roman London Wall. This landscape design was led by **Spacehub** of London.

The street now named "**London Wall**" shadows the course of the original city wall that was constructed by the Romans around 200AD; apparently built to protect the new capital of Britannia, Londinium, from attacks by invaders and angry Picts. Made largely from Kentish Ragstone, held together by mortar, it was originally 2.5 – 3.0m (8 ft - 10 ft) wide at the base and up to 6m (20 ft) high, and was complete with gates, towers and defensive bridges. It was probably the biggest building projects in Roman Britain, and until the Middle Ages defined the limits of the City of London. A few parts of this original wall still remain, many of them having been protected by their inclusion in other buildings over the past 1800 years. Notable in this regard is the section to be now seen at London Wall Place, which formed the northern wall of the original St. Alphege church.

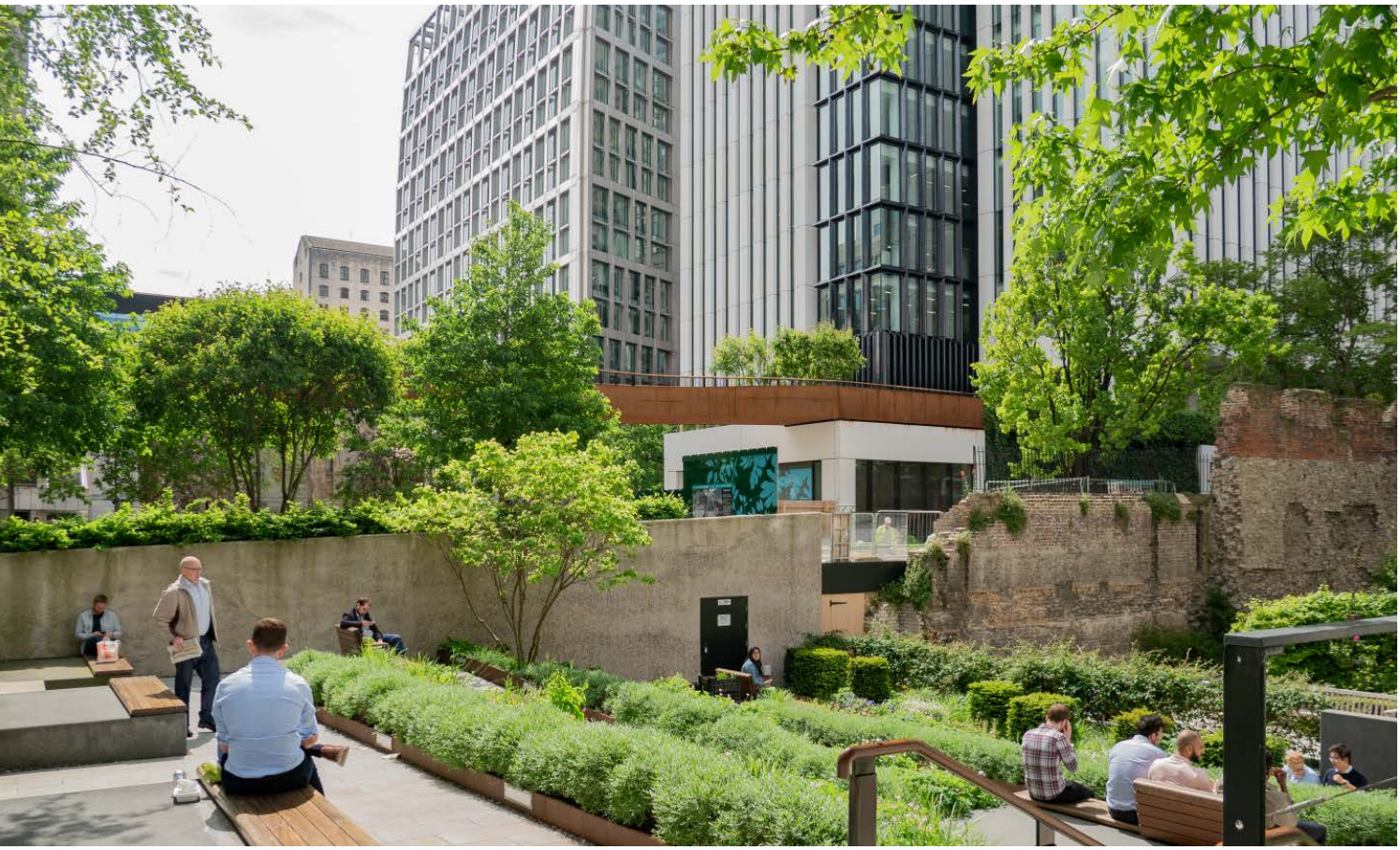


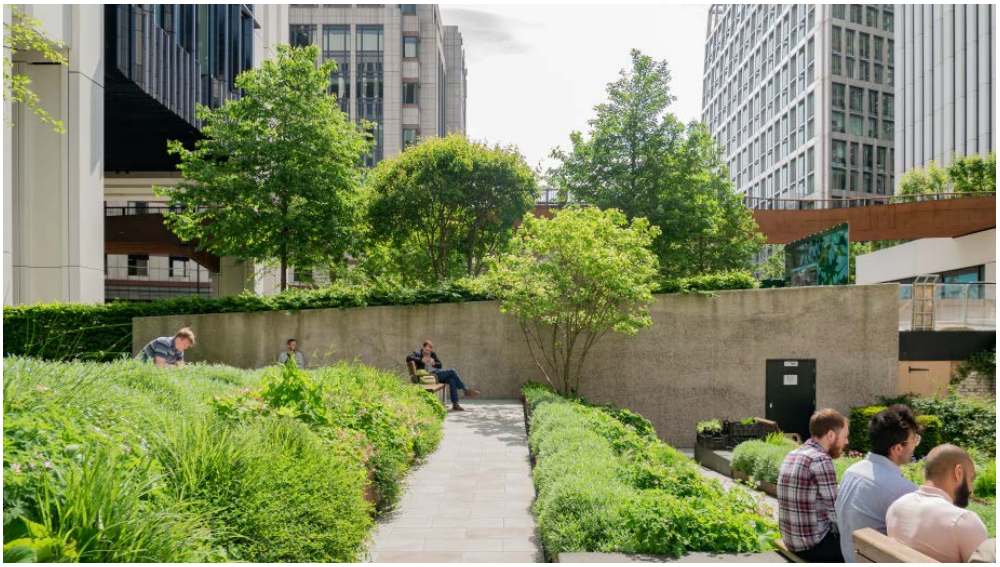



LONDON WALL PLACE

The new open central core of the development has reinstated the historic grid as pedestrian routes through a series of new landscaped gardens, both at street level and on bridges at high level and has provided a pleasant retreat formed by a series of pocket gardens, just waiting to be discovered.

Bearing in mind that this development is just the latest layer in the history of the site, establishing healthy trees amid the complex below ground works was never going to be simple. Many of the chosen planting positions were very limited in soil volume, and **GreenBlue Urban** were asked to suggest ways that good tree canopy cover could be provided.





Having carefully considered the tree species requirements and taking into account the unusual microclimates that exist in the city, the use of the **ArborSystem®** consisting of soil support cells to connect discrete soil areas, a soil aeration system and root management has enabled the trees to establish in a very satisfactory way without causing any difficulty with surfacing or below ground utilities.

In such schemes it is always helpful to include the landscape architect in early masterplanning: the London Wall Place scheme has again proved the value of collaboration, leading to the new urban park known as the “Sanctuary in the City”.

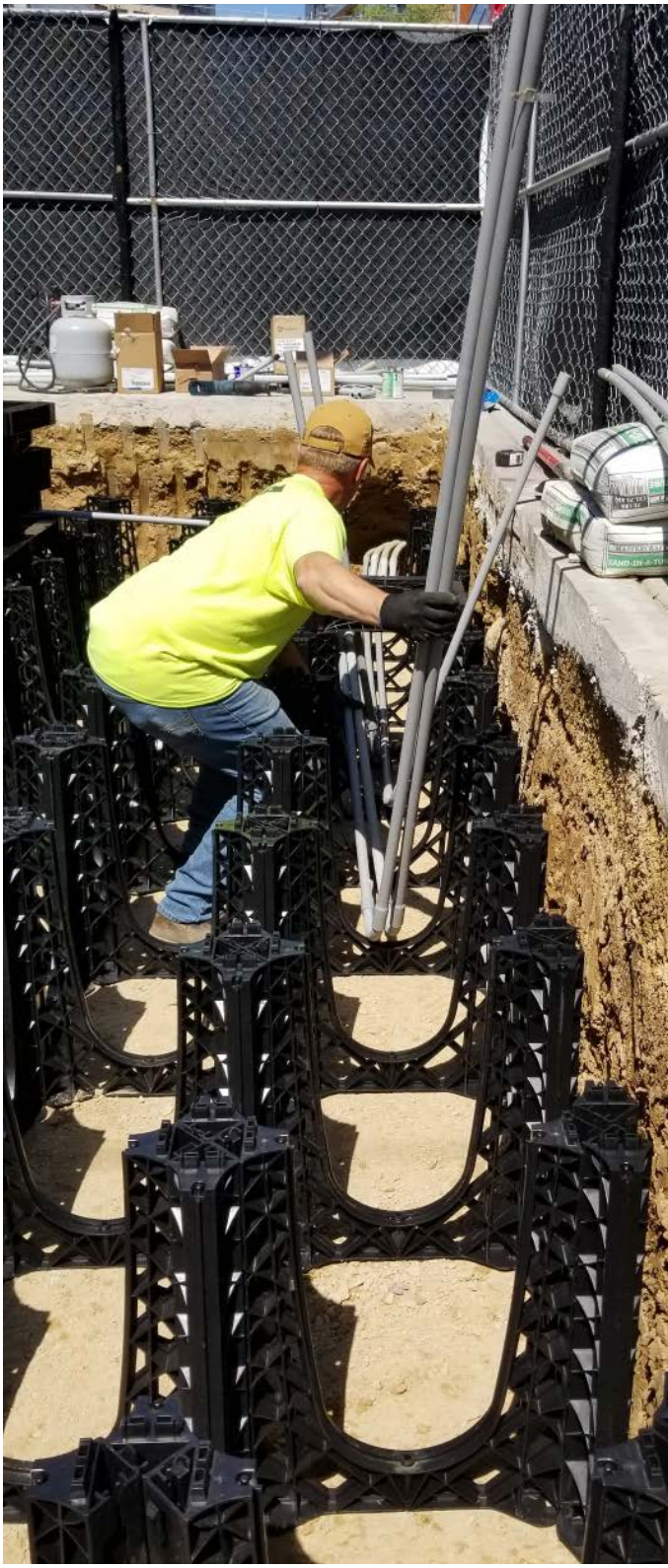
Hilldale Shopping Center Madison, Wisconsin

As one of the oldest shopping destinations in Madison since opening in 1962, Hilldale is a unique collection of high-end retailers. The current redevelopment underway at Hilldale marks the reinvigoration of the stable but aging suburban shopping mall through a multi-use approach. This strategy integrates restaurants, entertainment, lodging, office space, structured parking, and additional retail.

The original development pattern of buildings surrounded by surface parking is being replaced by a dense urban layout with outdoor spaces for cafes, plazas and pocket parks to create a new and inviting pedestrian environment between shops. This scheme will transform the busy mall into a street style outdoor shopping experience equipped with pedestrian walkways, social gathering spots, and lush landscaping.

GreenBlue Urban were brought in by the designers, **REALM Collaborative** and **Saiki Design**, to consult on the best way to achieve a mature tree promenade for this "street-style" shopping space. Considerations like walkability, maintenance vehicle access, and minimal closure times during construction were examined during the design of the **ArborSystem** into this area.

The trees along the pedestrian walkways that provided access to the various shops needed to grow into large specimen shade trees that would provide beautiful décor as well as comfort and protection from the outdoor elements.



Utilities being installed through the RootSpace system.

RootSpace was used to ensure that adequate uncompacted soil volume, along with the required irrigation/aeration and root management, was provided for these trees.

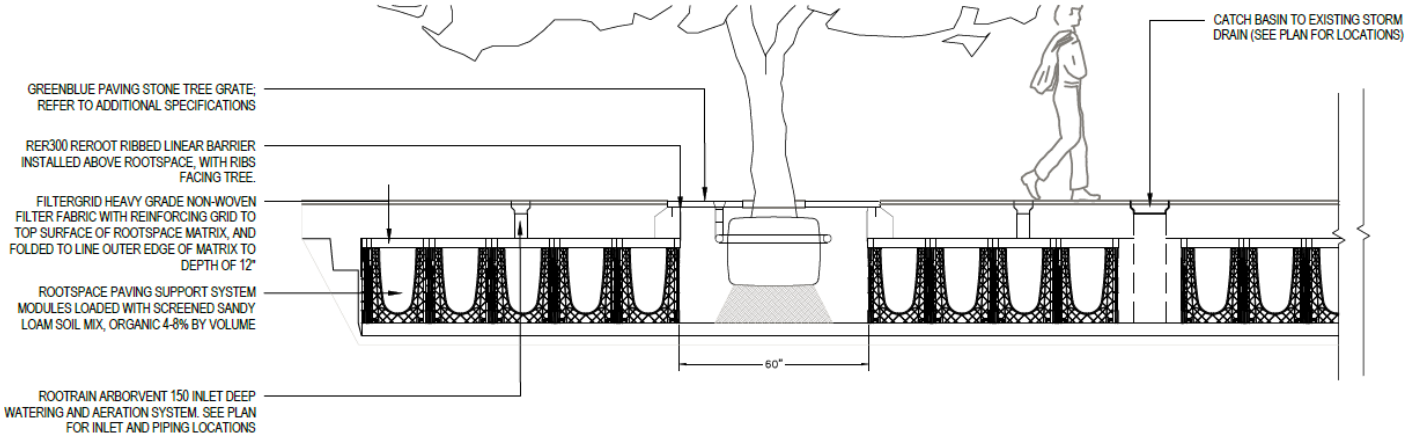
In addition to being made from 100% recycled plastic to help towards the sustainability of the redevelopment, RootSpace also boasts industry leading strength being H-20 load rated with minimal surface and provided a track record that couldn't be matched by other systems in the market – since GreenBlue Urban invented the world's first soil cell concept in 1998.

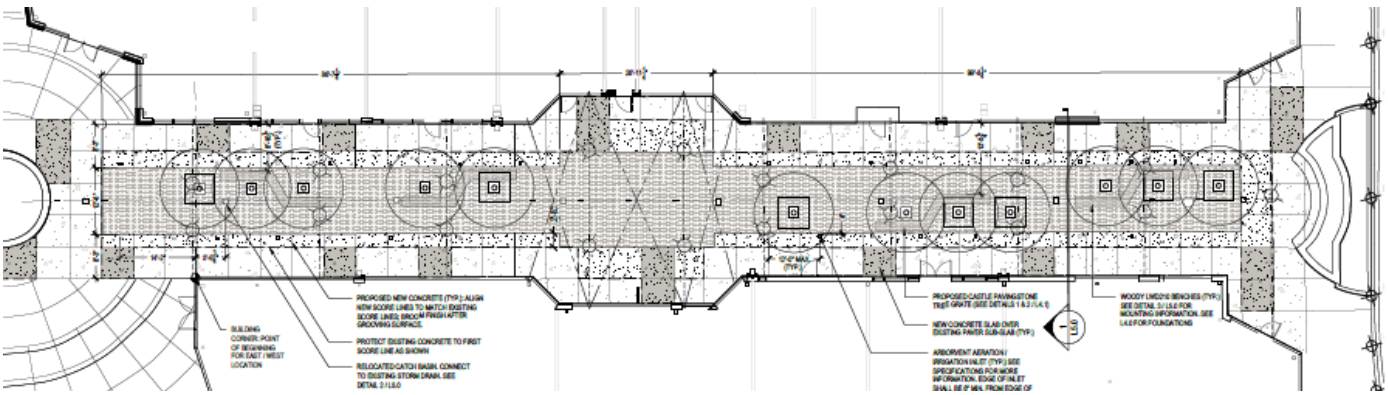
"GreenBlue Urban was extremely helpful with design support and preparing layouts and details for the project. Thank you very much GreenBlue Urban!"

- Landscape Architect,
REALM Collaborative

The design also incorporated a LID / SuDS element to the scheme by utilizing GreenBlue Urban's RootRain system throughout the RootSpace connected to ArborVent inlets. This provided a sustainable component for stormwater management while serving the purpose of irrigation for the trees.

A GreenBlue Urban representative was onsite for the installation to support the contractor and ensure that the process went smoothly. This onsite installation support is a free service that GreenBlue Urban provides for all our projects. We are proud to have supported the designers and contractors in making this redevelopment a success. Watch this space for more details and completed project photos, as this project nears completion.





Hilldale Shopping Center

Kings Crescent, Hackney

Green Lanes, in north London, one of London's longest stretches of road with a single name, is a road of great antiquity. Probably dating back to the Roman times, it has been used for centuries as a drover's way, a wide thoroughfare down which cattle were walked into London. It was preferred to the other major arterial routes, also Roman roads, such as Ermine Street heading towards Lincoln (now the A10), a road heading eastwards to Chelmsford, and the north heading Watling Street, running to St. Albans.

Up until the 19th Century, much of this road running through the parish of Stoke Newington was rural, passing through farmland and small holdings. The coming of the railways revolutionised this part of London, as it meant that those working in the city could commute – a hitherto rarely used term. This migration from city centre to nicer outlying areas and mass house building became common.

Opposite the beautiful Clissold Park – then still in private hands – a new development was taking shape. This consisted of three roads containing a mix of terraced and semi-detached villas with decent gardens. It was the developer's intention to provide better accommodation for families than could be obtained closer in to the city, and whilst the quality of the buildings would not impress us today, they were impressive at the time.

On site constraints

Installation in such close proximity to both new and existing housing presented utilities challenges - easily solved with the RootSpace soil cell system.

Trees planted

RootSpace installed and trees planted, contractors begin to backfill the tree pit system before paving.


Kings Crescent, Hackney

When men were first called up for military duty during the first world war, the Government found to its horror that many were unfit for service due to poor living conditions, and when the soldiers returned from the trenches, it began a policy of "homes fit for heroes", by clearing slum housing and rebuilding social housing to a better standard. What the Government did not finish then was assisted by bombing during the second world war, (Hackney losing approximately 4000 homes) which provided an opportunity to improve the housing stock.

The London Borough of Hackney became a laboratory for social housing experiments, trialling several different designs and options across the borough. Many of these particularly low-rise estates, have become popular, and are very much loved today. However, the Kings Crescent Estate, built on the land vacated by the demolition of the above three roads, consisting of two 20 floor towers, completed between 1969 and 1971 became problematic and disliked, and Hackney decided to demolish and replace the tower blocks with a stunning new development providing more homes, better accommodation and a fantastic public realm.

Tibbalds planning Consultancy were instructed by Karakusevic Carson Architects for the first phase of this complex scheme in 2017, bringing 50% of the 700 planned high quality homes to Hackney residents.

> “Regeneration is often complicated and clever ways were needed to integrate space in order to tie together one cohesive neighbourhood.”

- Lizzie Le Mare, Tibbalds

The public realm areas, designed by **Muf Architecture** were based around the needs of the residents, centred around the main street, which has been designed to be a playable area and also a route to the Clissold Park. This park, now open to the public gives an unenclosed eastern vista for most of the residents, reducing the impact of the high-density development.

Muf Architecture, working with GreenBlue Urban, carefully designed the infrastructure so that the new trees can establish in a very heavily engineered environment; and by cleverly incorporating different natural elements around these trees, provides:

- A play space for children
- An event area for the community
- Benches for the elderly
- Areas for socialising

Completed in 2018 a number of key practitioners are proud to be involved in this brilliant design and build. RootSpace 600, ArborVent Aeration, Guying and Tree protection will ensure maximum value is gained from the site, which will continue to become more and more effective as the 60 plus trees grow to reach their species potential – providing the multiple benefits that only mature trees can bring.

Toronto District Walking Tour on Trees & Water Sensitive Urban Design

At GreenBlue Urban we are constantly committed to engaging a broad range of professionals to share our experience of urban tree pit design and especially the approaches to LID/(SuDS) tree pits in constrained urban environments. Planners hold the key to setting the policy framework that enable us to develop more sustainable and resilient cities and to create a common language when it comes to trees as part of water management in our towns and cities. It was with this in mind that GreenBlue Urban's Consultant **Jeremy Bailey** provided a walking tour of the downtown Toronto area that was hosted by **Ontario Professional Planner's Association**.

This was a fantastic opportunity for professionals with an abiding interest in the relationship between planning and the provision of green and blue infrastructure. Coming together to see projects using engineered soil cells to both manage root systems and attenuate stormwater. Innovation is critical to developing a standard way of using natural assets such as urban trees to mitigate against flood risk. Toronto like many other North American cities is not immune from flood risk. The 2014 Toronto Emergency Plan notes that:

> "Floods are a common and widespread natural hazard across Canada"

with many households relying on forward thinking policies and action plans to reduce their vulnerability.

This Walking Tour was part of wider program to engage a multitude of different disciplines with these issues. Participants from across the Greater Toronto Area were able to see the physical locations of the LID tree pits and wider green infrastructure projects which enhances the learning experience.

Quite often we see the theory and the model planning policies that are often associated with green street scenes and downtown areas, but in practice the delivery and aftermath are not always considered. Toronto has an excellent track record of valuing and creating policies to enhance and maintain its urban trees and green infrastructure across the city, but we all know we can achieve more working together and sharing ideas through interdisciplinary collaboration.

It was with this in mind that GreenBlue Urban wanted to work proactively with the Ontario Professional Planner's Association so that the walking tour could provide a platform to disseminate knowledge across a wider audience and also facilitate discussion amongst professionals that may not otherwise have taken place. We can all be forgiven for sometimes working in silos and the walking tour was designed to make that explicit connection between green infrastructure and how we manage water.

This is still an area where policy needs to develop to support the wealth of technological innovations out there that are truly multi-functional and can provide soil volume for the trees whilst also being an integral part LID/SuDS design.

For this particular event, Jeremy began the tour at **590 King Street West** – a site making use of a Linear Drain supplied by GreenBlue Urban to channel stormwater runoff from the sidewalk into the soil within a suspended pavement system below.

300 Front Street also used a GreenBlue Urban Linear Drain to channel stormwater into a suspended pavement area below. Images from this site compare growth from 2014 to 2019, the difference is quite outstanding! Union Station was a standard tree planting application that used GreenBlue Urban's StrataCell system.

Jack Layton Ferry Terminal was one of the first Toronto installations of GreenBlue Urban's latest soil cell RootSpace. This site is where we ended the tour. It utilizes GreenBlue Urban Linear Drain along with all the ancillary ArborSystem components like RootRain Irrigation/Aeration.

The aim of the event was also to answer some common questions that planners require to adequately assess whether their local policy framework is providing for the long-term health of their green infrastructure and LID schemes and those delivered by developers in and around their cities. For example, how can tree pits manage stormwater from the roadway?

How can we install and monitor these LID tree pit systems across a variety of contexts and at varying scales?

GreenBlue Urban are passionate advocates of using physical site visits to underpin and illustrate the key principles of using uncompacted quality soil in geocellular structures to ensure the long term survival of urban trees in the hard landscape, and this walking tour enabled participants to have a contextual overview of the way these projects connected and enhanced the cityscape. It provided an opportunity to showcase how urban sustainability and resiliency are not achieved discretely but strategically through design. Placemaking and community buy-in is also vital to the success of these high quality schemes. The city is the sum of citizens and these long-term legacy schemes are here to enjoy.

ArborSystem Installation & Maintenance Manual

A comprehensive guide to installing the world's leading urban tree pit package, including detailed diagrams on servicing and maintaining utilities within the ArborSystem.

DOWNLOAD

bit.ly/ArborSystem-Manual

Scan to download

Launching RootSpace Generation 2

The GreenBlue Urban RootSpace® system is essentially a pavement support system – designed for maximum soil and rooting volume, to be 'utility friendly', with economic freight and industry-leading strength characteristics.

GreenBlue is very proud to announce a relaunch of **RootSpace** with some excellent improvements:

- New 400mm (16") high version to enable a wider range of tree pit depths – now 5 different height configurations
- Faster, simpler and easier assembly process
- Further increase to the load bearing capacity
- Enable easy re-excavation for maintenance of utilities

Full structural capabilities are available but by way of an example, the following table uses a 4.5 tonne wheel load on different RootSpace configurations (this is based on a typical macadam/asphalt type road construction and the standard tree pit detail of GBU specification as shown):

RootSpace configuration	Height	Subbase DTp Type 1 depth	Macadam depth *	Total depth
400 single	475mm (19")	150mm (6")	150mm (6")	300mm (12")
600 single	675mm (27")	300mm (12")	150mm (6")	450mm (18")
400 + 400	875mm (35")	300mm (12")	150mm (6")	450mm (18")
400 + 600	1075mm (43")	325mm (13")	150mm (6")	475mm (19")
600 + 600	1275mm (51")	325mm (13")	150mm (6")	475mm (19")

* Total depth of bound bituminous layers (Minimum construction depths for a full range of wheel loads are available separately)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GreenBlue Urban UK Roadshows

It has been a busy summer so far for GBU HQ. Following the success of the webinar series the previous winter we felt passionate about joining up with well-known collaborators to spread the word on Green Infrastructure and SuDS across the UK.

The first in the series of the roadshow events took in collaboration with the **Southside Housing Association** in Glasgow and co-hosted with The **Central Scotland Green Network**. The event provided a platform for stakeholders across the public and private sector divide to present innovative SuDs projects and discuss barriers and opportunities for the implementation of SuDs in the Glasgow area.

The presentations were also supplemented by a site visit to the ambitious Moss Heights Halfway Community Park Scheme.

Mid May saw the second and GBU arrive in East Anglia. The beautiful environs of **St Catharine's College**, Cambridge were perfect surroundings to welcome landscape architects, utilities companies and local authority for a series of talks from **Cambridge City Council**, **LDA Design**, **Sharon Hosegood Associates** and GreenBlue – highlighting the challenges and solutions for delivery from policy through to valuation techniques and the need for underground soil cell systems.

Travelling back North we were delighted to work alongside **Leeds City Council** and the **Institute of Chartered Foresters** to focus on "Green Street Principles". The event was designed to highlight the importance of considering the requirements of green and blue infrastructure.

We often find that the competing requirements of 'nature' and the highways and streets of our towns and cities result in schemes that do not deliver the ecosystems services that they could.

Finally, prior to the summer break the team arrived in Manchester to join our industry partners **City of Trees** for "SuDS in the City". Making the explicit connection between the role of trees and sustainable urban drainage and how they are often overlooked both in terms of policy and design. The objective of the roadshow was to bring together public and private sector stakeholders to share ideas relating to the delivery of SuDS in the GMCA area. The quality and variety of speakers from **Atkin's**, **Bruntwood**, **Biora Group** and **United Utilities** to name a few provided the most engaging and lively atmospheres for a conference of this nature.

With further roadshows planned in London, Liverpool and the East Midlands there is still an opportunity to determine the business case for SuDS being a necessary aspect of our holistic approach to the green infrastructure agenda.

Residence Inn by Marriott Greenville, South Carolina

It was a privilege for GreenBlue Urban to work with the prestigious **Marriott Group** to deliver a quality landscape around the Residence Inn in the bustling heart of downtown Greenville.

We often associate hotels in downtown areas with a lack of provision for lush landscaping and green infrastructure elements, not to mention the noise and activity of a 24 hour urban lifestyle. This can be counter to our need of sleep and rest in these hives of activity. However, working with the designers and installers delivering the Residence Inn by Marriott, GreenBlue Urban were able to provide the advice and technical solutions necessary to ensure that the landscape was not an afterthought.

The **RootSpace** soil cell system was used under the sidewalk to provide adequate uncompacted soil volume, ensuring the trees would establish into maturity to create the right canopy cover to buffer noise, add amenity value and reduce the urban heat island effect, making comfort of the guest rooms the primary focus for this city center hotel. The innovative rooms, in addition to the gym, pool, and dining provisions, meant that the hotel has been designed to draw not only the traveler on a budget visit, but catering to those for whom a holistic hotel experience is a requirement. The attractiveness of the peripheral pubic realm including the trees is also an essential component of placemaking to draw in local residents to use the hotel facilities more regularly.

The City of Greenville have worked with the **GreenBlue Urban** team and were enthusiastic to increase the provision of systems in the city that would ensure the healthy growth necessary for the trees to reach their full species potential. They also have a city tree crediting program and a landscape ordinance checklist that ensure quality of landscape is at the heart of new development delivered across the city. It was with this in mind that **Seamon Whiteside** specified the GBU RootSpace system. 24" high RootSpace 600 module, creating the perfect environment for theses urban trees and whats more, were able to deliver a cost-effective scheme for twelve trees with groups of two trees sharing the linked volume of our unique **ArborSystem**.

This project was time critical and GreenBlue Urban were able to respond to the needs of the contractors, ensuring that site delivery was achieved on time. The flexibility and ease of assembly of the RootSpace system enabled installers to construct the tree pit systems quickly, easily, and without onsite supervision on this occasion - although onsite support is a service GreenBlue Urban provide **free-of-charge**.


Residence Inn by Marriott

VIPs Collaborate at the New London Showroom

We are proud to announce the launch of our first ever showroom in Farringdon, London. Located in the heart of the Clerkenwell design district a stone's throw from major transport hubs it makes the ideal location for Architects, Landscape Architects, Contractors, Developers, Planners and many more to come to discuss designs and to avail themselves of our ongoing **CPD** and **training programme**.

To celebrate it was a pleasure to invite friends, colleagues and collaborators to our VIP opening evening event.

With our ever-expanding range of water management solutions, building upon the 27-years' experience integrating urban trees and green infrastructure into the hard landscape, it was appropriate that the talks which kicked off the showroom event focused on SuDS both in the capital and beyond. We were delighted to have guest speakers from the **GLA** – **George Warren** and the **Landscape Institute** – **Amina Waters** & **Andrew Morris** and GBU's very own **Charlotte Markey** presented alongside the existing CIRIA SuDS Champion **Chryse Tinsley** – **Leicester City Council** providing an overview on the research and innovation that had resulted from GBUs involvement in **EU Interreg Projects**.

The event highlighted the fact that strong relationships between our core team and those experts who have moved the SuDS agenda forward are essential to the long-term development of the market. Through group working and joined up approaches to delivering high quality products and designs we can provide the multifunctional solutions required for success and we cannot work alone!

The decision to open the new showroom was predicated on the fact that whilst the innovation campus in Sussex is an ideal location to meet with the team and see the physical manufacturing of products, there is an increasing desire for those delivering and designing schemes based in the capital and in cities connected to it, to be able to meet in a central location, and drop into a hub where a full complement of technical and design services are available daily.

Breakfast, lunch and evening training and networking sessions will be rolled out all year round. GreenBlue will also be collaborating with a variety of professional bodies and chartered institutes so that the space can become a focus for diverse and engaging events both educational and social.

Pop in for a visit or contact us today to arrange a CPD!

117 St Johns Street – EC1V 4JA

T: 0207 253 2800


GreenBlue
URBAN
ArborFlow
Landscape Design Advisory
Urban Planting Consultants
Stormwater Solutions
We enable sustainable cities
for improved quality of life.

GreenBlue Urban Ltd - UK
Northpoint, Compass Park
Bodiam TN32 5BS
United Kingdom

www.greenblue.com
enquiries@greenblueurban.com
Sales and Service: +44 (0)1580 830 800

GreenBlue Urban - USA
4405 Anderson Road
Knoxville, TN 37918
United States

www.greenblue.com
inquiries@greenblue.com
Sales and Service: 1 866 282 2743

GreenBlue Urban - Canada
71 Bysham Park Drive
Woodstock, ON N4T 1P1
Canada

www.greenblue.com
inquiries@greenblue.com
Sales and Service: 1 866 282 2743