

Action Greater Bedminster – Bedminster heat network

27th November 2024



VATTENFALL



BRISTOL
city leap

@SimonCraig_Photos

Introduction to the Bristol heat network

Who we are

One of Europe's most experienced heat networks players. We're working for fossil freedom in the UK by building and operating low carbon heat networks.



About Vattenfall

Vattenfall in Bristol

Vattenfall **fully owns and operates** the heat network in Bristol.

It is considered a key strategic city asset and will continue to be developed well **beyond the end of the 20-year Bristol City Leap concession.**



A ground-breaking twenty-year partnership has been created to deliver over £1 billion of investment into Bristol's energy system.



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Why heat networks?

Heating buildings accounted for approximately **20% of UK greenhouse gas emissions** in 2022. The UK will not meet its climate change targets without a revolution in heating.

It's estimated that **74% of UK homes are currently heated by fossil fuels**. To move away from fossil fuels, the Climate Change Committee has said that **the lowest cost and lowest carbon solution for cities or towns are heat networks**.

Why in Bristol?

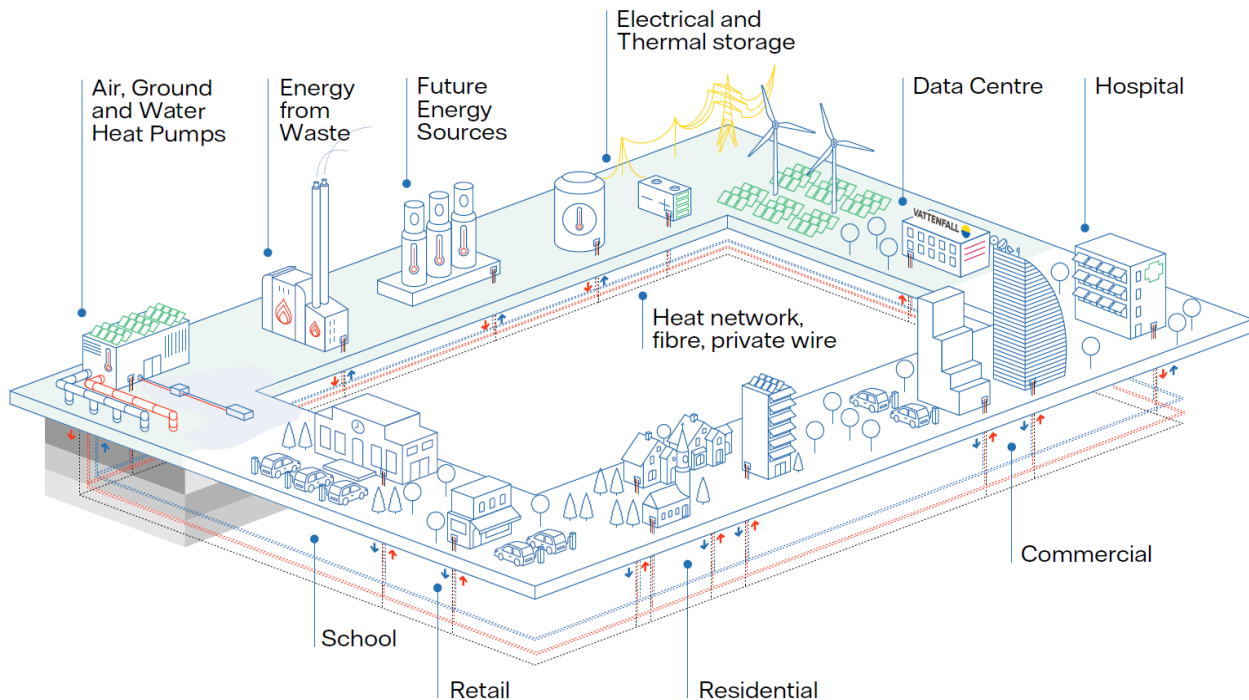
- One of the UK's most ambitious cities when it comes to cutting greenhouse gas emissions.
- First UK city to declare a climate emergency in 2018, setting a goal to achieve net zero emissions by 2030.
- In December 2022, Bristol City Council launched Bristol City Leap.
- Vattenfall will help decarbonise the city's heat by expanding the heat network into new areas and replace fossil fuels with permanent low carbon energy centres by 2030.
- Our goal is that 12,000 homes will be heated by a combination of air source heat pumps, water source heat pumps, thermal storage and electric boilers.

Scan the QR code
to learn more



Heat networks

Heat networks overview



Heat networks

What are energy centres?

Energy centres generate heat using a range of sources such as water, air, ground and waste heat from industrial processes.

They can be run using locally generated renewable electricity and incorporate thermal storage to further reduce carbon emissions.

Vattenfall operates the Castle Park Energy Centre, England's largest harbour-based water source heat pump.

It generates 3MW of energy, providing heat to 2,500 homes.

This is the first of many similar facilities across the city.

Scan the QR code to see how it works.



What are temporary energy centres?

Temporary energy centres serve the same purpose, just for shorter time periods, usually between one and two years, whilst we design and build permanent low carbon centres.

They generate heat using more traditional and accessible fuels such as biofuels or gas. These are not long-term solutions but are essential whilst we design and build permanent solutions for decarbonisation.

We have several temporary energy centres across Bristol, including Bedminster on St John's Road and St Catherine's Place.



Heat networks

What are heat substations?

Heat substations are the interface between the heat network and buildings.

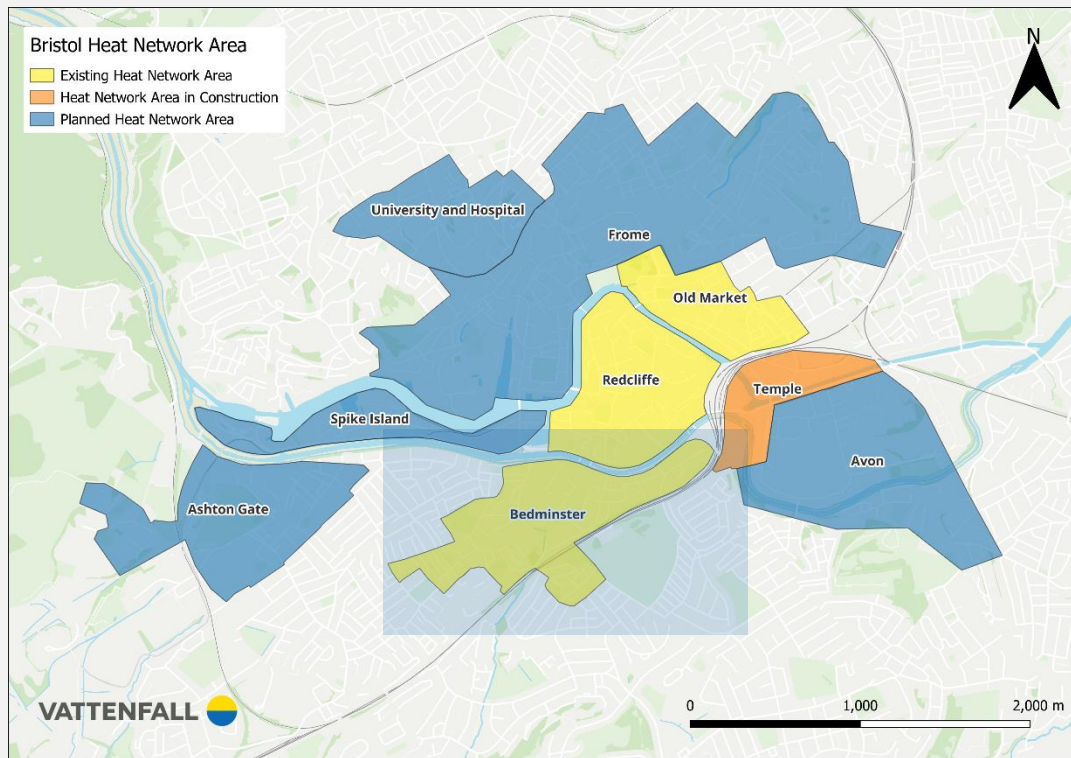
A heat substation replaces the need for individual gas boilers and enables a building or group of buildings to connect to a heat network.

These photos are examples of heat substations fitted in Hannah Moore Primary School and the Central Health Clinic.



Heat networks

Development to date



Connections
available from

Now

Old Market
Redcliffe
Bedminster

Temple
Frome

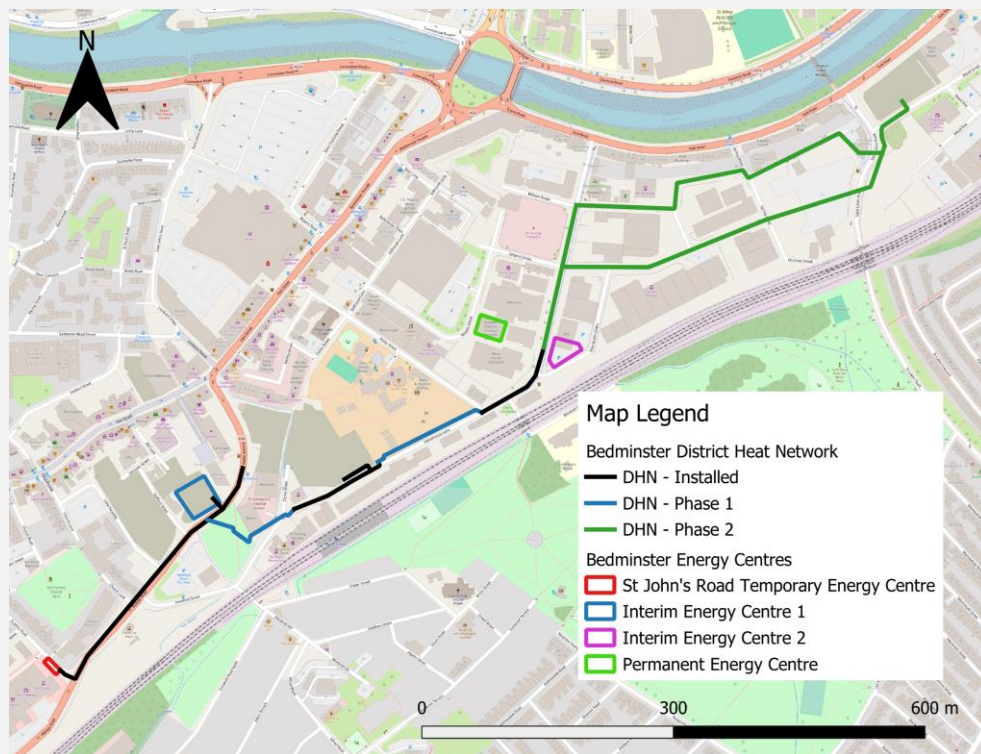
University and
Hospital

2030

Spike Island
Avon
Ashton Gate

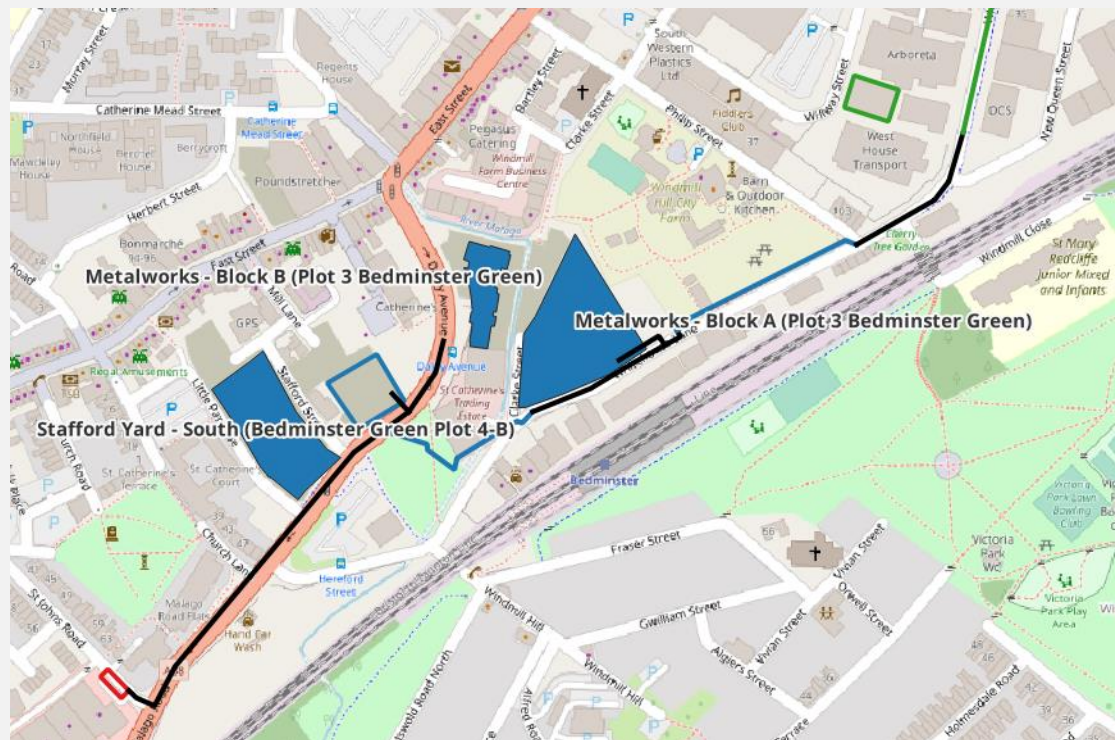
Update on the Bedminster heat network

Map of Bedminster network



★ Location of permanent energy centre (shown in the green square) is subject to approval

Map of connected buildings in Bedminster



*Buildings shown in blue
are connected to the
Bedminster heat network
and are receiving heating
and hot water*

St John's Road



What have we done to date?

We installed a temporary energy centre situated on St John's Road, off Malago Road, in March 2024. This was to provide heat to new residential developments in Bedminster.

What will be done next?

This energy centre will be shut down and replaced by an interim energy centre located on private land in Dalby Avenue.

We will remove the structure including the wooden panels, containers and concrete foundations, and the road and footpaths will be reinstated.

When will these works be done?

Currently, we are working to get the new energy centre running from March 2025. This needs to be working for at least 2 weeks before we can shut down and remove the energy centre in St Johns Road. We are aiming for this to be complete in April 2025.

Interim Energy Centre



What works are planned?

- We will be supplying heat from an alternative location on private land in Dalby Avenue and this will replace the temporary energy centre situated on St John's Road.
- The energy centre will be in use from this location for 1 year.
- There will be no visibility of this energy centre from the highway or public footpaths.

Next steps

- Submit planning application.
- Prepare the site to receive the interim energy centre.
- Replace the hoardings on the perimeter fencing.
- Begin operation by end of March 2025.

Bedminster Green



What works are planned?

We need to create a tunnel underneath the surface and install buried pipework to join the existing networks along Whitehouse Street and Dalby Avenue.

We are taking a Lease of Rights over Bedminster Green from Bristol City Council to carry out the works and have rights of access for the future operation of the pipes.

BCC will continue to have ownership of the Green.

Once the pipes are installed, the Green will be restored, maintained as usual and full access will be given back to the public.

In Late January to early February 2025, we will complete ground investigations. Separately, subject to fulfilling planning conditions, three trees will be removed in February 2024.

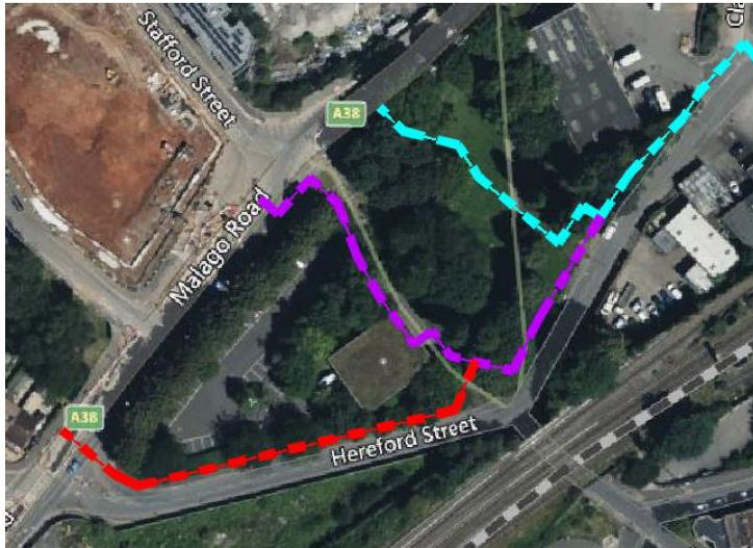
Bedminster heat network

Bedminster Green route assessment

Option 1. Route straight through the centre of Bedminster Green into Whitehouse Lane (Cyan)

Option 2. Route down Providence Place (Purple)

Option 3. Route down Hereford Street (Red)



We were unable to progress routes via Providence Place and Hereford Street due to:

- Significant utility congestion, some of which are immovable.
- Disruption to high-risk utilities would have caused major disruption to essential services for residents and businesses over a sustained period of time.
- Impact of additional highway disruption and road closures.
- Not enough trench depth to install pipes.

Bedminster Green route assessment



Views of congested utilities in the footpath and highway including gas mains, high voltage electrical cables, buried culverts, and an asbestos cement water main.

Bedminster Green



BH = bore hole

What are ground investigations?

A short-term exploratory exercise to check the viability of installation of buried pipework. No new pipework will be put in the ground at this point.

Where are they happening?

There are three work areas. Two are on public footpaths in Whitehouse Lane and Clarke Street and one work area is on Bedminster Green.

How long will it take?

The ground investigations will happen in each area consecutively, requiring a few days per location.

What's the impact on the area?

There will be some disruption for those using the footpaths, with diversions provided and access maintained where possible. For the work on the Green, the contractor has received specialist guidance and will be using robust protection methods. Trees will not be removed as part of these works, but some minor pruning is required to allow access.

Will access be limited?

The work areas are small and will be fenced off to protect the public. The footpath on the Green will not be affected. All areas will be returned to their original condition.

Windmill Hill City Farm



Alternative options along Whitehouse Lane and via Philips Street/Percy Street had **immovable buried utilities**. Through the farm has the **least interference** with ongoing and planned highways improvements.

What works are planned?

We are installing the buried pipework through the perimeter of the Farm (via the allotments) and joining this to existing networks at the Whitehouse Lane/Philip Street junction and in Whitehouse Lane.

We consulted the Farm management and plot owners on these works, and they were approved. The farm will remain open as usual for visitors.

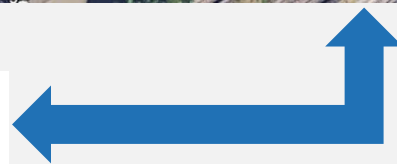
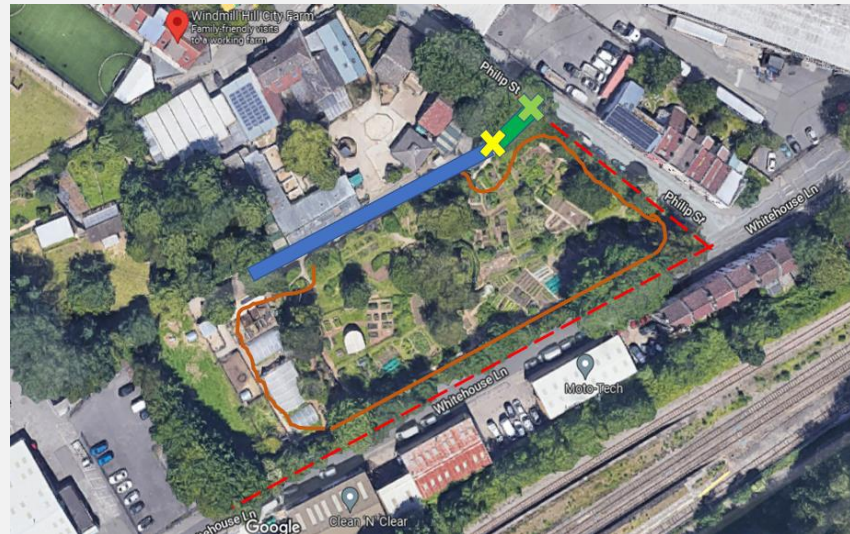
Ongoing coordination with Bristol City Council's Highways team is underway to ensure that work is coordinated with wider improvements and disruption is kept to a minimum.

Preparation works will begin in December 2024, with construction anticipated to begin in January 2025 during the farming offseason.

Windmill Hill City Farm

We have worked closely with the Farm to provide several enhancements which will include:

- Opportunity to connect to the network when appropriate
- Resurfacing of vehicle path
- Improved entry gates
- Enhanced walkways to improve accessibility
- Replacement of perimeter fencing
- A new cow shed and equipment, funded in partnership with Dandara Living



Orange line - hogging path replaced to current regulation
Red dotted line - new palisade fencing to replace existing chain link
Yellow cross - replace existing wooden gate with new wooden gate
Green cross - replace chain-link gate with palisade gate
Blue rectangle - repair or re-tarmac surface lane
Green rectangle - repair or re-tarmac area between 2 gates

Bedminster heat network

Next steps

Windmill Hill City Farm –

December 2024,
preparing for works

Windmill Hill City Farm –

January 2025,
construction begins

Bedminster Green–

Late January to early
February 2025,
ground investigations

*Tree removal is not
related to the ground
investigation. These
are two separate
requirements as part
of preparing for
construction.*

Bedminster Green –

February 2025,
removal of three trees
subject to fulfilling
planning conditions

St John's Road temporary energy centre–

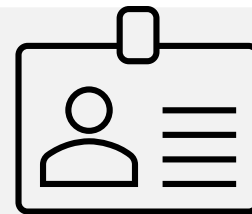
Early April 2025,
Turning off and removal of
energy centre

St John's Road temporary energy centre–

Late April 2025,
reinstatement of road and
pavement

Bedminster heat network

Where can you get updates?



To sign up to receive updates on regeneration activity in Bedminster, including the heat network, visit:

www.eastbedminster.com/bedminster-green/bedminster-green-project-news/

Follow Bristol City Leap on social media **@Bristol City Leap**

Message us at:

Bristol.enquiries@vattenfall.com

Delivering social value as we build

Decarbonising Bristol

As part of Bristol City Leap, we have committed to decarbonising the heat network as we expand it.

By 2030 we will:

- **Phase out all existing gas-fired assets on the Bristol heat network**
- **Only build and operate low carbon permanent energy centres**

While we strive to use low carbon sources in our operations before that date, we need to use other heat sources temporarily to ensure a continuous and reliable supply for our customers whilst we design and build permanent solutions.



Our commitment to Bristol

In partnership with Bristol City Leap, we're delivering **£61.5 million** of social value. In the first years, we will spend **£50 million** with local supply chain, create over **1,000** new local jobs and deliver **£1.5 million** of community funding for energy projects.

Funding initiatives

£2.7 million Community Benefit Fund created through heat network connection sales | £1.5 million Community Energy fund including heat connection and generation projects, supported by workshops and digital guide | £500,000 Research and Development Fund | Community benefits package for construction projects.

Supply Chain

Real Living Wage | Equalities and Diversity Charter | 1,000 new local jobs | Meet the Buyer engagement | Educational awareness sessions | Social value guide for contractors | Spending 25% of contracts locally | Spending 5% with Micro and Small Medium Size Enterprises.

Skills and Development

Primary and Secondary school engagement | Work experience | University and College seminars | Internships | Apprenticeships | Placements | International Trainee Programme | Mentoring | Catalyse Change Programme | Supporting minority groups such as refugees and ex-offenders.

Social value

Building community energy ownership in Bristol

We are funding **heat connection** and **heat generation projects** via the £1.5m Bristol City Leap Community Energy Fund. We can help:

- Facilitate a route to market for community owned heat generation assets, including shared ownership models
- Collaborate with third party sources of generation and waste heat, and this includes assets developed and owned by the community
- Work with community energy groups to explore options for installing a community owned generation plant in the vicinity of the heat network such as a water source or air source heat pump
- Work with community energy groups to utilise existing electricity generation projects
- Support community energy groups to review land owned for hosting energy centres



Social value

More than just heat

We appreciate heat related projects may not be at the top of your list, but you can still benefit from the Bristol City Leap Community Energy Fund.

It covers:

- Low-carbon building improvements
- Demand-side response and demand reduction
- Low-carbon transport initiatives
- Electricity generation
- Support for communities to reduce their energy consumption

Find out more here - www.bristolcityleap.co.uk/



Social value

Who the fund has helped so far...



GREEN
SCH@OLS
PR@JECT



St Werburghs
Community Centre

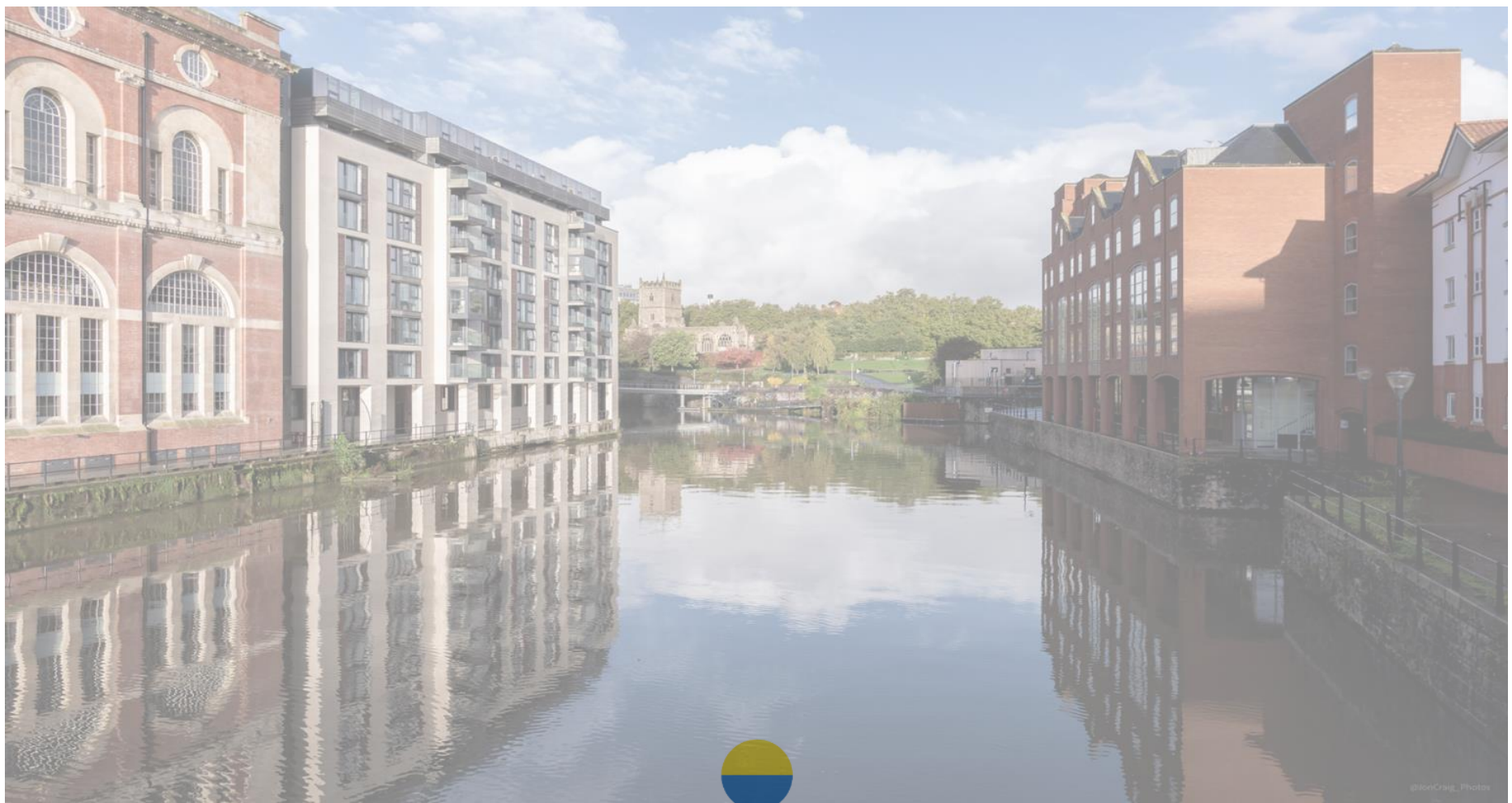


BRISTOL
WOOD
RECYCLING
PROJECT

Contact us

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**Community Energy Fund enquiries:
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