



## Sustainable Structures – Application Form Guidance

This guidance provides information to help you complete your application for the Future Industries Demonstrator Programme. Please read the guidance thoroughly, and refer to the competition scope in your application.

Please contact SHIFT at [hello@shiftlondon.co.uk](mailto:hello@shiftlondon.co.uk) if you have any questions about completing the application form or the application process. There will be an online information event on Wednesday 28<sup>th</sup> February 2024. Up to two people from your organisation can register [here](#).

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## 1. What is the Future Industries Demonstrator?

The Future Industries Demonstrator (FID) is a mission-led scale up programme focused on supporting London-based enterprises who are working on innovative solutions to tackle the climate crisis. It focuses on the real problems that citizens face in east London and the market solutions that, with investment and tailored support, would accelerate our collective transition to Net Zero and fairer economies.

FID provides pioneering start-ups and SMEs with financial backing, as well as linking them to collaborative networks, workspaces and local knowledge resources that give them the best chance to



succeed. Successful SMEs with innovative climate solutions will participate in a programme of support delivered by SHIFT and partners to bring their products to market and scale.

FID consists of:

- An open innovation challenge competition to source the capital's best innovations
- An 8-week 'Venture Creator' programme to support SMEs to scale their product or service
- A 3-month testbed exercise to demonstrate a product or service in east London<sup>1</sup>
- 1 Knowledge Exchange and Demonstration Day

The project is part-funded by the UK government through the [UK Shared Prosperity Fund](#). The UK Shared Prosperity Fund is a central pillar of the UK government's Levelling Up agenda and provides £2.6 billion of funding for local investment by March 2025. The Fund aims to improve pride in place and increase life chances across the UK investing in communities and place, supporting local business and people and skills.

## 2. About SHIFT

FID is led by SHIFT, the innovation agency with a mission to accelerate innovation that transforms how we live in cities. SHIFT facilitates access to the internationally recognised testbed at Queen Elizabeth Olympic Park, which innovators can use to test and demonstrate the potential of new solutions. Through its carefully curated ecosystem, SHIFT builds connections and sparks collaboration between startups, corporates, universities, community groups and policymakers.

SHIFT was formed in 2022 by a cross-sector partnership of public, private and academic organisations based at Queen Elizabeth Olympic Park: LLDC, Lendlease, Here East, UAL:College of Fashion, Loughborough University London and UCL East.

## 3. Our programme partners

Our home boroughs in east London are Newham, Hackney, Tower Hamlets and Waltham Forest. Our centre of gravity is the Queen Elizabeth Olympic Park, and this is the heart of our testbed – but for this project we are collaborating closely with our Local Authority Partners to provide access to a wide variety of real-world environments for testing.

[Plexal](#) is the innovation company solving society's challenges through collaboration with government, startups and industry. The business is closing the gap between organisations – small and large, local

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<sup>1</sup> Testbeds are locations around Queen Elizabeth Olympic Park, Hackney, Tower Hamlets, Waltham Forest and Newham that will be made available as real-world locations in which enterprises will be able to test and scale their solutions. A testbed could be a sports and leisure venue, a high street, a residential neighbourhood, a shopping centre, a market, a transport hub, for example. These locations give the opportunity for a solution to interact with multiple stakeholders, existing services, supply chains and customers/end-users.



and global, private and public – and working towards a common goal: using science and technology to deliver national security and prosperity. It was founded in 2017 as the innovation centre at Here East.

[Hackney Wick and Fish Island Community Development Trust CIC](#) works with the private, public and third sectors to secure ownership of buildings and spaces in the HWFI and QEOP area for the benefit of the community. For the past two years, the CDT has been coordinating with local partners to establish a space for a circular economy hub – The Loop – made up of a cluster of businesses, academics and communities aiming to reduce waste in the area. In Spring 2023, the CDT launched its first site – the Textile Reuse Hub – with partners Yodomo, Rise Up East and the Trampery supporting young people from the local area to establish their own creative businesses using sustainable approaches.

[ReLondon](#) is a partnership of the Mayor of London and the London boroughs to improve waste and resource management and transform the city into a leading low carbon circular economy. ReLondon's team delivers tailored support to government, businesses and citizens. The organisation works to reduce waste, increase recycling and accelerate London's transition to a low carbon circular economy.

[University College London \(UCL\)](#) is consistently ranked among the top 10 universities in the world and is The Times and Sunday Times Good University of the Year 2024<sup>2</sup>. Since 1826, it has championed independent thought and broken boundaries to make a positive impact in London and beyond. It was the first university to welcome students of any religion and the first to welcome women to university education. It has been innovating in higher education ever since. UCL's new campus at East Bank on Queen Elizabeth Olympic Park is the biggest development in the university's nearly 200-year history, giving it the scale and space it needs to find solutions to the biggest challenges facing people and the planet.

Around 4,000 students and 700 staff will work and collaborate on the UCL East campus with local communities and businesses in cutting-edge new centres specialising in ecology, robotics, urbanism, culture, accessibility, heritage, engineering, technology and health.

UCL East's One Pool Street base, which opened in autumn 2022, is full of multidisciplinary research labs and studios with a lecture theatre doubling as a cinema, a shop, café and homes for more than 500 students. Marshgate, which opened in September 2023, includes eight floors of hi-tech research labs, innovation workshops, collaboration spaces, studios, a library and a large public café. The UCL East campus is accessible, sustainable and open to the public with exhibition areas and specially commissioned art by local artists.

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<sup>2</sup> QS World University Rankings (2010–2024), The Times and The Sunday Times Good University Guide 2024.



## 4. Competition scope

The Future Industries Demonstrator is back with Challenge 02 – the Sustainable Structures Challenge. We're calling on innovators to shape the future of our urban landscape. From the structures that define our skyline to the power systems that fuel our homes and workplaces. We invite London's innovators to catalyse change in the built spaces where we live, work and thrive.

### The Problem

The built environment has a critical role to play in addressing the climate crisis and enabling the transition to net zero. [25% of UK carbon emissions](#) are directly linked to the built environment. London, as the most urbanised area in the UK with 9 million residents and counting, needs to lead the way in making our built environment more sustainable. Our East London sub-region remains the area with the [largest number of tall buildings](#) proposed, approved and under construction, and bold action is required now if we are to shape our changing skyline for a more resilient future.

East London is vulnerable, but this isn't just about east London. It's about cities around the UK, and the rest of the world too, developing adaptive techniques to build resilience for the climate emergency we face.

### Our Approach

This isn't a call for piecemeal change, it's a demand for systemic responses. We believe that innovation requires a holistic and systemic approach that considers the complexity of how different aspects of our urban environments are connected. That means understanding how we interact with our environment at multiple levels, what are the goals and drivers of change and who benefits, who are the stakeholders and experts, and what solutions are required.

### Our Challenge Areas

We want to work with business solutions that take a systems based approach, addressing one or more of the key challenges facing east London's built environment and energy systems. We have outlined two core Challenge categories: 'Building for the future' and 'Fuelling the future'. Applicants can address one or both categories.

**Impact metrics:** We have identified a key measure across all areas for measuring both short-term impact during your time on the testbed and long-term impact after the Programme finishes; 'carbon emissions reduced or prevented'.

We are interested in how applicants address this metric, but there is the option for applicants to also outline one further robust and demonstrative metric. For example; cost reduction for end-users,



increase in homes meeting the Decent Homes Standard, construction materials diverted from landfill, percentage increase in renewable energy use etc.

We will review suggested impact measures and assess alignment, and we will consolidate where relevant.

**1. Building for the future:** The design, construction and disposal processes of buildings can significantly impact health, wellbeing and our environment. The construction industry generates [62% of the UK's waste](#), and embodied carbon from construction and refurbishment of buildings currently makes up to [20% of the UK built environment emissions](#). The high costs of retrofitting existing buildings in London hinder improvements, leading to substandard living conditions.

We are calling for bold solutions that integrate sustainability into the construction of new structures and/or the enhancement of existing structures. We want to bring forward innovation for a resilient and sustainable built environment that prioritises the health and wellbeing of people while minimising environmental footprint.

Proposals should address one or more of the following areas:

Sub-category	Description
Measure and communicate a decisive shift	Revolutionise the measurement, assessment and communication of the environmental impact of buildings. We want solutions that optimise resource use, measure Scope 3 emissions accurately, and provide actionable insights for informed decision-making in both construction and retrofitting processes.
Pioneer novel and natural materials	We want to discover groundbreaking methods and materials that push the boundaries of conventional construction, exploring the potential of novel and natural alternatives that efficiently harness resources, are environmentally friendly, durable and cost-effective.
Break financial barriers for retrofit	We want to hear about financial models that transcend traditional economic constraints, paving the way for widespread retrofitting initiatives. Make sustainable improvements more accessible to residents, businesses and landlords.
Implement cutting-edge retrofit solutions	We're looking for solutions that enhance energy efficiency and significantly reduce costs while improving overall living conditions. We're striving for a



	transformative impact on the issue of retrofit through the incorporation of groundbreaking technologies.
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**2. Fuelling the future:** The overreliance on fossil fuels is adversely impacting both residents and businesses, resulting in escalating costs and high emissions. Renewable and clean energy sources exist – solar, wind, water and more, but we lack the systems and structures to use them in a way that meets consumer needs.

We want to support a change in the energy landscape of east London, with a more diversified, efficient and environmentally friendly ecosystem that benefits both individual consumers and the broader community.

Proposals should address one or more of the following areas:

Sub-category	Description
Reshape the future of energy	Diversify and enhance the energy mix, reducing dependence on depleting resources, minimising waste and environmental impact.
Supercharge energy storage and management	Tackle the complexities of capturing, storing and managing renewable energy sources. We want to effectively balance supply and demand, ensuring a reliable, consistent and sustainable energy grid.
Showcase the power of micro-scale solutions	Empower individuals and businesses to play an active role in sustainability. We want to support solutions that target domestic or commercial premises, significantly reducing emissions from energy.

### Cross-Cutting Themes

We will look for business solutions that tackle these challenges from the below angles. These will form part of the assessment criteria for the selection of businesses:

**Solid evidence:** Using digital technologies and tools to monitor and manage the built environment more effectively, allowing for better decision-making and more targeted interventions.

**Novel technologies and services:** New or improved technologies and services that can be applied to key challenges in the built environment.



**Innovative financing:** a focus on longevity, commercial viability, scalability, new business models and ownership structures.

**Responsible innovation:** involvement of citizens, supporting behaviour change at the individual, community, corporate or regulatory level, interdisciplinary partnerships and strong ethics frameworks.

**Just transitions:** Technologies and services that drive opportunities for new economies, promoting shared benefits, valuing people and planet and underpinned by principles of equity.

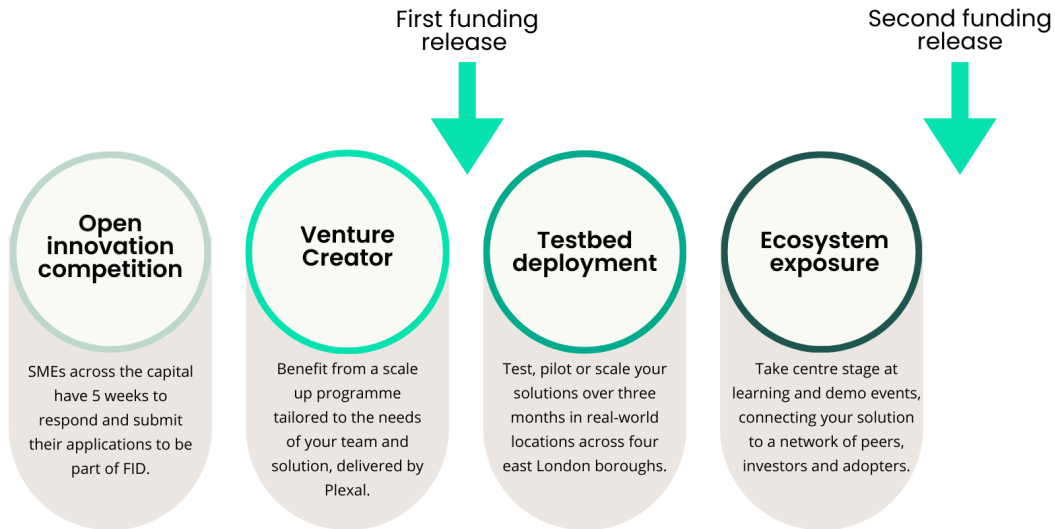
## 5. Who is it for?

We are looking for solutions that are beyond ideation - have an understanding of their market and end-users, or have had some initial commercial success, and have demonstrated potential to scale their solutions. At minimum, to qualify you need to:

- Be able to clearly articulate how your solution aligns with one or more of the challenge impact areas.
- Have validated the 'need' for your solution and show initial traction
- Your solution is at least an early stage prototype or minimum viable product. We are looking for solutions that are beyond ideation.
- Your solution may have already had some initial commercial success, but needs support to scale.
- Be a London-based, and London registered enterprise and employees must be eligible to work in the UK. Please note, we are targeting businesses that are based in the London boroughs of: Hackney, Tower Hamlets, Newham and Waltham Forest (80% of our total cohorts). The programme is open to businesses based elsewhere in London.
- Be hosted at a small or medium sized enterprise (1-249 employees). You can be for-profit or non-profit but you must qualify as an ['SME'](#).
- You must be an established business with a business bank account.

## 6. What can you expect from the Programme?

In this five-month programme, you will have direct access to an extensive pool of resources to scale your business and build valuable connections. Support is tailored to the needs of your team and solution.



The four key elements of the Programme are:

1. Open Innovation competition: SMEs across the capital have 5 weeks to respond and submit their applications to be part of FID.
2. Venture Creator: Enterprises will go on a bespoke and uniquely designed scale up programme, delivered by Plexal to design your scale up plans, taking early stage solutions to validated products in an accelerated cycle of 8 weeks.
3. Testbed Deployment: Enterprises will receive project management support from SHIFT to test, pilot or scale their validated solutions in real-world locations at Queen Elizabeth Olympic Park and in the four neighboring boroughs; Hackney, Tower Hamlets, Newham and Waltham Forest.
4. Learning and events: Knowledge Exchange workshops and the opportunity to present at a Demo Day will foster peer-to-peer learning and connect enterprises with a wider network of investors, enablers and adopters.

In addition, enterprises will receive:

- Up to £20,000 grant to supplement scaling plans, subject to participation in Programme activities and approval of testbed proposal.
- £5,000 budget to support testbed activity
- Access to free co-working space at Plexal or The Loop
- 1:1 coaching with a UCL specialist in circular business, and connecting into wider UCL expertise.





- Benefit from [The Loop](#); a hub for circular economy businesses in and around Queen Elizabeth Olympic Park, providing affordable workspace and specialist support.
- Benefit from free SHIFT membership and its free ecosystem benefits. You can apply to become a Member [here](#).

## 7. Further information on Programme structure

Applicants will need to confirm that they are available to:

- Participate in Venture Creator sessions delivered in-person over 8 weeks at Plexal HQ in Stratford. Each week there will be a half day workshop. The Venture Creator sessions are due to begin on 9<sup>th</sup> May 2024 and due to conclude 27<sup>th</sup> June 2024.
- Be available for 1:1 mentoring sessions with UCL specialists.
- Attend and make the most of our Knowledge Exchange workshops and Demo Day.
- Commit to deploying your solution on a testbed site(s) in east London for a minimum period of 3 months.
- Participate in a Monitoring and Evaluation exercise, in collaboration with SHIFT.
- Successful applicants will be required to report on progress and impact following completion of the 5 month programme cycle.

### **What does the Venture Creator involve?**

Delivered by Plexal, the 8-week Venture Creator programme will provide your business with hands-on support to develop and test your solution in east London. You'll leave the programme with a compelling testbed proposal and an agreement with a local testbed partner to utilise testbed funding.

Venture Creator programme will be delivered in-person over 8-weeks at Plexal HQ in Stratford, east London. Each week there will be a half day workshop with content aimed at challenging and improving your solution. The workshops are designed to help you answer critical questions that will ensure the success of your testbed, including:

- Local challenge validation: who do I need to speak with to develop a detailed understanding of the local context for this challenge?
- Solution-fit: how does my existing solution fit this local context? What requirements are needed and are iterations necessary?
- Partnerships and testbed sites: Where will I test this solution? What other local partners need to be involved to make this a success?
- Testbed operations: What health and safety, permits, licenses or planning permissions do I need to gain?
- Measuring impact: What impact will my solution have on east London, and how do I measure it?



Throughout the programme Plexal, SHIFT, and partners will provide mentorship and connections to relevant local stakeholders to unlock new opportunities for your business in east London.

A clear project owner should be nominated from your organisation to attend each week's half day workshop in-person, however other colleagues are welcome to join these as well. Your wider business will also have the opportunity to engage with the programme through a series of online sessions that bring together wider groups to share learnings and opportunities.

Plexal will also offer innovation facilities for the duration of the programme, including up to 2 hot desks for each company to use, affording cohort members the opportunity to co-locate in east London with close access to local partners, testbed sites, and the support team at Plexal team.

The Venture Creator is due to run from 6<sup>th</sup> May to 28<sup>th</sup> June 2024.

## 8. Application process and key dates

- Stage 1 Online Registration and Application: Opens Thursday 8th February
- A guidance webinar will be held on Wednesday 28<sup>th</sup> February 2024, 2-3pm online. You can register [here](#).
- Stage 1 Online Registration and Application: Closes Friday 15th March
- Stage 2 Interview: Shortlisted applications will be invited to present to assessors on their proposal and why they should be progressed. These interviews will be held online. Assessors will be able to ask the applicants further questions. The highest scoring applicants will be selected to join the upcoming Future Industries Demonstrator Cohort.
- Stage 3 Selection: We aim to notify all applicants by 3<sup>rd</sup> April 2024.
- Interviews: 3<sup>rd</sup> and 4<sup>th</sup> April 2024, subject to change.
- Stage 4 Feedback: 5 SMEs will be selected for the Programme. All SMEs who were interviewed will receive detailed feedback and advice on their application.
- Programme start: 6<sup>th</sup> May 2024
- Venture Creator end: 28<sup>th</sup> June 2024
- Knowledge Exchange and Demo Day: 18<sup>th</sup> September 2024
- Programme end: 27<sup>th</sup> September 2024

## 9. Assessment criteria

Eligible applications will be evaluated using the below assessment criteria.

- Impact: The proposal has responded to the Challenge statement and impact areas.
- Growth potential: The solution is scalable and has demonstrated potential to succeed.



- Suitability for the Programme: Understands the programme, is likely to benefit from Venture Creator and is feasible for testbed deployment.
- Innovation: The solution is unique and novel in a way that meets the challenge requirements.
- Responsible design: Has consulted users and underrepresented groups in the development of solution and is clearly responding to user needs.
- Capability: Competence and experience of organisation and team to deliver.
- Sustainability: Potential to help London be net zero by 2030, adapt to climate change and become more resilient to long term impacts of climate change.

Guidance on key items to consider in your application form responses are included underneath each question. Applicants have the option of including supplementary materials such as a short pitch deck or demo videos if you feel that this will give assessors a better idea of your organisation and solution, but this is not a requirement for the application and points will not be deducted if these items are not included.

### Delivery partners:



### Supporting partners:

