

What could the Industrial Strategy do for me?

Transforming Construction
Healthy Ageing

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Honest brokers to build connections & drive innovation networks.

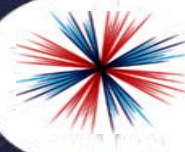


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The Industrial Strategy



**INDUSTRIAL
STRATEGY**

Industrial Strategy: Overview

We will create an economy that boosts productivity and earning power throughout the UK:



We will set Grand Challenges to put the future of the UK at the forefront of the industries of the future:



AI & Data Economy

We will put the UK at the forefront of the artificial intelligence and data revolution



Future of Mobility

We will become a world leader in the way people, goods and services move



Clean Growth

We will maximise the advantages for UK industry from the global shift to clean growth



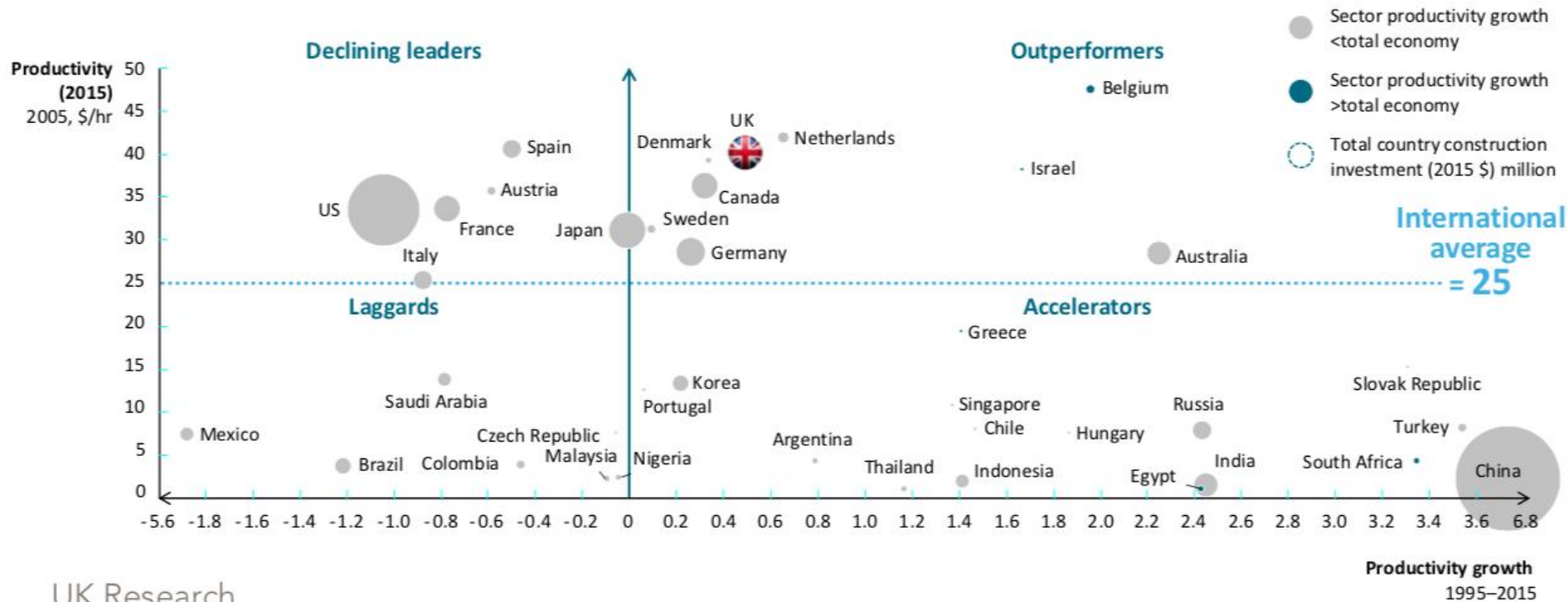
Ageing Society

We will harness the power of innovation to help meet the needs of an ageing society

Transforming Construction



Construction productivity

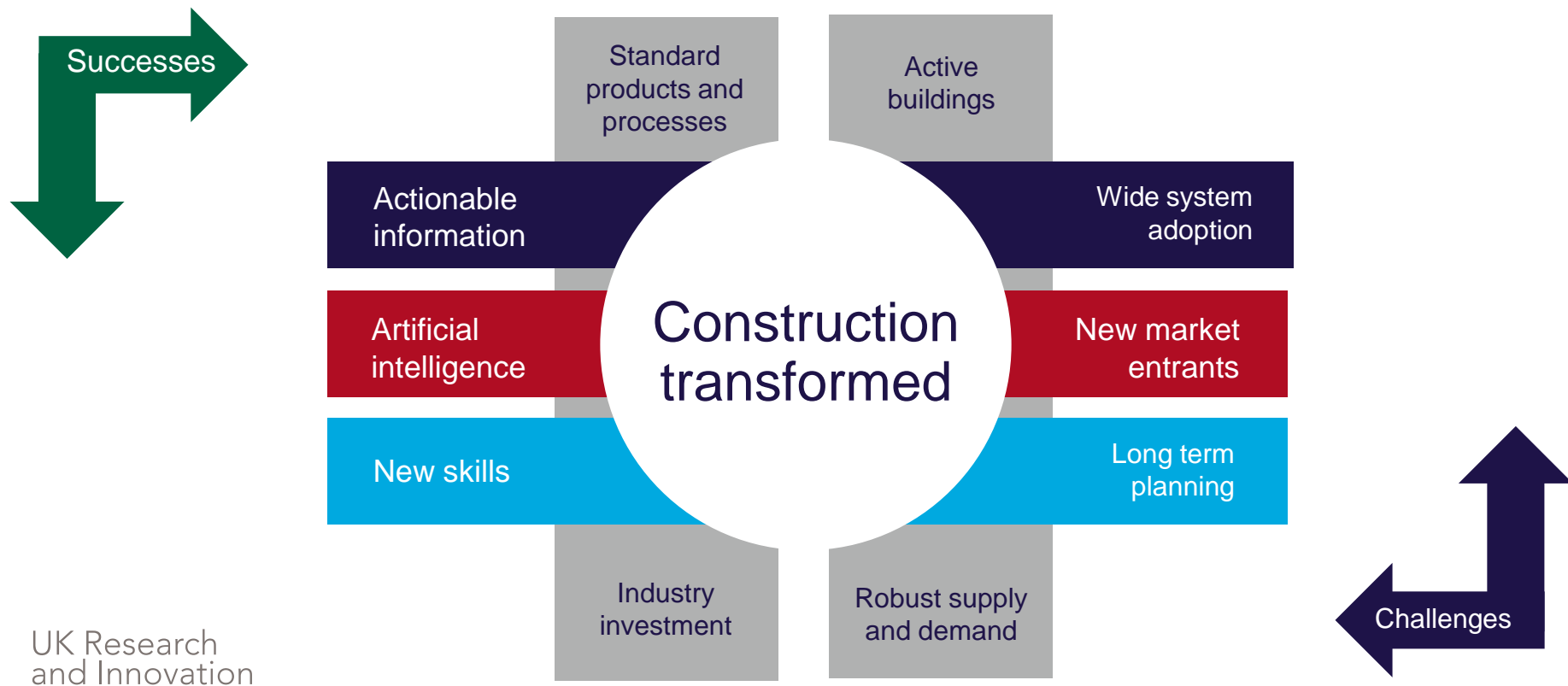


Waste in construction

- Defects
- Materials
- Energy
- Waiting
- Unused talent
- Double handling
- Excess inventory
- Movement of people



Industry integration



UK's construction sector deal



£170m

Government
funding

£250m

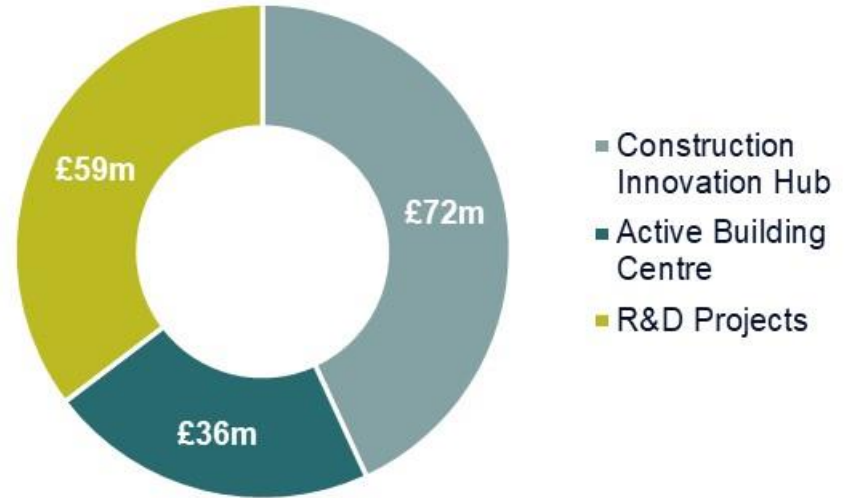
Matched industry
funding

4 years

of funding

Sustainable

long-term model



Three strategic outcomes



Digital

Delivering better, **more certain outcomes** using digital technologies



Manufacturing

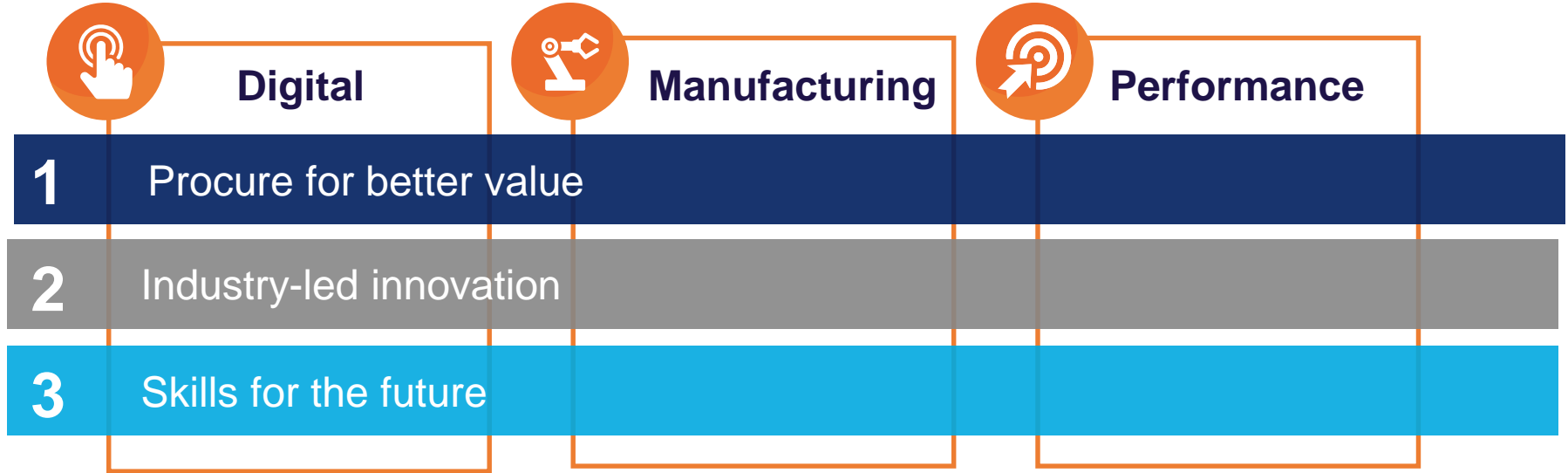
Improving productivity, quality and safety by increasing the use of manufacturing



Performance

Optimising through-life performance through the development of smart assets

Delivered through three enablers



Investments to date





mtc
Manufacturing
Technology Centre

bre

cdbb
Centre for Digital Built Britain

UK Research
and Innovation

Product family
architectures

Process
engineering

Performance testing
and validation

Demonstration and
engagement

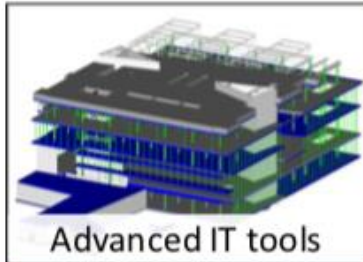
Digital transformation
across asset lifecycle

Information
Management
Framework

Active
buildings

- 1 Create a critical mass of buildings
- 2 Smart and Connected Active Buildings Evidence Framework
- 3 Active Buildings as 'Energy Positive Agent'
- 4 Aggregate Active Buildings at National Scale
- 5 Adapt the Active Building Technology Portfolio to Tackle Existing Stock
- 6 Create a sustainable National Centre of Excellence
- 7 Deliver an ecosystem for Active Buildings





Industrialized Construction



New Business Models

Read more
www.bit.ly/ICmirror

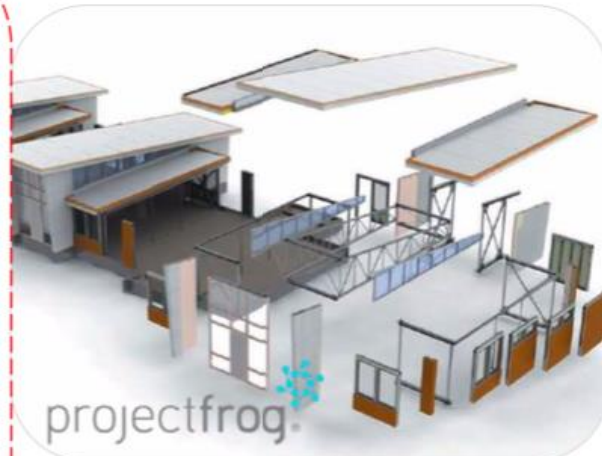
TRANSFORMING
CONSTRUCTION
NETWORK PLUS



Spinoff Factory
from Tier 1 Contractor



Vertical
Integration



Digital Systems
Integration



Vertical Integration

- Housing developer owned by Skanska & IKEA
- Builds sustainable quality homes for people with average incomes
- Applies strict product focus w/ development teams for BoKlok housing “products”
- Builds in own factory (+3 external), controlling the entire building process
- Strong growth, 4 markets (SE, NO, FI, UK)



Funded innovation



Information

- Data interoperability
- Digital integration platform
- From BIM to machine control
- AR for efficiency
- IoT for site plant
- IoT and concrete curing
- IoT and thermal performance
- LIDAR for cranes

- Robot clusters

Machine learning

- AI and logistics
- AI for programme prediction
- AI and BIM
- AI and component tracking
- AI for site safety
- AI and progress monitoring
- AI for quality
- Alexa for sites

- 3D concrete printing

Product and process

- Panelised housing
- DfMA for housing
- Modular Homes
- Industrialised homes
- Energy active prefab
- Smart piles
- Frame optimisation
- Modular steel

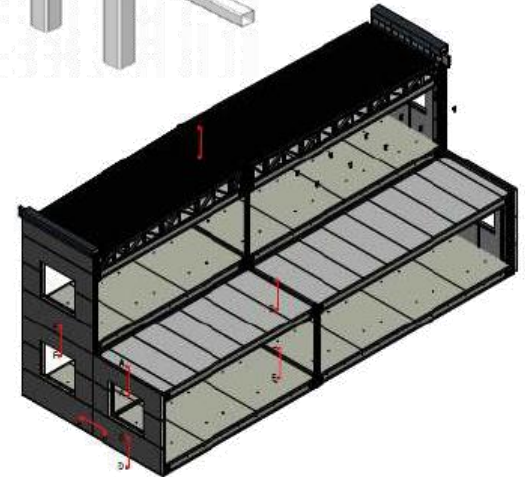
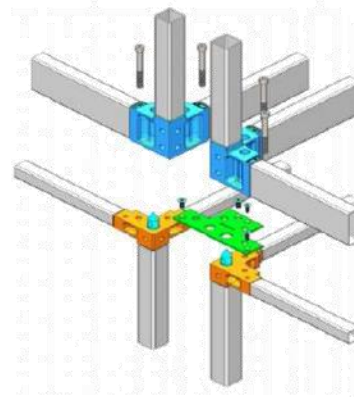
- Non-prismatic concrete

Redesigned steel frame for school buildings,
standardised across two major suppliers:

- 40% reduction in cost
- 52% faster assembly
- 57% reduction in weight (40% reduction in emissions)
- Exports - being used overseas

Market uptake:

- Steel frame on Gen. 5 procurement framework for DfE
- Interest for other buildings types
- Digital configurator
- Will extend to other components



- UK's largest house builder and second largest social landlord coming together with their supply chains to industrialise housebuilding
- Using challenge approaches to reduce cost, boost productivity (40% target), increase safety onsite, improve quality (75% less rework) and 30% faster
- Bringing in wider housebuilding community, and establishing data to prove the business case



Impacting 35,000 homes a year

UK Research
and Innovation

<https://www.aimch.co.uk/>



Transforming Construction

Live Competitions



Which Competition?



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and Innovation



Research →

Development →

Commercialisation →

**TRANSFORMING
CONSTRUCTION
NETWORK PLUS**

Small Projects
Round 2

Launched 19th Sept 2019

Innovate UK

£10m R&D

Innovate UK

£26m Demonstrators



Platform Design
Competition

IUK Competitions



UK Research
and Innovation

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Innovation Funding Service

Sign in

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Funding competition

Transforming UK construction round 2: MMC, digital and whole-life performance

UK businesses can apply for a share of up to £10 million for collaborative R&D projects that improve productivity, quality and performance in UK construction.

Competition opens: Wednesday 28 August 2019**Competition closes:** Wednesday 30 October 2019 12:00pm

Start new application

Or [sign in](#) to continue an existing application.

Summary

Eligibility

Scope

Dates

How to apply

Supporting information

Description

Innovate UK, part of UKRI, will invest up to £10 million in UK businesses undertaking collaborative research and development (CR&D) projects. Such projects should go beyond the state-of-the-art in improving productivity, quality and performance of the UK construction sector.

This funding is from the [Transforming Construction Industrial Strategy Challenge Fund](#).

GOV.UK

Innovation Funding Service

Sign in

BETA This is a new service – your [feedback](#) will help us to improve it.[Back to all competitions](#)

Funding competition

Transforming UK construction: demonstrator projects

UK businesses can apply for a share of up to £26 million for practical, demonstrator projects in MMC, digital and whole-life asset performance.

Competition opens: Wednesday 28 August 2019**Competition closes:** Wednesday 6 November 2019 12:00pm

Start new application

Or [sign in](#) to continue an existing application.

Summary

Eligibility

Scope

Dates

How to apply

Supporting information

DescriptionInnovate UK, part of UKRI, will invest up to £26 million from the [Transforming Construction Industrial Strategy Challenge Fund](#) to demonstrate solutions to improve productivity, quality and performance of the UK construction sector.Your project must show how it will deliver on the objectives and commitments detailed in the [Construction Sector Deal](#), including

apply-for-innovation-funding.service.gov.uk/

Search: ISCF transforming construction

IUK Competition



UK Research
and Innovation

£36m total R&D funding available

Two competitions will run in parallel:

£10m Collaborative R&D fund

£26m Demonstration fund

Spend profile:

£27m in FY20/21

£8m in FY21/22

£10m CR&D

- Opened 28th August 2019
- Closes 30th October 2019
- Projects start 1st April 2020

£26m Demonstration

- Opened 28th August 2019
- Closes 6th November 2019
- Projects start 1st April 2020

THIS IS THE FINAL COMPETITION FOR THE PROGRAMME

Collaborative projects that go beyond the state-of-the-art in improving productivity, quality and performance of the UK construction sector

Your project must focus on one or more of the following themes:

- digital information management, tools, systems and standards
- modern methods of construction (MMC) and platform based approaches
- whole-life asset performance, including active buildings
- business models, procurement, analytics, benchmarking and metrics
- financial, assurance, warranty and lending products

Total eligible project costs of between £150,000 and £1.5 million

Up to two years maximum duration

£26m Demonstrator Programme



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and Innovation

The aim of this competition is to present a portfolio of demonstrator projects which showcase **close-to-market solutions, deployed at scale**, that **go beyond the current state-of-the-art**. They must establish improvements in productivity, quality and performance of the UK construction sector

Projects should aim to be future case studies, accessible and showcased to the industry and to the public

Total eligible project costs between £500,000 and £8 million

Up to two years maximum duration

Platform Design Programme Objectives

Develop a platform design and delivery concept that can:

- Be **implemented at scale** by public sector clients
- Reduce **cost**, **delivery time** and lifetime **carbon** emissions
- Boost **productivity** and increase the asset **whole life value**
- Offer an opportunity to **integrate** active renewable energy systems



Source: Bryden Wood Technology Limited, Platform 2 Superstructure

Platform Design: Opportunities to engage

Super
structure

We will provide two pre-existing superstructures based on Bryden Wood Platform 2 and the SEISMIC system

Envelope

We are looking for organisations to....

MEP

Fit Out

- Suggest alternative superstructure solutions
- Develop a range of additional platform systems including:
External Wall Panel, Interior Wall Panel, Ground Floor Panel, Interim Floor Panel, Active Roof Panel, MEP Systems
- Develop a range of possible platform services including:
Design, Logistics, Construction Management, Definition of Interface Standards, Assembly, Inspection Services

What does good look like?

Materials



Manufacturing technologies



Assembly systems



Functional technologies



Manufacturing



Integration



Join the transformation



www.constructioninnovationhub.org.uk



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Construction Innovation Hub

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Healthy Ageing Challenge

Overview

UK Research
and Innovation

Innovate UK
Knowledge Transfer Network

Ageing Society Grand Challenge



*People will enjoy **five more years of healthy, independent life** by 2035, whilst narrowing the gap between the experience of the richest and poorest
(measured through improvements in disability-free life expectancy)*

Health & Care

Homes,
Families &
Communities

Work,
Learning &
Purpose

Finance &
Economy

UK Research
and Innovation

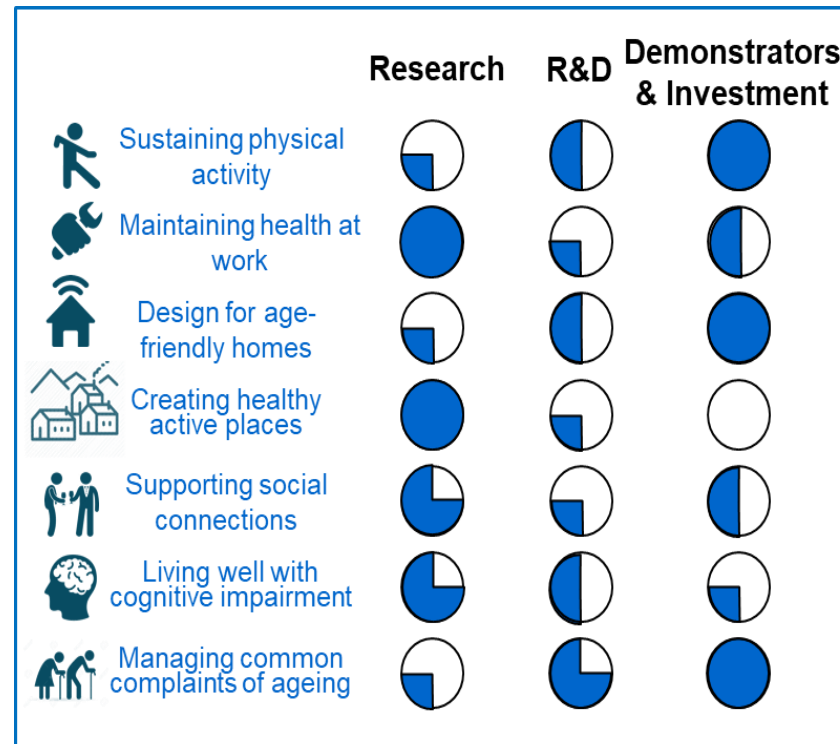


Emerging Approach



The challenge is looking to develop and deliver a portfolio of initiatives where the main focus of investments will be **on late-stage innovation**:

- Demonstrators – large-scale projects
- **Investment partnerships**
- Early stage R&D
- Research – Social, Behavioural & design



UK Research
and Innovation

Healthy Ageing Opportunity



ISCF healthy ageing trailblazers: stage 1

This is stage 1 of a 2-stage competition. A total fund of up to £2 million is on offer for stage 1 to conduct research and develop a business plan for a healthy ageing 'trailblazer'. This funding is from the Industrial Strategy Challenge Fund.

Competition opens: Monday 23 September 2019

Competition closes: Wednesday 27 November 2019 12:00pm

The aim of the Trailblazers is to encourage businesses and public sector led collaborations, including social enterprises, to develop and demonstrate how products, services and business models which support people as they age will be adopted at scale.

This is stage 1 of a 2-stage competition. You can apply for a grant of up to £100,000 to conduct research and develop a business plan. For stage 1 of the competition you can apply as a single applicant. Stage 2 proposals must be collaborative.



* The Challenge themes, developed by the Centre for Ageing Better, offer the greatest opportunities to tackle market failures and stimulate innovation

How to connect with us

- LinkedIn Knowledge Transfer Network (KTN)
- Twitter @KTNUK
- Email mark.wray@ktn-uk.org
- Sign up for newsletters: <http://www.ktn-uk.co.uk>



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