

Quick Reference

Please note that you must read the full Call document for guidance before submitting your proposal

Industrial Strategy Challenge Fund – Transforming Construction: Active Building Centre

Call type: Invitation for proposals

Closing date: 16:00 on 23 May 2018

Funding Available: Up to £36 million (£10 million capital; £26 million resource – subject to HMT signoff) over four years to support the formation of the Active Building Centre as part of the Industrial Strategy Challenge Fund for Transforming Construction. The ABC should be led by a University and undertake a programme of research and innovation working with partners to ensure commercialisation of Active Buildings. The ABC will need to attract substantial leverage from industry and other sources. A key component of the additional funding will be in the form of matched funding from industrial partners. The ABC should aim to achieve 50% leverage early in its lifetime and ultimately seek to attract 100% leverage against this investment.

How to apply: Straight to full proposal. Representatives from the lead university applying to this call must attend a briefing event on 19 April 2018.

Assessment Process: Proposals will go direct to interview panel and the panel may request additional material in advance. Further value for money assessments may take place following the outcome of the interview panel.

Key Dates:

Activity	Date
Deadline for Full Proposals	16:00 23 May 2018
Briefing and Consortia building Event	19 April 2018
Interview Panel	w/s 09 July 2018
Funding decision	ASAP following the Interview
Grant start date	Latest start date 03 September 2018

Please note that dates may be subject to change. The timeline is as a result of spending requirements. EPSRC will mandate a specific spend profile across the

duration of the programme. All projects must be able undertake spend as of 03 September 2018.

Additional information:

This funding call is part of the Government's Industrial Strategy Challenge Fund (ISCF). This is not a standard EPSRC funding call and the remit is unique. There are specific requirements that must be met for reporting, governance and spend profiles. The successful applicants will be required to work with the wider ISCF Transforming Construction activities and integrate with the Core Innovation Hub which is being established at the same time by Innovate UK. The consortia building event on the 19 April 2018 will aid integration.

Those funded must work within the overall management and governance structure of the Transforming Construction Challenge. Funded researchers must also work collaboratively with other partners of the programme, across the UK Research and Innovation landscape, and within the context of the wider aims of the Government's industrial strategy.

The Transforming Construction Challenge will appoint a Challenge Director and set an overarching governance structure; applicants will be required to meet requests from these stakeholders where needed

Funding is subject to final HMT signoff. Additional grant conditions will be issued in line with the ISCF expectations.

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Industrial Strategy Challenge Fund – Transforming Construction: Active Building Centre

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Related EPSRC themes: Digital economy, Energy, Engineering, ICT,
Manufacturing the Future, Research infrastructure

ESRC priorities: Housing, Climate Change

Innovate UK interests: Smart Infrastructure; Construction

Summary

The Transforming Construction Challenge, supported through the UK Government's Industrial Strategy Challenge Fund (ISCF), will seek to revolutionise the way the UK designs, constructs and operates buildings by realising the potential for the integration of advanced offsite manufacturing with state-of-the-art digital design. This will include the incorporation and integration of energy generation, storage and release technologies to create Active Buildings which substantially reduce both the operational costs of buildings and their demand on the UK energy infrastructure.

UK Research and Innovation (UKRI), through EPSRC, is to invest **a single award** of up to £36 million to build and establish an Active Building Centre (ABC), as part of the for Transforming Construction Challenge.

The Active Building Centre's aim will be to begin to break down the barriers that prevent mass uptake of Active Buildings, by working across the UK strengths in research and innovation to:

- Deliver a new physical centre that will provide a "living lab" and host key staff tackling the challenges around incorporating and integrating energy harvesting, storage and release technologies in buildings.
- Embed the use of Active components into construction standard practice through working with the Core Innovation Hub, funded as part of the Transforming Construction challenge.
- Draw on the significant technological advances and other insights from the wider research community, in addition undertake user-inspired research and innovation activities, to enable seamless integration of new and existing energy technologies into buildings.
- Work with commercial developers and the public sector to deliver a critical mass of Active Buildings in the UK, demonstrating the concept in multiple buildings, and exploring the potential of energy sharing between buildings.

- Feed performance data, social and behavioural insight from Active Buildings back into the research and technology base to drive iterative research, innovation and product improvement.
- Address the appropriate standards and regulatory barriers that inhibit buildings being designed to be powered by solar energy alone.

This is not a standard EPSRC call and the Centre funded by this call must work across the research base and industry, playing a direct role in the delivery of commercial buildings. As such the application must bring together all of these components in a coherent narrative, and present how the Centre will function on a not-for-profit basis.

The Centre will be required to work in partnership with the Core Innovation Hub (CIH) and other investments being made through this challenge. There will be further opportunities for the community to engage with the Challenge.

Prospective Universities expecting to lead a bid must attend a workshop on the **19 April 2018** and register their attendance at:

<https://iscf-transforming-construction-hub-programme.eventbrite.co.uk>

Please note in recognition of the short notice, the proposed lead applicant does not need to attend this workshop but appropriate representation from the lead university and applicant team should attend; where appropriate including partners.

Engaging Across the Challenge: Innovate UK Competition: Core Innovation Hub

Alongside this call to establish the ABC, Innovate UK, on behalf of UKRI, will invest up to £72 million to establish a core innovation hub (CIH).

The Core Innovation Hub will support collaboration across the digital, manufacturing and construction sectors, to develop and commercialise digital and manufacturing technologies for the construction sector. The hub consortium will enable sector collaboration to:

- develop a digitally driven, manufacturing approach to build assets
- improve construction sector productivity
- optimise the whole-life performance of those assets

It will lead a programme to develop standards, tools, designs and regulation methods. These will support a sustainable marketplace for digitally driven manufacturing in construction.

Whilst activities in the hub will be undertaken in existing facilities, it is expected that it will actively develop links with other centres, business and academia to support innovation in construction across the UK.

Further detail on this call may be found on Innovate UK's Innovation Funding System Platform:

<https://apply-for-innovation-funding.service.gov.uk/competition/142/overview>

Background

This call is part of the Industrial Strategy Challenge Fund for Transforming Construction and is for proposals to establish an Active Buildings Centre (ABC). In addition to meeting the overarching ISCF objectives, the ABC will contribute towards the challenge specific objectives of:

- C1. Establish the facilities for integration, demonstration and research and development to enable faster commercialisation of a digital manufacturing approach to construction and integration of Active components.
- C2. Deliver an R&D programme match funded by industry leading to increased productivity in construction methods.
- C3. Establish the test facilities, methodologies and research and development programmes to better design buildings for increased lifetime performance and value of buildings and infrastructure.
- C4. Develop and demonstrate new building designs that drive faster delivery at lower cost.
- C5. Reduction in trade gap between total exports and total imports of construction products and materials.

The Transforming Construction challenge aims to eliminate the productivity gap in construction and pave a faster route to building safer, healthier and more affordable places to live and learn that use dramatically less energy. To achieve this the programme will invest £170M over 4 years to transform the construction sector to a digitally-driven, design for manufacture and assembly approach to buildings that enables higher quality, faster delivery and more ready integration of Active components and technologies.

This ISCF challenge brings together the construction, manufacturing, energy and digital sectors to tackle the three main elements of the lifecycle costs of buildings: **designing and managing buildings** (through digitally-enabled performance management), **constructing quality buildings** (through an offsite manufacturing approach) and **powering buildings** (through embedded Active technologies and improved quality of build). An underpinning R&D/Research programme will tackle this in a coordinated way.

This call for proposals addresses the UKRI investment of up to £36M to build and establish an active Building Centre, which will break down the barriers preventing the benefits of Active Buildings being realised at large-scale, and will draw out the underlying technologies, by creating a market for commercialisation. The ABC should focus on the integration of new and commercially available solar energy capture, storage and release technologies in buildings, designed and delivered in commercially-led building developments.

We define an Active Building or Energy Positive Building as “a building which integrates solar generation and storage technologies for both electricity and heat within its construction, rather than being heated by gas, and which is controlled by an intelligent system to optimise energy management and comfort for inhabitants. Active Buildings aim to be net energy generators, and have the potential to utilise the surplus energy to “trade” energy with the grid, surrounding buildings and electric vehicles.”

The ABC should galvanise, accelerate and mobilise the UK’s world-leading research and innovation capability in Active Buildings, creating the conditions where energy positive buildings are the first choice for new developments.

Ultimately this will lead to solutions for the technical and market challenges of applying integrated energy capture, storage and release technologies to buildings and a transformation in the energy system.

Proposals must outline how the lead University will set-up an appropriate arm's-length, not-for-profit organisation to undertake these activities. Such an organisation is unlikely to be in place on day one of the project, however plans for how this will be delivered must be provided along with interim working arrangements.

The ABC will need to work commercially with industry and must attract substantial leverage from industry and other sources (for example third sector, devolved administrations, local government, local enterprise partnerships etc). A key component of the additional funding will be in the form of matched funding from industry. Ultimately the ABC must seek to attract 100% leverage against this investment.

Detailed objectives of the ABC include:

- Deliver a new physical centre that will provide a "living lab" and host ABC staff; this will be the UK's most advanced Active Building incorporating energy harvesting, storage and release technologies.
- Integrate the use of Active components into buildings while working with the Core Innovation Hub aligning with advances in integration of advanced manufacturing and digital approaches within construction. Close collaboration with partners to identify the optimum technologies to establish a critical mass of Active Buildings.
- To undertake user-inspired research and innovation activities to enable seamless integration of new and existing energy technologies into buildings. Solutions will ultimately decarbonise individual buildings and address the energy trilemma, carbon budget targets and grid stress.
- Draw on the significant advances from the wider research community to realise the benefits of energy positive buildings at scale, reducing the barriers to entry for new technologies – with a focus on new entrants to the buildings market, including houses.
- Develop transformative business models that benefit the industry and the consumer - business models should be inherently scalable and accelerate SME activity.
- To plan for the delivery of a number of Active Buildings (through alignment with local government investment plans, the wider challenge and beyond), to stimulate market uptake and drive down overall costs across prioritised market segments.
- Demonstrate the Active Buildings concept in multiple buildings with integration and management of energy between buildings.
- Demonstrate the scalability and viability of Active Buildings considering user and societal acceptance - including technical and socio-economic validation. Feeding performance data, social and behavioural insight back into the research and technology base should influence iterative product improvement and address barriers to adoption and effectiveness

- Address the appropriate policy, standards and regulatory barriers that inhibit buildings being designed to be powered by solar energy alone. This should consider users as well as the broad supply chains of the construction, energy sectors and manufacturing sectors.
- Act as ambassadors for the concept of energy positive buildings, particularly with government and other policy-makers.

Projects must last no more than four years and start by 03 September 2018.

Expectations

Reporting and Monitoring

There will be a requirement to report against key performance indicators across both operational activity and the build component of the ABC. This reporting will be quarterly and will feed into annual monitoring & evaluation reports as part of the overall challenge.

The ABC will undergo a formal independent mid-term review with the progress assessed against criteria established in advance. This will build on the agreed performance indicators and how the ABC has worked towards the objectives of the challenge.

Attributes of the applicant team:

- Led by an individual of appropriate seniority and experience to galvanise the consortia, with an appropriate Director identified with a comprehensive management team to lead the activities of the ABC
- Core capabilities across engineering and physical sciences research, social science and innovation in the focus and technologies in a shared environment to enhance collaboration and create critical mass.
- Flexible capability in companion and enabling technologies that might be needed to remove barriers to innovation and make systems work.
- Capability to undertake market analysis and market development in evaluating the commercial opportunities across a range of end-uses.
- Have access to existing facilities & equipment that are fit for purpose to enable operational activities; to produce technology demonstrators; with access for third parties, while the physical centre is being built.
- Ability to dynamically respond to business need.
- Professional management of knowledge and intellectual assets, including both internally and externally owned intellectual property.
- Demonstrable track record of having delivered Active Buildings according to the definition in this document.
- An existing network across the energy and construction sectors (research and industry) and across national and international research institutes

Universities and partners involved will be required to:

- Accept that the Centre has the rights to re-deploy staff and funding to other projects within the ISCF Transforming Construction Challenge upon advice from the relevant overarching governance structures, including that of the ISCF challenge.
- Demonstrate plans to support the initial activities of the ABC while the physical centre is being built.
- Ensure that activities can start as soon as possible following the grant date to enable spend in line with expectations. This may include ensuring recruitment and other activities are initiated before grant formally starts.
- Demonstrate a clear willingness to collaborate with other universities and users. This must include other activities supported under the Transforming Construction Challenge.
- Demonstrate appropriate international connections that will enhance the development of an internationally-leading capability in Active Building technologies.

Funding available

Up to **£36 million** is available for this call subject to final HMT signoff for establishing a single ABC that harnesses the whole UK strengths in this area. The ABC will need to attract substantial leverage from industry and other sources (for example third sector, devolved administrations, local government, local enterprise partnerships etc). A key component of the additional funding will be in the form of matched funding from industrial partners. The ABC should aim to achieve 50% leverage early in its lifetime and ultimately seek to attract 100% leverage against this investment.

The funding available covers: up to **£10 million** to establish the physical Centre and up to **£26 million** for the research and innovation activities required to meet the objectives set out in this call.

Applicants must be at an advanced stage of planning for the physical centre (including assessment of potential locations) before funding commences. The facility should be delivered within the timeframe of Challenge, as rapidly as possible, but should not be a barrier to activity progressing. Plans to support the activities of the ABC during the build phase must be provided.

The physical centre will be a new building which will be the UK's focal point for Active Buildings. As a minimum it should:

- House the operations of the ABC, with space and facilities for a significant number of staff and visitors, including shared spaces for networking and co-location
- Be a flagship technologically advanced building and international centre of excellence in Active Buildings
- Be an Active Building exemplar and technology showcase, reconfigurable to meet the emerging needs / enable future sustainability beyond the

lifetime of the ISCF Challenge. It should target a net zero energy requirement from the National grid, and have no gas connection

- Showcase and promote the possibilities and potential of Active Buildings, and generate significant interest worldwide

The resource is available to support:

- The salary costs for the leadership and management of the ABC; including appropriate project management arrangement resources
- Core research and innovation activities or technologies that are necessary or valuable to the ABC, including the appropriate dissemination;
- Networking with other centres in the UK and/or overseas, including costs relating to visiting researchers where advantageous to the ABC;
- ABC administration, marketing, business development/engagement managers, outreach and public engagement;
- Travel costs associated with ABC operations and the local advice streams;
- Pathways to impact and associated commercialisation activities;
- Flexible funding to explore promising technologies and bring in new skills into the ABC. Including working with CIH and other parts of the challenge
- Costs associated with access and running of facilities that are core to the ABC.

The ABC will be led by a single University, but must involve a consortium from more than one institution, involve academics from across disciplines and work extensively with industry. As detailed earlier in this document, it must also lead to the creation of an arms-length not-for-profit organisation. The drivers for this activity are research, innovation, development and be actively involved in working with partners of commercial activity with sufficient autonomy from the lead University as outlined above.

There is flexibility for applicants to propose a different model for ABC, including ownership models and sources of funding – however it must remain a public asset. This must be discussed with EPSRC and IUK prior to submission and in cases where alternative funding is identified, building plans must still be submitted as part of the application, with clear justifications for the reallocation of the budget to support the ABC in delivering the Challenge objectives.

The funding profile for ISCF awards is fixed and spend must place in the allocated financial years. There will be no carry over of spend between financial years and applicants must demonstrate an ability spend straight away based on this requirement. Applicants will be expected to match the spend profile as set out below, noting these are totals which include capital and recurrent spend:

ABC	18/19	19/20	20/21	21/22
Total (£Ms)	8.7	12.5	10.8	4

Equality, Diversity and Inclusion

The long term strength of the UK research base and beyond depends on harnessing all the available talent and the Research Councils have together developed the ambitious RCUK Equality, Diversity and Inclusion Action Plan <http://www.rcuk.ac.uk/funding/diversity/>

In line with the RCUK Diversity Principles, EPSRC expects that equality and diversity is embedded at all levels and in all aspects of the activity supported through this call. We are committed to supporting the research community in the diverse ways a research career can be built with our investments. This includes career breaks, support for people with caring responsibilities, flexible working and alternative working patterns. With this in mind, we welcomes applications from academics who job share, have a part-time contract, need flexible working arrangements or those currently committed to other longer, large existing grants.

Please see our Equality and Diversity webpages <https://www.epsrc.ac.uk/funding/equalitydiversity/> for further information.

Equipment

The capital associated with the build of the centre will be funded at 100% full Economic Costs. Full details of the requirements for submission are detailed later in this document.

Equipment within the Centre that is over £10,000 in value (inc. vat) is available through this call, although as mentioned earlier in this document the expectation is that the consortia will in most cases already have appropriate equipment and facilities in place. Where there is a strategic case for its inclusion, this equipment must be housed within the ABC and not be at the expense of the ABC build. This will also be funded at 100% fEC, however, direct contributions to this equipment cost is encouraged and would contribute to the overall leverage targets. As the centre is to be a national assets, there should be clear plans for access to this equipment including clear justification why new equipment is required. The use of existing equipment is encouraged where possible. Except from the 100% fEC, normal EPSRC equipment rules will apply.

Where equipment or combined equipment asset are £138,000 - £400,000 a two page business case will be required, in line with EPSRC rules. This would be in addition to the expectations set out below. Equipment or combined equipment over £400,000 will not be supported.

Smaller items of equipment (individually under £10,000) should be in the Directly Incurred - Other Costs heading.

For more information on equipment funding, please see: <https://www.epsrc.ac.uk/research/facilities/equipment/>

Eligibility

Only universities who attended the information meeting on **19 April 2018** are eligible to bid for this call as the lead consortium university.

Proposals received from lead universities not in attendance at this meeting and attend **the ABC information session** will be rejected without consideration.

Please register at: <https://iscf-transforming-construction-hub-programme.eventbrite.co.uk>

The named lead applicant does not need to attend but an appropriate representative from the lead university should attend the workshop.

Additional eligible research organisations may join the consortium prior to the submission of the final proposal where they are eligible to receive Research Council funding. Organisations who are not eligible to receive funding are able to join as project partners as contributors and not recipients of the ABC funding.

For information on the eligibility of organisations and individuals to receive EPSRC funding, see the EPSRC Funding Guide:
<https://www.epsrc.ac.uk/funding/howtoapply/fundingguide/>

A list of eligible organisations to apply to the Research Councils is provided at:
<http://www.rcuk.ac.uk/funding/eligibilityforrcs/>

Additional eligibility requirements

The ABC will need must attract substantial leverage from industry and other sources (for example third sector, devolved administrations, local government, local enterprise partnerships etc). A key component of the additional funding will be in the form of matched funding from industrial partners. The ABC should aim to achieve 50% overall leverage at submission and early in its lifetime; ultimately seeking to attract 100% leverage against this investment. Plans to achieve these aims across the grant lifetime must be submitted as part of the bid.

How to apply

EPSRC wishes for interested university consortia to make their intentions to apply known through registering at <https://iscf-transforming-construction-hub-programme.eventbrite.co.uk> by no later than **10 April 2018, in order to attend the workshop on 19 April 2018.**

EPSRC requires that proposals for this call are submitted through the Research Councils Joint electronic Submission (Je-S) System (<https://je-s.rcuk.ac.uk/>).

Submitting an application

You should prepare and submit your proposal using the Research Councils' Joint electronic Submission (Je-S) System (<https://je-s.rcuk.ac.uk/>).

When adding a new proposal, you should select:

- Council 'EPSRC'
- Document type 'Standard Proposal/Outline Proposal/Fellowship Proposal'
- Scheme 'Standard/Outline/Advanced Research Fellowship/...'
- On the Project Details page you should select the '[call name]' call.

Note that clicking 'submit document' on your proposal form in Je-S initially submits the proposal to your host organisation's administration, not to EPSRC. Please allow sufficient time for your organisation's submission process between

submitting your proposal to them and the call closing date. EPSRC must receive your application by **16:00 on 23 May 2018**.

Guidance on the types of support that may be sought and advice on the completion of the research proposal forms are given on the EPSRC website (<https://www.epsrc.ac.uk/funding/howtoapply/>) which should be consulted when preparing all proposals.

Guidance on writing an application

There are specific assessment criteria for this call that build on the standard EPSRC assessment criteria, which should be addressed by the application.

Case for Support (total of 12 pages) consisting of:

- 1) **Track record of the applicants (max 2 pages)**: In addition to the information required in the Director's CV, describe the consortia's record of relevant research and innovation relating to the Active Building Centre, including evidence of international standing. This should include associated enabling disciplines. Provide evidence of a track record of working across the research and innovation spectrum to commercialisation, including an ability to attract private sector investment; relevant experience of delivering Active Building or facilities to time and budget envelopes should also be included.
- 2) **Overall Vision and fit to Challenge Ambition** set in the context of this challenge with clear plans for how this will be achieved, and including:
 - How the Centre fits with national and international context
 - Context of the Centre within the ISCF Transforming Construction Challenge aims and the expectations of the ABC set out in this call
- 3) **National importance**: to set out how the ABC will contribute to the competitiveness of UK industry. This should also address key societal challenges and the potential contribution to other disciplines and sectors.
- 4) **Details of Approach**: the approach the consortium will take to managing and operating the ABC:
 - Plan for the establishment of an arm's length body or similar mechanism to deliver the ABC. This should detail the ABC business model and include details of a whole UK approach, drawing on the full strengths on the consortia, and provide details of how the R&I activity will progress as the physical centre is being built.
 - Details of the two elements of the proposed programme, its fit with the call and proposed vision. Please include sufficient detail for peer review to assess the quality of the proposal for each element:
 - Facility operations (building of the physical centre should be covered in the technical assessment, see later)
 - Research and Innovation work programme split into work packages

- ABC team: roles of key personnel, detailing the skills & expertise required to deliver the vision. Including training and career development plans.
- Management and resources: a clear management that includes appropriate project, fiscal and risk management. Plans to ensure resources, including staff, are deployed in the most effective way to deliver desired outcomes, with clear accountabilities and dependencies identified. Viability of the plans to deliver the research and innovation element to time and budget including an assessment of the value for money, benefits realisation and implementation/integration plans. Plans for sub-contracting (including how any state aid issues will be managed) and how the ABC will meet with the expected spend profile.
- Governance: this should include comprehensive plans for the governance of the ABC, along with details of an independent steering committee; detailed plans and membership will be subject to UKRI approval. A clear decision making framework should be provided.
- Approach to Responsible Research and Innovation across all functions of the ABC.

Workplan (Max 2 pages): This should provide detailed workplan for the first two years to enable peer review to have confidence that there is a structured approach. An indication of the milestones and decision points and mechanisms for shaping the research and innovate programme in the early stages.

Future work plans will be agreed with UKRI and informed by the mid-term review and steering committee for the latter years which depend on research results from not only the ABC but also other groups nationally and internationally.

Pathways to Impact (max 4 pages), to include:

- An explanation of how the ABC will contribute to the competitiveness of UK industry. This must include an understanding of the economic considerations of the development of Active Building components and how the ABC will enable the realisation of these benefits.
- Outlined plans for linking with the Core innovation Hub (the 19 April 2018 workshop will aid the development of these plans)
- A benefits realisation plan which details proposed key performance indicators, in line with the core challenge indicators, monitoring, reporting and how impact will be achieved from the outputs across all scales, both during the funding period and beyond.
- Plans for User engagement and partnership, with plans on how these will be developed over the lifetime of the ABC. This should include details of how early commercialisation will be promoted from the activity of the ABC.
- Plans to address the appropriate policy, standards and regulatory barriers that inhibit uptake of Active Buildings
- Plans to manage of IP, disseminate of results, stakeholder management plans covering all potential users of the ABC and its outputs.

Justification of Resources (max 4 pages):

- How the proposed budget will be used to maximum effect and how this represents value for money. Please provide this information and justification in a clear format, with appropriate breakdown of costs.
- Both the capital and resource elements and how this is appropriate for the build and non-build activities of the ABC. The role of any subcontractors should be detailed here along with appropriate justifications for their involvement.
- Additional funds leveraged should be summarised here along with plans to maximise the matched and leverage funding as specified earlier in this call.

Director's CV (max 2 pages): for the identified Director of the ABC, this may be an interim director who will facilitate the appointment of a full time Director. This should

- Be tailored to provide track record of the successful leadership of previous relevant activities,
- Detail how they engage across the broad academic and industrial disciplines,
- Explain how they will lead a team to achieve the maximum impact from the ABC.

Project Partner Letters of support (max 2 pages each) Required from all project partners involved in the proposal and listed on the Je-S form. These letters from project partners should:

- Indicate how the ABC might contribute to their business needs, and outline how they have been involved in the preparation of the proposal as well as the wider Transforming Construction Challenge (where appropriate)
- Detail the level and nature of the cash and in-kind support
- Describe their intended involvement during the ABC lifetime
- Be dated and on headed paper, making clear the role of the signatory in the user organisation

Host Organisation letters of support (max 2 pages per letter, combined into one PDF document where a consortia of universities has been formed). A Letter is required from each University partners involved in submission and should be signed by the Pro-VC of Research or equivalent. This should include details of

- The support and commitment from the University to the ABC within the context of the challenge
- Flexible support for key staff to focus on the establishment of the ABC and related activities as required
- Plans for hosting the initial ABC activities while the physical centre is being built

- How the ABC aligns with the universities strengths and long term strategies
- A commitment to start immediately on 3rd September, with assurances on the ability to put in place the required recruitment and capital build elements
- A commitment to the future sustainability of the ABC beyond the funding period.

Delivery plan for the physical centre (max 8 pages – please use attachment type Additional Document). This part specifically covers the build of the physical centre and the plans associated with operation of this and should include:

- Comprehensive build project plan that details spend, scheduling and budgeting, along with clear project milestones for delivery. This should also provide details on the plans for physical location of the ABC and level of planning permission in progress.
- Finance and Procurement plan which clearly outlines the value for money for the build
- A comprehensive risk management and mitigation plan
- Pre-build, transition and start-up plans, which should cover how the core activity will carry on in the absence of the Centre and the plans for transitioning towards full functionality, including plans for UK wide access.
- How the build project will be managed with respect to the relationship to the Governance plans of the ABC.
- Appropriate build Health and Safety & Environmental plans
- Long term sustainability plans and details on how the building will function beyond the funding period of the challenge.

Equipment quotations

Quotes for equipment (no page limit): It is a requirement of EPSRC that 3 quotes are provided for all items of equipment costing £25K or more.

For those items costing between £25k and the OJEU limit quotes can be verbal. For all items over the OJEU limit, three written quotes are required.

Prior to uploading quotes, please remove the pages of standard terms and conditions from each quote. These contractual terms do not assist the peer review process and add considerably to the volume of paperwork for the panel.

If there are only one or two suppliers of the equipment, the available quotes should be uploaded then additional blank dummy quotes should be uploaded to enable the proposal to pass the Je-S validation checks.

Equipment Business case (as required, two page max per item)

For equipment between £138,000 and £400,000 a two-page business case should be included in addition to standard requirements. Equipment over £400,000 will not be supported in this call.

This should information such as cost, vendor(s), planned usage, strategic rationale, sustainability, leverage and alternative possibilities. Further information on equipment business cases can be found online at

<https://www.epsrc.ac.uk/research/facilities/equipment/process/researchgrants/>

Applicants should use the Ethical Information section on the Je-S form to demonstrate to peer reviewers that they have fully considered any ethical issues concerning the material they intend to use, the nature and choice, current public perceptions and attitudes towards the subject matter or research area. EPSRC will not fund a project if it believes that there are ethical concerns that have been overlooked or not appropriately accounted for. All relevant parts of the Ethical Information section must be completed. If the research will involve human participation or the use of animals covered by the Animals (Scientific Procedures) Act 1986 it is recommended that applicants pay particular attention to the guidance highlighted below. EPSRC reserves the right to reject applications prior to peer review if the Ethical Information sections are not completed correctly.

Further guidance on completing the Je-S form can be found at <https://je-s.rcuk.ac.uk/Handbook/pages/GuidanceonCompletingaStandardG/EthicalInformation.htm>. Other relevant guidance includes: EPSRC's policy on animal use in research (<https://www.epsrc.ac.uk/about/standards/animalresearchpolicy/>) and the Responsible Innovation Framework (<https://www.epsrc.ac.uk/research/framework/>) and the ESRC Framework for Research Ethics. (<http://www.esrc.ac.uk/funding/guidance-for-applicants/research-ethics/>)

Please note that on submission to EPSRC **all** non-PDF documents uploaded onto Je-S are converted to PDF, the use of non-standard fonts may result in errors or font conversion, which could affect the overall length of the document.

For advice on writing proposals see:

<https://www.epsrc.ac.uk/funding/howtoapply/preparing/>

Assessment

Assessment process

Proposals will be assessed by an expert interview panel comprised of academic and industry representatives. There will be no direct postal peer review.

This expert panel will assess the submissions against the assessment criteria within the context of the ISCF. The technical assessment for the physical centre will be assessed facility management specialists who will provide an assurance report to the expert interview panel. Applicants will be able to respond to the panel's comments prior to interview which may require submission of additional documentation or clarification of existing material.

Full guidance on the interview requirements and expectations will be provided to applicants in due course.

Feedback will be provided by the expert panel in advance of the interview stage and following interview.

Additional value for money assessments may be required along with Gateway Reviews. Specific requirements will be communicated as early as possible.

Assessment criteria

- **Research Quality (primary):** International standing and an established record of relevant technology research. Clear contribution to the research and innovation challenges associated with Active Buildings.
- **Vision and Ambition:** Articulation of how the Centre will address the ambition of this programme in the context of the Transforming Construction Challenge, including a clear plan for benefits realisation.
- **Appropriateness of the Applicant Team:** Assurance and demonstration of the necessary research and innovation expertise, including associated enabling disciplines, to address the challenges. Track record of working across the research and innovation spectrum to commercialisation, including ability to attract private sector investment alongside public funds.
- **Leadership Quality:** Effective leadership by the Centre Principal Investigator, Director and senior leadership team, including a track record of delivery of physical buildings or facilities and leadership within research and commercialisation environments where appropriate.
- **National Importance:** The international context, how the Centre will meet the UK need in the context of this programme. Demonstration of contribution to: health of other disciplines, key societal challenges, current or future UK economic success.
- **Exploitation strategy and potential impact:** Appropriate plans for the establishment of an arm's length body or alternative mechanism to facilitate delivery of the ABC. Clear plans for management of IP, dissemination of results, knowledge exchange, collaboration building and to advance regulations and standards.
- **Partnership and User Engagement Strategy:** Demonstration of a strong user engagement and partnership approach that fits with the expectations of the Challenge, with clear plans to develop this approach.
- **Resources and Management:** Demonstration of a clear management plan that includes appropriate project, fiscal and risk management. This must ensure resources, including staff, are deployed in the most effective way to deliver desired outcomes, with clear accountabilities and dependencies identified. Clear plans to secure further leverage. Viability of the plans to deliver the physical building element of this award, including an assessment on the value for money, benefits realisation and implementation/integration plans. Clear and realistic milestones for completion of the build.

- **Responsible Research and Innovation:** Appropriate plans to explore the Centre’s activities in the context of EPSRC’s Framework for Responsible Research and Innovation.
- **Institutional Commitment:** Clear institutional commitment from all HEIs involved in the Centre including allowing key staff the flexibility to focus on activity relating to the establishment of the ABC and/or related research programmes as needed. Commitment and plans for supporting the research and innovation activities during the building of the ABC and clear plans to support the build project. Demonstration of a commitment to the long term sustainability.

Additional grant conditions (AGCs)

Grants will be subject to the standard RCUK grant conditions however additional grant conditions will be added to this call to match with the requirements of ISCF funding.

The ABC must:

- Start on 03 September 2018 at the latest
- Match the funding profile set out by EPSRC on behalf of UKRI
- Propose a governance structure which will be subject to approval by UKRI.
- Provide regular quarterly reports on progress against KPIs agreed with the Challenge Director
- Work with the Core Innovation Hub, setting out a clear plan to achieve this following award.
- The build project must demonstrate clear value for money. Clear and realistic milestones for completion must be provided and agreed by EPSRC.
- Remain a publically owned asset and any equipment over £10,000 must be housed within the ABC.

Additional grant conditions are subject to change.

Moving forward

Submissions to this call will count towards the Repeatedly Unsuccessful Applicants Policy. Further information about the policy can be found at: <https://www.epsrc.ac.uk/funding/howtoapply/basics/resubpol/rua/>

Key dates

Activity	Date*
Deadline for Full Proposals	16:00 23 May 2018
Briefing and Consortia building Event	19 April 2018
Interview Panel	w/s 09 July 2018

Activity	Date*
Funding decision	ASAP following the Interview
Grant start date	Latest start date 03 September 2018

*EPSRC aims to adhere to the key dates as published, however there may be exceptions where the interview meeting may have to change due to panel member availability.

Contacts

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Change log

Name	Date	Version	Change
Daniel Smith and Tracy Hanlon with direct input and contributions from Innovate UK and ESRC	26/03/18	1.0	First Version

Appendices (includes Attachment Checklist and Fund Headings)

Je-S attachments Check List

Standard:

Attachment Type	Maximum Page length	Mandatory/Optional	Extra Guidance
Case for Support	12 pages	M	Comprising up to two A4 sides for a track record, and 10 A4 sides for the remainder
Pathways to Impact	4 pages	M	
Workplan	2 page	M	

Justification for Resources	4 pages	M	
CVs	2 pages each	As Required by EPSRC	For Director only. Plus named and visiting researchers, and researcher co-investigators. Not for other academics
Project Partner Letters of Support	2 pages	As Required by EPSRC	Must be included from all named project partners. Must be on headed paper, and be signed and dated within six months of the proposal submission date.
Host Org	2 pages per university/organisation No page limits	As Required by EPSRC	In exceptional circumstances a maximum of three letters can be submitted.
Delivery Plan	8 pages		
Equipment Quotes	No page limits	As required by EPSRC	
Equipment Business Case	2 pages each	As required by EPSRC	Required for any items or combined assets with a value above the OJEU limit.
Technical assessment	No page limit	As required by EPSRC	
Proposal Cover Letter	No page limit	Optional	The cover letter can be used to highlight any important information to EPSRC. This attachment type is not seen by

			reviewers or panel members.
Other attachment	No page limit	As required, at EPSRC request only	This can be used for a document that does not fit under any of the headings above. This attachment type is not seen by reviewers or panel members.

Please ensure you adhere to the above attachment requirements when submitting your proposal. Any missing, over length or unnecessary attachments may result in your proposal being rejected.