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Student Design & Sustainability Competition 2026



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The Student Design and Sustainability Competition is run and managed by **The Concrete Centre**.

The Concrete Centre is the central development organisation for the UK cement and concrete industry. Its objective is to assist all those involved in design and construction to realise the full potential of concrete as an adaptable and sustainable construction material.

For more information on The Concrete Centre, visit www.concretecentre.com.



The Student Design and Sustainability Competition is sponsored by **Cordek**.

Cordek provides a range of bespoke and complex formwork solutions for creating architectural features, finishes and shapes in concrete, including the construction of arches, columns, staircases, and ribbed slab soffits.

For more information on Cordek, visit www.cordek.com

Introduction

This is a national student competition which encourages students of architecture and the built environment to explore the benefits of designing sustainably with concrete. This year's brief is to submit innovative designs for a sustainable museum of mudlarking on the Canvey Island seafront. The competition is open to students studying at schools of architecture, landscape architecture and the built environment in the UK, and is free to enter.

Essential skills

The competition seeks to raise awareness and skills related to the design, specification and use of concrete, highlighting the sustainability considerations required of the built environment to address climate change.

The ubiquitous and versatile nature of concrete means that most, if not all, architects, designers and building professionals in their practicing life will need to specify concrete in some form in their buildings. There are key design and specification decisions that architects and designers can make to enhance the sustainability of the concrete used in their projects. This competition aims to upskill students, giving them agency to make more informed, responsible and sustainable decisions when designing and specifying concrete in practice.

Benefits for students

- Develop an understanding of ways to design with concrete to improve its sustainability credentials.
- Develop an understanding of the ways in which concrete can enhance a building's performance.
- Gain familiarity with innovation in the manufacture design and construction of concrete.
- A chance to enhance portfolios for prospective employers.
- Develop skills in communication, planning and technical design.
- A chance to win a share of the £3000 prize fund.
- A chance for recognition as a short-listed or runner up entry
- An opportunity to gain national recognition for the design work.

Reading list and learning resources

A suggested reading list and learning resources for students participating in this competition can be found at www.concretecentre.com/designconcrete

*Front cover image:
Close up of Milford Haven Beach Huts. Image courtesy of Reckli® and Martin Gardner*

This year's challenge...

To design a sustainable new museum of mudlarking on the Canvey Island seafront. Further details of the Canvey Island Seafront and site location options are detailed on page 5 of this document.

Twice a day, the River Thames recedes to expose a fascinating landscape unknown to most people living along its tidal shores. Among the mud and the stones, the tides reveal remarkable objects from every era of the River Thames' past.

Mudlarking is the activity of searching muddy river banks to find valuable or interesting objects.

A "Mudlark" was historically the word used to describe a person, often living in poverty, who scavenged a living from the river's foreshore. More recently licenced hobbyists searching the Thames foreshore for historic artefacts have described themselves as Mudlarks.

In July 2025 a new temporary exhibition opened at the London Museum Docklands titled "Secrets of the Thames". The exhibition brings together a plethora of interesting objects and stories from London's past in the UK's first major exhibition dedicated to mudlarking. The exhibition features over 350 mudlarked objects and is open to the public until 1st March 2026. This design competition brief asks students to design a permanent home at the Canvey Island seafront for some, or all, of the collection currently on display at the London Docklands Museum. Further information about the exhibition and opening times can be found here: [Secrets of the Thames | Mudlarking exhibition | Open now | London Museum](#)

There are no specific size or space requirements stipulated for the competition brief and it is up to students as to whether they create a museum space for all or some of the objects currently on display at the temporary exhibition. A suggested schedule of areas has been provided as a guide by The Concrete Centre at www.concretecentre.com/designconcrete but students are also welcome to work to their own schedule of areas and spaces if desired.

As well as the wider sustainability and construction requirements the design must feature concrete as a significant component of the proposal and harness the thermal mass of concrete exposed internally within the building, paired with natural ventilation, to reduce the operational energy demands of the building. The existing tidal defence structures and coast line of the site can be extended, adapted and or replaced as deemed appropriate. The design proposals should make use of concrete's durability and resilience in marine, flood and tidal environments.

The key design deliverables which will be assessed by the judging panel are outlined on page 4 of this document.



Fig.01 Tate St Ives - Jamie Fobert Architects



Fig.02 The Hepworth Wakefield – David Chipperfield Architects.
Image courtesy of Iwan Baan

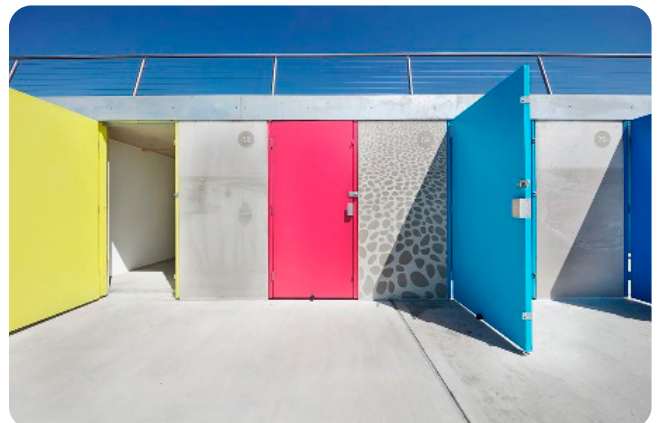


Fig.03 Milford haven beach huts - Snug Architects. Image courtesy of Martin Gardner

Key Design Deliverables

Entrant's designs must feature concrete as a significant component of the proposal, demonstrating an understanding of how concrete can be used to reduce whole life carbon, provide climate change resilience and support a more circular economy. The judges will also be looking for design creativity and flair with proposals that exploit concrete's potential for unique forms, pattern, texture and colour. Entrants must also demonstrate their investigation into manufacturing and construction processes of concrete.

Entries will be judged against the following three design deliverables:

Design Deliverable 01 – Sustainability

The concrete building must reduce whole life carbon emissions by harnessing the thermal mass of concrete paired with natural ventilation to regulate internal air temperatures and reduce operational energy demands of the building. The concrete structure must also demonstrate material efficiency, lower carbon cements, responsibly sourced materials, climate change resilience, support of circular economy principles and support of biodiversity.

Hints: Find out about the whole life carbon benefits of thermal mass here: <https://www.concretecentre.com/Performance-Sustainability/Thermal-Mass.aspx>. The use of local lower carbon concrete mixes, aggregates, recycled content, lean low-waste forms, and modern methods of construction, together with concrete's potential to provide passive climate change resilience and energy efficiency, are also just some of the ways in which concrete can be used within highly sustainable buildings. Concrete's role in providing flood resilient construction is of particular benefit for this brief.

Design Deliverable 02 – Creativity

The design must demonstrate the entrant's understanding of concrete as a material. The concrete should be designed with imagination, flair, aesthetic appreciation and innovation in mind. Exploration of colour, texture, pattern, shape and form are encouraged.

Hints: Concrete does not need to be boxy or grey! It offers great scope for achieving a range of textures, forms, colour and pattern. The possibilities are almost endless. Check out The Concrete Centre's case study web page www.concretecentre.com/Case-Studies and Concrete Quarterly magazine www.concretecentre.com/Concrete-Quarterly-magazine for inspiration

Design Deliverable 03 – Manufacturing and Construction

The entrants must outline what methods of concrete manufacture and construction they propose would be used for their design or different parts of their design. They must provide critical and reflective written narrative on why they have selected certain methods of manufacture and construction over others. Annotation and narrative should also be provided on the type(s) of formwork that would be used on the project.

Hints: Understanding the process of making concrete and the materials that are used, either in the factory or on site, is key to exploring concrete's potential. Concrete can be used in many different parts of a building, including foundations, structural frame, walls, cladding, floors, roof and even furniture. It can be cast or sprayed in-situ, using formwork (moulds) or pre-made (precast) in a factory to be assembled on site. The concrete can be made especially for your project or selected from premade elements. Buildings often utilise a combination of techniques (hybrid construction).

Other more innovative manufacturing and construction techniques include use of alternative formwork, glass reinforced concrete, rammed or 3D printed concrete. The texture of whatever concrete is poured into will be imprinted into the surface of the concrete. Conventionally concrete is poured into plywood or steel formwork, but it can also be cast against fabric, rubber, plastic, wax, cardboard, almost anything really provided you can remove the formwork. More often than not, concrete is left 'as struck' straight out of the formwork, but concrete's texture and colour can also be altered after it has been cast. These 'post-finishing' techniques include acid-etching, bush-hammering and grit-blasting to achieve varying degrees of roughness, revealing the colours of the aggregates within.

A wide range of learning resources to support the competition, including publications, webinars and case studies are available free of charge on The Concrete Centre website: www.concretecentre.com.

This also includes the back catalogue of Concrete Quarterly magazine at www.concretecentre.com/archive where students and tutors can find inspirational precedents and useful technical advice.

A specific list of resources useful for students and tutors taking part in the competition can be downloaded from www.concretecentre.com/designconcrete

The Site

The location for the project is on the Canvey Island Seafront in Essex.

Canvey Island is very low lying with ground levels nearly two metres below the daily high tide level in the Thames estuary. This means that much of Canvey Island is at risk of flooding. This risk is managed by 14 miles (23km) of tidal defences which provide a very high standard of protection and were built in response to the last tidal flood event to impact the Island in 1953. The tidal defences play a critical role in reducing the risk of flooding to people, property and infrastructure on the island.

In 2022 The Environment Agency began work to renew the flood defence revetment on the southern shoreline of Canvey Island. The work being carried out will extend the lifetime of the sea defences in this area for another 50 years whilst also improving public access to the seaward walkway and foreshore. Work is ongoing and due for completion in 2025. The extent of the Environment Agency renewal project is outlined in red on fig. 04

The site consists of flat and sloping terrains, daily tidal variations and proximity to existing infrastructure and housing, all providing students with exciting opportunities for contextual design. See fig. 05 for a typical aerial photograph of the seafront. **Student's designs must be informed by and respond to these special and unique landscape features.**

Students are given the option of locating their design proposals in two different locations along the sea wall. Site 1 [fig. 06] or Site 2. [fig.07]

Site 1 is located towards the western end of the seafront where Thorney Bay meets the Thames Estuary. The sea wall articulates from a North westerly trajectory to a West/ East trajectory at

this point. There are steps down to the shoreline and a series of benches along the sea wall promenade.

Site 2 is located at the Eastern end of the seafront. The sea wall articulates from a West / East trajectory to a North / South trajectory at this point. There is a pumping station within this site and open green space on the landward side of the sea wall. The open green space is the Canvey Island B17 memorial ground dedicated to those who lost their lives on the 19th June 1944 in a B17 aircraft collision off Canvey Point.

For the purposes of the design and sustainability competition, the existing sea defence structures and coast line can be extended, adapted and or replaced as deemed appropriate as part of the design proposals.

Site information

A full pack of site information including scaled drawings, photographs and film footage can be downloaded at: www.concretecentre.com/designconcrete

The site is open to the public. Whilst there is no specific requirement for students or tutors to visit the Canvey Island Seafront to take part in the competition, entrants are welcome to visit the publicly-accessible areas of the site, under their own supervision, should they wish to do so..

Visitors should note the risks associated with coastal environments and take necessary precautions to remain safe. Access is not permitted, under any circumstances, to the working areas of the adjacent Environment Agency construction works.



Fig. 04 Location plan with extent of Environment Agency work outlined in red [image courtesy of The Environment Agency]



Fig. 06 Site 01 boundary outlined in red



Fig. 05 Aerial photo of part of the the Canvey Island seafront [image courtesy of The Environment Agency]



Fig. 07 Site 02 boundary outlined in red

Assessment criteria

Design Deliverables checklist

The entries will be judged using the following assessment criteria:

Design Deliverable 01 – Sustainability

- The concrete building must reduce whole life carbon emissions by harnessing the thermal mass of concrete paired with natural ventilation to regulate internal air temperatures and reduce operational energy demands of the building. The concrete structure must also demonstrate material efficiency, lower carbon cements, responsibly sourced materials, climate change resilience, support of circular economy principles and support of biodiversity.

Design Deliverable 02 – Creativity

- The design must demonstrate the entrant's understanding of concrete as a material. The concrete should be designed with imagination, flair, aesthetic appreciation and innovation in mind. Exploration of colour, texture, pattern, shape and form are encouraged.

Design Deliverable 03 – Manufacturing and Construction

- The entrants must outline what methods of concrete manufacture and construction they propose would be used for their design or different parts of their design. They must provide critical and reflective written narrative on why they have selected certain methods of manufacture and construction. Annotations and narrative should also be provided on the type(s) of formwork that would be used on the project.

The interpretation of the above criteria by the award judging panel will be final and formal feedback will not be provided.

Eligibility

- Design Concrete is open to undergraduate and postgraduate students enrolled in UK schools of architecture, landscape architecture and the built environment.
- Entries can be single, joint, or from teams of up to four students.
- The competition is aimed at students in their second and third years of undergraduate study although postgraduate and alternative course structures are also eligible if agreed in advance.

University submissions

Each university will be asked to select a maximum of three students' work for submission.

Independent submissions

Independent submissions of work from students whose universities are not embedding the competition brief within their course will also be reviewed and considered but only ten such submissions will be shortlisted for judging at the national level alongside university submissions. Entries cannot be entered via both routes. Students submitting independently of their university must provide proof of an active university email address.

Submission stages

Step 1 – Registration

15th September 2025 - 30th January 2026

Universities and independent students should register their interest to enter the competition by filling in the online form at www.concretecentre.com/designconcrete by 6th January 2025.

Once registered, each university will be provided with three unique finalist entry reference numbers to be included on their submissions along with instructions as to where the final submissions should be uploaded. Each independent student (i.e. those not at a university running the competition in their course) will receive their unique entry reference number and instructions on how to submit directly once registered.

Step 2 – Submission

Deadline: 31st March 2026

Each university/student is to upload their anonymous submissions and separate contact details forms to the online storage platform provided by The Concrete Centre. For team submissions, the contact details for every student involved in each submission must be provided. Submissions can be uploaded at any time during the competition period but must be uploaded before 5pm on 17th April 2025.

Submission requirements

A maximum of three A1 digital presentation boards are permitted for each student/team submission. The competition entries should be submitted as digital PDF files. It is essential that all submissions are anonymous from both a student and university perspective. Each entrant's unique entry reference number should be clearly marked on all boards forming the design entry. No other form of identification or distinguishing mark should appear on any part, or file name of the submission.

Presentation boards should visually communicate the design, sustainability proposals and the supporting ideas in a persuasive and descriptive way.

Entrant's designs must feature concrete as a significant component of the proposal. This should include the following as a minimum:

Scaled drawings

Scaled, annotated drawings should be included in the student's submission. Drawings may be prepared using appropriate CAD software, or by hand. In either case, notes and dimensions should not be smaller than the equivalent of an 11pt font when printed at A1.

Drawings must be to an appropriate scale. The drawings should show the following:

- i. Site plan.
- ii. General arrangement floor plans of all levels.
- iii. Section(s) through the proposed design showing relationship to site context, methods of inhabitation and scales of space.
- iv. Elevations of the proposed design showing its form shape and materiality in relation to the existing context.
- v. Construction detail(s) showing interconnection of concrete building elements with themselves and with the surrounding context.
- vi. A timeline series of section drawings showing the proposal during construction, 5 years after completion and 50 years after completion.

Models and views

Images of 3d modelling (either digital or physical) should be included on the student's submission boards. All 3d modelling must show the design proposal accurately located to scale in its surrounding context. 3d images should convey the unique atmosphere, character and inhabitation of the spaces and places being created by and within the design proposals.

Students are also encouraged to include referenced and annotated precedent images of existing concrete to illustrate inspiration of form, texture and colour and construction.

Awards

A shortlist of entries will be selected, from which the winners of the national competition will be chosen. Every winning and shortlisted student will receive a signed certificate and each prize winning university will receive a signed certificate.

A prize fund of £1500 is available for each of the undergraduate and postgraduate student categories. The judges reserve the right to award joint winners or a series of prizes in each category, in which case the awarded funds will be divided at the judging panels' discretion.

Presentation

The prizes and certificates will be presented at an event organised by The Concrete Centre. The prize winners and tutors will be notified of further details regarding date and location in advance. Extracts from the winning and shortlisted entries will also be exhibited and publicised on The Concrete Centre's social media platforms and website along with credits.

Rules

1. Complete design entries must be received by the final deadline of 5pm on the 30th March 2026. Late or incomplete submissions will not be accepted.
2. Each student will be allocated a unique entry reference number which should be clearly marked on all pages forming the design entry. **No other form of identification or distinguishing mark should appear on the boards or any part or file names.**
3. A successful competitor must be able to satisfy the judges that he or she is the bona fide author of the design that he or she has submitted.
4. Competitors should retain the originals of the designs and drawings submitted.
5. Any entry may be excluded from the competition if:
 - The competitor does not meet the eligibility requirements.
 - The entry is received after the competition closing date.
 - The competitor discloses his or her identity in the submission.
 - The entry does not comply with all of the submission requirements.
 - The competitor attempts to influence either directly or indirectly the decision of the award judging panel.
 - The entry does not use concrete as a significant component of the proposal or sufficiently meet design deliverables 1, 2 and 3.



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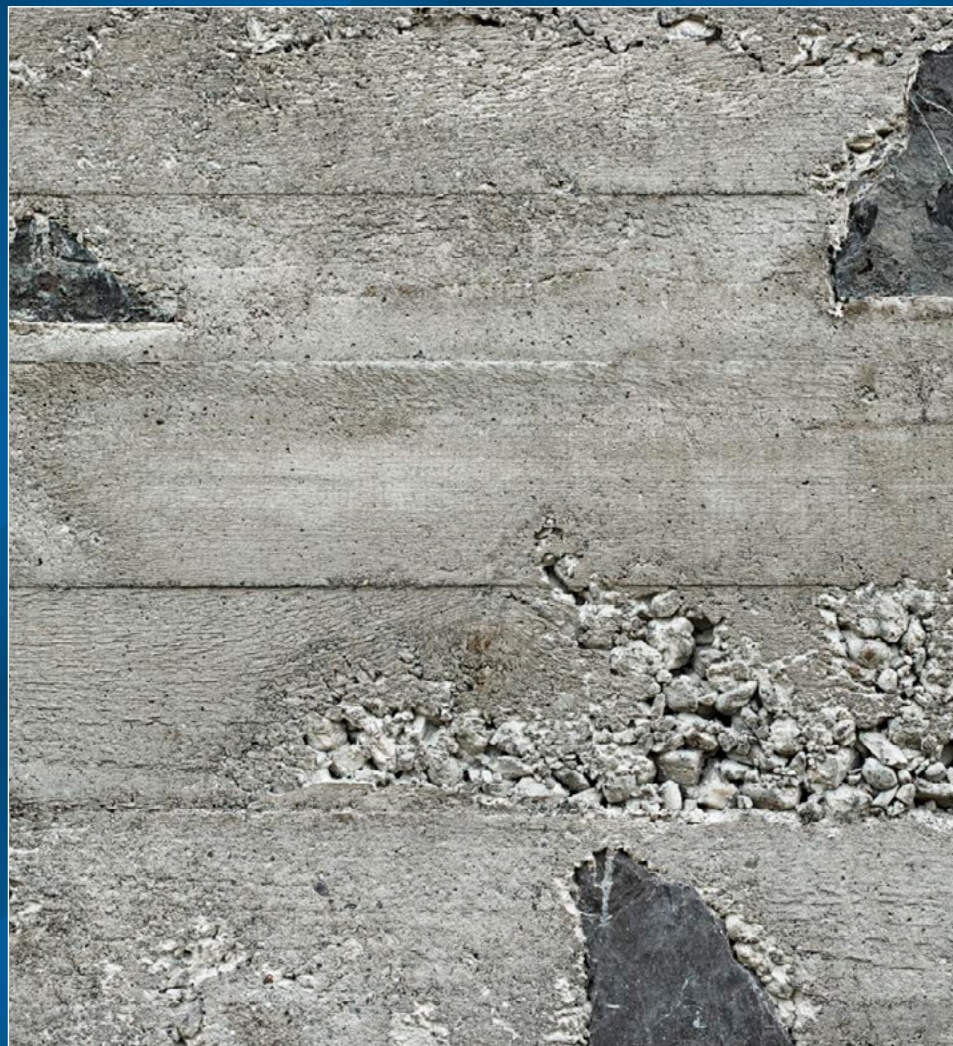
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The Concrete Centre is part of the Mineral Products Association, the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and industrial sand industries.

www.mineralproducts.org

*Image reference: Bergkapelle Wirmboden –
Schnepfau Innauer Matt Architekten, © Adolf Bereuter*



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The competition is run and managed by The Concrete Centre and is sponsored by Cordek. Cordek provides a range of bespoke and complex formwork solutions for creating architectural features, finishes and shapes in concrete, including the construction of arches, columns, staircases, and ribbed slab soffits. Innovative thinking, engineering expertise, and state-of-the-art manufacturing equipment, enable Cordek to solve a wide range of engineering and complex formwork problems. Cordek is committed to supplying the best quality, value solutions, which are supported by the highest levels of personal service.