



Brief 1:

Apply AI

How might we empower communities to use AI to tackle the local challenges of climate change?

RSA + **Google DeepMind**

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In partnership:

Google DeepMind

There is one award available for this brief:

Apply AI award of £2,000

How might we empower communities to use AI to tackle the local challenges of climate change?

Background

- The climate emergency is already reshaping communities worldwide. We are [not on track to limit warming to 2.5°C by the end of the century, let alone the 1.5°C set out in the 2015 Paris Agreement](#).
- Shifts in temperature fuels economic disruption, conflict, natural disasters, water scarcity, food insecurity and more, forcing us to reconsider all aspects of our lives.
- While the climate crisis is a global threat, its impacts are unequally experienced - with [diverse and unique challenges in different regions and communities](#). Unfortunately, those who have contributed least to the ecological predicament are often the ones who suffer the most severe consequences.
- To overcome these challenges, a paradigm shift is required, empowering individuals and communities to respond to the effects of climate change head-on. [Local communities possess invaluable knowledge, resources, and a profound understanding of their own needs](#). By harnessing this wisdom, local communities worldwide can best tackle the specific challenges they face from their different starting points. Taking urgent, collective action will ensure we don't miss our opportunity to create a more balanced and just world.
- Technology, despite its undoubted contribution to the climate crisis, also holds the potential for transformative innovation which can support us in reconnecting with nature, and enabling people and the planet to flourish. One technological innovation which could deliver invaluable and timely solutions to local communities is artificial intelligence (AI).
- AI is the broad discipline dedicated to the creation of 'intelligent' machines. It is an applied field of computer science that draws on our understanding of intelligence - the ability to learn and solve problems - to build novel computer systems that can help us to solve the difficult challenges we face.
- One of the core aspects of AI is the ability to process and analyse data or information about the world.

AI commonly relies on machine learning algorithms: the use of statistics to allow an AI system to spot patterns in that data and learn to solve problems.

- A crucial component in designing AI is, therefore, the use of datasets. These collections of information serve as the fuel for training AI algorithms, and shape the capabilities and limitations of AI systems. Strong datasets contain a wide range of examples and patterns.
- It is crucial to ensure that datasets are unbiased, representative, and inclusive. Biases in datasets can lead to AI systems making unfair or discriminatory decisions at scale, further perpetuating inequalities.
- In this way, datasets and machine learning can be used to build novel AI systems that deliver:
 - Personalisation: tailored approaches that support the distinct needs of communities and places.
 - Creativity: immersive experiences in virtual learning environments could simulate real-world experiences and enhance community understanding.
 - Accessibility: less time and fewer resources used on administrative tasks or monitoring, lower costs for engagement, enabled participation in climate action.

How to approach the brief

- Identify a pressing climate challenge faced by a local community (anywhere in the world) that you personally have access to or knowledge of. This could involve tackling degradation of a local environment, promoting sustainable practices, dealing with extreme weather changes, or combating climate misinformation.
- Like any emerging technology, AI requires equitable and inclusive consideration to ensure it is used responsibly. How can AI benefit society without reinforcing bias or unfairness? Could AI help build trust amid disinformation? Can AI help spot patterns to inform better decision-making? How can we build computer systems that invent new ideas whilst behaving in reliable ways? Who owns the content

generated by these systems and how can we ensure equitable ownership? Consider the ethical implications of your idea. Google DeepMind's [operating principles](#) show how a company might consider its ethical commitments when creating and using technology.

- Consider culture, geography, infrastructure, relevant technologies, and whether your idea could be scaled and replicated in other locations.
- This brief requires a co-design approach to build and strengthen local relationships. Consider the ways in which you could bring together different stakeholders across the community and platform local voices, including more than human stakeholders (eg the biodiversity of the place you're focusing on). Explore your stakeholders' unique struggles, aspirations, and insights.
- We want to see evidence that you have thought about the longevity of your proposal and its role in enabling communities to thrive. There are multiple elements to consider – such as what could be a sustainable business model or how community governance would work. How can your ideas be captured and translated into action by communities, policymakers, funders, and other players?
- Think about wider systemic barriers that may be preventing your audience from participating in collective climate action. How can these barriers be addressed? For example, access to technology is a current challenge for many communities and you need to ensure your proposal considers digital inequalities.
- We encourage you to bring together multiple disciplines and approaches to address the complex challenges within this brief. Explore ways of building a multidisciplinary team or inviting different perspectives – from those with knowledge of AI and climate science, to local experts, to subjects including geography, sociology, politics, etc – to enrich your research.

For the purposes of illustration only, viable responses could include:

- **AI powered energy grids:** Husk Power Systems is [pioneering](#) the use of AI-powered minigrids to provide clean energy access in rural areas of Asia and Africa. The rapid deployment of over 200 AI-powered community solar minigrids combats the climate crisis by leveraging AI to provide modern, affordable, clean, and reliable energy.
- **AI protects endangered African wildlife:** [RESOLVE's TrailGuard AI camera](#), powered by Intel's Movidius Myriad 2 vision processor, uses real-time computer vision to detect poachers, preventing harm to endangered species and aiding in the fight against climate change.
- **Weather predictions:** DeepMind's [Deep Generative Model of Rain](#) empowers short-term weather predictions. By accurately predicting rainfall amounts, timing, and locations, it equips decision-makers in sectors like water management, agriculture, and emergency planning to combat the climate crisis effectively.

... and many more are possible.

Partner information:

Deep Mind

Google DeepMind is a scientific discovery company, committed to 'solving intelligence to advance science and benefit humanity'. Solving intelligence requires a diverse and interdisciplinary team working closely together – from scientists and designers, to engineers and ethicists – to pioneer the development of advanced artificial intelligence.

The company's breakthroughs include AlphaGo, AlphaFold, more than one thousand published research papers (including more than 20 in Nature and Science), partnerships with scientific organisations, and hundreds of contributions to Google's products (in everything from Android battery efficiency to Assistant text-to-speech).

Judging criteria

Your entry should demonstrate a design thinking approach to the brief and **clearly communicate the following principles:**

Social and environmental impact:

Social: How is your approach benefiting people and generations to come? How have you considered diversity and inclusion in your proposal? How have you brought in different voices and perspectives?

Environmental: How does your proposal make a positive difference for the natural world in your chosen context? How have you considered effective use of resources including materials and processes that can do more good short and long term for people and planet?

Rigorous research and compelling insights:

How have you combined your own first-hand research with a review of existing research and wider trends? How are your insights and proposal grounded in people's needs and desires? How have you considered the potential of your chosen place and the global context? How did you get feedback and incorporate new ideas through prototyping and iterating?

Systems thinking:

What's the bigger picture? How have you considered the root causes of the challenge you're exploring? How does your idea connect to a wider set of issues? What might be some unintended consequences of your proposal?

Viability:

Have you considered potential models for how your proposal could work in the real world? How could it be funded and sustained financially with the resources and skills needed? What are potential barriers? How would you measure success? How could your proposal be adaptive to changes over time?

Creativity and innovation:

How is your idea different from existing interventions? Are there unexpected or surprising elements in your proposal? How is it an imaginative and hopeful alternative for the future?

Entry requirements (Briefs 1-5)

Open briefs

The competition will open for entries via sda.theresa.org on 31 January 2024, and the final deadline for entries is 16 March 2024 at 4.00pm GMT.

Submission requirements

For all briefs EXCEPT the Centenary celebrations brief, the submission requirements are:

1 x A3 PDF hero image with a one sentence description – a single 'poster image' that conveys the essence of your project and includes your project title plus a one sentence description. For example: 'Bare technology: a product and service design proposal to convert old computers (e-waste) into simpler, more straightforward, accessible computers for older people'. Your hero image should aim to bring your concept to life – make sure it is vibrant and engaging. Your one sentence description is very important, make sure you take some time to craft an impactful message.

1 x A3 written summary – a single A3 PDF page that summarises your big idea using the following format:

- **Problem (50 words max).** What is the specific problem you identified within the brief topic? Who experiences this problem, and how does it impact them?
- **Process (75 words max).** How did you investigate this issue and what were your key insights? What journey did you go through to get to your final proposal?
- **Proposal (50 words max).** What is your proposed intervention? How will it address the problem?

Online entry

If you are unable to submit online, please contact us by email at sdaenquiries@rsa.org.uk. As you prepare your submission, please ensure that:

- You do NOT include your name, university/college or other identifying marks anywhere on your submission.
- None of your PDF submission files exceed 10MB – this is the maximum size for each individual file/board when you submit online.

We are open to submissions in alternative formats - such as audio or video. Please contact us for more information if this would help you participate.

4 x A3 PDF boards outlining your proposal – 4 pages describing your proposal and responding to the 5 sections of the judging criteria. Number each board in the top right-hand corner in the order they should be viewed by the judges. You may include relevant hyperlinks in your boards, however we cannot guarantee this will be viewed by the panel.

For details on the submission requirements for the Centenary celebrations brief, please see the Centenary celebrations entry requirements and guidelines. Please note that late submissions will not be accepted, and all entrants are encouraged to submit their work in good time before the deadline.

Competition timeline

07/09/23

Briefs soft launch

The 2023–24 RSA Student Design Awards competition briefs go live on sda.thersa.org.

Nov–Dec

Workshops and events

Free learning workshops and events based on all brief themes.

14/02/24

Early bird deadline

Submit by 4.00pm GMT on 14 February 2024 for a reduced entry rate of £25.

16/03/24

Final deadline

Submit by 4.00pm GMT on 16 March 2024.

Early June

Winners announced

Stay tuned for the big announcement.

Sept–Oct

Online launch events

Sign up to [our newsletter](#) to learn about our in-depth brief launch sessions held by our partners and the SDA Team.

31/01/24

Submissions open

Go to sda.thersa.org to submit your proposal.

28/02/24

Needs-based bursary deadline

Submit your application for a needs-based bursary to cover the cost of your submission by 11.59pm GMT on 28 February 2024.

March–May

Judging

Entries will be evaluated in a two-stage process: shortlisting and interviews.

Late June

Awards ceremony

Join us to celebrate the 2023–24 RSA SDA Winners.