rsa spark

creativity changes tomorrow

RSA Spark is designed to help **everyone, everywhere**, find their creativity, **igniting ideas into action** to change tomorrow.

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Urban cool

How might we support communities to create cooler, greener and fairer cities in response to climate change?

RMIT UNIVERSITY

What might the future look like if we achieve this mission?

Our cities have transformed into vibrant, cool, safe, green havens that support a flourishing life for both people and planet.

These ‘urban centers’ are seen as living ecosystems, filled with different life forms, including birds, animals, plants and rivers. Now ‘living’ cities, they are also ‘public’, with community gardens, urban farms, and green spaces that everyone can use. They offer shade, food, and places where both people and nature can live well together.

Our buildings are affordable and inclusive, designed to stay cool naturally and retain warmth through specially designed insulation. New materials and designs, inspired by nature, keep our homes and workplaces comfortable, without consuming a lot of energy.

Renewable energy is also widespread, giving us clean and low-cost power while helping us stay cool in a sustainable way. Businesses recognise their duty to care for the environment, and work with their local communities to act on climate change. Local markets are more in tune with local resources, and are set up in ways that benefit both people and the planet.

We respect and celebrate different traditions and the wisdom of traditional knowledge, as well as those who hold it. This makes our cities lively and culturally rich.

Everyone living in cities feels responsible for keeping the city and planet cool, meaning we’ve more than met our climate targets. The changes in city climates have created new jobs and skills for everyone, while a fair and equitable approach means that no one is left out.

Background to the brief

Urban heat comes about when cities become hotter than is healthy for people and nature. It'is caused by buildings, roads, cars, and a lack of natural vegetation. This heat can harm vulnerable groups, including older adults and children, and damage the environment, affecting fish, birds, animals, plants, and soil.

As global temperatures rise, it’s crucial that people from different fields – arts, policy, digital, architecture, farming, and business – collaborate. A combination of creativity and technology may offer the best solution.

Research shows that natural elements, including trees, green roofs and parks, are vital. These green spaces – with proper water and shade structures – can cool the city and provide heat-safe habitats for both people and wildlife.

New building and street designs are also important, and we can learn from nature’s cooling methods (known as biomimicry). Using heat-reflective materials and designing structures for natural airflow can keep buildings cool with less energy. Renewable energy sources, like solar panels, and hydro power in cities near running water, offer promising solutions.

Indigenous communities have long lived in harmony with nature, and we can learn from them as we create sustainable cities. Policies protecting natural systems are becoming more common, with governments creating laws to safeguard parks, rivers, and forests in urban areas.

Cities like Barcelona and Singapore are leading with green spaces and innovative designs. By working together and embracing new ideas, we can create cool, green, and vibrant cities that inspire communities to tackle climate change, and allow everyone to thrive.

Inspiration for you when answering the brief

For this Mission we are interested in approaches that:

- **Activate residents and businesses**: How can you encourage local people and businesses to help cool the city? Think about how to provide education or support that empowers them. It's important to make sure people feel involved in climate solutions. For example, you can offer workshops or rewards for businesses supporting local projects, or using green technologies that are designed to build a culture of sustainability.
- **Understand place:** Good solutions match the local climate, culture, and community. How can you learn from how local nature stays cool? What local traditions or knowledge can help?
- **Connect local activities**: Consider how to link different local projects, like connecting community gardens with schools or city cooling plans. Your idea might connect existing work, rather than starting something new.
- **Bring in multiple perspectives:** Understand the benefits of working with different kinds of experts. How can your project create new collaborations, for example between businesses and community leaders, scientists and designers, or students and politicians?
- **People, Place, and Planet:** We want ideas that connect local actions to the bigger picture. For example, if you're cleaning a local river, think about where it flows from or to, and who else may depend on it.
- **Support Learning:** Create new ways to understand how urban cooling projects work. Encourage ongoing learning and improvement by making space for testing and feedback. How can we be creative together as a community?

Check the Toolkit for global examples where these ideas have been used successfully.

Existing ideas include:

Spain: 22@ District in Barcelona is a smart urban regeneration project that focuses on sustainability, integrating green spaces, energy-efficient buildings, and innovative cooling technologies. It exemplifies how urban design can enhance environmental resilience and reduce urban heat islands.

Buildings in 22@ District. Photo: @22HQ

Living Melbourne. Photo: The Nature Conservancy, Australia.

Australia: City North in Melbourne is an urban heat reduction project focused on increasing green spaces and using reflective materials to cool the area.

Meet the mission partner

RMIT University

RMIT University was founded in Melbourne in 1887 as a night school offering art, science, and technology courses. Today, RMIT has a global presence in Australia, Europe and Vietnam, and is known for its strong connections with cities and industries. The university emphasises hands-on learning and innovative research that prepares students for future careers. RMIT's focus on Regenerative Futures drives research and education efforts that tackle climate change.

At its Innovation Hub in Barcelona, RMIT researchers address urban heat challenges caused by urbanisation. The university studies urban heat islands and ways to reduce their impact, bringing together expertise in urban planning, architecture, environmental science, and engineering. RMIT collaborates with governments, industries, and communities to develop solutions that improve urban resilience. Projects such as green infrastructure, cool roof technologies, and urban design changes are part of their work to make cities cooler and more sustainable. Innovation precincts such as the City North District in Melbourne and the 22@ District in Barcelona help create the spaces and places for urban cooling experimentation and collaboration. This aligns with Melbourne's goals to improve urban heat strategies.

RMIT and the RSA share a vision for creating a world where people, places, and the planet thrive. This brief aims to unite a global network that will empower local communities to creatively and collaboratively combat climate change.

RMIT UNIVERSITY

RMIT Swanston Academic Building by Lyons. Photo: John Gollings

Share your idea!

We are excited to see your (team's) idea come to life and encourage you to share it with others via the RSA Spark Awards platform. By posting your idea, you will receive a digital badge and feedback from the Mission Sponsor and other innovators. You will also gain access to other opportunities including invites to meet the Sponsor sessions, our annual Festival and more!

To post your idea, go to the RSA Spark platform and make your way through the submission form (platform goes live January 2025).

A submission invites you to upload:

- An introduction to you, your team and what inspires you to take positive action
- A more specific question you have been answering with your work e.g. how might we make the local health centre in Leigh Park better serve holistic community needs?
- The research and work you have done so far
- How you have listened to, and learnt from, others
- Your idea and how you think it could be implemented
- What impact you want to have and how you will track your progress
- What you want to do next and what help you would like

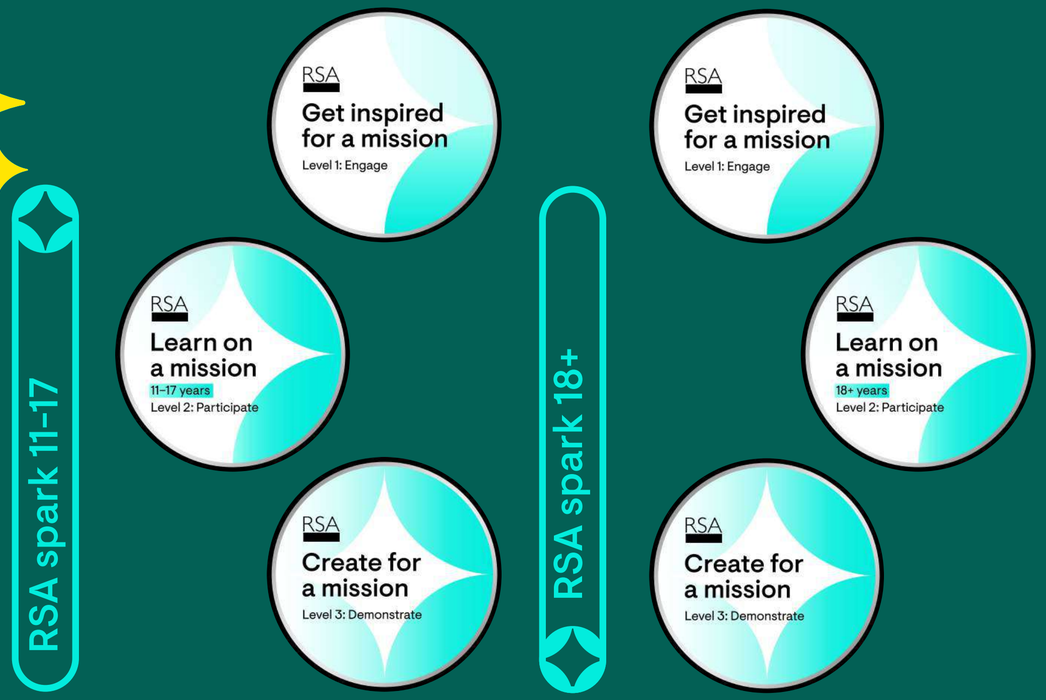
Get support and recognition

Participants who submit to this mission will have the opportunity to be mentored by city leaders and researchers from around the world, including the USA, Europe and Oceania.

If you are interested in areas like urban mobility, planning and design, you will also have the opportunity to take part in additional learning, by taking short courses developed by academic and industry professionals. These courses invite students to learn step-by-step through a mix of bite-sized videos, articles, audio, and practical activities. You can achieve an online micro-credential in topics such as ethical and sustainable cities, designing a green corridor, bringing nature into cities, designing walkability in cities, and fostering inclusive citizen engagement.

All participants who want to be recognised for their learning can gain a 'digital badge' for working on this brief. A digital badge is an official way to show universities, employers, your team, friends and family that you have gained specific skills.

By participating in an RSA Spark learning journey you can receive three badges for each learning journey. These are at different levels depending on how your progress.



How to approach this brief

You can choose to respond to this brief individually or as a team. In responding to this Mission brief, you have an opportunity to tap into and grow 10 life skills or 'capabilities' that are key when innovating in ways that positively impact people, places and planet.

You can find out more about these capabilities here.

There is also more information about how to develop these capabilities within the RSA learning journeys. You can sign up for these learning journeys via the RSA Spark platform.

Examples of what you can consider and develop for each capability are provided in the table below.

Citizenship

- What makes you a great change-maker?
- Why are you passionate about this project?
- How is your approach making things better for people now and in future?
- Is your idea hopeful and exciting?
- How are you using materials in smart ways that care for the planet and all life?

Collaboration

- How will you get thoughts and ideas from people with different backgrounds to yours?
- Who is part of your team and how will you manage working together?
- Who is already working in this space that you can learn from and partner with?

Communication

- How are you using your voice – and the voice of others – to tell the story of your idea?
- How are you listening to other people?
- In what different ways can you share your thoughts and ideas (in writing, pictures, games...)?

Care

- How have you thought about and listened to people who might need the most help?
- What would animals, plants and other natural things make of your idea? How can you have them included?
- How will you listen and learn from people and nature in a kind way?

Composure

- Who might disagree with your idea and what would you say to them?
- Once you have an idea, have you shared it with people and asked them what they think?
- What's something that might be tough to do but that would make this idea even better?
- Am I asking big and important questions about the world?

Courage

- Who might disagree with your idea and what would you say to them?
- Once you have an idea, have you shared it with people and asked them what they think?
- What's something that might be tough to do but that would make this idea even better?
- Am I asking big and important questions about the world?

Critical Thinking

- Who might disagree with your idea and what would you say to them?
- Once you have an idea, have you shared it with people and asked them what they think?
- What's something that might be tough to do but that would make this idea even better?
- Am I asking big and important questions about the world?

Curiosity

- Who might disagree with your idea and what would you say to them?
- Once you have an idea, have you shared it with people and asked them what they think?
- What's something that might be tough to do but that would make this idea even better?
- Am I asking big and important questions about the world?

Creativity

- Who might disagree with your idea and what would you say to them?
- Once you have an idea, have you shared it with people and asked them what they think?
- What's something that might be tough to do but that would make this idea even better?
- Am I asking big and important questions about the world?

Change

- Did you test your ideas and make changes based on feedback?
- How will your idea keep changing over time so it becomes even better?

Toolkit

Sponge City Initiative, China

Implemented in several Chinese cities, this initiative promotes the use of green infrastructure and permeable surfaces to manage stormwater and cool urban areas.

Urban Heat Island Mapping, Singapore

Uses satellite data and ground measurements to map heat islands and implement targeted cooling strategies in affected areas.

Gardens by the Bay, Singapore

A large scale park that integrates lush greenery with cooling technologies to enhance airflow and reduce the urban heat island effect.

Heat-Resilient Neighborhoods, Ahmedabad, India

A project integrating green roofs, cool pavements, and increased green cover to mitigate extreme heat in vulnerable neighborhoods.

Adobe Buildings, Southwestern USA

Indigenous communities in the American Southwest have used adobe, a natural building material made from earth, water, and organic materials, for centuries. These structures are highly energy-efficient, providing natural insulation that keeps interiors cool in hot climates and warm in cold weather.

Green Alleys Program, Chicago, USA

Converts alleys into permeable, green spaces to absorb rainwater, reduce flooding, and cool the surrounding areas.

Legal Personhood for Nature, New Zealand

The Whanganui River, considered an ancestor by the Whanganui Iwi (indigenous Maori people), was granted legal personhood in 2017. This recognition ensures the river's rights are protected and managed according to indigenous practices, promoting sustainable environmental stewardship.

Regenerative Design

A report by Ellen MacArthur Foundation demonstrates the value of a circular economy that is regenerative by design.

Link to resource: https://rb.gy/ooze8w

Terraced Farming, Andean Highlands, Peru

The Inca civilization developed advanced terracing techniques to prevent soil erosion and manage water efficiently in mountainous regions. These terraces are still used today to grow crops sustainably in challenging environments, mitigating the impact of extreme weather.

Living Root Bridges, Meghalaya, India

The Khasi and Jaintia tribes in Meghalaya have developed a unique method of growing bridges from the roots of rubber trees. These living root bridges are resilient to heavy rainfall and flooding, showcasing a sustainable and adaptive approach to infrastructure in a monsoon climate.

Medellin, Colombia

Achieved a 2 degrees Celsius reduction in heat across the city with their implementation of green corridors.

Resources to understand urban cooling

https://www.weforum.org/agenda/2022/10/cities-heat-urban-greening/

https://www.theguardian.com/environment/2022/sep/29/urban-greening-reduce-impact-global-heating-cities-study
https://www.rmit.edu.au/news/all-news/2024/july/hot-cities-collaborating-for-climate-justice

https://www.c40knowledgehub.org/s/article/Urban-Heat-and-Equity-Experiences-from-C40s-Cool-Cities-Network?language=en_US

Additional Resources: https://www.arup.com/insights/issues/what-makes-a-net-zero-city/
https://www.c40.org/what-we-do/building-a-movement/cities-race-to-zero/
https://unhabitat.org/cities-and-climate-change

Glossary

Urban heat: refers to higher temperatures in urban areas due to the planning and design of the built environment and lack of natural vegetation which can negatively impact the health and well-being of people and communities. Events such as drought, floods and fires may happen as a result. People may experience poor health and even death due to heat exhaustion.

Biodiversity: the range of different plants, animals, and micro-organisms (e.g. bacteria) living together in a specific area or as part of a joint living ecosystem.

Biophilic urbanism: Designing cities with green roofs, green walls and green balconies to bring nature into the densest parts of cities to provide green infrastructure and human health benefits.

Climate change: a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

Biomimicry: when people design things by copying how nature solves problems, like how bees build their hives. Find out more from the Biomimicry Institute: https://biomimicry.org/

Climate targets: There are different goals set by countries and businesses to try and keep our planet healthy. One is ‘net zero’ which means making sure we only put the same amount of greenhouse gases into the air as we take out. This helps stop the Earth's temperature from getting warmer. The 1.5-degree climate target means we’re trying to keep the Earth's temperature from rising more than 1.5 degrees Celsius above the levels before the Industrial Revolution. This helps us avoid the worst effects of climate change, like extreme weather and rising sea levels.

Fairness: just treatment without discrimination in which each person is considered of equal worth with equal opportunity.

Green infrastructure: The interconnected set of natural and constructed ecological systems, green spaces and other landscape features. It includes planted and indigenous trees, wetlands, parks, green open spaces and original grassland and woodlands, as well as possible building and street-level design interventions that incorporate vegetation.

Indigenous knowledge: Indigenous knowledge refers to the understandings, skills and philosophies developed by societies with long histories of care and custodianship of their environments. This knowledge encompass language, systems of classification, resource use practices, social interactions, values, ritual and spirituality.

Regenerative: a fundamental shift in thinking and action in the arenas of environmental, economic and social change. It is grounded in a living systems view of the world and recognises the interdependence of the challenges we are facing today, across climate change, social and economic inequality and environmental degradation.

Well-being: A state of existence that fulfils various human needs, including material living conditions and quality of life, as well as the ability to pursue one’s goals, to thrive, and feel satisfied with one’s life. Ecosystem well-being refers to the ability of ecosystems to maintain their diversity and quality.

Living Systems: Living systems are natural networks, like forests or rivers, where plants, animals, and environments work together to stay healthy.