

DESIGN

Ramboll
Design System

RAMBOLL

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Paramit - Factory in the Forest
A competition winning entry for an electronics manufacturing plant. This site is conceived as a forest that penetrates, surrounds & steps over the building creating maximum contact with nature - green, breeze, scent, sound, touch. A canopy supported by a 'forest' of columns creates unity to office & courtyard while giving protection from the tropical sun. Office levels give access to roof gardens and staff are encouraged out for breaks, meetings or just contemplation.

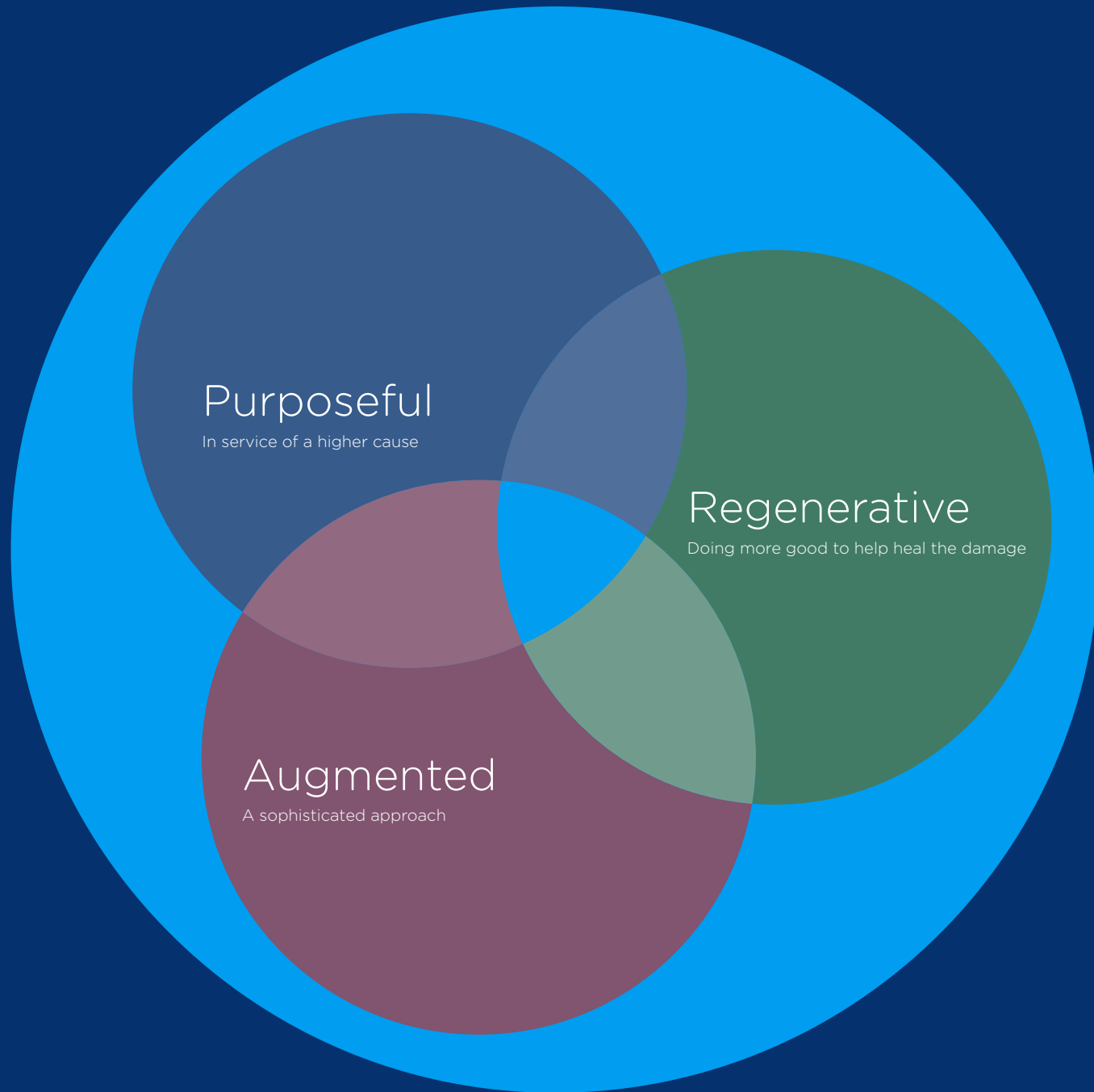
Feature image from
Design Unit Architects Sdn Bhd

A Ramboll publication

Sustainability
is a goal. An ambition.

Innovation
is a tool.

Design
is the enabler that harnesses
the power of innovation to help
achieve the sustainability goals
and ambitions.



The Ramboll Design System

The Ramboll Design System (RDS) is composed of three pillars: Purposeful design, Regenerative design and Augmented design.

The three pillars are inseparable and integral parts of one whole with symbiotic relationships between. It does not see design for design purposes, nor technology in isolation, or aims to achieve sustainability goals through sustainability (which won't be possible, nor achievable).

Design Excellence is the **PURPOSE**. This is about the quality of what we deliver to our clients — What we must do better than the competition.

Digitalization is The **ENABLER** to deliver design excellence and meet sustainability targets by increasing efficiency in the design process and quality in the product.

Sustainability is a set of design **CRITERIA** that defines the ambition of the design and its environmental, social, and financial impact

Our design is purposeful

Our design is Purposeful Design. It does not celebrate itself. It is not vain. It is not about aesthetics, nor iconic or beautiful, though our buildings can have all three attributes.

But our design is purposeful at the core. It sets “solving the challenges facing humanity and the planet” as its ultimate purpose. These challenges are numerous, but five of these can be listed as follows, as depicted in the Ramboll Design Rosette.

1 - Design as an integrator: to bind our efforts and resources within Ramboll together, and to ensure that the best of Ramboll comes out of every Ramboll project, no matter where we operate, as depicted in the Ramboll Design Rosette.

2 - Design as an enabler: to help achieve our sustainability and environmental goals.

3 - Design as an optimizer: to help ensure that all our designs are fully optimized vis-à-vis efficient use of materials and the ultimate cost of the projects we deliver.

4 - Design as a profit maximiser: to help increase our productivity, efficiency and profit (see McKinsey design index, MDI).

5 - Design as an Influencer: to help enhance our influence across the industry. To elevate the valour and position of the engineer in the society at large to help attract bright minds to our industry and to make it more attractive to the younger engineers and those planning for their tertiary education.

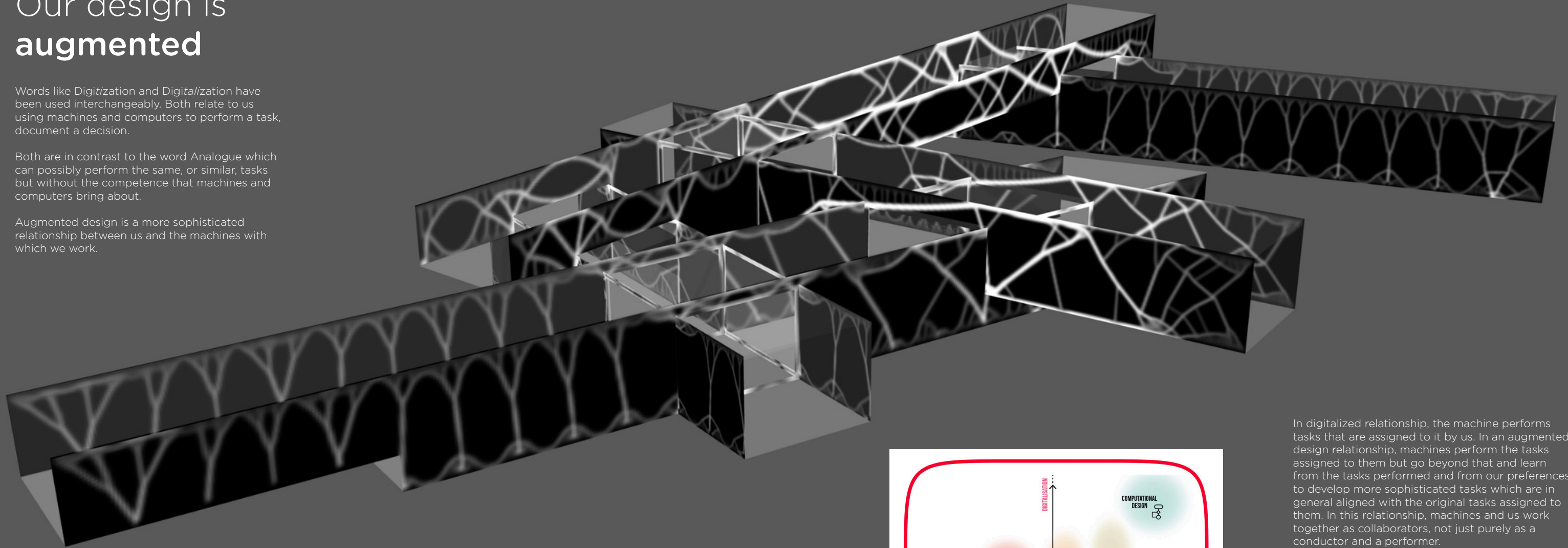


Our design is augmented

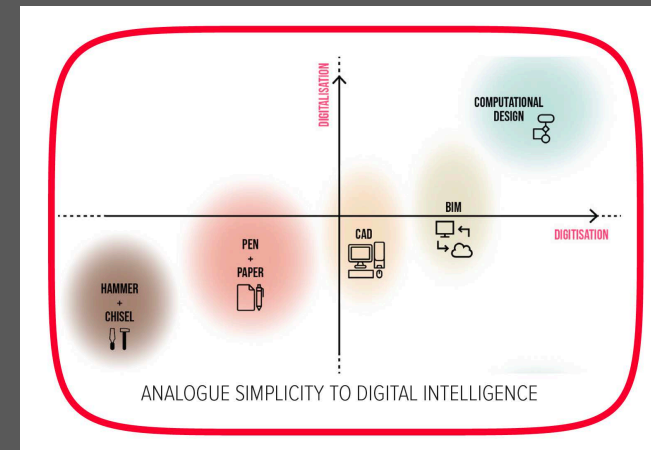
Words like Digitization and Digitalization have been used interchangeably. Both relate to us using machines and computers to perform a task, document a decision.

Both are in contrast to the word Analogue which can possibly perform the same, or similar, tasks but without the competence that machines and computers bring about.

Augmented design is a more sophisticated relationship between us and the machines with which we work.

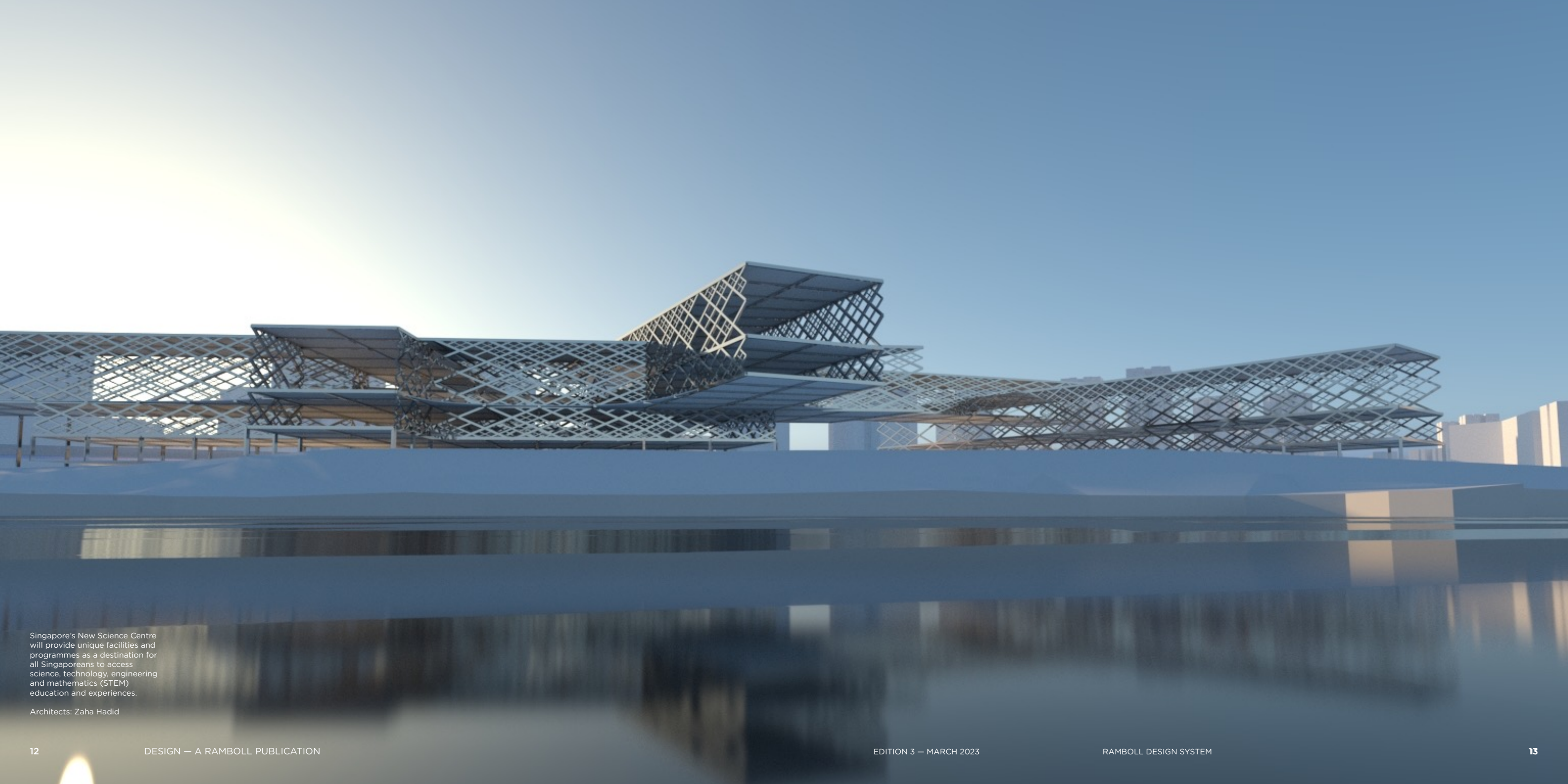


New Science Centre – Singapore: A topological optimisation algorithm was used to calculate the most efficient load paths for each façade of the building, taking into account differing programme loads and support conditions. This image shows the final result of this process, with white indicating the most optimal location for structural members and black indicating the least. This method minimises material usage and waste.



In digitalized relationship, the machine performs tasks that are assigned to it by us. In an augmented design relationship, machines perform the tasks assigned to them but go beyond that and learn from the tasks performed and from our preferences to develop more sophisticated tasks which are in general aligned with the original tasks assigned to them. In this relationship, machines and us work together as collaborators, not just purely as a conductor and a performer.

In the design arena, a higher form of augmented design is a “Digimetric” workflow where the entire design process from conceptualization through to detailed development and documentation happen in a seamless workflow where we are more in control at the earlier stages of thinking, conceptualizing and decision making, while the machine is more in control at the later stages of detailed design, documentation and visualization.



Singapore's New Science Centre will provide unique facilities and programmes as a destination for all Singaporeans to access science, technology, engineering and mathematics (STEM) education and experiences.

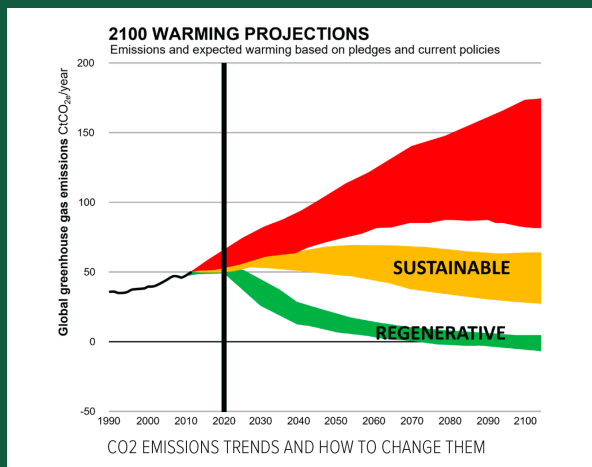
Architects: Zaha Hadid

Our design is regenerative

Regenerative Design and thinking are predicated on the fact that a “Degeneration” has taken place. This is particularly in relation to environmental degradation, and especially since the advent of the industrial revolution over the past 200 years.

The contrast with sustainable design is that sustainability is founded on two flawed premises: one is that the natural environment is a “resource” that we have unfettered access to. The other that we ought to use these natural resources in a measured and controlled manner such that we leave enough for the future generations to continue to use same.

In effect our sustainability efforts have been limited to “being less bad, and doing less harm” to the natural environment. In contrast, regenerative design is based on “doing more good to help heal the damage” hitherto inflicted on the natural environment. ■





We enable society's transition to a future that flourishes

Ramboll is a global engineering, architecture and consultancy company founded in Denmark in 1945. Across the world, our 16,500 experts create sustainable solutions.

We combine local experience with a global knowledge base to create sustainable cities and societies, driving positive change for our clients, stakeholders and society. We enable our stakeholders to realise their goals and navigate the transition to a more sustainable future.

We call it:
Bright ideas. Sustainable change.

Capella Resort, Singapore is a hotel and resort development on Sentosa Island. World War 2 army barracks are retained to create the foyer, while an open sided excavation is carved behind the barracks for the new hotel. The design incorporates one of the first permanent passive soil nail retaining systems in Singapore.



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Feature image from
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DESIGN is a periodical publication by the Design Excellence Board (DEB) within the Buildings Market in Ramboll.

The publication promotes and articulates latest ideas on matters relating to design, technology, environment and ethos within the design industry and the built environment, at large. It aims to address key issues facing contemporary design professionals, including our evolving relationship with the natural environment; as well as pressing political and social agendas for the built environment.

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