TU/e
INNOVATION SPACE

Challenge name	*The Gate Venue 2030*
Challenge owner	*The Gate*
	Irina Kulizhnikova, Fons Sweegers
Brief summary	The Gate is the TU/e venue for tech startups in the Brainport region. The building is old-fashioned and needs an overhaul to make it more sustainable and a showcase of the sustainable solutions that are already possible.

About the challenge owner

Irina and Fons are both business developers at The Gate in the field of Artificial Intelligence, energy and built environment. Irina has a background in economics and entrepreneurship, degree in Business, and experience in founding startups (including those in AI).
Fons is a mechanical engineer and an industrial designer by training and during his career he worked on a broad variety of design and engineering assignments, i.e. from (ship) interiors to spacecrafts, brought his own product to market, was a startup lead in the energy sector and a project coach/assignor at the dept. of Industrial Design at the TUE for 5 years. Both now work at The Gate having its office in the Alpha building.

Challenge description

The Alpha building does not meet the needs of The Gate anymore: it is old, shabby, has very poor climate control, is dark, small, poorly visible and not easy to find. Its interior is second hand, not matching, crappy furniture. We envision an inspiring, comfortable, aesthetically appealing and inviting work environment for staff and startups hosting learning, consulting, working and social activities.

To meet the climate neutral ambitions of the campus, the venue should be a showroom/ living lab of technologies developed at TU/e impressing and inspiring visitors. The Gate 2030 venue should be a statement, an example for all new buildings on campus regarding sustainability and circularity without compromising functionality or comfort.

We would like students to work on a building concept on campus as an inspiration for future buildings and/or renovations. Applications that can be included in the design of the new building are: 3D printing of reinforced concrete, carbon neutral climate control, sustainable heating and cooling through iron fuels, and any other creative ideas that the group of students can think of.

Challenge pictures and company logo

Input and involvement of challenge owner

Please indicate briefly what your involvement will be for the project group.

- Consulting & coaching role
- Introduce to potential users ??? (startups, portfolio companies)
- Show the existing building and explain what is not working there

How would solving this challenge help your organization?

- Become climate neutral by 2030 and as an inspiration for future buildings on campus.
- We would like to improve our services having an inspiring work environment for staff and startups.
- The building should be a good representation of what we are doing (building ventures), therefore it could be a part of our promotion (just like the website)

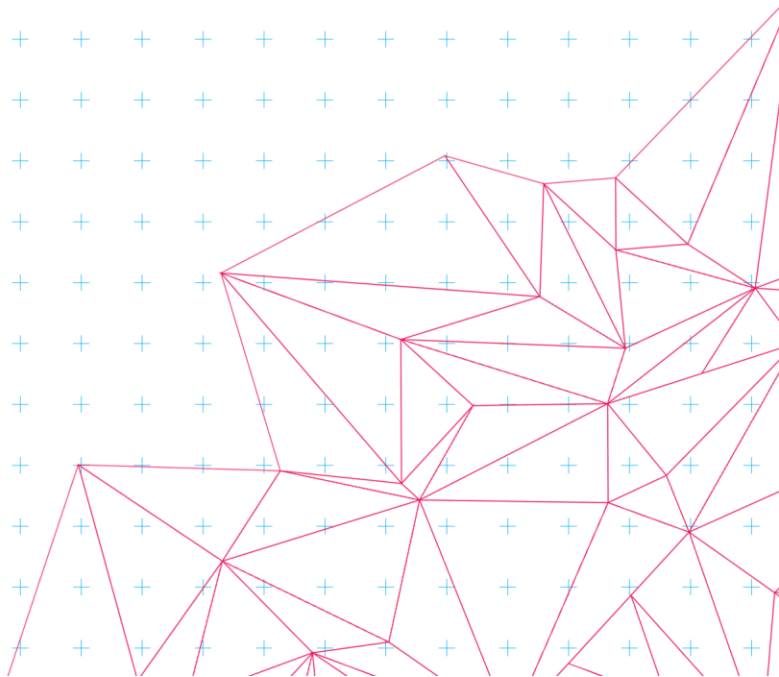
Resources

What resources are necessary for the students to work on the challenge?

- Information/ access to technologies from the labs/startups
- Workshop environment to do any modelling and experiments
- Design tools (Sketchup, Adobe creative suite, CAD...)
- Access to the BE-model workshop

What resources do you offer to students?

- Expertise; sustainability, climate control, architecture, smart systems, energy systems, AI, customer insights (The Gate & Startups)
- Materials; design tools from stationary to software/hardware, tinkering materials
- Workplace; innovation space team workshop



Roles of different disciplines (only for ISBEP)

Architecture, Urbanism and Building Sciences	Redesigning a building, including its climate control, heating and cooling system, smart new building materials, distribution of open and closed spaces, and making it both functional as well as aesthetically appealing needs knowledge from various subfields within AUBS.
Computer Science and Engineering	When various data streams are collected, they should be bundled and stored in a way that allows for easily gaining an understanding of what works and what not, and an interface is needed to bring this knowledge to our visitors.
Data Science	Unexpected sources of data can be used for our benefit. People's wellbeing in the building could be tracked with various types of data, and these data can be used to predict what to do to make the building as pleasant as possible.
Electrical Engineering	The building will need to be prepared for operating as (or on) a smart grid, where all energy flows are handled appropriately. Various initiatives already exist on campus, and each of those could be applied in the design of the new building.
Industrial Design	Visualizing effects of sustainable solutions on the structural design of the building, people's wellbeing and productivity, and effects on future design solutions.
Psychology and Technology	Understanding the mental effects of building design and translate these insights into solutions to stay energized and inspired.