

Challenge name	Urban communities of the future
Challenge owner	Horizon2050
	X Company <input type="checkbox"/> Research <input type="checkbox"/> Student team
	Nico Schouten
Email challenge owner	
Phone challenge owner	
Preferred way to contact	X email <input type="checkbox"/> Phone call <input type="checkbox"/> SMS / what's app <input type="checkbox"/> Other; ...
Brief summary	The way in which we think about living is changing. Younger generations are more aware of their influence on the environment, and want to live, work, and go out in different ways compared to their (grand)parents. This challenge is about changing the way in which we organize our lives and start building the urban (and rural) areas of the future.

About the challenge owner

Horizon2050 is an open consortium of innovative university startups, student teams (knowledge institutions), construction companies (industry), (local) governmental organizations (government) and umbrella organizations (from stakeholders as well as future users) in the Quadruple Helix. We are exploring new ways of design, fabrication and construction of sustainable housing within a sustainable community. Horizon2050's main goal is to find new ways to build new local communities with the 2050 IPCC goals in mind. With this project we want to contribute and help solve the Dutch housing problem before 2030.

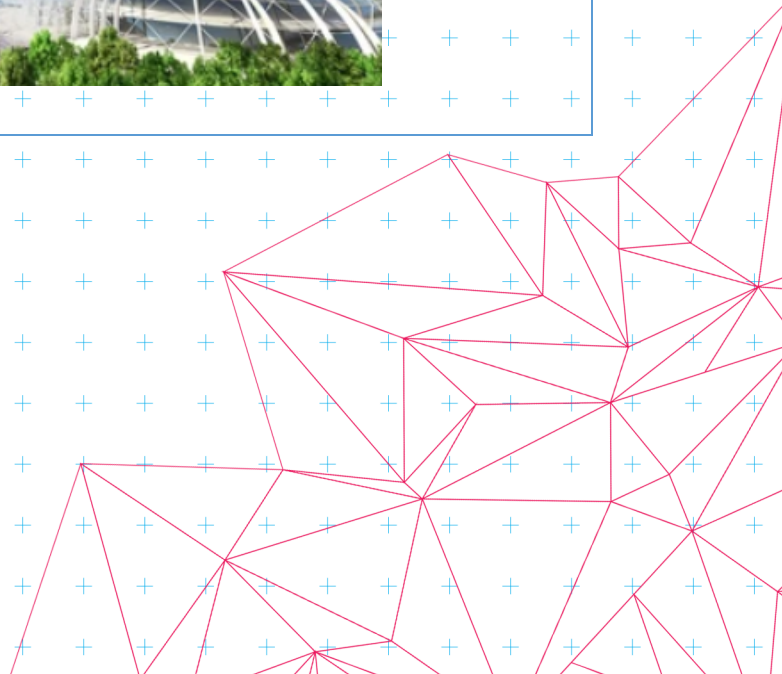


Challenge description

By 2030 the Netherlands need to build 1 million new houses. Currently there is already a need for 300.000 houses. We can start building like we always did, but this would not fit the needs and requirements of younger generations anymore. There is a need for sustainable living environments, including the way we travel to and from work, how we meet friends and family, and how we organize leisure activities.

There seems to be a discrepancy in what builders think young generations want and need when it comes to work, leisure & live. Elements that come into play are use of different types of materials, land use for growing food and organizing spaces, the space that is needed to have a comfortable place to live in, the role of (natural) light, greenery and water. Concepts like tiny houses are becoming popular because of the abundance of stuff that is created, bought and used on a yearly basis.

The challenge consists of conceptualizing a new rural and/or urban community area that meets these new demands of the younger generations and meet new standards derived from the IPCC 2030 and 2050 reports. Think, instead of compacting cities, choose to create new rural neighborhoods for all generations with that typical countryside atmosphere. And ultimately we can work towards developing a new model for the way we design rural areas and their community.



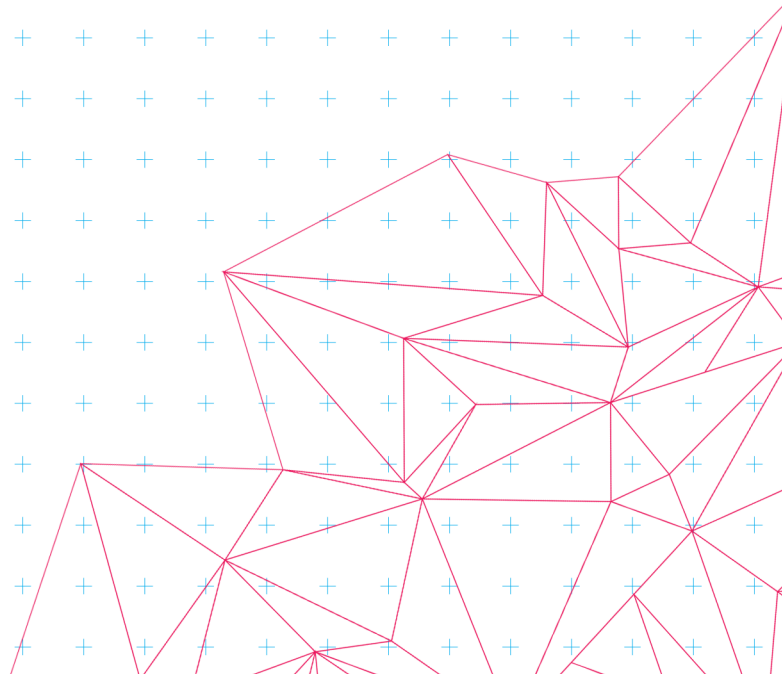
Input and involvement of challenge owner

This is a very open challenge, the team will very likely make a number of pivots. For me as a challenge owner this will mean I have to be flexible in availability to offer the team the feedback they need.

I have been involved in different InnoSpace projects over the past 8 years, have been collaborating with multiple student teams and have supervised dozens of graduation students. All these projects had in common that they revolved around how people want to be living in the future, so my expertise on this topic could be helpful in initial discussions with the team.

Resources

I have a large network of specialists and a frequently updated slack channel that serves as a knowledge base. I do not have physical resources or a place to work, but I can help out with finding theoretical resources in terms of output of earlier projects that I have been working on.



Roles of different disciplines (only for ISBEP)

Automotive Technology	The new residential area will likely need a new approaches for mobility services, both electric and combustion engine-based. Some inspirational YT channels: the Urban Cycling institute, Active Towns, Not Just Bikes etc.
Biomedical Engineering	Maybe the biggest challenge, the cost of medical services will rise every year. There is hardly any focus on prevention. To improve people's lives we need to know more about prevention and what this means for the way we design houses, offices, etc.
Architecture, Urbanism and Building Sciences	At first glance this is an AU and BS challenge only. Developing the urban and rural environments of the future poses many architecture and urbanism questions that can be tackled by more than one student.
Computer Science and Engineering	Our society becomes more data driven, which role will data play in the new residential areas, how will data serve the residents? What IT systems do we need to connect appliances, cars, houses, making them able to communicate and make our lives better.
Data Science	
Electrical Engineering	With an energy transition were electricity plays a big role, how would the grid in a residential area look like? What types of energy can be generated how and where?
Industrial Design	
Medical Sciences and Technology	Many people do not know how low the quality of the air inside houses and offices are. Designing a more healthy environment is part of the new way of building houses offices etc,
Psychology and Technology	Many transitions are slowed down because the people involved are hesitant. How can we get people involved so they adopt the new technology?
Chemical Engineering and Chemistry	The transition we have to make also introduces new challenges that can only be fixed with (bio)chemistry. For example, bi chemistry, phase changing materials etc,
Sustainable Innovation	This challenge could not be successful if sustainable development would not be high on the agenda. How do we organize living and working in the future around the sustainable development goals?
Industrial Engineering	
Applied Physics	
Applied Mathematics	
Mechanical Engineering	