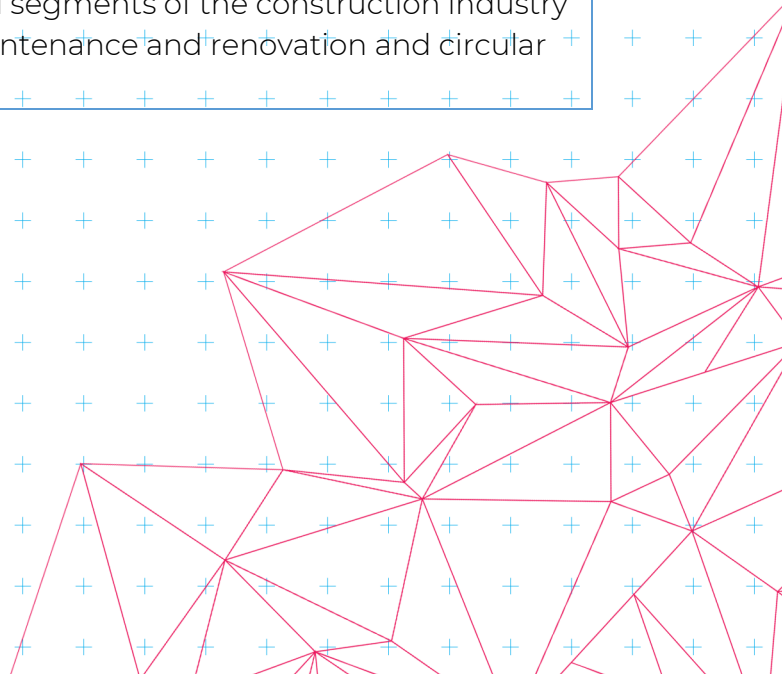


Challenge name	Packaging solutions
Challenge owner	Janssen de Jong Groep
	<input checked="" type="checkbox"/> Company <input type="checkbox"/> Research <input type="checkbox"/> Student team
	Daan Arts and/or Karel Kalis
Email challenge owner	
Phone challenge owner	
Preferred way to contact	<input checked="" type="checkbox"/> email <input checked="" type="checkbox"/> Phone call <input type="checkbox"/> SMS / what's app <input type="checkbox"/> Other; ...
Brief summary	In the house-building industry, we pay for packaging four times: the packaging material (usually plastic) itself, the time it takes to wrap big materials, the time it takes to unwrap, and disposal of the material. Can we find a way to eliminate packaging of construction materials and/or eliminate the use of non-renewable materials? This saves resources and enables us to save valuable time and money in our construction process (we can build quicker and cheaper).

About the challenge owner

Janssen de Jong Groep is a large group of specialized construction companies based in The Netherlands, operating in all segments of the construction industry from development, construction and maintenance and renovation and circular repurposing of materials.



Challenge description

More than 30% of total waste produced in the Netherlands consists of construction related waste. 50% of that consists of expendable packaging. Packaging is often made from non-renewable materials (plastics, foam, etc), it has no value for the end product (the constructed building) and it costs time and money.

We are looking for a solution where we can banish wasteful packaging and save valuable time, money and resources.

The overall goal is to eliminate waste from the process to be able to build cheaper and faster whilst maintaining the quality of the completed building

Possible solutions might be found in eliminating packaging by determining the root cause of the necessity of the packaging. Can the root cause be addressed differently? Different means of transportation or handling. Development of reusable packaging? Development of bio-based packaging, etc.



Input and involvement of challenge owner

We will be guiding the process with the challenge group from our Innovation Hub. Team leads will support the challenge team with regular meetings and guidance.

There are possibilities for the challenge team to work in our company to promote collaboration and team energy to make this challenge a “two way street”

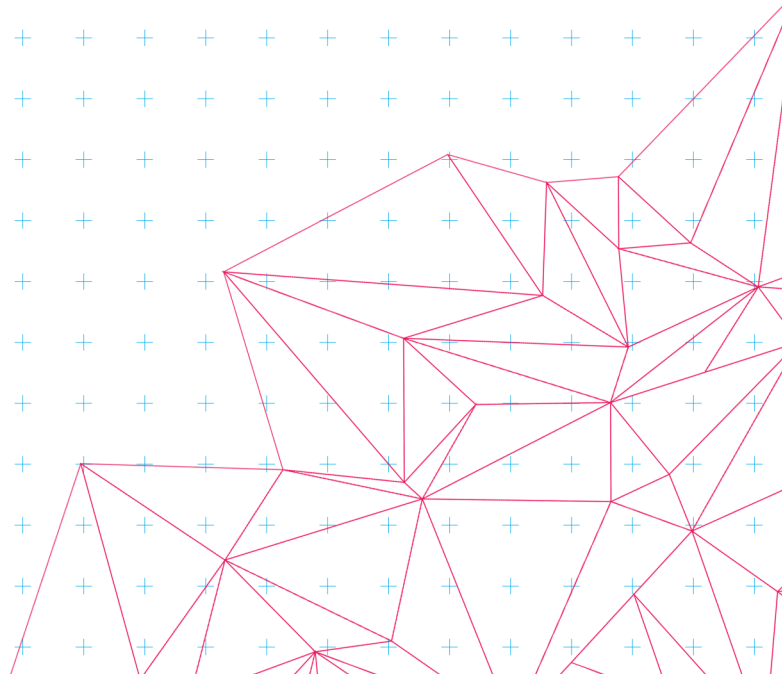
Resources

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

Enthusiasm about the challenge (banishing waste out of our processes), eagerness to learn and discover unbeaten paths.

What resources do you offer to students?

Expertise, knowledge, time, tools (laptop), workplace at the office, a warm bath of co-workers, our network to find the right companies to collaborate with us during the challenge.



Roles of different disciplines (only for ISBEP)

Automotive Technology	When creative new solutions for the transport of big building materials are developed, knowledge of control systems and potentially power electronics is needed to design the solution within existing boundaries.
Biomedical Engineering	
Architecture, Urbanism and Building Sciences	The knowledge of the construction process of (sustainable) building is crucial for this challenge. Optimizing this process is necessary to be able to eliminate waste.
Computer Science and Engineering	
Data Science	
Electrical Engineering	
Industrial Design	Knowledge about designing products in a different way, opting for different means of transporting materials and different means of packaging can greatly contribute of this challenge. Also forms of reusable packaging (e.g., crates) can substitute the non-renewable one way packaging).
Medical Sciences and Technology	
Psychology and Technology	
Chemical Engineering and Chemistry	A lot of packaging materials are made of non-renewable plastics, foam etc. Knowledge about chemical components of these forms of packaging and the reusability or recyclability of these materials can help us find a better solution
Sustainable Innovation	Why do we need packaging? How can we make this circular? How can we make this biobased? These kinds of questions fit right in the sustainable innovation
Industrial Engineering	Getting rid of packaging is potentially a huge value creator for the construction domain. What value would a newly developed creative solution for packaging bring?
Applied Physics	
Applied Mathematics	
Mechanical Engineering	When creative new solutions for the transport of big building materials are developed, knowledge of control systems and potentially power electronics is needed to design the solution within existing boundaries.