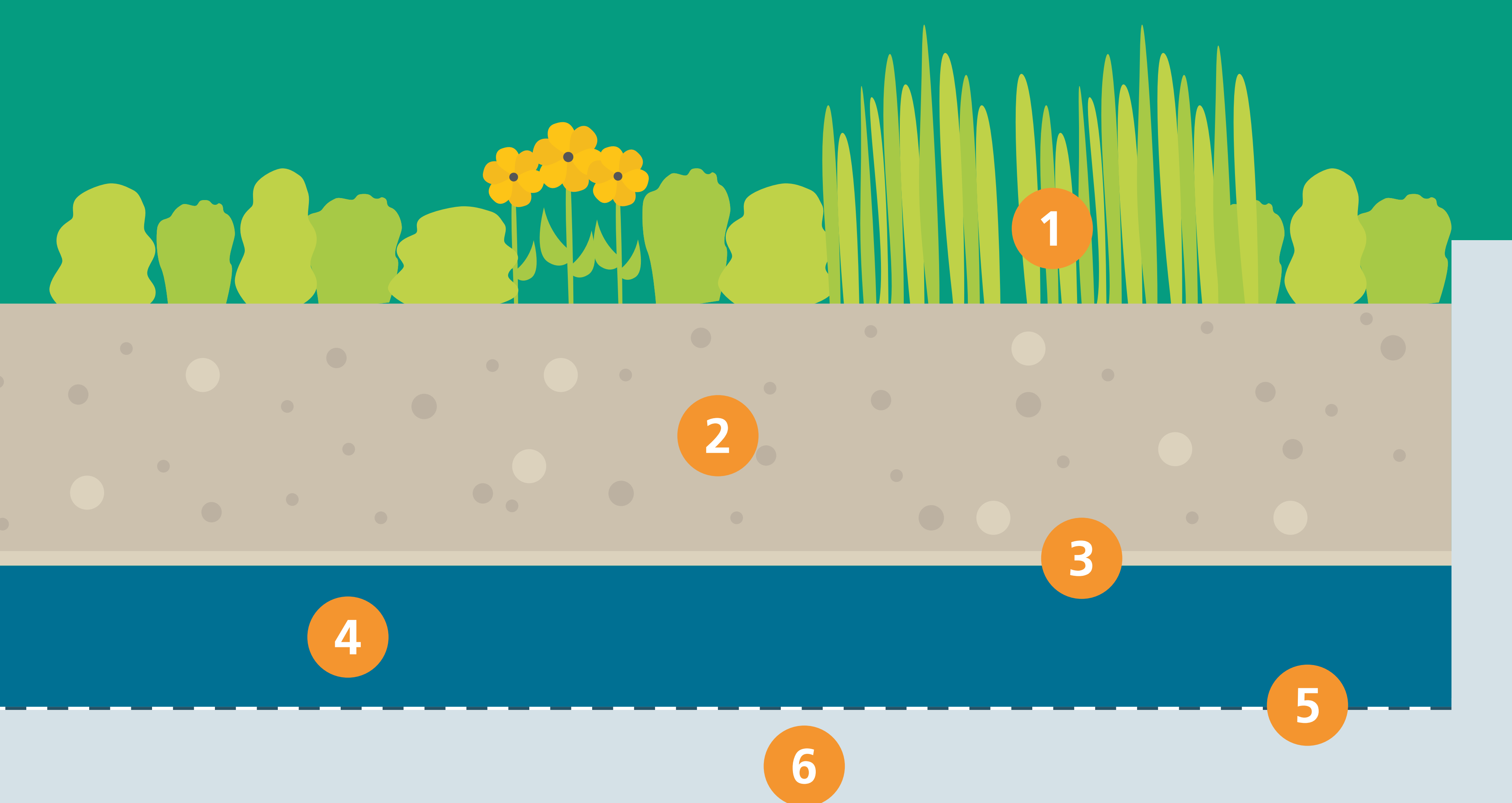
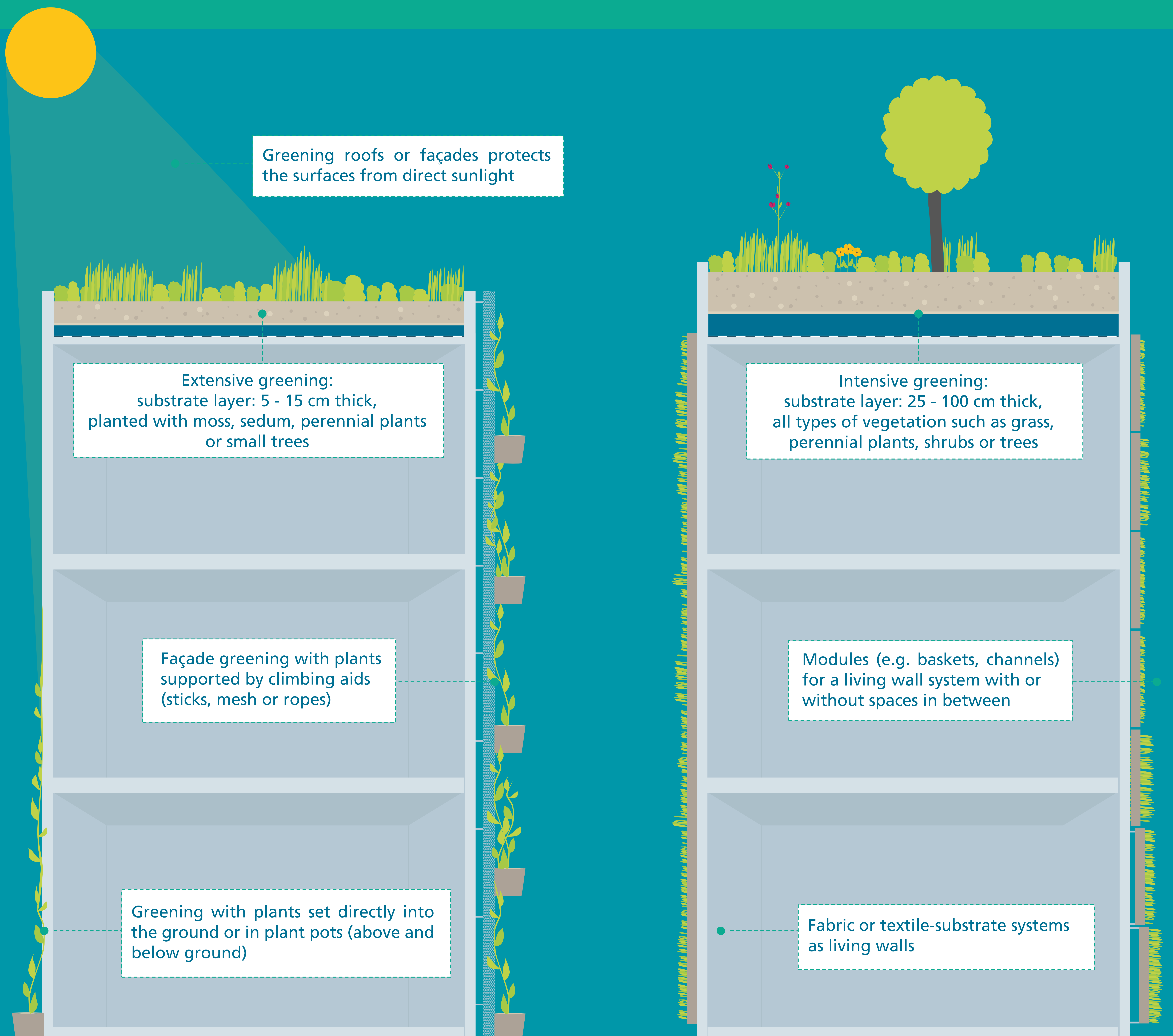


## Types of greening

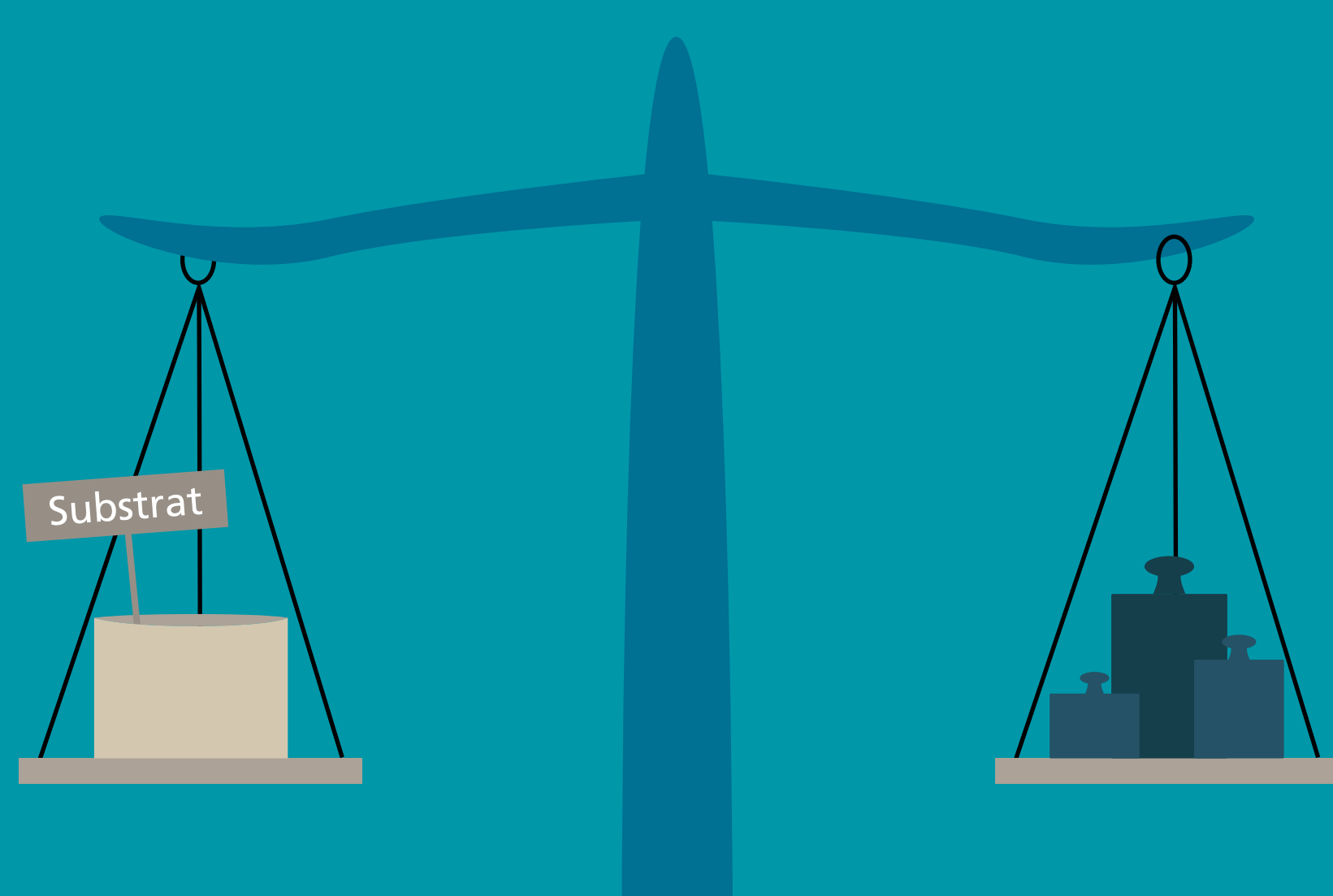
Greening the surfaces of buildings has several advantages, especially in densely populated cities, e.g. cooling, noise reduction, water retention or a better quality of life for people and the ecosystem. Depending on local conditions and requirements, there are different types of greening.



- 1 Vegetation layer
- 2 Substrate
- 3 Filter fleece
- 4 Water storage and drainage layer
- 5 Roof insulation (root-proof according to FLL)
- 6 Roof construction

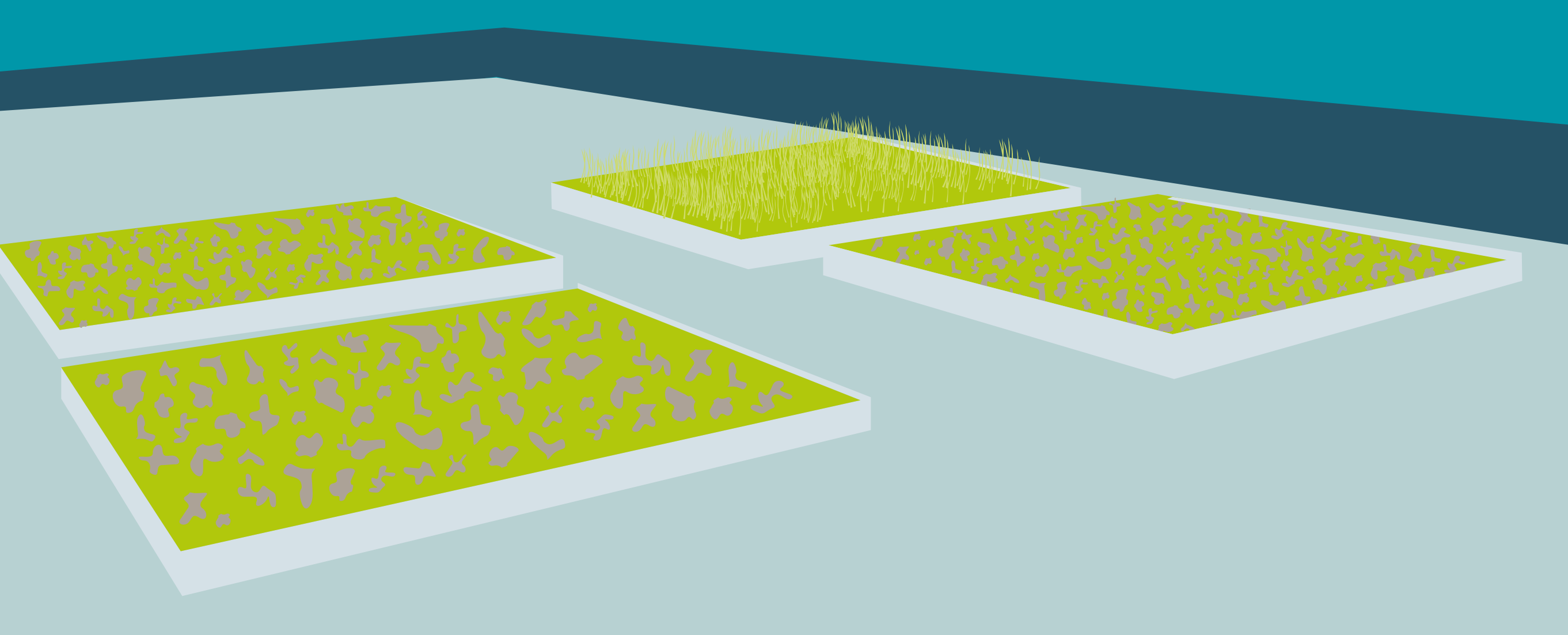
## Services offered by the Fraunhofer Institute for Building Physics IBP

Our experts provide interdisciplinary advice to suppliers, planners, contracting companies and municipalities on greening issues and give them the support they need to build and maintain sustainable solutions that have a positive impact on the climate.



### Laboratory

In our hygrothermal laboratories, our experts examine greening systems – e.g. to ascertain their durability in different climate zones or the capacity of greened roofs to retain water. Additionally, they determine material and cumulative parameters.



### Field studies

Among other things, the focus of our field studies is on the release of substances, water retention capacity or measurements with sensors. Individual aspects can be taken into account at any time in the experimental set-up and study parameters. The collected data are used to build a digital twin of the system and to validate it through simulations.



### Simulation

Depending on the aim and the chosen software, through simulations we can quickly and easily assess the durability of a roof construction, the effect of greening on the indoor climate and on energy consumption, as well as the impact on the urban climate.