In 2050, all the stakeholders in Sant Cugat value collaboration and shared responsibility to manage their energy pro-actively. Both owners and occupiers of buildings value the opportunity to save energy and water. They do this by using the latest energy-saving technologies and energy-efficient system designs. These concepts add up to significant energy savings. But people don’t have to make any compromises on the comfort of their (living) environment. The latest technologies are also applied in the materials used in buildings and in the urban space. For example with materials that can clean the air, and take advantage of the kinetic energy of cars, bikes and pedestrians, transforming this energy into other forms that are useful for citizens.

Renewable resources are valued because they create a self-sufficient smart energy grid connecting all the individual buildings and neighbourhoods.

The desired future scenario makes a distinction between the different type of buildings — family houses, apartments, public buildings and offices — addressing specific opportunities and solutions. Those solutions can also be applied in other areas and categories when the need arises.

Elements of the desired future scenario are:

### Smart communities

In 2050, owners of family houses are aware of the need for sustainable energy, water and waste services. They invest in systems and share them with their neighbours, so together they can afford a range of solutions for energy (generation and storage), water, food and waste. Together, they form a self-sufficient community. Smart homes provide a high level of comfort, with easy access to services like healthcare, so people can continue to live independently in their own homes.

### Saving through sharing

Apartments in 2050 provide both shared and private areas and services. Next to gyms, gardens and swimming pools, sharing also extends to kitchen, dining areas, office spaces for teleworking, and many other facilities. Green roofs provide shared gardens and urban farming spaces. These are interconnected to provide green walking routes. Basements offer common parking spaces for bikes and charging points for shared vehicles.

### Empowerment by example

Public buildings in 2050 are like a service rather than just a space. They make efficient use of space by adapting to the needs of the users — e.g. smart services to optimise behaviour. Nature and natural resources are used, like plants and green, to reduce the impact of the building. Public buildings are showcases for the highest possible energy efficiency and teach and empower citizens towards sustainable behaviour.

### Campuses as incubator

In 2050, offices and campuses are small villages in themselves, providing local facilities and services. They open up to citizens and connect to the community. The controlled environment of campuses and the predictable patterns of use, make them ideal incubators to test new solutions for energy exchange, self-driving mobility and other shared services. All systems use and provide open data, supporting start-ups in developing new business.

### Open smart grid

In 2050, a smart grid connects all buildings and public services. The system is accessible by all users and providers of energy, water and other resources (waste disposal). It allows users to choose from a range of available options. It brings together supply and demand, anticipating weather and other conditions and use patterns. The system enables self-sufficiency at city level. It uses open data, although citizens are in charge of their own data and of the system.