In 2050, the people of Murcia enjoy buildings that proactively adjust to their changing needs. Through profiles based on the expected use (presence and activities) and external factors (weather, season etc.), buildings actively choose the optimum energy settings to maximise comfort for users.

The buildings are interconnected by a telemanagement system that enables sharing of energy and resources. This makes a big contribution to users’ comfort and convenience, both inside and outside the buildings.

Murcia achieved a position among Europe’s top ‘clean & green’ cities by green urban planning that values CO₂-neutral energy-producing buildings. The buildings use renewable energy sources and have a low impact on nature, both during construction and in everyday use.

Elements of the desired future scenario are:

- **Flexible use of buildings**
  The buildings in Murcia facilitate highly flexible use, for different users, different activities and in different seasons. Walls, installations and furniture can be rearranged easily — for example using flexible partitioners, changeable windows or ‘floating’ desks. Standardised protocols enable roaming profiles for user settings in the virtual space. Smart management systems support effective and efficient use of the workspaces.

- **Enhancing working & family life**
  The buildings recognise people and can adapt to their personal preferences and habits by providing the desired atmosphere and climate settings. Homes cater for teleworking and remote healthcare through good connectivity and smart appliances. Use of the latest technologies facilitates a whole range of other activities — for example using augmented reality for easy enjoyable shopping, navigation and other everyday tasks.

- **‘Green’ buildings technologies**
  The latest technologies are used in the buildings for easy energy saving, generation and storage. Examples are the use of energy-absorbing materials, and light tubes to bring daylight into the heart of the building. The buildings are climate-proof, so they can absorb heavy rain showers. And they are resistant to earthquakes through the use of innovative solutions like flexible materials and active bumpers. Wireless networks are used to charge energy-efficient appliances.

- **Learning buildings**
  The buildings are interconnected: not only do they learn during use, but they can also share their learnings. The use of all utilities (energy, water, waste and other resources) is monitored. Patterns of use are recognised so upcoming activities can be anticipated, providing maximum comfort for users. This active data sharing allows the buildings to learn from each other, providing maximum user comfort at the lowest energy consumption.

- **Master Intelligent System**
  Murcia’s Master Intelligent System uses open data and standard protocols all over the city, providing new services on an open platform. People can easily access and connect to the platform, wherever they are. Energy supply and demand are matched — and legally embedded — in the central system. The focus is on the users’ needs, with priority for emergency services when necessary. Energy can be exchanged freely between users, appliances, vehicles and buildings.

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