IRIS Utrecht

Transforming into sustainable neighbourhoods

Netherlands

The city of Utrecht is located in the middle of the Netherlands. In the Kanaleneiland-Zuid district in Utrecht, an existing neighbourhood is being transformed into a more sustainable, future-proof district with the help of ICT. In this project the engagement of residents is of great importance for completing the project.

The Municipality of Utrecht, Utrecht Sustainability Institute (USI) and social housing cooperation Bo-Ex work together to inform residents in the best way possible so they become more aware of a sustainable lifestyle. The residents also are invited to take part in co-creation sessions to provide input for the project.

The start of IRIS Utrecht

The Municipality of Utrecht has big ambitions regarding sustainability, resilience, circular economy and mobility. It is the Municipality's task to provide sustainable and liveable city districts for residents. In 2017, Utrecht joined the IRIS programme with the ambition to transform the Kanaleneiland-Zuid district into a more sustainable neighbourhood. IRIS is funded under the European Union's Horizon 2020 research and innovation programme. The IRIS programme aims to research, develop and test smart city solutions, with the ultimate goal to spread these solutions throughout Europe.

The Kanaleneiland-Zuid district is a low-income, multicultural city district that has lots of apartment buildings that will be refurbished into sustainable homes. The Municipality of Utrecht together with Utrecht Sustainability Institute decided to transform this area into a sustainable, future-proof city district. They decided to connect this challenge to the IRIS programme, so that they could exchange experiences and knowledge with other European cities that face similar challenges and are seeking similar solutions.

Cooperation

IRIS is a smart city cooperation that includes three European lighthouse cities that work as collaborators and test beds: Utrecht, Nice and Gothenburg, and four follower cities where solutions are being replicated: Vaasa, Alexandroupolis, Santa Cruz de Tenerife and Focsani. 43 international partners are involved in this cooperation. The coordinator of all these 43 IRIS partners is the Municipality of Utrecht.

The Municipality of Utrecht and the Utrecht Sustainability Institute engage the stakeholders of the project by using the quadruple helix approach. There are nine Dutch partners that contribute to the transformation of the Kanaleneiland-Zuid district. These partners are research institutes Utrecht University and HKU University of Arts Utrecht, social housing cooperation Bo-Ex, grid operator Stedin, energy provider Eneco, telecommunication provider KPN, public transport operator Qbuzz, LomboXnet - an SME that provides vehicle-to-grid charging points and WeDriveSolar - a Mobility as a Service company with electric vehicles. City innovation platform Civity develops and implements a generic, scalable and reusable Urban Platform, based on an open and standards-based architecture that will connect and integrate with existing ICT-platforms.

Focus
Smart Mobility, Sustainability

Surface area
640,000 m^2

Time span
2017 till 2022

Phase
Development started

Five transition tracks

The IRIS project consists of 5 transition tracks that together provide a framework for demonstrating integrated solutions. The five transition tracks are:

- Renewable and energy positive districts
- Flexible energy management and storage
- Intelligent mobility solutions
- Digital transformation and services
- Engagement and co-creation

Projects within these transition tracks are:

- the renovation of twelve large apartment buildings (644 social housing apartments in total) to (nearly) energy-neutral buildings;
- an increase in electric sharable cars and introducing electric busses that run on locally generated energy;
- the installation of smart metering cabinets in homes so that less energy is consumed;
- the development of an ICT platform with open data, on which data exchange takes place to support the project;
- the organisation of co-creation sessions with residents and involving schools and pupils in making the neighbourhood more sustainable.

Co-creating with the neighbourhood

As stated above, part of the project is focused on organising co-creation sessions with residents. This is a very important aspect during the project because Kanaleneiland-Zuid is a challenging neighbourhood. It is a low-income district with high unemployment rates. Besides that, the multicultural neighbourhood faces a higher than average rate of illiteracy in Dutch, English or native languages. This poses challenges for transforming the district.

HKU has developed a design-thinking approach in order to reach the people that live in the neighbourhood. A so-called 'change agent' that represents Bo-Ex is now the point of contact within the neighbourhood. This change agent is familiar to the residents because she attends all neighbourhood events. So, this is a person that tries to connect the residents to the plans of the Municipality and Bo-Ex. Various participation events are organised through this change agent. An idea that emerged from one of the co-creation sessions is to create an illuminated pedestrian crossing as an addition to smart street lighting. This will be implemented in the project. To communicate about IRIS, IRIS is present at local events with an information stand or a test setup to show what changes are about to happen. Or they organise an activity with school children to teach them about sustainability and what this means for their neigbourhood. Excursions through the neighbourhoods are organised to show where different changes will take place.

Besides organising co-creation sessions, it is also of great importance to engage the tenants on the refurbishment plans. This is because in the Netherlands it is compulsory to have at least 70% of the tenants in an apartment building supporting the refurbishment plans for it to proceed. Bo-Ex has changed tactics to engage tenants, for example by communicating in different languages, giving the tenants' committee more responsibility and paying individual house visits to explain the personal implications of the refurbishment.

Business case

IRIS is funded under the European Union's Horizon 2020 research and innovation programme. Major on-going investments are being made by housing corporation Bo-Ex in the Utrecht lighthouse demonstration district. These include investing in the Near Zero Energy Retrofit of 12 apartment buildings, bringing them from energy label E/F to label A, as well as in district-wide renewables and storage systems. The municipality of Utrecht together with LomboXnet and Stedin is investing in a citywide vehicle-to-grid bi-directional ecosystem, providing an emerging energy system that results in minimal grid stress and curtailment due to power peaks in supply (solar) or demand (electric cars and buses), and maximal yields of the installed interconnected energy, mobility and ICT infrastructures. In a transition to zero-emission buses, Qbuzz is investing in electric buses that are equipped with monitoring equipment to research the value of smart charging and vehicle-to-grid systems for buses. Eneco is investing in the transformation of the district heating network to a low-temperature district heating network and in the implementation of the Home Energy Management System TOON, that provides insight into energy usage at home level. TOON provides an opportunity to coach tenants and to benefit from different energy behaviour.

Scale-up

The goal of IRIS is to develop business models for smart city solutions and to replicate those solutions in other European cities. But Utrecht also wants to scale-up within the city itself. The Municipality of Utrecht observes whether solutions in Kanaleneiland-Zuid are also applicable to other city districts. And for some solutions, this is already the case. For example,


Before


After

bi-directional electric car charging systems are already being installed throughout the city. The car-sharing network is also being spread across the city. And the new approach to engage residents directly in the renovation of large apartment buildings is being applied by Bo-Ex to improve other districts in Utrecht as well. This is already happening in Overvecht and in Lombok, similar city districts in Utrecht. Mobility solutions will be used to improve the Utrecht Central Station area known as Beurskwartier.

Contact information

Contact us to exchange Smart City experiences!

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