



Dear friends and colleagues,

Another year is coming to an end, and for many it's a bittersweet time. Let us slow down for a moment and take a look at our work in the syn.ikia project, a creative venture that is well into its third year.

We are pleased to present our new urban development project [Verksbyen](#) in Fredrikstad, Norway. The project is part of a large development of 1500-2000 new residential buildings, that together will form a lively sustainable plus energy neighbourhood. In the videos below you may hear more about innovative solutions for energy use and generation, conditioned on a new scheme proposed by the Norwegian Energy Regulatory Authority (RME) for energy sharing at neighbourhood level.

In [Austria](#), we are showcasing no less than 3 plus energy neighbourhoods, one of them is the GNICE neighbourhood in Salzburg, consisting of social housing, kindergarten, and other community services. In October, the project [received its 'Klimaaktiv' certification](#) and received honourably words from the Austrian Climate Protection Minister: 'Impressive how sustainability and economy can be brought together.'

From our demo neighbourhoods in Spain and the Netherlands, you may hear about interesting innovations and lessons learned directly from the local participants, in the videos below.

How is the 'social beautiful' concept in real life? Listen to the thoughts and experiences in the podcast '[Making a house a home](#)', a discussion between the developers and the tenants in the neighbourhood in Uden, the Netherlands.

Our newsletter also contains information about upcoming and past [events](#) about sustainable plus energy neighbourhoods, as well as some interesting academic publications for those who would like to get into the details.

Wish you an inspiring reading! While embracing the wisdom that experience can instill in us, let's dream generously of new beginnings.

Merry Xmas, take care!

The syn.ikia Coordinator
Niki Gaitani, NTNU

HIGHLIGHTS

Warm welcome to our new Norwegian SPEN demonstration project

The new [subarctic demonstration SPEN](#) will be realised in Verket Panorama and Atrium, part of the new urban development project Verksbyen in Fredrikstad, Norway. The land area of Verksbyen took its shape in the second half of the 19th century as an important industrial area along the Glomma River. The project and associated land areas are fully owned by the developer [Arca Nova Bolig AS](#). The number of planned new residential units are approximately 1500-2000 units. The demo project, consisting of two apartment buildings, is part of a wider neighbourhood. Early on in the detailed zone planning process, Arca Nova informed the Municipality of Fredrikstad about their ambition to create a sustainable neighbourhood, to ensure that the project goals be implemented in the plan. This included, among other things, structural functions as orientation of facades and roof forms (mono-pitched roofs).

A sustainable and efficient energy system will be set up, including mobility and energy

exchange solutions between buildings and future neighbourhoods in the area. All apartments will be connected to a shared central heating system for Verket Atrium and Panorama. Each apartment is individually connected to the grid. Solar energy production from roofs and facades surfaces will be shared virtually at the neighbourhood level, conditioned on a new scheme proposed by the Norwegian Energy Regulatory Authority (RME) for energy sharing at neighbourhood levels, including multi-family homes, apartment complexes, and commercial buildings.

[Watch the interview with ARCA NOVA](#)

[Meet the Norwegian demo](#)



Austrian Ministry of Climate Action and Energy honours Austrian demo project

On October 12th, the third energy community day took place in Salzburg. In addition to the discussion on current topics such as energy price increases and gas shortages,

the event highlighted and awarded exemplary projects, and the Austrian demo project GNICE was one of them.

The project is being developed as part of syn.ikia as a sustainable plus energy neighbourhood. The concept was completed in summer 2022, and the project is currently in the final stages of the official procedure. What can already be said is, that the project meets the highest standards and will make a significant contribution to the achievement of the local, national and international goals.



"Climate-active energy systems, buildings and settlements ensure that communities can reduce energy consumption and become carbon neutral. The implemented examples show impressive how sustainability and economy can be thought together. At the same time, the communities are role models for companies to do the same." said Climate Protection Minister Leonore Gewessler.

The Gneiss project convinces on the organizational side with the cooperative planning process and the citizen participation accompanied by a sociologist. A comprehensive urban planning concept is planned, which, in addition to rental apartments and condominiums, also provides rooms for a kindergarten, a doctor and a base for social services. All buildings will be implemented in line with the klimaaktiv standard and in mixed construction. The energy concept provides for a relatively large PV system,

which, among other things, drives the two heat pumps. A comprehensive mobility concept is also being developed.

[Watch the interview with SIR](#)

[Meet the Austrian demo](#)

syn.ikia on set!



Interviewing Incasòl, Catalan Land Institute, responsible of #SPEN in Santa Coloma de Gramenet



Syn.ikia's partner TNO: the predictive twin in practice

'Making a house a home' podcast

A 'Making a house a home' podcast

Have a listen to the first episode of the syn.ikia podcast!

Tune in for an interesting conversation including the perspective of a social housing provider, care provider organisation and the tenants on what is it like to live in a Sustainable Plus Energy Neighbourhood.

Sustainable
plus energy
neighbourhoods

The social housing in the Netherlands that produces more energy than it consumes!

Loopkanstraat, Uden

For those interested in understanding more than just the technical aspects of syn.ikia, we have good news: our first podcast is now available! For this first episode, our partners from Uden, the Netherlands, take the stage and walk us through what a Sustainable Plus Energy Neighbourhood means from different perspectives: social housing provider, care provider organisation and the tenants themselves. What challenges were met along the way? What does it take to adapt to such an environment? Those are just some of the questions that Area Wonen, Labyrinth Zorg & Werk and tenants from the demo building had to answer. This episode is part of the [‘Making a house a home’](#), produced by [Housing Europe](#). Listen to the podcast here. Enjoy!

[Listen to the podcast](#)

Events



Join the International Social Housing Festival 2023!

Some of you might have taken part in past editions but let us introduce the

[International Social Housing Festival \(ISHF\) 2023](#) that will take place June 6-9 in Barcelona. This year's theme will revolve around 'Learning from the challenges and policy responses of mature and emerging housing Systems'. Established systems, or others that have just started developing both face new situations and problems as society evolves. Social, economic or environmental contexts may differ, but the questions that need answers are always the same. The 4th ISHF edition will have a special focus on Southern Europe and extensive participation from the rest of the continent, Asia, Latin America and North America. More information, as well as a call for events will be published shortly.

Past events

Syn.ikia at the European Sustainability Energy Week, September 26-30, Brussels

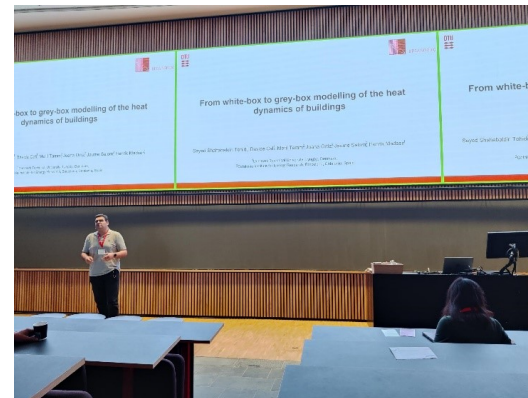
The [European Sustainable Energy Week 2022](#) was quite an important one for syn.ikia. The project took part in the Energy Fair to raise awareness on what are the benefits of Sustainable Plus Energy Neighbourhoods, and especially what can they mean in the context of social and affordable housing. Participants from all over Europe gathered to share ideas and get inspired. Those intrigued by the scope of the project were not few. Participants were mostly interested by how energy produced by renewable sources can be shared at neighbourhood level, especially how can this be done while keeping the social dimension at heart.



Syn.ikia also took part in the workshop organised by two sister projects, [Cultural-E](#) and [EXCESS](#): *Unlock the value of plus energy buildings and neighbourhoods*. Niki Gaitani from NTNU, syn.ikia project coordinator, summarised well why we need to think at a larger scale: to address climate change, residents need to support each other, thus social sustainability at neighbourhood level is a key element.

Syn.ikia's partner DTU at BuildSim Nordic conference, in Copenhagen 22-23 August 2022

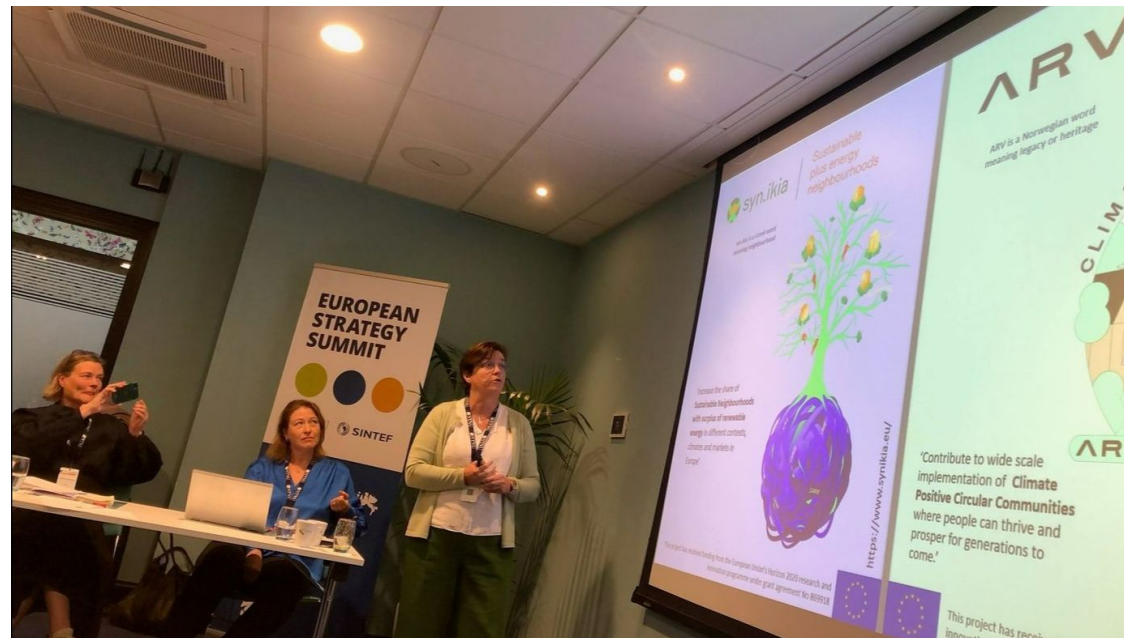
DTU's paper, "From white-box to grey-box modelling of the heat dynamics of buildings" got accepted for publication at [BuildSim Nordic conference](#). Syn.ikia's partners presented the paper and introduced the proposed procedure to find a mathematical model of heat dynamics from white-box model, appropriate for the control purposes. This work, in collaboration with researchers from Denmark Technical University (DTU) and Catalonia Institute for Energy Research, considers occupants stochastic behavior in the white-box to generate realistic training data.



European Strategy Summit, October 12-13, Brussels

On October 12. & 13, two of syn.ikia's partners NTNU and SINTEF held their annual [EU Strategy Summit](#) in Brussels. The event gathered leaders from Norwegian business and industry, organizations, public sector and funding agencies to discuss how

Norway can contribute to RePowerEU. Syn.ikia and [ARV](#) were presented as examples of how we can work together across sectors and borders to solve energy challenges in the building sector and reach the climate goals.



[More information](#)

Renovation Summit 2022, 16-17 November, Brussels.

SPENs are becoming a point of reference in social sustainability and energy

efficiency: The Renovation Summit was organised by the [European Affordable Housing Consortium: Sustainable Housing for Social Impact \(SHAPE-EU\)](#), [Housing Europe](#), [European Construction, built environment and energy efficient building Technology Platform \(ECTP\)](#) and [Eurocities](#), in partnership with the European Committee of the Regions and the House of Dutch Provinces. The Summit brought together representatives from social and affordable housing, tenants, construction and energy companies, trade unions, and EU policymakers and funding institutions to discuss the **need to fast-track innovation in the renovation of social and affordable housing districts to mitigate the current energy crisis.**

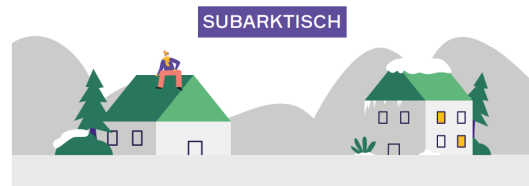
The syn.ikia's Uden demonstrator joined the session on 'Housing neighbourhoods of tomorrow' and shared their experience on how housing can become better for the environment, and for the tenants. Through '[Social Beautiful](#)', Maaike van Orsouw, Social project manager, and Hugo de Vries, Manager real estate and sustainability at [AREA Wonen](#) explained how they needed to create a partnership to achieve their objective.

Two tenants of AREA Wonen, Thomas van de Water and Esmay Braam, shared their experience of becoming tenant-ambassadors, and how using an energy consumption app opened the competition of who will get the lowest energy bill.. During the policy session 'The fair energy transition trilemma – affordability, sustainability, availability', participants got familiar with the methods adopted by the [syn.ikia's Salzburg demonstrator](#), which renovated existing building stock, and with the Santa Coloma one, that is building new apartments as part of a neighbourhood regeneration plan.



[Read more](#)

Learn more about the syn.ikia demos



Download the Norwegian flyer



Download the Dutch flyer



Download the German flyer



Download the Spanish flyer

Academic publications

- [Reducing peak load of renewable energy at district level with predictive twins](#)
- [Design and performance predictions of plus energy neighbourhoods – Case studies of demonstration projects in four different European climates](#)
- [Ten questions concerning energy flexibility in buildings](#)
- [Recent developments in multivariate wind and solar power forecasting](#)

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