

Fancy life in an eco-village? Welcome to the hi-tech off-grid communities

Residents in an eco-village project piloted in the Netherlands will produce solar and biogas power, grow their food and recycle waste into fertiliser

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"If you look at any long lasting eco-village, it has usually been about religion, polyamory or drugs," says James Ehrlich, president of Netherlands-based ReGen Villages, who wants to build sustainable communities for the 21st century.

"Those things are all great in their own way ... but we want to express innovation and excitement. Traditional eco-village people wait for 50 years for that one tree to fall so they can build their community centre. I don't think the planet has the time to wait. We have to build off-grid neighbourhoods around the world as quickly as we can, and as many as we can."

Since revealing plans for their modern eco-village at the Venice Biennale at the end of May, ReGen Villages and architectural partners EFFEKT say they have seen a "firestorm" of viral activity and 6,500 interested emails. "What they are saying is: 'We want in desperately: this is our dream,'" says California-based Ehrlich.

"We're getting emails from PhD [students], family members, older couples who want to downsize with their friends ... communities of people reaching out to us because they see we have essentially done the homework for them."

That homework involves combining the most modern technologies to build a circle of homes in a closed-loop system that produces its own solar and biogas power, grows organic vegetables, farms fish and chickens, harvests water and recycles waste into fertiliser. Homes, enclosed in greenhouses to "extend the warm season", will start at $\[\] \[\] \] 200,000 \(\[\] \] 1,200 \]$ people are on the waiting list.

ReGen - which means "rain" in Dutch and German - sees the answer to the world's growing population and scarcer resources in self-sustaining, rural communities. It will start building its first 100 homes in Almere Oosterwold in the eastern Netherlands this summer, aiming to raise €25m (£21m) from private investors and sovereign wealth funds (who will be promised a return). It is planning projects in Denmark and northern Europe, then hopes to create designs for every climate.

Although Ehrich is a Stanford University academic, and the architectural firm EFFEKT is Danish, ReGen Villages is based in the Netherlands thanks to a rapturous Dutch welcome and a reputation for innovative housing projects.

Tjeerd Herrema, head of housing at Almere council, explained it is letting a new area develop by allowing people and collectives to build their own neighbourhoods and infrastructure (with a few ground rules).

"We want to develop part of Almere in a completely different way, so people can decide their own future," he said. "ReGen Villages want to produce their own food, energy, planning their own land, buildings and homes using the latest technology. That project fitted seamlessly into the philosophy for Oosterwold.

"This is an experiment. Normally, government has a plan for an area, but we've turned that upside down. It's a kind of reaction to the crisis we've just come from, which caused so much disappointment in our institutions and banks."

Sinus Lynge, co-founder of EFFEKT architects, believes this suburban development in Oosterwold is just the start of de-urbanisation. "It makes a lot of sense to look at being self-sufficient in a village, in intensive modules, or in an area that is being deserted," he said. "In the most intense inner city areas like Shanghai or London, to give space to food is unthinkable.

"There's also a huge wave of people who want to reconnect. The idea of knowing where your food comes from is one [way], and in Denmark there's a huge movement of people wanting to work less and spend more time with their families: this could be an opportunity."

Dr Frank Suurenbroek, professor of urban transformation at the Amsterdam University of Applied Sciences, says the Netherlands has a history of radical housing developments, most recently driven by ideas around sustainability - but that developers need to maintain a sense of reality.

"A possible field of tension is how the technological demands of sustainability and circularity [interact with] spatial configurations needed to create attractive places and the desire to create new houses fast," he said. "Both worlds have to learn how to connect. Experiments with new sustainable quarters are interesting and needed, but a major issue is how to do this within existing built areas."

This is absolutely logical for Marlies Rohmer, the architect behind a 2011 complex of floating houses in the manmade islands of IJburg, near Amsterdam. "It doesn't suit everyone, but they are great in the Netherlands for former harbours, where the infrastructure is there, parking is not a problem and you have a very good public traffic system," she said.

Her architecture firm is set to work on a floating village with the firm Carillion Igloo Genesis in Royal Victoria Docks in London, and she added that the surprising thing is how broadly attractive such homes have proven in the Netherlands: "We thought this is housing for young urban people but strangely people with children started to go there, attracted by an outside location. I've never seen such a mixed population."

Sustainable innovation may be threatened now that the Dutch housing market is booming, though, according to architect Matthijs Bouw.

He has worked with another experimental, self-build community in Amsterdam's Buiksloterham, using digital technology to coordinate elements like building a waste management system. "Part of [the motivation] is a culture of self-building and innovation, and part of it is driven by the Dutchman as trader, getting rid of the middleman to get better results for less money," he reflected. "But the Dutch are fickle. With the changing real estate economy, there's an incredible urgency to build houses and Amsterdam has tended to return to the old models."

Back at Almere, though, Ehrlich can't wait to meet an "ebb and flow" of varied residents when the first 25 homes are completed in early 2017. Some of the smallest inhabitants, it turns out, will be soldier flies, great at breaking down compost and a food source for fish and chickens. "They are also edible for humans, for people who are interested in that," he confides, "and protein-delicious with butter and garlic."

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