

## 9. EVA-Lanxmeer (Culemborg - NL)

### Project description

**Eva-Lanxmeer** is a social-ecological district of 24 ha that has been built on a former farmland surrounding a protected drinking water extraction area.

Located near the Culemborg railway station, Lanxmeer consists of 250 dwellings, 40.000 m<sup>2</sup> of offices and business units, an urban ecological farm (assuring biological food and contact with nature), an information centre, wellness centre, congress centre, bars, restaurants and a hotel.

Lanxmeer integrates different urban functions providing good equilibrium between social, economic, cultural, educational, recreational and sustainable interests.

The Lanxmeer project features far-reaching residential participation, inhabitants took active part in workshops and in the overall planning process.

Environmental measures include a closed water circuit, an integral water management system, a biogas production facility, use of sustainable building materials, use of RES, organic food production.

Today, Lanxmeer is a national and international reference in terms of sustainable town planning and social development.



### Objectives

The Lanxmeer ecological project is meant to promote sustainable development by being an example of integrated approach towards sustainable planning.

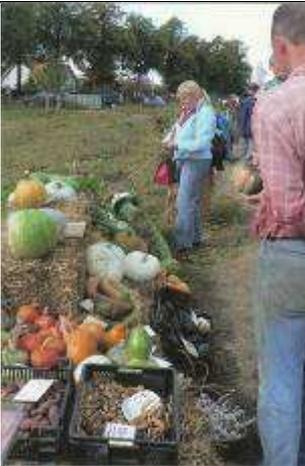
The chosen approach is to integrate technology/innovation ('hardware') and the environment and behavior ('software') to achieve preservation of natural resources in every day life.

The final Lanxmeer project programme contains six areas which form the Lanxmeer coherent and integrated Eco-framework: energy, water, landscape, mobility, chain management and communication and education.

Moreover the municipality set 'integration of functions' as a one of the crucial criteria for the district.

- Energy: sustainable energy systems - striving towards zero-energy balance: energy production + minimised consumption of fossil energy sources; energy production from waste and sewage, energy-independent dwelling, not being connected to the grid
- Water: integrated water management system and local biological water treatment; rainwater for toilets and washing machine; the sewage is used for biogas production
- Materials: sustainable building programme; the chain management objective is to close down material cycle in terms of origin, transport, production, use, reuse and recycling.
- Land use: sustainable city planning - good balance between urban land use and green spaces, public and private gardens
- Transport: support public transport and limit car use
- Food: ecological agriculture, biological food, contact with nature
- Social: co-production and inhabitants involvement in the building process; variety of dwellings according to architecture, size and price leading to social diversity
- Integration of different functions: living, working, recreation, education, social etc



<p><b>Driving factors</b></p>		<p><b>Dutch policy</b> The Netherlands follows an integrated policy on sustainable building, addressing eco-efficiency, construction issues and socio-economic issues; explicit attention is paid to energy saving, health and building materials. Simultaneously, sustainable building policies focus on consumers ('the demand-side') and the physical environment of buildings. The Dutch government sets minimum quality levels through legislation but the aim is to achieve higher levels of quality through financial arrangements and covenant agreements with relevant stakeholders in the housing and building sector.</p> <p><b>Bottom up process</b> The Lanxmeer project was initiated by the E.V.A. Foundation in 1994. The Lanxmeer concept was developed by a group of scientists having diverse backgrounds. Some of them were already keen to settle in Lanxmeer. The network grew quickly and a group of future inhabitants was created and regularly met to co-create the foundations of the project. In 1996, 80 families had already subscribed, having a positive impact on the elected representatives of Culemborg municipality. The future inhabitants participated in several workshops; additionally an Urban Development Plan was drafted in dialogue with (future) residents and users. Following a 'sustainable development' training course and being aware of the wide interest of possible future residents, Culemborg municipality took interest in the project. Today, Lanxmeer is a co-production of Culemborg municipality and E.V.A. Foundation.</p>
<p><b>Financing structure</b></p>	<p>Subsidies and funds granted:</p> <ul style="list-style-type: none"> <li>• German Ministry for Education, Science, Technology and Research chose Lanxmeer as a European demonstration project and provided funding</li> <li>• Dutch Ministry for Housing, Spatial Planning and the Environment provided subsidies for guidance of the residents in drafting an urban development plan</li> <li>• Stimulation Fund for Architecture – offering a private grant</li> </ul>	
<p><b>Partners &amp; Roles</b></p>	<p>The (private) Ecological Centre for Education, Information and Advice (EVA) played a key role in developing Lanxmeer, in co-operation with the Culemborg municipality, the Ministry of Housing, Spatial Planning and the Environment (providing subsidies) and many private parties.</p> <p>To create the plan according to its ambitions, the need of commitment of the involved parties was necessary. So future residents, architects, consultants, the urban development agency, the municipality, the building contractor etc were involved in preparation and execution activities of the Urban Development Plan for Lanxmeer.</p> <p>Apart from the master plan, residents also took part in designing the green areas in the neighbourhood.</p>	
<p><b>Results/Achievements</b></p>	<ul style="list-style-type: none"> <li>• <b>Energy:</b> annual energy use of 50 GJ / household (approx. 1250 m<sup>3</sup> gas and 2500 kWh electricity) / year; mainly RES: small Canadian windturbines installed; biomass station for power and heat generation; most houses dispose of solar panels for electricity and solar collectors for hot water; excellent insulation. Where entire roofs are covered by solar panels, electricity is fed in the public grid during summer and partly in spring and autumn. In order to keep track of electricity use most residents take part in a monitoring program.</li> <li>• <b>Water &amp; sewage:</b> separate water delivery system: rainwater running off roofs is led to retention pools by a drainage system; rainwater running off road surfaces is collected in a sewer system flowing into ditches; waste water from kitchen sinks and washing machines is collected in another sewer system, treated and lead into ditches; waste water from toilets is collected separately, fluids are filtered and the solid component is used for biogas production.</li> <li>• <b>Transport:</b> fast and attractive scheme of bicycle routes and foot paths; walking distance to Culemborg central train and bus station; limited car use; approx. 55 households share a fleet of seven cars: 0.7 cars/household; car free district: parking places situated at the edges of the housing area; cars allowed for delivery only.</li> </ul>	

	<ul style="list-style-type: none"> <li>• <b>Economic:</b> living and working on the spot saves travelling time and money; several jobs created at the EVA information centre and at the urban ecological farm (sustainable agriculture).</li> <li>• <b>Social:</b> The bottom up approach of involving the intending residents in all aspects of the project's conception, planning, design and construction is showing positive results in terms of awareness and sustainable behavior. Inhabitants are organized in a residents' association which takes care of the maintenance of the area. In the neighborhood, there are many forms of cooperation, focussed on subjects such as the maintainance of nature, energy, education and the urban ecological farm. While it may have taken more time than a developer led project, EVA Lanxmeer is paying clear dividends in providing aesthetically pleasing houses for living and creating a community that will work socially and ecologically with employment on site.</li> <li>• <b>Land use:</b> built according to the "pergola" plan meaning smooth transitions between private and common (no walls nor fences), cultivating food in the area for the residents, limit of transport and trade beside participation of the people on the farm; live-work-recreate close to eachother; 4 inter-connected main green areas communicating with private gardens, municipal land and the urban farm; integrated functions: the need for work places, manufacturing, food production, community areas, and private and government houses.</li> <li>• <b>Materials:</b> dwellings are built using sustainable construction materials.</li> </ul>
<b>Difficulties faced and solutions found</b>	<p>The neighbourhood of Lanxmeer is a former farmland that surrounds a protected drinkwater extraction area. Normally it is not allowed to build around such areas, but special foundation techniques and landscape design made it possible to create a neighbourhood like Lanxmeer.</p> <p>In order not to disturb ground water layers houses have a five foot thick foam concrete foundation instead of piles; and retention pools have a non permeable floor to prevent rainwater running off from roofs and street surfaces mixing with the ground water.</p> 
<b>Next Steps</b>	<p>EVA Foundation is currently developing a public training course focused on awareness raising concerning urban built environment. The programme will consist of: development of convivial sustainability (People, Planet, Profit); sustainable urban and landscape planning, participative processes, education, consumption behaviour etc.</p> <p>Ongoing construction: several apartments; 1 individual house, 2 offices, 8 houses for elderly.</p>
<b>Friendly advice to those who want to build new eco district</b>	<p>Public participation has proved to be an effective instrument toward the creation of a convivial and sustainable community.</p> <p>The integration of different interested actors allows a better balance between components of sustainable districts: eco-efficiency, socio-economic issues, construction, involvement of inhabitants, conviviality.</p>
<b>Online information</b>	<p><a href="http://www.evacentrum.com/info.html">www.evacentrum.com/info.html</a>  <a href="http://www.culemborg.nl/level1/index.aspx">www.culemborg.nl/level1/index.aspx</a>  <a href="http://www.bel-lanxmeer.nl">www.bel-lanxmeer.nl</a>  <a href="http://www.kwarteel.nl/volgende/container.html">www.kwarteel.nl/volgende/container.html</a>  <a href="http://www.werkwerf.nl">www.werkwerf.nl</a>  <a href="http://www.caetshage.org/index.php?option=com_frontpage&amp;Itemid=1">www.caetshage.org/index.php?option=com_frontpage&amp;Itemid=1</a>  <a href="http://www.caetshage.org/index.php?option=com_frontpage&amp;Itemid=1">www.caetshage.org/index.php?option=com_frontpage&amp;Itemid=1</a></p>
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