*Renovation Kerkrade West unique example for large scale energy reduction*

In the Dutch Town of Kerkrade, 150 houses have been renovated to (near) 0-energy standards. It’s a very innovative approach, since the houses have been renovated in a serial process, while inhabitants remained living in their houses. Every house took ten days for the “ make over” first two days where used to prepare the house, 1 day was used to take out the old façade and replace with 2 vertical prefab elements, next day the back façade was replaced, followed by the roof a day later. The remaining days where used to install all equippement and finishing works. The “Renovation train “ moved along the row houses by 1 house a day. Its like the automated production cars where the car passes the different process stages: here the building team moved passing the houses.

It’s a unique project in Europe, of which the approach could be used to renovate 100.000 of houses, with standardization, speed, and cost reduction increasing by continuing the standardized approach. It took the first 10 to 15 housing renovations, before the different partners in the consortium where fully tuned on each other and operated as a solid team, within the time schedule. .

The renovation was based on a passive house standard design, with heating energy demand remaining under 25 kWh /m2. The prefab (façade) panels where about 20 centimeters thick, later another 20 centimeters was added on top of the prefab panels and finished with plaster and tiles. The roof on one side was designed as one of the first real BIPV roofs : fully integrated PV panels and solar collectors, acting as the water proof layer a well.

The project, initiated by HeemWonen, a social housing corporation, cost around 90.000 euro per house (excluding the solar panels) , which was possible due to the prolonged exploitation of the houses for another 50 years, and partial raise of the rent level compensated by the reduced operational energy costs. All inhabitants agreed to this scheme, with still a reduction in total costs ( rent plus energy) of around 40 euro a month for the inhabitants.

Follow up projects are in preparation.

A more elaborated article for BRI will be prepared by RiBuilT, the Research institute of Zuyd University (now involved in monitoring the project).

More information: en <http://www.sustainablebuilding.info/BWVM/>