

City hall and civic center recycled from former factory, Oostkamp, Belgium

Project data

Project group Building and civil engineering works
Client Oostkamp Municipality
Project background Public commission
Estimated start of construction January 2011



Main author

Name Carlos Arroyo
Profession Architect
Organization Carlos Arroyo Arquitectos
City, country Madrid, Spain

Further author(s)

1. **Vanessa Cerezo**, Architect, Carlos Arroyo Arquitectos, Madrid, Spain

Comment of the Holcim Awards jury Europe

Beside its sustainable construction, the project was considered remarkable by the jury in terms of its social sustainability due to a participatory planning process, including the 170 council employees. The joint accumulation of the program, its process and the resulting design for the open main hall is an outstanding example for transparency in governmental architecture. All this is combined with simple but clever concepts for technical infrastructure that include spatial organization according to thermal zones ("thermal onion") to reduce energy consumption, and effective deployment of natural lighting via a solar chimney and patio system. The project is very convincing: maximum effect through the least possible degree of technical intervention and minimal financial investment.

Project description by author

The City of Oostkamp acquired the former Coca-Cola factory, a 4ha plot with an 11,000 sq m industrial shed built in 1991.

The brief for the International Competition Open Oproep for OostCampus - City Hall and Civic Centre required a campus that could gather most of the public service buildings of the city on this central and well-connected plot. We decided to reuse the spacious industrial shed; not just to recycle materials like the steel, but to reuse the space itself, and all the functioning "invisible" systems. An uncompromising "in-situ recycling", including foundations, bearing structure, outer skin, waterproofing, services installations and equipment, electric power station, heating plant, water ducts, fire hoses, drainage and even parking space, fencing and accesses.

This is combined with a far-reaching transformation of the interior, to turn it into a luminous landscape of clouds; a sheltered public space within a controlled weather environment, where simple adaptable modular clusters may be arranged. The openings among the clouds are equipped with simple devices that transform all kinds of weather conditions into wonderful events. The strong winds of the outside are transformed into electricity that feeds a disc of LEDs, an artificial sun that will bring joy to, for instance, wedding days.

We are dealing with very different kind of programs within the same space. People may be getting married in one end while roadwork materials are being stored somewhere else. Our simple diagrams help control flows of people and materials, noise and dust, daily work and celebration. A series of workshops were held with the 170 workers of the city, to establish the right arrangement of this democratic productive landscape.

Thermal onion: energy loss grows exponentially with temperature difference. It is much more efficient to have several layers of climate control, than to attempt to heat or cool the whole building homogeneously up to the door. It is also more comfortable when you enter a building, to find that the temperature in the hall area is only a little different to the outside, so that you do not have to take your coat off immediately, reaching a comfortable temperature gradually as you move to the inner areas. This is particularly true for a public building, where thermal layers may correspond to access controls.

The large space created within the white cloud landscape becomes a kind of "Grand Place" with permanent mild weather, powerful enough to generate a public image. On the outside, it is a non-building. We cover the red paneling of the former Coca-Cola offices with a deciduous vegetation screen, to optimize solar exposure in winter and summer, but also signifying the change towards a friendly attitude and a caring management of the environment. The rest of the industrial building, with the round portholes, only needs a coat of paint.

Relevance to target issues by author

Innovation and transferability – Progress

Joyful recycling: While addressing the issue of embedded energy, we propose a fun way to do things. This has been defined by critics as "sustainable exuberance", and praised as a key for the success of sustainable approaches. Simple technology for spectacular results: The GRG shells, simple and easy, turn an enormous ugly factory into a wonderful experience, with a tiny energy-budget. **Weather interface:** In a country with unstable weather, we build an interface that reacts to the external conditions. The wind-powered artificial sun, the anidolic natural light ducts, and the sheltered piazza, interact with the thermal onion and the inertia of the industrial concrete slab in a simple, self-managed system requiring minimum extra heating and definitely no cooling. **Transparent administration:** Citizens can see what is going on in their town hall.

Ethical standards and social equity – People

Participation: The 170 workers of the city, from clerks to cleaning people, participated in workshops to discuss the project, from spatial arrangement to the maintenance of materials. Accessibility, but blended in. The signage is on the floor with relief-painted paths, but for everyone, not just for the visually impaired. The clusters are not color-coded but texture-coded. The two info point heights feel natural, not specially made for wheelchairs.

Environmental quality and resource efficiency – Planet

Respect for the grey energy in the existing construction is a major criteria for sustainable development. Replacing a building (which in this case would affect even sewerage or sidewalks) implies a major carbon debt that may well take over 100 years for the most efficient new construction to pay back. The flexibility of our design allows for future development with minimum resources. **Energy:** The thermal onion is a major device to minimize energy consumption during operation. The thermal inertia of the industrial concrete slab means no cooling is required. Natural light control and enhancement, for working areas and public spaces is ensured through a series of mechanisms like the solar chimney, as well as the patio system. Collecting water: In two steps, the 13,000 sq m roof provides clean water for all the toilets and the workshops. This adds to the water collected in the 4ha plot, which may contain some sand, but is perfect to fill the street-cleaning truck tanks.

Economic performance and compatibility – Prosperity

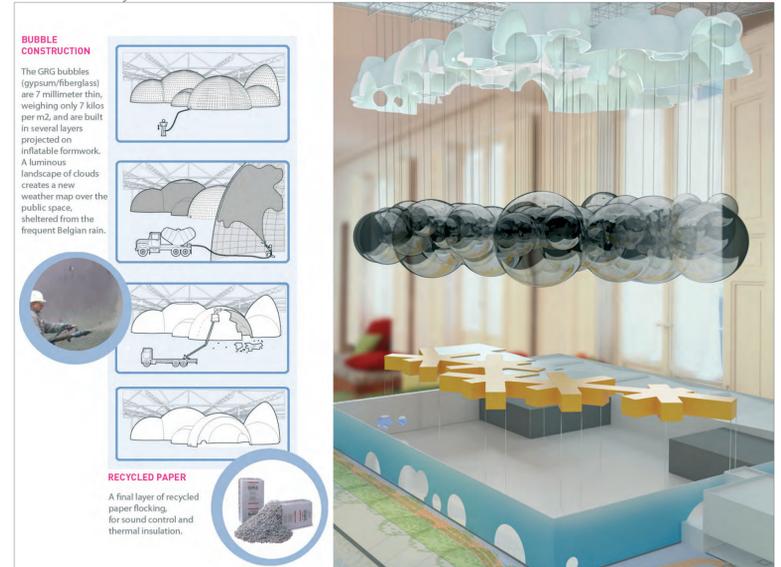
Reusing the existing building was the way to cover the whole program with the limited budget available. Our proposal is cheaper to implement and cheaper to maintain than its alternatives. The park around the building is also built with minimum budget, and its features are productive systems, rather than an expense. The city's roadwork department material storage integrates with pedestrian and cycling routes. It is part of a European Interreg MP4 project, *Making Places Profitable*.

Contextual and aesthetic impact – Proficiency

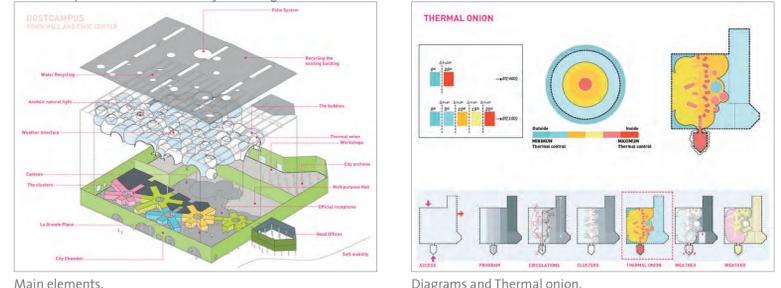
In this airy bubble-space of transparency and democracy, a luminous landscape of white clouds, the city services are clustered in a dendrite structure. The central nerves throw feeders into the public space, as well as the back office, with informal meeting rooms at the joints. The info points, a 3-D version of the city website, have a touch-screen interface.



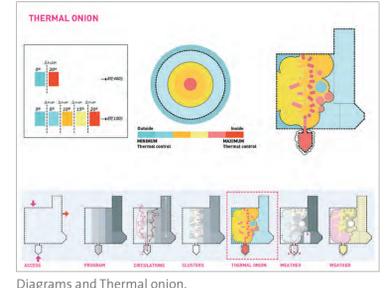
An uncompromising in-situ recycling, not just to recycle materials like the steel, but to reuse the space itself, and all the functioning – often invisible – systems.



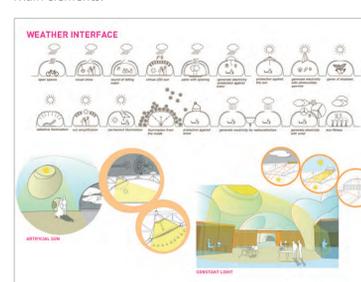
Total change inside, creating a luminous landscape of clouds; a sheltered public space within a controlled weather environment, where simple modular clusters may be arranged.



Main elements.



Diagrams and Thermal onion.



Controlled weather conditions.



Plan of bubbles and clusters.

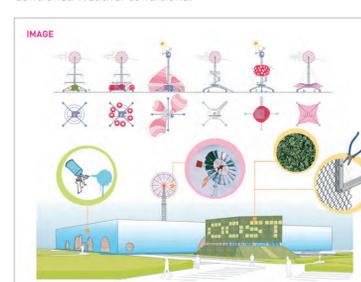


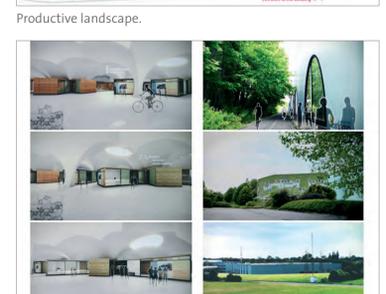
Image.



Productive landscape.



Cluster construction January 2011.



Images.