

# REUSE TO

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ARCHITECTS



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ARCHITECTURE WITHIN A CARBON  
BUDGET. THE CASE OF BIOPARTNER 5

# REDUCE



Looks Le Roy in conversation, 2002



Dry stacked rubble, BioPartner 5, 2020

STACKED WALLS AS A FOUNDATION FOR NATURE

Bricks after disassembling, Gorlaeus high-rise, 2019



BRICK RUBBLE IN GABIONS

During the demolition of the Gorlaeus Building, piles of red brick rubble lay on the site. These stones had been part of the brick shafts in the building. On the exposed side, some of them were covered in light-blue ceramic tiles. The expressive dark-red colour, as a result of the raw material ferruginous clay, triggered us to think about possible uses in BioPartner 5. The soft brick rubble consisted of fragments but also entire stones. In the stack we devised, we have alternated these. In the stack of 40 cm, pieced together by hand, then closed off with a soldier course of entire stones. These soldier courses create horizontal lines in the stack. Thus, an outer cavity leaf stacked without mortar has been created, which provides the inner cavity leaf with the necessary protection against all kinds of weather. Here and there, former users of the Gorlaeus Building recognise the characteristic blue tiles, a contemporary form of *spolia*.

FLOORING

Reuse of brick rubble as a façade

Amount	180 m <sup>2</sup>
Age	50 years
Compared to	New brickwork
-4.01	kg CO <sub>2</sub> -eq /m <sup>2</sup>

Bricks awaiting assembling, Gorlaeus high-rise, 1966





Fully grown tree at the heart of the 'Glass House' by Lina Bo Bardi, Sao Paulo, Brazil, 1995

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Plant seeds are laid between the stones in jute sacks with substrate, 2019



Redstart approaching his nest, BioPartner 5, 2021

### BIODIVERSITY AND BUILDING

Nature thrives on differences, it adapts to them, therefore we chose for high stacked walls of rubble made from the loose brick rubble, creating a large diversity of cavities between the stones. Many sizes and shapes, from microscopically small to 125 mm.<sup>46</sup> The cavities offer protection to fungi, mosses, insects, and potentially also to birds due to the size of the recesses. The rubble and especially the lime-rich cement that has come with it offer food as well as protection to insects, which is important because there is an acute shortage of calcium in nature.<sup>48</sup> A redstart had already nested in a cavity within one season. With the stacked walls used in BioPartner 5, we have tried to create an overgrown wall, as one sees on quay-walls for instance. Plant seeds have been laid between the stones in jute sacks used as substrate. These seeds were sourced from the local district. Collected rainwater is directed along the sacks with a drip system, causing the plants to sprout depending on their orientation. This creates a dynamic and diverse environment, wet, dry, sun and shadow, on which nature thrives. Thus, the building and the green landscape around it provide a foundation where nature can emerge over time, perhaps after 15–20 years.<sup>47</sup> Time will tell whether the intervention really contributes to the promotion of biodiversity. The intention is to actively monitor the increase in species.



Gathering seeds near the site, 2019

