

Martini Ziekenhuis Groningen

Good Practice

Netherlands board for hospital facilities

Architects

Burger Grunstra architecten,
Alkmaar

Project data

gross floor area: 58.000 m² (new construction)
Beds: 715
Constituency: 260.000 inhabitants

Keywords

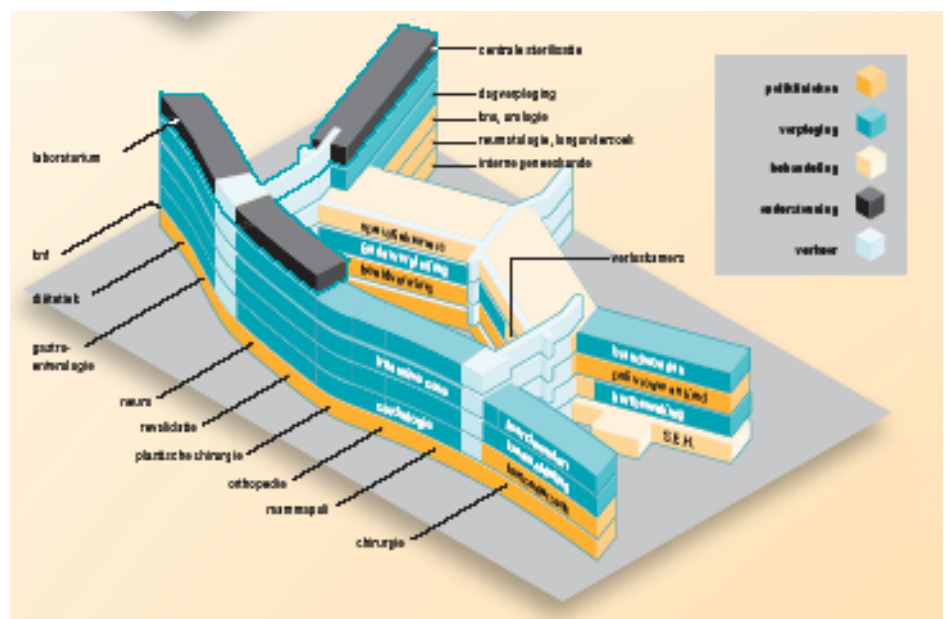
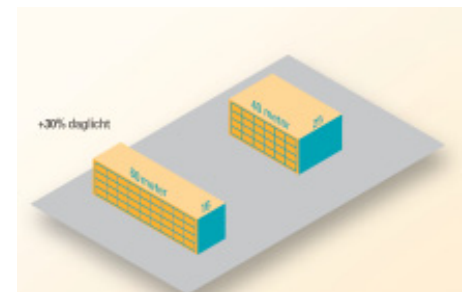
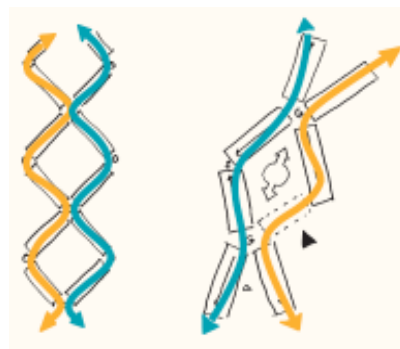
Daylight incidence, orientation, location, service life, flexibility, IFD, expandability, typology

Plan layout

The plan has a shared layout, with the intersections between the blocks accommodating the central facilities such as lifts, stairwells, wardrobes and meeting rooms. The architect has deliberately chosen to make the blocks asymmetrical for better orientation inside and outside the building. The complex comprises eight architecturally almost identical construction blocks, each of 1,000 m². A common width for such blocks is 25 metres. However, to achieve a greater window area, the choice in Groningen was for 16 metres, so that according to the architect's calculations, the incidence of daylight is 30% greater.

Flexibility

The construction of the Martini hospital is a national demonstration project for industrial, flexible and demountable building (IFD). According to the designer, the building's uniform dimensions make it flexible at every level. The main structure is entirely independent of the care concept, which may change as time goes by. Should this lead to different demands on the layout, utilisation and functionality, then according to the concept's inventor, the building can easily be adapted. The technical installations in each block are housed in a central shaft, enabling the surrounding floors to be laid out without restriction.



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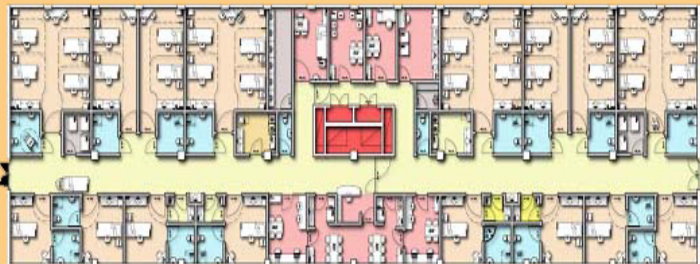
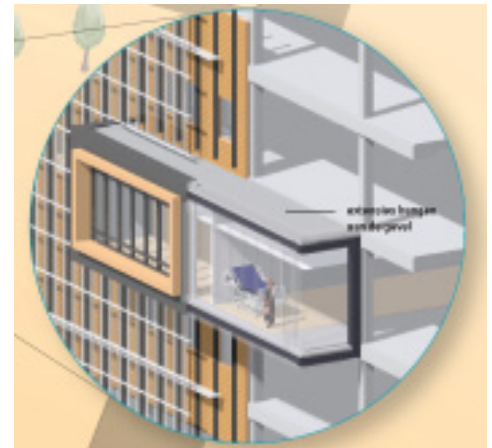
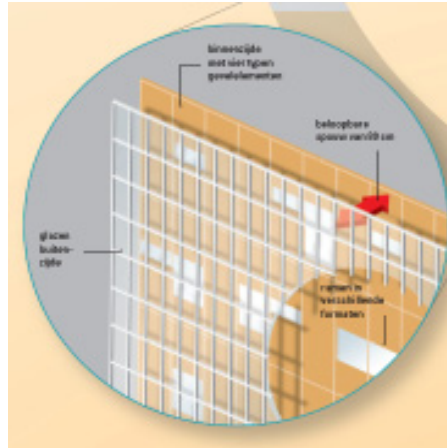
Expansion and adaptation

The construction and architecture make it possible to add parts to the building. Projections as large as 2.40 x 7.20 metres can be suspended from the construction on the exterior walls. The foundations are designed to support this. This gives the potential to enlarge the entire floor area by around 10 percent, without any structural modifications. The building is so designed that it can later accommodate even non-hospital functions. In the new building, a nursing ward can easily be transformed into an outpatients department or office space.

The façade is a double-skin wall. The outside of the double-skin wall is made up entirely of glass, and one of its properties is insulation against noise. The entire inside of the façade consists of four types of relocatable, demountable façade elements. This design makes the building easily adaptable to match the interior layout.

Layout

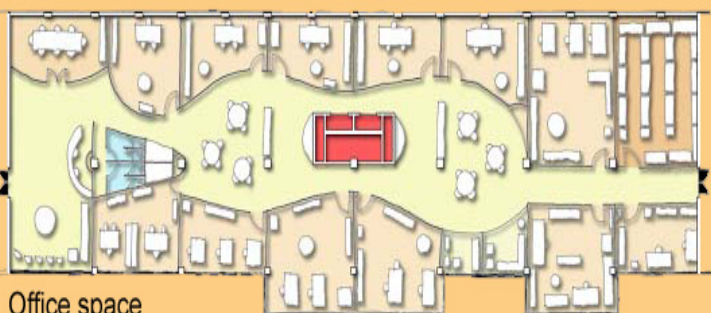
The industrial building concept is based on standardisation. Besides the structural skeleton, which consists entirely of uniform building blocks, the façade panels and system partitions are also entirely prefabricated. Even the operating theatres are prefabricated. The outpatient rooms have standard dimensions, suitable for different care specialities. The pipe and cable shafts are also standardised. Only the high-tech departments, such as imaging and operations, get a modified building block.



Nursing floor



Poli urology, KNO



Office space

Accommodation plan

The new construction plan takes account of the age difference between the older and newer buildings. The end of the service life of the old buildings (in about 15 years) coincides with half of the service life of the new buildings. The use of the available real estate bears witness to a good long-term accommodation plan that over the next 40 years will ensure that utilisation of the site can be developed by means of a hop, skip and jump. Just as with the building, the location continues to offer new possibilities. With the present dimensions (16 x 60 metres) and size of the building modules (1,000 m²), the building has long-term potential for office or residential functions.

Healing environment

The long, small building blocks ensure a higher daylight incidence than is usual for a hospital. This will have a positive influence on how the hospital is experienced by the users. Moreover, the many points that have an outside view offer a good orientation on the surroundings. Natural materials and colours were chosen for the exterior. For the interior, a framework of colours is used to create differences in the ambiance. Sound also plays a role in the 'experience' of a building. To lower the noise level inside the new hospital, which is confronted with severe traffic noise, the exterior has been built as a double-skin façade. An extra glass screen ensures a significant reduction in traffic noise.

