

BIRKHAUSER

A Design Manual
Hospitals

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Public Spaces in and Around the Hospital: Streets, Squares, Patios, Waiting Areas, Healing Gardens

The way a hospital presents itself to patients and visitors is largely determined by its public spaces: the entrances, halls and interior streets, patios and all the amenities that can be found there, ranging from a simple flower shop to restaurants and supermarkets. These define an intermediate zone between the steps of the care pathway located outside the hospital and the hospital itself. It can either emphasize the latter's function as just another step in the care pathway, albeit one requiring special technology and medical expertise, or present it as a medical machine answerable only to its own laws. There is widespread consensus on the public nature of hospitals: 'Hospitals have always been public institutions with a special significance for the community, comparable to town halls, railway stations, theaters and museums. They shape public space.'¹⁰³ Large hospitals are likely to present themselves as small cities, with parks, sports facilities and restaurants; ideally, they will be self-sufficient, even producing their own energy.¹⁰⁴ The role of their public spaces may go beyond that of just facilitating the flows of traffic; they can be 'just as vital to the mission of the facility as private patients or clinical spaces'.¹⁰⁵

Public spaces can be found in all medical facilities and in very large complexes they can develop into the backbone of the entire hospital. In university medical centers this may result in an interplay between areas open to everybody and restricted areas, reflecting the juxtaposition of the city's streets and squares with the private domain of the buildings lining them. In this respect, a hospital can function as a city in its own right: a city within the city. One may even claim that designing hospitals is as much an urban challenge as an architectural one.

The University Medical Center of Groningen (UMCG) is an example of a hospital that is designed as a city, with a simple pattern of spacious covered streets connecting several squares. Its glass-walled entrance hall at the southern tip of the building provides views of the public space outside the building – mainly of the street in front of it, while the hall itself is the domain of pedestrians, who either enter from the street or arrive from the parking garage underneath. At both ends of this rectangular space, two covered streets branch off to the north, embracing the lower levels of a very long hot floor. A third street connects those two main arteries near the northern tip. The linear structure of the internal streets, which separate the clinical zones, incorporates a wide spectrum of public functions ranging from restaurants to coffee bars and from lounges to internet stations and a small, open theater for children, as well as exhibition spaces. The variety of the shops and their concentration along specific parts of the internal streets of the complex give people the impression that they are in a normal shopping street. There is even a supermarket that serves both the hospital and those with no connection to it, so that patients and people living in the neighborhood tend to mix, bridging the gap between hospital life and 'normal' life. The outpatient departments are located along the perimeter of the complex, while the patient



Entrance hall of the University Medical Center of Groningen (UMCG), the Netherlands, Wytze Patijn, 1997. Although designed two decades ago, the abundance of public spaces at the UMCG is still an outstanding and inspiring feature.



Patio at the University Medical Center of Groningen (UMCG), the Netherlands, Wytze Patijn, 1997. The roofs can be opened if the weather allows it. The representative office of the hospital board has been transferred from the historical building and integrated in the new one.

wards are housed in separate pavilions above them. Several designers were called upon in order to give each outpatient department its own distinct atmosphere, and the results are especially evident in the waiting rooms, which act as intermediary spaces between the public streets, the less public outpatient areas and the private spaces of the inpatient wards above. The original urban layout is the work of Kruisheer & Hallink and the final design was furnished by Wytze Patijn.

Why spend so much time and effort, and ultimately money, on the public domain in a hospital? One reason is to establish a continuity with the outside world which has positive effects on the hospital users' experience: the patients come first. The UMCG, as one of the first Dutch hospitals to be influenced by the ideas of evidence-based design, manifests these ideas most clearly in its public spaces.

Another hospital based on an urban vision which reflects a patient-centered perspective is St. Olav's Hospital in Trondheim, Norway. With its 223,000 m² it is a sizable facility that serves about 630,000 inhabitants; it is also a teaching institution with around 1,250 students. The proximity of a historic city center and of Norway's most important Technical University partly determined the masterplan. The team of Frisk Architects aimed at creating an easy-to-manage, unthreatening complex of several smaller clinics which would blend in well with its urban surroundings. Probably the main difference from the Groningen complex is that these clinics have been conceived as small, independent hospitals, each hosting a variety of medical services and interdisciplinary functions. In principle, everything needed for specific clusters of diseases is available in these pavilions, minimizing the need to move patients from one part of the hospital to another. Each clinic is based on the same generic model and all are adapted to other buildings in the vicinity in order to better integrate them into their surroundings.

One distinctive characteristic of St. Olav's is that public space at the ground floor level is left open: tunnels and bridges connect the buildings. This reflects the public nature of the open spaces in older urban centers and underlines the more private nature of the clinics. As is the case in historic cities, the public domain displays a distinct hierarchy. In addition to semi-private gardens there are public streets and parks which extend between the buildings, thereby linking them with the surrounding scenery. Altogether, this is a major achievement in terms of inclusiveness, integration and differentiation.

The layout of St. Olav's outdoor spaces is based on a combination of experience, scientific research and user needs. It draws as well on the idea of the outdoors as a promoter of health and well-being. Four zones need to be considered when planning an outdoor space for healthcare settings: the parts of the building in contact with the exterior, the transition zone, the immediate surroundings and the wider neighborhood. The first zone is where contact with nature is established from inside the building, for instance via windows. The second consist of the transitional areas which mark the boundaries between the clinical world and the world outside: balconies, patios, porches, winter gardens and entrance halls. The third zone is best represented by small, inviting gardens. The fourth is the surrounding landscape.

In 1999, Roger Ulrich formulated the 'supportive garden theory', describing four main ways of reducing patient stress. These consist in granting them a sense of control and a measure of privacy, social support, physical movement and exercise and access to nature and positive distractions. All these considerations seem to have been taken into account by the Helse-Midt Norge – the Norwegian healthcare authority – and the planners of the St. Olav's hospital. The alternation of trees, plants and bushes, typical of the natural surroundings of the city of Trondheim, for instance, contributes to making the transition between zones gentler, sometimes almost imperceptible. From one side of the hospital, it is possible to enjoy the beauty of the nature preserve, where it is common to see people fishing for salmon and trout in the clear waters of the Nidelven River surrounded by unspoiled nature. From the other side, one has a view toward the historic city center and its old wooden houses.



St. Olav's Hospital, Trondheim, Norway, Nordic - Office of Architecture; Ratio Arkitekter, 2010. Color accents enliven the waiting area in the neuro center.



St. Olav's Hospital, reception desk in neuro center main lobby

Circle Bath, Bath, UK, Foster + Partners, 2009. Public spaces inspired by the lobby of a luxury hotel

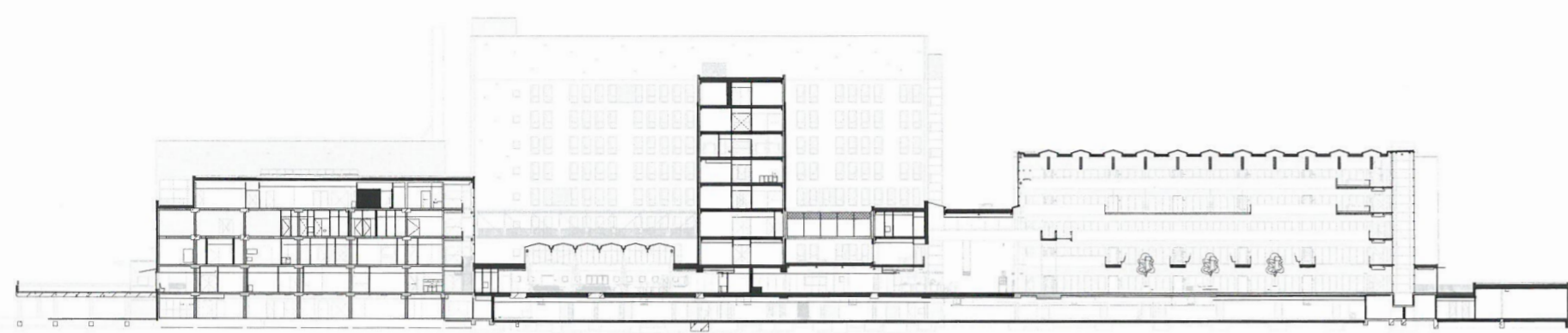


Healthcare Center for Cancer Patients, Nord Architects, Copenhagen, Denmark, 2009. The warm wood on the patios inside the building provide comfort and contrast with the building's stark exterior that looks as if it wants to fend off intruders, creating a safe haven for those inside.

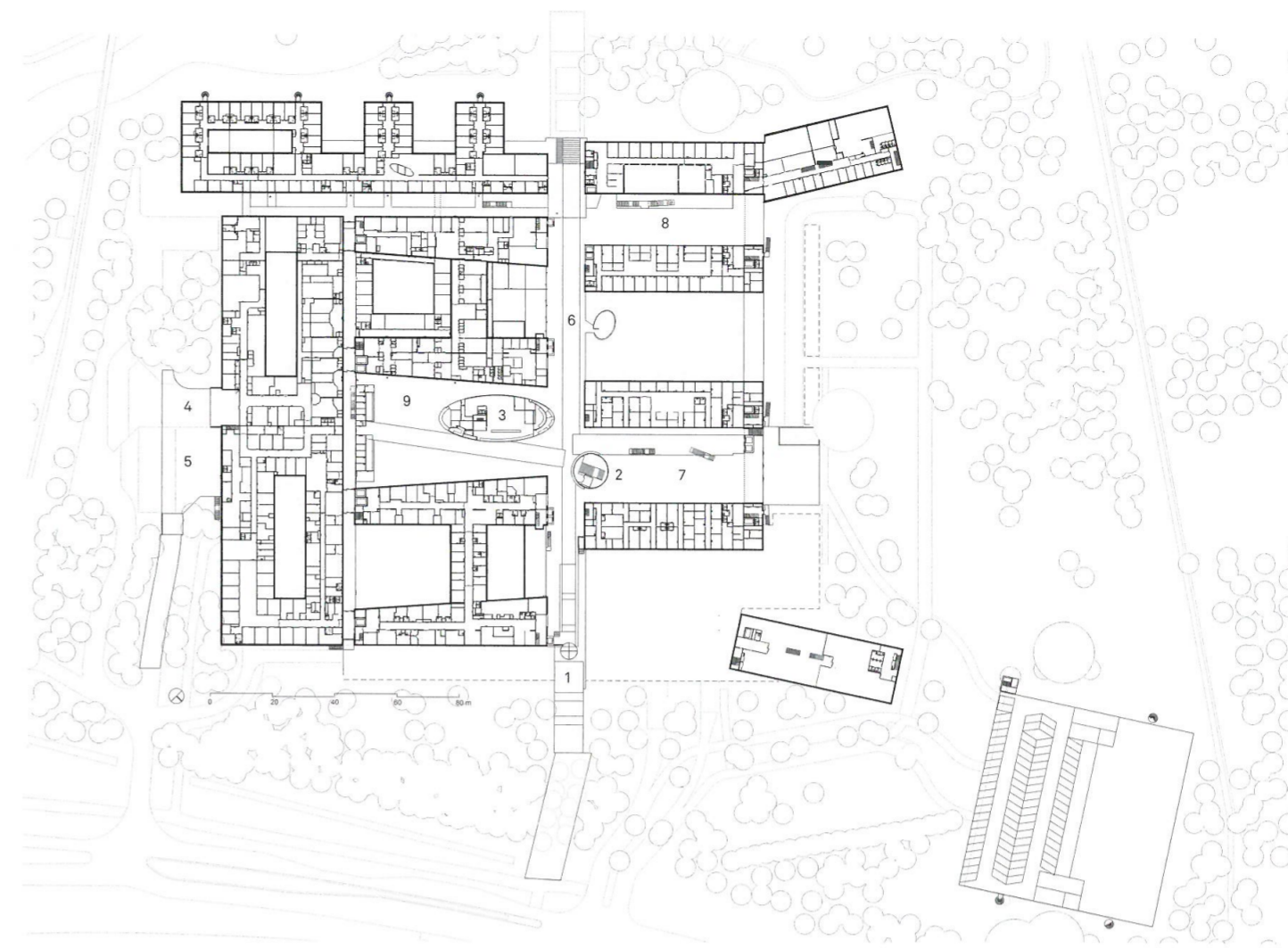
Meander Medisch Centrum, Amersfoort, the Netherlands, Atelier Pro, 2013. Divided in cubicle-like units, the spacious hall (with a view on nature) can accommodate large numbers of people without giving a crowded impression.

Vlietland Ziekenhuis, Schiedam, the Netherlands, EGM Architects, 2008. The generous lobby and reception space with its wooden ceiling creates a welcoming atmosphere for patients and visitors.





Longitudinal section



- 1 Main entrance
- 2 Entrance from parking garage
- 3 Information desk
- 4 Ambulance access
- 5 Emergencies
- 6 Central street 'Avenue'
- 7 Public space 'Brink'
- 8 Public space 'Foyer'
- 9 Wintergarden 'Oranjerie'

Site and ground floor plan



The hospital's arcadian setting | Exterior with main entrance at night | Exterior with connecting bridges



Meander Medisch Centrum

Amersfoort, the Netherlands

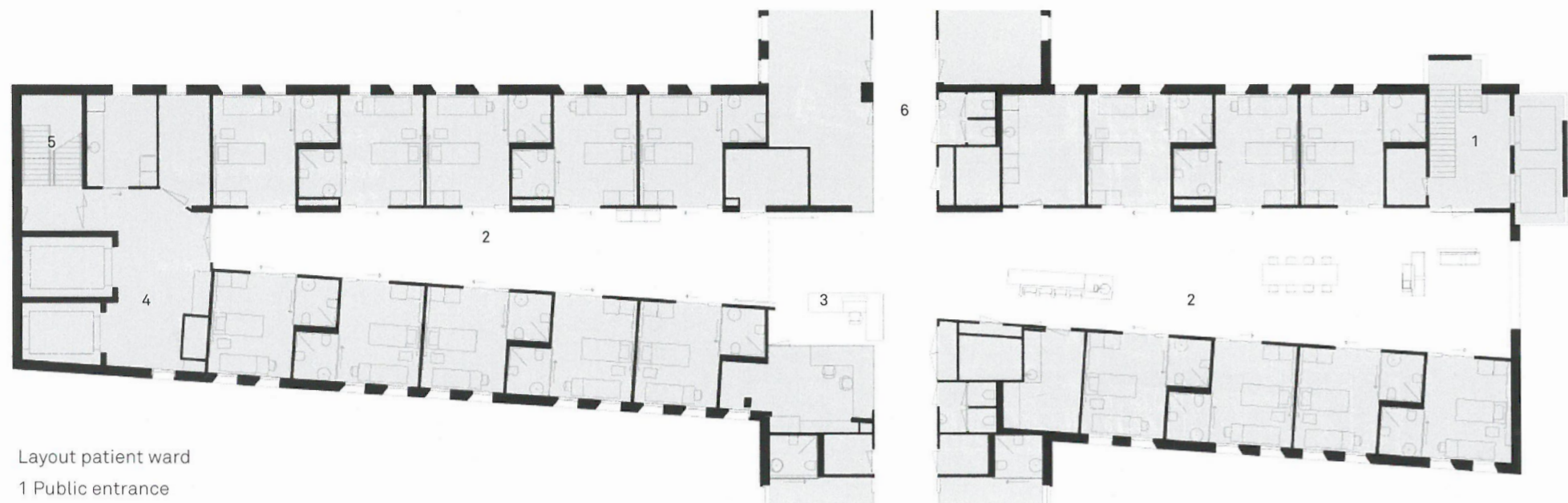
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| Architect | Atelier PRO architecten (Hans van Beek) |
| Client | Meander Medisch Centrum |
| Completion | 2013 |
| Floor area | 112,000 m ² |
| Capacity | 600 beds |

This impressive new hospital replaces two predecessors with vastly different cultures, one having been founded by Catholic devotees, the other by their Protestant counterparts. One objective of the new institution was to foster a community spirit among its members of staff. When the merger of the two previous hospitals was contemplated, Dutch healthcare architecture was still dominated by a handful of specialized firms that produced large quantities of indistinct buildings which strictly followed the rules laid out by the national planning agency. Convinced that Amersfoort needed something better than that, the hospital board invited Atelier PRO, an

office with a large portfolio of buildings in many categories, but not in healthcare – an unprecedented move at the time. As the decision-making process dragged on, the political context changed, and in 2006, when Atelier PRO began with the design, the national agency had been dissolved. The Meander Medisch Centrum (Dutch for 'Medical Center') combines domesticity and publicness, the one represented by people's individual homes, the other by urban public spaces. Hans van Beek, principal architect, sees the new hospital as a village, characterized by the pattern of streets and squares, usually dotted with landmark buildings, and the parceling structure in between. The

access road culminates at the main entrance and gives way to the central spine of the hospital: a spacious, glass-covered street that is dubbed the 'Avenue'. Since a high ground water table made the construction of a parking garage too expensive and since an outside carpark would have destroyed the building's idyllic natural setting, the ground level was raised by 4 m, allowing the accommodation of a parking facility underneath. A friendly slope outside leads the visitors to the main entrance, located some 2 m above the bus stop and the bicycle parking; the remaining part of the slope is inside the building. The spine of the central Avenue is the most lively part of the

hospital. It connects three spacious, covered squares: a so-called Brink (which refers to the central green areas found in some Dutch villages), a Foyer, both to the right and to the left a wintergarden called 'Oranjerie'. The back exit of the Avenue gives access to a psychiatric ward that is located slightly off the main building in a series of pavilion-like buildings. A strict separation of front and back office prevents the circulation of food and equipment from interfering with the flows of patients, visitors and staff. The outpatient departments, a particularly busy part, are situated on the right side of the Avenue and connected to the wards on the left by bridges.



- Layout patient ward
- 1 Public entrance
 - 2 Social spaces
 - 3 Reception counter
 - 4 Services
 - 5 Staff and services entrance hot floor
 - 6 Nursing unit



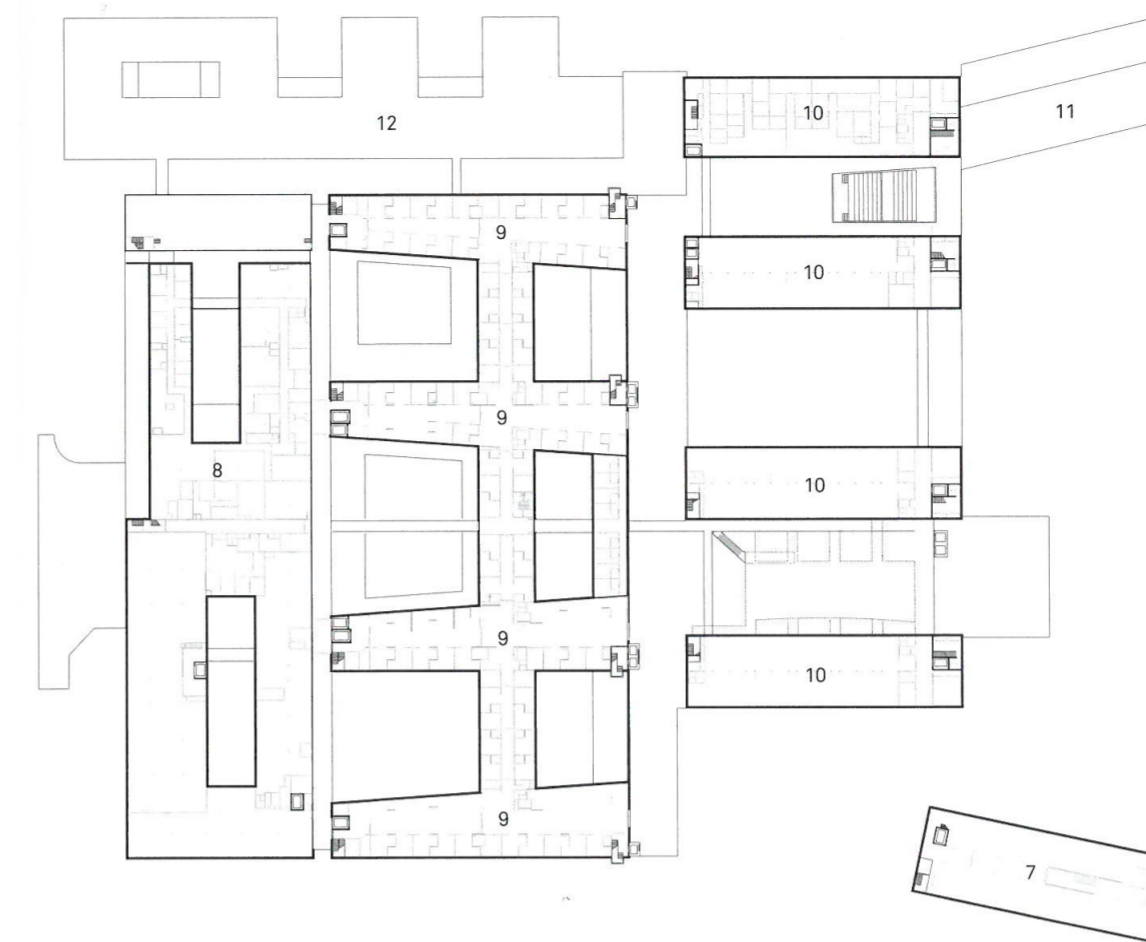
The wintergarden 'Oranjerie' | Wedge-shaped lounge and single-patient room | Avenue with reception



The wards separate the central spine from the hot floor, a solution that results in a rather large distance between the hot floor and the outpatient departments. While the design of the hot floor is determined by the medical processes, the other parts refer to building types outside the realm of medicine: the wards were conceived of as a luxury hotel, while the outpatient department took inspiration from office spaces. Emphasizing a private atmosphere, single-patient rooms are the norm in the new hospital, the first general hospital in the Netherlands to completely abandon the classical multiple bedroom. Sliding doors connect the rooms to a so-called living

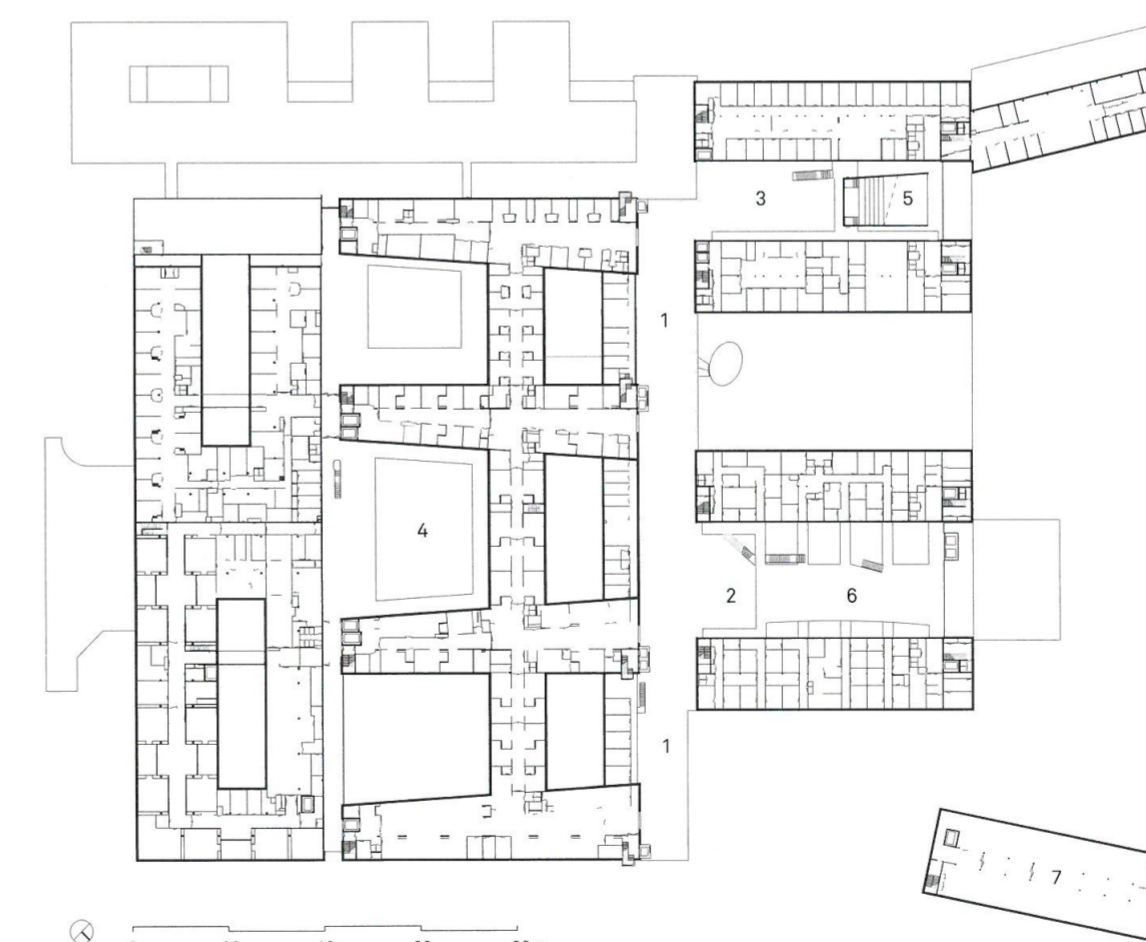
room, a wedge-shaped lounge that offers a view either to the greenery outside or to the Avenue. Each living room has a coffee corner and a computer station. The fluent transition from the private realm of the rooms via the semi-private environment of the lounge to the public domain of generous circulation spaces is expected to stimulate recovering patients to gradually expand their radius. Wayfinding is greatly facilitated by the simple overall layout and the visual connections with the outside. Color further enhances the navigation through the building. Illuminated green panels signal the hospital reception desks, for instance, and the entries

of the clinics are marked by signal colors and waiting areas by a green wall. Color is also used to enliven the interior: the overall effect is one of serenity and calm. Warm, natural materials such as wood have been used in the public areas as well as in the patient rooms, and thanks to the abundance of glass there is plenty of daylight. However, the lighting concept of the hospital prevents the effect of a flood-lit factory, accepting low-light conditions where this contributes to a pleasant atmosphere. Wishing to avoid an institutional feel, the architects decided to design all the furniture themselves – some 3,000 pieces.



Second floor plan

- 1 Void above 'Avenue'
- 2 Void above 'Brink'
- 3 Void above 'Foyer'
- 4 Void above wintergarden 'Oranjerie'
- 5 Auditorium
- 6 Restaurant
- 7 ROC (regional education center)
- 8 Intensive care, operation rooms, emergency area, laboratories
- 9 Inpatient ward
- 10 Outpatient clinics and offices
- 11 Rehabilitation and physiotherapy
- 12 Psychiatric center
- 13 Staff car park



First floor plan

