The architecture and building history of the University Medical Center Groningen (UMCG)

Noor Mens
CITY WITHIN A CITY

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The University Medical Center Groningen (Universitair Medisch Centrum Groningen or UMCG) is in a constant state of development. The dynamic informing this world-class hospital is not just that of the present or even the recent past. There is an unbroken line running from 1797, when Professor Thomassen à Thuessink began clinical education in a poorhouse; through 1851, when science and hospital care joined forces in the General Provincial, Municipal and Academic Hospital (Algemeen Provinciaal, Stads- en Academisch Ziekenhuis or APSAZ); to the Healthy Ageing Campus Netherlands of today. In the 19th century, APSAZ was a poorhouse with a basic level of patient care and a step-by-step development of scientific knowledge and educational facilities, all of an extreme simplicity by today’s standards. In the 20th century the tremendous advances in medical science and technology transformed APSAZ into Academic Hospital Groningen (Academisch Ziekenhuis Groningen or AZG), a world-class hospital combining education, research and patient care. Now, in 2012, there have been further changes. The UMCG is still a world-class hospital with its priorities in patient care, education and research, but the emphasis has shifted to developing new concepts for prevention and working on ensuring the best possible health into old age. Indeed, our mission is to build the future of health. Together with the European Research Institute for the Biology of Ageing (ERIBA) and Biobank LifeLines, the UMCG is part of the international front line of institutions concerned with Healthy Ageing – the 21st century is to be devoted to advancing and preserving health.

One condition for keeping patient care manageable is the prevention of disease; another is the public nature of health care. The buildings used by the UMCG and its predecessors tell the story of the development from poorhouse via world-class hospital to health campus. This story is interwoven with that of the city of Groningen. The online publication you are now reading – a book containing a second book – relates how the UMCG has grown into a city within a city. And this history still has a long way to go. The Healthy Ageing Campus is expanding constantly but at the same time the complex as a whole has stronger connections with the city centre than ever before – the UMCG is part and parcel of Groningen, just as Groningen is part and parcel of the UMCG.

Frans C.A. Jaspers, MD, Member of the Executive Board of the UMCG, Chairman of the Thomassen à Thuessink Foundation, Groningen
This online book is all about the buildings of the University Medical Center Groningen (UMCG). The UMCG is one of the Netherlands’ biggest hospitals, but it is much more than just a hospital. It’s where the borders of medical knowledge are pushed back, where hundreds of scientists and scholars do research. Students come here from all over the world to train as doctors or undertake PhD research. Students, doctors, professors, technicians, patients and their visitors populate the buildings, which are a city in themselves.

For more than a century now, the UMCG has occupied a position on the edge of the old town. The magnum opus of J.J. van Nieuwerken, an architect from The Hague, the hospital was officially opened on 29 May 1903 by Abraham Kuyper, Prime Minister and Minister of the Interior. It was a special week for the Netherlands, he would recall. A second large and important building was dedicated in 1903, namely the Stock Exchange in Amsterdam designed by Hendrikus Petrus Berlage. Kuyper saw in the two buildings, diametrically opposed as architecture, the proof of a revived national consciousness. They showed what the Netherlands was capable of. From then on, things happened fast. When the hospital opened its doors on 29 May 1903, it was bounded on one side by fields as far as the eye could see. These days, housing estates have taken their place and the hospital is in the midst of the city. Only a few fragments of the original buildings are still on site. The gradually expanded complex was replaced in the last quarter of the 20th century by new build designed by a single architect. A few hundred people worked there to begin with, but now there are over 10,000. A big event in 1900 was the arrival of an X-ray machine: for the first time it was possible to see what a living human body looked like on the inside. These days the hospital is bristling with medical technology. Each new advance is inevitably accompanied by new build or refurbishment. The hospital of today has grown from its past incarnations: the succession of buildings shows what the hospital has meant over the years to the city as well as to the patients, doctors and students.

This historical guide describes in seven chapters how the present-day UMCG came into being. The story begins with infirmaries for the ailing poor, plague hospitals and rooms set aside for ‘the insane’. These offered little hope of a cure. Doctors were not attached to these institutions and their visits were few and far between. Medical science was entrenched in the academy and in practice was limited to bloodletting. In 1797 Groningen gained an academic hospital and only then did students get practical medical tuition. This was the academic hospital’s key task; patient care would only become truly significant when it merged with the municipal hospital in 1851. From then on, education, research and patient care would go hand in hand. The story of the buildings parallels that of education, research and patient care – it has been this way since 1903 and this is the way it always will be. The move to the present grounds marked the start of a tempestuous development, one whose end is not yet in sight...
CHAPTER 1

1822—1897

Early history
“Guest-houses, military hospitals and plague hospitals were charitable institutions”
Physical and mental afflictions are of all times. It was only just over a century ago that winter colds and fevers were still the most normal thing – they were part of life and there was little you could do about them. There have not always been special buildings for caring for those afflicted with illness. In the Western World, it was only since the Council of Aix-la-Chapelle of 816 that it became customary to care for the ailing poor in buildings known as infirmaries or ‘guest-houses’ (gasthuizen in Dutch). If you were ill you couldn’t work, and those who weren’t working and earning were reduced to poverty. Such paupers were cared for in these guest-houses. The church saw tending to those in need as one of its tasks. There were two other places besides guest-houses where the infirm could be taken: military hospitals, where the state looked after wounded and disabled soldiers, and plague hospitals for those with contagious diseases; these last-named were erected outside the towns whenever an epidemic threatened. Guest-houses, military hospitals and plague hospitals were charitable institutions. Steps taken to alleviate the suffering largely drew on the knowledge amassed over the centuries about the properties of plants and herbs. Popular beliefs and practical experience dictated what to use for headaches, constipation, fever, stomach upsets and the like.

Groningen, a prosperous Hanseatic town in the Middle Ages, had its own share of infirmaries. One of these – Heilige Geestgasthuis – was founded as early as 1268; it stood at the site now occupied by another guest-house, Pelstergasthuis. Then there was Pepergasthuis, built in 1405. Guilds took on the responsibility of caring for their ill and infirm members, as there were no special facilities for this purpose. So the guest-houses remained charitable institutions for the poor who were unable to fall back on family, friends or trade associations. In Groningen too, the threat of epidemics led to guest-houses being built on the outskirts or beyond the town walls. In 1422 a leper asylum, St. Jurjens-gasthuis, was founded in Helpman, then a village some kilometres south of the city. In 1537 an outbreak of the plague led to the founding of Sint Antonigasthuis on Rademarkt in Groningen; in 1644 it was relocated to a site at Boteringepoort, then a new settlement on the edge of the town. In 1702, Sint Antonigasthuis added a number of rooms for psychiatric patients, then still termed ‘the insane’ (dollen in Dutch). These rooms remained in use until 1844 when the State had them closed down. In 1808 part of the Prinsenhof building was designated as a military hospital. All predecessors of today’s hospital were present in Groningen but unlike in, say, Zwolle, Amsterdam or Lübeck, chief among Hanseatic towns, a general municipal hospital had yet to be built. This would have to wait until 1817 at Steentilpoort as a response to a typhoid epidemic that had cost many lives. In 1820 it moved to Schultenmakersstraat where it had 25 beds. More epidemics followed and in 1835 premises were found on Popkenstraat for 50 patients.

Doctors played an equally subsidiary role in Groningen’s guest-houses and plague hospitals. Knowledge of medicine bore little relation to daily practice; doctors limited
Early history

Portrait of E.J. Thomassen à Thuessink by Anna Wilhelmina Böhl, 1912

The portrait was donated to the university in 1914 by one of Thomassen à Thuessink’s descendants to mark the university’s tercentenary. It is a copy from a pastel by Wessel Lubbers, in 1914 in the possession of E.J. Thomassen à Thuessink van der Hoop van Slochteren. Collection Rijksuniversiteit Groningen
Early history

their activity to prescribing drugs and bloodletting. Making incisions was beneath their station. They had a general idea of how the human body was constituted and how it worked but lacked the necessary scientific knowledge. It was only when the course taken by illnesses was studied in detail that tentative progress was made. There was nothing of the kind before 1550 or thereabout. Then the scientific dissection of cadavers began, literally opening up a world of anatomical knowledge. The invention of the microscope brought enormous advances, yet observing how a living body works was still centuries away. In Groningen it was possible to study medicine at one of the four faculties at the college of higher education, founded in 1614. This study was mainly confined to theory, there being no opportunity to get practical experience. It was only at the end of the 17th century that changes in this situation were proposed. Yet the first academic hospital was founded as late as 1797. This was an initiative by E.J. Thomassen à Thuessink, professor in medicine. The Nosocomium Academicum, as the hospital was called, occupied two chambers in Groene Weeshuis, a former orphanage. These had room for four sujetten, patients who had volunteered themselves for purposes of education and demonstration.

When professors in surgery and obstetrics also decided to give object lessons, the orphanage was found to be too small. Replacement premises were found in an elongated building on Munnekeholm, where Groningen’s office of the Dutch West India Company used to have its chamber in the 17th century. The new accommodation came into use in 1803. When the hospital left these premises in 1903, they were demolished to build the town’s principal post office. The Nosocomium was regularly enlarged. Once was in 1817, when an operating room, four patient rooms, a consulting room and two bathrooms were added. In 1851 the Nosocomium Academicum merged with the general city hospital. This gave it an additional duty: from that year on it would double as the general hospital for the town and province. Its Latin name was traded in for that of General Provincial, Municipal and Academic Hospital (Algemeen Provinciaal, Stads- en Academisch Ziekenhuis or APSAZ). The APSAZ was allotted the former premises of the natural history museum and after this was refurbished boasted 124 beds in an ensemble of four wings: administration on the street, surgery and internal medicine on either side of a courtyard, and obstetrics opposite the administration wing. In 1862 the new premises were enlarged. A shed-like space on Zuiderkuipen could accommodate an additional 24 patients, and another on the edge of the town did duty as an isolation ward for patients with contagious diseases. This last-named was joined, whenever the occasion arose, by other more or less improvised accommodation for contagious patients elsewhere in the town. In 1867 the hospital was provided with its own dispensary. In the early years the APSAZ was very similar to a ‘guest-house’. Most of the patients were paupers, and would be looked after by minders instead of nurses until 1899. By the end of the 19th century changes were on the way. One was the new X-ray technique. The radiation used in it was detected in 1895 by Wilhelm Conrad Röntgen, a physicist working in the German town of Würzburg. This had never been observed before, which is why he gave it the name X-radiation, although it wasn’t long before some countries (including the Netherlands) began calling it after its discoverer. The benefits of X-radiation for medicine soon became clear and in 1896 the celebrated Groningen surgeon C.F.A. Koch used it on patients at the university physics lab, which
Plan to enlarge the Academic Hospital on Munnekeholm, 1862
Early history

makes him a pioneer in this field. In 1897, the old APSAZ on Munnekeholm acquired one of the first X-ray generators. There must have been few inventions before then that had become commonplace so soon. It was the onset of great changes in the hospital. If in 1897 it had little or no technology at its disposal, after that it would gain one technological advance after another. Inevitably, the APSAZ would need newly-built premises if it were to keep up.

The decision to build these came in 1893. The existing ensemble was antiquated, too small and all but impossible to prime for the great leap forward that everyone was convinced was about to take place. Pathologists had long pushed back the limits of medical science, but now it was the turn of scientists working in laboratories. These were following in the footsteps of Louis Pasteur, one of the founders of microbiology, and their findings would lead to new medicines that would prove their worth in practice.
Early history

1822   1897

Academic Hospital on Munnekeholm

Courtyard of the hospital on Munnekeholm
Early history

Lecture theatre
EVERT JAN THOMASSEN À THUESSINK

Evert Jan Thomassen à Thuessink was the founder of the UMCG. Born on 6 August 1762 in Zwolle, he was ready for university by the time he was twelve. In 1782 he graduated from the University of Harderwijk. His chosen theme was philosophy but he had no wish to limit himself to it. In 1783 he left for Leiden and graduated again, this time in medicine. After a journey that took him to Paris, London and Edinburgh he set up in practice as a doctor in his place of birth. He made a name for himself by introducing the findings of British scientists into the Netherlands. His main interest was in closely observing the course taken by illnesses. Thus, for example, he sought to trace the possible causes of epidemics. In 1794 he was appointed professor at the University of Groningen. He was disturbed by the fact that the medical faculty lacked the facilities needed to observe patients.

Accordingly, he called for the foundation of an academic clinic. In 1797 this bore fruit in the Nosocomium Academicum, which in 1803 moved into more permanent premises on Munnekeholm. In 1851 it merged with the municipal hospital, founded in 1817, as the ‘General Provincial, Municipal and Academic Hospital’ (APSAZ), a name that would remain in use until 1971. Shortly after his arrival at Groningen University Thomassen à Thuessink was appointed Rector Magnificus, a post he resigned in 1798. In 1819, he was exempted by royal decree of certain duties attached to his position. In 1831 he was honourably discharged as emeritus professor. He died on 3 June 1832.
CHAPTER 2

1898 — 1925

General Provincial, Municipal and Academic Hospital (APSAZ)
"Guest-houses, military hospitals and plague hospitals were charitable institutions"
In 1874 the passing of the Fortification Act made it possible to dismantle the belt of defence works imprisoning many towns. As these were state property, it was central government that drew up the first plans for priming them for new duties. Groningen elected to have the proposals from The Hague recast by the architect Bert Brouwer. This gave Groningen in the south a new street (Zuiderpark) and well-appointed singels (tree-lined canals) opposite the station with a canal (Verbindingskanaal) and turning basin, in the west a harbour basin (Westerhaven) and in the north-west and north a park (Noorderplantsoen). The last section of the former stronghold, the eastern border of the old town, consisted of two parts. In one of these, the fortifications made way for a circus ground, a location where goods were transported to and from the town (bodenterrein) and a gasworks; later this area would be called ‘CiBoGa’, from a corruption of these three duties. In 1893 it was decided to allocate the remaining area of three and a half hectares for new buildings to house the General Provincial, Municipal and Academic Hospital (APSAZ). Four years later the new build was put out to tender and on 29 May 1903 it was opened by the then Minister of the Interior, Abraham Kuyper. The number of beds, which had almost tripled to 350, was illustrative of the hospital’s ambitions.

Its designer was Johannes Jacobus van Nieukerken. Based in The Hague, Van Nieukerken was a private architect who had made his name with a number of mansions (including a castle), restoration work, an operating room in The Hague’s Diaconessenhuis Hospital and an eye hospital in the same town. His design for the new APSAZ filled the space between the town and the town moat, where the design had to stop since the moat was used by shipping. This gave rise to ‘the new row of palaces for the art of curing and healing’, to quote Groningen University’s annual report; an elongated ensemble with each medical speciality given its own pavilion. The pavilion type emerged at the end of the 18th century to facilitate the discharge of infected air, even then regarded as the principal cause of illness. Here it marked the subdivision of medical science into its various specialities. The pavilions were equipped with the fullest range of facilities so as to limit moving patients in the open air. Most of the buildings had their own operating rooms and X-ray equipment. These were small individual hospitals that included rooms for live-in nurses. Even so, the new APSAZ also had central facilities; indeed, these occupied a prominent place in the initial phase of building. The grounds were accessed by way of the administration building on Oostersingel. Beyond this gatehouse was a hefty multi-purpose building containing the boiler house, laundry and kitchen.

The new hospital had three departments: one for internal medicine, one for surgery and a women’s clinic. The internal medicine department was sited north of the gatehouse. It also included the psychiatry pavilion and the barracks for contagious diseases; these were located at the rear, on the side to the canal. The psychiatric clinic replaced a small institution for seven patients on Grote Leliestraat founded in 1897 by Enno Dirk Wiersma. Groningen now had a psychiatric institution of its own after being without one for more than half a century. After the move to the new premises, however, these immediately proved to be too small. The mortuary was housed on Oostersingel, at the medical department itself. It had three rooms, one of which was
The complex under construction, 1901
In the foreground, the surgery pavilion
Bert Brouwer, development and expansion plan for Groningen Municipality on land freed when the defence works were dismantled, 1878
Groningen Municipality, development plan, 1904

The hospital grounds occupy the site of the former defence works in the east of the town
J.J. van Niekerken, aerial perspective and site plan of the General Provincial, Municipal and Academic Hospital (APSAZ)

Legend
1. Administration building
2. Internal medicine pavilion
3. Surgery pavilion
4. Women's pavilion
5. Pavilion for syphilitic diseases
6. Psychiatry pavilion
7. Pavilion for contagious diseases
8. Mortuary
9. Laundry and kitchen building
Site plan, 1903
for Jewish citizens to perform the last rites for their deceased. South of the gatehouse was the surgical department. Obstetrics was allocated the tallest building, which occupied the south point of the hospital grounds.

The new build for the APSAZ caused quite a stir as a spectacle of technology. Much thought had been given to the admission of fresh air and daylight. There was a system of tunnels connecting together all the buildings. Steam produced by five boilers in the central multi-purpose building was conducted throughout the complex along these tunnels. This was used for the kettles, the hot plates, the hot water supply, the medical baths and the autoclaves for sterilizing surgical instruments. It was even used in an advanced system for biodegrading and disposing of faeces, which left only clean water. Electricity, generated by the hospital’s own power plant, was needed to operate the six hydraulic lifts, the electric smoothing irons, a slide projector, the X-ray equipment and of course the lighting (with sixteen arc lamps and 1500 55-Watt bulbs). Most of the pavilions had simple flat roofs. North and east elevations were fitted out with double glazing. The corners in the pavilions were rounded to prevent stubborn dust traps from developing. Van Nieukerken introduced cavity walls in the hospital new build, decades before these became commonplace. This made it unnecessary to finish the walls with wallpaper attached to slats. The press was effusive about the APSAZ’s new premises because of its architect’s sound attitude of seeking to design an attractive building but putting the required fitness for purpose criteria first.

Architecturally, the new hospital was the very opposite of the Amsterdam Exchange, which had opened its doors that same week. If that building’s designer H.P. Berlage sought to dispense with styles that harked back to examples from the past, Van Nieukerken deliberately made reference to the architecture of the 16th century. He felt that decoration had a part to play in improving the human state of mind. This struck him as even more important for the ill and infirm than for healthy people. His decoration was inspired by the Dutch Renaissance, but applied with restraint. The principal means of introducing contrast and even a degree of gaiety in the interior was colour. This had to be clear, uplifting, soft and restful. The cavity wall system made it possible to paint all the walls – the harsh white characteristic of so many hospitals was avoided wherever possible. P. van Harreveld, the municipal parks superintendent, filled in the gaps between pavilions with an abundance of flower beds: the entire ensemble had to be an idyllic setting for the patients. Trees were planted at seven-metre intervals along the canal; these and a hedgerow screened off the grounds.

Within a year of the opening, work to extend the new build was in full swing. The university built the anatomical pathology laboratory in 1904, the laboratory for anatomy and embryology in 1909 and the physiological laboratory in 1911. In 1912 the maintenance department moved into new workshops and in the same year it was decided to build a new pavilion for the psychiatry departments and convert the old one to accommodate the ears, nose and throat department. This took effect in 1916. The APSAZ also appropriated buildings outside the hospital grounds. In 1920 the first X-ray photographs were taken in specially converted premises on Oostersingel that abutted the hospital grounds. It wasn’t just lack of space that brought about this decision but also the wish to make the institute accessible to other Groningen physicians – these usually
had their practice at home and would only move into the outpatient clinics of hospitals during the 1950s. In 1925 the department of skin and venereal diseases moved into a temporary pavilion at the anatomical laboratory.

The psychiatry department was responsible for the biggest expansion at the APSAZ since the move to new premises in 1903, with several tens of per cent more beds in scarcely ten years. Nor was the end in sight: in 1919 the executive board presented a plan to expand that would include an increase in the number of beds from just over 700 to 1250. The educational side called for new departments for ophthalmology, skin and venereal diseases, a children’s hospital, enlargement of the general medicine and obstetrics departments, new build for the surgery department, as well as new central facilities including a studio for educational resources. The ambitions might have been limitless but the grounds were not. It was only in 1924 when the decision came to fill in the canal (Verbindingskanaal) and acquire part of the land on the opposite bank, originally allocated by the town burgomaster for new residential areas, that the hospital could expand further.
BUILDINGS

Gatehouse (administration building)
The administration building housed the boardroom, the dispensary, the live-in units of the medical superintendent and the dispensing chemist, dining and recreation rooms for doctors and assistants, and in the attic living space for 70 nurses divided into several small halls. A wide corridor through the middle of the building gave access to the hospital. It was most emphatically not the intention that patients and visitors should swarm all over the grounds unchecked. Likewise, for outpatient clinics with their own entrances it was physically impossible for visitors to penetrate deeper into the hospital than was necessary. The capitals in the corridor referred to the fictional prankster Tijl Uilenspiegel. The message was that those who put their faith in charlatans were in for a disappointment, the moral being that only medical science can provide a satisfactory answer to illness and discomfort.

Department of internal medicine
The greatest number of beds could be found in the pavilions housing the department of internal medicine. This was given over to ward-based nursing care. The main building had 100 beds, the barracks at the rear for contagious patients 40; the 20 places in the psychiatry pavilion were for the time being regarded as belonging to the internal medicine department. The lecture hall could hold 60 students and some beds.
An X-ray department (one of the most advanced in the country), an operating room, a room for experiments (also on animals), rooms for chemical and bacteriological research, bathrooms, a library and a reading room gave the main pavilion the air of a complete miniature hospital.

**Surgery department**
The surgery department was fitted out for 120 standard patients and 20 syphilitics. This put the total number of beds at the APSAZ at 350. Each storey had two wards, one for men and one for women; each ward had its own large sun room. Other features were a photographic studio, a room for preliminary examinations, an outpatient clinic, an operating theatre (once again in the form of an amphitheatre), a chloroform room and a ‘museum’ of medically interesting examples. C.F.A. Koch, the famous surgeon who presided over this department and had recognized the usefulness of X-ray equipment as early as 1896, decided in 1904 to use the radiation not just for taking photographs but also to treat tumours of the skin, jaw and tongue. So he was responsible for introducing radiotherapy as well as radiodiagnosis.

**Women's pavilion**
Located at the south point of the new grounds, the women’s pavilion catered to two categories: the gynaecology department for patients suffering from illnesses related to the reproductive system, and the obstetrics department for pregnancies (and for ‘lying in’). These two categories were kept separate in the design. The pavilion had 50 beds. The rooms for treatment and education were on the ground floor; here too were the...
outpatient clinic and the operating room, the latter extending beyond the envelope so as to have as much daylight as possible. The first floor was reserved for the gynaecological patients, with the obstetrics department on the second floor. Unlike the other departments, this pavilion had no large wards but many small ones with four beds apiece. The operating theatre was shaped like an amphitheatre and could hold 62 students. Features of the women’s pavilion, besides the essential professor’s room, included laboratories, a library, a museum, an operating room with preparation room and an outpatient clinic.
D ward (medical superintendent's ward)

Presided over by the medical superintendent, D ward was originally intended for dermatological patients (skin and venereal diseases). Although there had been a pavilion for dermatology since the opening, there had been no professor to go with it. Rutger Adolf Benthem Reddingius (professor of clinical and anatomical pathology) took on this task in the early years, although he held his lectures (from 1913) in his anatomical pathology lab and not at D ward. A professor of dermatology was appointed in 1924.
Outpatient clinic in the surgery department

Ward in the surgery department
The anatomical pathology laboratory and the laboratory for anatomy and embryology, both to a design by government architect Vrijman and built in quick succession, have much in common. Professor Reddingius and the architect Johannes Antonius Willibrordus Vrijman travelled to Breslau and Bucharest, among other places, when preparing the design for the first to be built. The buildings were massed and sited to facilitate the natural lighting. The rooms for microscopic research were located on the north side whenever possible. In both cases this was the rear of the building. Both buildings comprised a basement, two storeys and an attic and were configured asymmetrically. The entrance was to the left of a tower-shaped volume containing the stair. The gabled corner component on the west side projected from the main mass. A wing on the east side, originally with a flat roof, was set square to the front facade.

The physiological laboratory consisted of four wings about a courtyard. Designed in a simple Neo-Renaissance style, its first floor included an amphitheatre that did duty as a lecture hall, a ‘spectatorium’ and a demonstration room also fitted out as an amphitheatre but without seating. Here too were the workspaces for the scientists and scholars. A standout feature was the ‘cinematograph’, which made it possible to film difficult lecture experiments so that there was no need to repeat them. On the ground floor were the practical chemistry and bacteriological labs. Physiological surgery was
held in particularly high regard. Tests on animals made it possible to show how internal organs worked without causing permanent injury to human subjects.

**J.A.W. Vrijman, department of psychiatry and neurology**

In the years round 1910 it became clear that the pavilion for the psychiatry departments was no longer up to the task. J.A.W. Vrijman, then working at the government architect’s office, was commissioned to design a new building for 100 adult patients and 20 children with psychological and neurological conditions (so-called neurotics). It was to be sited on a newly acquired parcel of land opposite the women’s pavilion, bringing the total size of the APSAZ territory to four hectares. Much space was reserved for bath therapy. Agitated patients were kept in the water sometimes for days on end in an effort to calm them. A pioneering feature was the fine focus given to the new discipline of psychiatry. E.D. Wiersma, professor of the department of psychiatry and neurology, not only wanted separate areas for calm and agitated inmates but also a place for the neurotics. Given the customary distinction between men and women’s wards, this meant a division into six. The left wing was for women and the right wing for men. Neurological patients were housed at the front of the building. A bridging piece in the middle gave access to two wings at the rear where the psychiatric patients were housed. Here too were the rooms for the potentially violent inmates. As was customary in those days the nursing staff lived in the hospital grounds – in this case on the second floor of the new build. The lecture hall had room for 100 students. Vrijman harked back to the architecture of Dutch Classicism: the stepped gables at the extremities of the two mirror-image wings referred to the architecture of the Golden Age. The building was erected in colourful standard-size brick (waalsteen) and a larger type (Groninger steen). White cut stone, specially shaped bricks, ashlar sills and 4000 kilos of decorative ironwork completed the picture.
D ward

Lecture theatre in the psychiatry department

Rear (east) of the psychiatry department
G.C. Bremer, department of dermatology
When the hospital was originally built, a small pavilion for dermatology was erected in the vicinity of the surgery department. Its two wards, each of twelve beds, had a kitchen, bathrooms and other ancillary spaces but lacked rooms for treatment and academic research. It also proved insufficiently equipped as a department for syphilitic diseases. The steep rise in the number of venereal diseases in 1918 and the next few years was a cause of great concern. There were increasing calls for a comprehensive department for skin and venereal diseases but the decision to build came only when it was prescribed by law that medical students should have lessons in this subject. The department’s construction was a unique experiment: lack of funds forced the designer, government architect Gustav Cornelis Bremer, to do the job on a budget of just 100,000 guilders. Basing his design on a proposal by medical superintendent Willem Hendrik Mansholt, Bremer developed a T-shaped building. A shed-like structure for a third of the price of a more solid building, it included wards for men, women and children, a professor’s room, a laboratory, an X-ray room, a child day care centre and an outpatient clinic. The interior had a cladding of pumice stone and plasterboard as insulation, so that it would keep relatively cool in summer and not get too cold in winter. This proved largely ineffective in practice. Only a few years after the opening there were complaints about damp caused by cracks in the windows and doors. It was impossible to keep the building warm in winter and a number of rooms were far too hot in summer. The exterior of the dermatology department building was painted green. An official from the Government Buildings Agency (Rijksgebouwendienst) entrusted with supervising the building, chose a number of vivid colours for the interior. The topmost floor could accommodate twenty live-in nurses, sixteen of whom had their own room of two by three and a half metres.
Surgery

It has been a well-known fact for many centuries that the removal of smaller or larger parts of the human body can have a salutary effect. Yet until well into the 19th century it was a drastic remedy that not infrequently killed rather than cured the patient. There were two reasons for this, aside from an often incomplete anatomical knowledge: the lack of effective anaesthetics and the absence of means to combat infections. Even in the 18th century, physicians kept well away from such practices, leaving them to barbers and surgeons with no academic training. It was only during that century that surgery – one Dutch word for it is heelkunde, literally the science of healing – was embraced by the medical faculties. The 19th century witnessed enormous advances in combating pain and preventing infection. In 1842 ether was used for the first time to lessen the pain when making cuts. All the same, almost half the patients who were operated on died. Ignaz Semmelweis can be credited with identifying the principal cause of these deaths as infections through a lack of hygiene. He forced his colleagues to clean their hands with bleach before setting to work. This reduced the number of deaths dramatically.

Joseph Lister shifted the focus of attention to the wound caused by cutting. He used phenol to fight infections – this marked the arrival of antiseptics. It was found that the danger of infection was greatly lessened when carbolic acid was sprayed to disinfect the immediate vicinity of the wound. Lastly, there was the emergence of asepsis. This basically entailed disinfecting the entire room where the operating was being done. The greatest risks were now under control, but the equipment of operating rooms still left a lot to be desired. Electric lighting made its entrance there round about 1900, although operating rooms were characterized by large windows letting in the indis-
Laundry and kitchen building, west side.
At background right, the boiler house chimney

Carpentry and painting workshop with garden shed
South side of the boiler house with coal storage facility (foreground)
pensable daylight as late as the 1930s. The 1920s saw the auspicious arrival of the operating suite: two operating rooms separated by a sterilization room. The operating lamp was introduced to rule out inconveniencing shadows. In the meantime the surgical profession was itself developing. Such specializations as plastic surgery and thorax surgery emerged at the end of the 1930s, an advance associated in Groningen with the name Pieter Roelof Michaël. From the 1950s onward the operating department gradually became an area isolated from the outside world with artificial lighting and air-conditioning. Since the 1980s the key innovations have once again been in hygiene. This saw the appearance of the air-handling unit, a ceiling mounted panel that blows fresh air into the operating area. It seems likely that computer-aided robots, at times operated by remote control, will make a more significant contribution in the future, as will techniques that keep the scale of the interventions to a minimum. Daylight, phased out in past decades, is back in the latest designs for operating departments.
SURGERY

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CHAPTER 3

1926 — 1954

The complex is enlarged
‘The ensuing years were marked by a game of displacement and replacement new build’
THE COMPLEX IS ENLARGED

The new complex saw the tasks of the old hospital continued on a larger scale. It did duty as a general hospital, although it had two religious hospitals for company, one Protestant (Diaconessenhuis) and one Catholic, the last-named moving into premises built in 1926 in what is now the Helpman area of Groningen. This may explain why the APSAZ’s development was governed entirely by its academic duties, particularly education. Since 1906 it had been training nurses as well as doctors. As before, care of the sick and infirm was restricted to the ranks of the poor and was paid for by church councils and poor-assistance groups. Some doctors additionally were permitted to treat more affluent, paying patients, with facilities to match. Limited at first, this level of treatment became increasingly popular as the hospital gained more and better facilities.

The hospital’s programme for 1919 would inform its expansion during the following years. It wasn’t just the APSAZ that had major plans. The city of Groningen prepared for a long period of unbroken growth. Its town planning department drew up some ambitious schemes. Jan Anthony Mulock Houwer had plans to build residential areas in the then undeveloped eastern and north-eastern areas. If these were to materialize, the APSAZ would find itself wedged between them and the old town. To avoid this situation, the hospital bought a large patch of land on the other side of the canal. When this was filled in in 1926, the hospital had more than ten hectares of building land at its disposal. 

The grounds in the 1940s with the new dermatology outpatient clinic
The complex is enlarged
The complex could now expand further. There was a programme and there was land – all that was needed now was a development plan. This was drawn up in 1927 by Hayo Hoekstra, then principal architect at the Government Buildings Agency. At the place of the filled-in canal he designed a central, 50-metre-wide boulevard, a green lung that followed the curve of the site. Round it he constructed a six-metre-wide ring road. The intention was to provide a tunnel that would connect this to the projected pavilions. Both programme and plan came with a schedule of priorities. Two matters were of particular urgency. The old eye hospital, which still had its own premises in the town, had become untenable in its present state, being particularly unsuitable for teaching purposes. At the south point of the newly obtained land, between the psychiatry department building and the southern end of the green lung, Hoekstra reserved space for new build. A second problem was accommodating the nursing staff. In 1903 there were 75 nurses, in 1926 a full 260, and if the plans for the eye department were to materialize this figure would increase to at least 300. Sixty of the sleep spaces for nurses, most of them on the upper floors of the pavilions, needed replacing. New build for at least 100 residential units was therefore unavoidable. So it was decided to establish a full-fledged nurses’ residence, to be sited at the north-eastern extremity of the ring boulevard. The inspiration for this facility came from abroad: the plans for a hospital in Stockholm (Södersjukhuset) also included a central nurses’ residence. And as in Stockholm, the idea in Groningen was to keep the nurses’ home as isolated as possible from the hospital comings and goings to ensure that the nurses enjoyed rest and relaxation in their leisure time. Between 1929 and 1933, Hoekstra assisted by Gerrit Westerhout saw onto site the eye department as well as the residential building for nurses. The ensuing years were marked by a game of displacement and replacement new build. The capacity of the spaces for the board and the administration, the central
dispensary, the kitchen and the boiler house was no longer adequate for the rapidly growing hospital. In 1936 a new central kitchen was taken into use, located behind the barracks for contagious diseases. The old one housed in the multi-purpose building was converted into a dispensary, the dispensary in the gatehouse being reassigned for administrative duties. The surgery department was expanded enormously.

When Nazi Germany invaded the Netherlands in 1940, this had repercussions for the academic hospital. Its board was put in the hands of Nazi sympathizers. Jewish members of staff were sacked; they shared the fate of Groningen’s Jewish population, most of whom didn’t survive the war. The occupying forces smothered all forms of intellectual freedom. That said, efforts to nazify the APSAZ were fairly fruitless. In the meantime the game of building, converting and reallocating went on. The last addition for the time being came in 1941; in that year the children’s clinic, founded in Sint Jansstraat in 1891 with the support of the business magnate Willem Albert Scholten, moved to the academic hospital where it was sited on the east side of the green lung, not far from the pavilion for ophthalmology. A year later, a new pavilion for contagious diseases was erected behind the children’s hospital. The old barracks at the internal medicine department were demolished, to be replaced in 1943 by a new boiler house and new premises for the maintenance workshops, sited between the boiler house and the central kitchen of 1936.
After the liberation in 1945 the academic hospital was faced with the prospect of a dramatic increase in the demand for doctors and medical specialists. Nor was it just the unprecedented medical and technical advances that made this a probability; there were social reasons too. New social facilities, including compulsory health insurance, put once-expensive medical care within everyone's reach. This brought an end to the days when less well-off patients only became hospitalized thanks to the aid of church councils and poor-assistance groups. For the APSAZ this ushered in a new period of furious growth. This initially followed the trail blazed in the 1930s, resuming the game of displacement and replacement. In 1948, the first new addition of the post-war years – a dental department – was opened in the workshops left empty by the maintenance staff five years earlier and then refurbished. In the 1950s the hospital's renovation programme began making real headway. The grounds, which in 1927 had seemed expansive enough to accommodate decades of progress, were filling up fast. High time then to make new plans for the future of the APSAZ...
BUILDINGS

H. Hoekstra and G. Westerhout, nurses’ residence, 1932
The nurses’ residence was sited on the north-east side of the rearmost section of the ring road, an area that could be assumed to remain comparatively noise-free. It acted as a kind of buffer between the departments of contagious diseases and the other departments then expected to be built along the ring road. First to arrive was the long central portion with a small lateral wing on its north side. This part, containing about a hundred nurses’ bedsits, was opened in 1932. This would later be expanded with a larger lateral wing on the south side containing the dining room and recreation hall and a further fifty nurses’ rooms. The nurses’ residence could therefore accommodate some 500 nurses all told.

H. Hoekstra and G. Westerhout, ophthalmology department, 1932
This building closed off the ring road on the south side and was sited so that operating rooms and laboratories faced north in accordance with the professor’s wishes. The wards were deep enough for the beds to be turned to face the incoming daylight. Able to accommodate eighty beds, the building had a cruciform shape whose four wings (two long ones to north and west and two short one to east and south) converged at a central hall.
The complex is enlarged
**H. Hoekstra and G. Westerhout, radiological institute, 1934**

Key requirements for the new institute were that it had to be attached to the hospital – in the interests of patients, science and education – as well as being able to function independently so that the doctors could draw freely on it. So it needed to be sited within the hospital complex and at the same time along the public highway.

In 1917 several houses on Oostersingel were bought and converted and in 1920 the new institute was taken into use. Just a few years later there were discussions about improving the situation. In 1927 the rapid advances in radiology, the enormous increase in the number of patients, the limited space and the impractical layout brought calls for new build. The adjoining plots were bought, the existing institute was demolished and new build erected on that site to a design by Hayo Hoekstra. The outcome was an L-shaped building with its long wing parallel to Oostersingel.

**Conversion and enlargement of surgery department, 1936**

In 1936 the new wing of the surgery department was ready, with three new wards, two new operating rooms and a new outpatient clinic. The department made its greatest advances under Professor L.D. Eerland. The men’s wards were on the ground floor, the women’s on the first floor and the children’s ward on the second.
Site plan, 1945

The complex is enlarged
South and east sides of the new kitchen building with girls’ dining hall, 1936
THE HOSPITAL AS SOCIAL FACILITY

Hospitals were poorhouses until as late as the second half of the 20th century and the APSAZ was no exception. Those who could afford it generally preferred to have a doctor call at their home. The sum total of what hospitals had to offer held out few expectations. This changed when an ever increasing flow of costly medical equipment, beginning with the X-ray machine, took hospitals by storm. They then became places where you could get the best in advanced medical care. It never got as far as becoming a monopoly, as doctors began investing in equipment for their home practices. The hospital's new role ushered in changes in the make-up of its user group. For the poor, once the largest share of its patients, hospitalization had become too expensive. A major breakthrough came with the Sickness Fund Decree, passed in 1941 and incorporated four years later in the social protection offered by the welfare state. Now everyone, regardless of their origins, education or financial standing, was in principle able to pay for their stay and treatment in a hospital. This marked the onset of a massive growth in the number of hospitals, and with it the demand for trained medical staff. From then on, health care would grow into one of the key sectors of the economy.
Building for infectious diseases, 1940 (right) and the children’s department, 1941 (left)

Neurology outpatient clinic, 1953
Ears, nose and throat department, 1942

Boiler house, 1943

Dental surgery department, 1952

The complex is enlarged
CHAPTER 4

1955 — 1966

Plans for new build
‘The trend continued towards “a conglomeration, where specialists once again assemble at a patient’s bedside, with the concentration of buildings this will bring”.’
PLANS FOR NEW BUILD

New pavilions were added and old ones replaced as late as the 1970s, keeping alive the principle of self-sufficiency for each department. Nothing was demolished, save for the barracks for contagious diseases. The original hospital and all later additions were still in place, with a share of the existing buildings given a new duty. The new build for the department of internal medicine, seen onto site between 1952 and 1959, had filled in one of the last remaining large open spaces. If growth were to continue at this rate, the resulting clutter of buildings would in most cases leave little room for further expansion. This nightmare scenario called for a master plan. Once again it was Hoekstra who was commissioned to design it.

The first question to arise was whether there was any point in continuing along the route embarked on in 1903. Perhaps it would be better to move on from the system of pavilions. This would have both advantages and disadvantages. In some cases, it was advantageous to have each department function as a small hospital in its own right. It kept distances short, requiring little in the way of transport, and the whole was easy to manage. There were also disadvantages. Each pavilion had its own facilities, such as operating rooms and radiological equipment. This was expensive and could result in too much equipment being used too little. Centralization would be one way of overcoming this. Add to that the fact that the advantages of discrete departments would become disadvantages once these had reached their limits for expansion. The issue of centralization and decentralization was a hot topic. For the time being, the hospital chose decentralization, while the authorities had increasing doubts about it. Nor did the discussion end when the new structure plan arrived. Concentration, so the argument went in 1956, would lead to ‘monstrous complexes’ such as that in Lille or the Södersjukhuset in Stockholm, and the question was whether ‘the individual factor of human suffering isn’t neglected in such factories of healing and the relationship between the sufferers and their next of kin rudely denied by the inhuman dimensions of the organism to which they have been consigned.’ All the same, the trend continued towards ‘a conglomeration, where specialists once again assemble at a patient’s bedside, with the concentration of buildings this will bring’.

In the plan he presented in 1955 Hoekstra stuck by the tried and tested configuration in pavilions. To ensure that the ensemble would retain its clarity of organization in the future required a clear vision of the space that would then be available. How much space depended in part on being able to give existing buildings new duties to perform. Again, an easy-to-read traffic structure was indispensable if chaotic situations were to be avoided. The ring road around the green lung had been intended for this purpose but was now swallowed up by the hospital buildings. The space between the ring road and the gatehouse accessing the grounds was blocked and the old buildings on the city side were oriented not to the ring road but to Oostersingel. Hoekstra proposed demolishing the gatehouse and the old multi-purpose building, which no longer fulfilled its original purpose. In their place was to be a broad traffic cut-through to connect Oostersingel with the central ring road. That would leave space for two four-to-seven
Plans for new build

Site plan, 1955
storey buildings, which in time could play a part in relocating departments and reallo-
cating their former premises.

The plan came with a programme for what would eventually be nine building projects. Phase one was worked up further. This entailed new build for the laundry, en-
largement of the children’s hospital, enlargement of the surgery department, new build for the dermatology department, new build for gynaecology and obstetrics on the site of the demolished dermatology pavilion, extensions to the nurses’ residence and the department of child psychiatry and new build for the psychiatry department. Only the first four would materialize; the rest were stopped in their tracks. This was quite literal in the case of gynaecology and obstetrics: the frame was on site when further construction work was called off. All this led in 1959 to a bridge plan, which proposed preserving for the time being the buildings that had been earmarked for demolition and reassigning them temporarily. Though little came of this proposal it was decided in 1960 to further develop phase two of Hoekstra’s 1955 structure plan. This made provision for the new build for an audiological institute, a mortuary and a building for the central services. This last-named facility was a cautious first step on the way to centralization.

In 1962 Hoekstra presented a revised version of the structure plan. This was nec-
essary because several clear trends were emerging. Visits to the outpatient clinics were increasing hand over fist and exhibited a trend towards specialization. The ex-
amination rooms proved to have been made too small to accommodate the ever in-
creasing influx of medical technology. The staff was rapidly expanding in number and more work rooms were required. Interestingly, there was a noticeable increase in the number of accidents, presumably brought about by the rising car ownership. This raised the question of whether a special accidents department should be set up. Hoekstra set about making the necessary modifications with minimal interventions.

As he worked on his designs, a new increasingly urgent problem presented itself, that of parking. The number of cars the academic hospital had to assimilate daily had swelled 140 per cent between 1959 and 1966. This meant a like increase in parking space. Cars took up more and more room, and the demand for parking space and building space met head-on. A second fundamental issue joined that of centralization versus decentralization: should the hospital remain on the site it had occupied since 1903, or was it preferable to move to the outskirts of the city? There would be no re-
strictions on space there, and cars would enjoy every freedom, certainly if the site were locked into the network of motorways. At that time Groningen’s urban planners were four square against expanding the existing site; the hospital was considering the matter. Would it stay put, or would it move to the suburbs? This was the issue the plan-makers had to resolve in the years that followed.
In the 1950s, the internal medicine department was the only department of the hospital opened in 1903 that hadn’t been drastically modified or enlarged, although the circumstances there were far from satisfactory. The patients resided in wards of 30 beds apiece, there was insufficient space for examinations and the sanitary facilities were below par.

Between 1952 and 1959 a new department building was erected between the nurses’ residence and the children’s hospital at the centre of the ring boulevard. The inpatient component was in the south and consisted of two wings of rooms for two, four and six patients. These were kept entirely separate from the outpatient clinics, which could be enlarged over time. In between the two were the examination and treatment rooms, so that these could be reached from both sides.

Architectenbureau Hoekstra & Westerhout, department of internal medicine, 1959

Architectenbureau Van Linge, psychiatry department, 1969

The new psychiatry department was regarded in 1969 as a model institution. So was its predecessor in 1916, but since then ideas about treating mentally disturbed patients had changed dramatically. Bed and bath treatment had been replaced in the 1930s by methods that put into practice the principle of active therapy. The patients had to be kept occupied. The 1950s brought a new breakthrough: new drugs made it possible to deal with agitated and unruly patients in a similar way to the calmer ones.

This saw the end of the age-old distinction between those two categories of psychiatric patients. At the heart of the new department was a biochemistry lab.
Plans for new build

Ward building of internal medicine department

Internal medicine department, 1959
Architectenbureau Van Linge, department of psychiatry, 1969
Plans for new build

Extension to children’s department, 1960

Gynaecology and obstetrics department, 1975
INNER CITY POLICY

The meteoric rise of private car ownership underscored the success of the Dutch welfare state. There seemed to be no end to the growth in prosperity. It was expected that increasing numbers of people would soon be earning more and enjoying more leisure time. In the mid 1960s, it was predicted that the population of the Netherlands would have increased to 20 million souls by the magic year 2000. This population explosion and the rise of the car were the principal pillars undergirding spatial planning policy. According to the scenario outlined in the Second Report on Physical Planning of 1966 Groningen would have a major share in this growth. At the core of 1960s municipal policy was that Groningen would burgeon into a functional city where traffic would play a key role. The traffic had to be able to penetrate to the heart of the city, the financial heart, where economic activity was strongest. That said, the increase in traffic would negatively impact on the quality of life.

Although through traffic had been excluded from the city centre since 1967, a few years later the famous (or infamous) traffic circulation plan would come into effect. This divided the inner city into four zones or ‘tangents’ whose borders prevented motorized traffic in one from directly accessing the others. The structure plan for Groningen’s inner city (Structuurplan Binnenstad Groningen, 1969) built on earlier developments: the inner city became the centre of an ever expanding area which thanks to the car had become accessible more quickly and more regularly to an increasing number of people. The plan’s main target, however, was to turn the city into a place of encounter. This called for more houses, shops and offices but also meant strengthening the inner city’s cultural dimension. In 1972 an ‘objectives document’ (Doelstellingsnota) saw the light of day – this was not a design but a written document that fixed the key determinants of inner city policy. The inner city had to become a haven of fulfilment, an environment for encounter, information and events, a platform for the pursuit of leisure, a high-point of city life. As for the academic hospital, the inner city plan was unequivocal: a gigantic complex as in the plans being prepared at that time was unacceptable so close to the city centre. The question of how such a massive ensemble could be inserted into the urban fabric would prove decisive in the coming years for the place the hospital would literally take up in the city and in the urban community. In the 1980s, the social and cultural ideals of the celebrated ‘objectives document’ were pushed into the background. If this had been about distributing the prosperity so that all citizens became part of a new, democratic culture, the crisis made it necessary to set other priorities. With one factory after another shutting down, the accent shifted to kick-starting the economy. Urban planning was to contribute to this. Priority number one was to keep economically powerful companies in the inner city. These had to help reinstate Groningen as an economic engine. It was clear that the academic hospital could make a difference. The urban planners changed tack and stopped pressing for relocating the hospital to the city outskirts. That said, the preference for distinct departments, such as the one for women, would persist for the time being.
CHAPTER 5

1967 — 1986

The master plan
‘The hospital had to be a part of the community and blend seamlessly into the urban fabric’
In 1967 the Ministry made clear how it saw relations between the universities and the academic hospitals. The interests of medical education and research were paramount, with the hospital as a workplace serving those ends. In 1971 the new relationship was expressed in a change of name. After more than a century, the General Provincial Municipal and Academic Hospital (APSAZ) became Academic Hospital Groningen (Academisch Ziekenhuis Groningen, or AZG).

Meanwhile it had become clear that the pavilion system was no longer tenable. Centralization would mean a more efficient use of space, facilities and staff. This presupposed concentrating facilities in big buildings. High-rise was one means of achieving this. The 1969 inner city structure plan for Groningen made provision for high-rise, proposing two or more towers to compete with the Martinitoren, the city’s tallest church tower. The celebrated ‘objectives document’ (Doelstellingennota) of 1972 would consign these ideas to the wastebasket. Small scale was the name of its game, with hospitality at the forefront; the entire inner city was to become a sociocultural centre of encounter. Comparable ideas were to take hold of the medical world. Doctors and architects worked together in a foundation whose title translates as ‘Hospital, Human and Modern’ (Ziekenhuis Menselijk en Modern). The loose-leaf manual of that name, issued by the foundation between 1969 and 1975, proposed radically rethinking the way hospitals were organized. The patient would determine what the hospital looked like and how it functioned, not the demands made by medical specialists. Patients would be at centre stage. The medical bastion had to be exchanged for a friendly village. High-rise was not an option; instead, there would be ‘structures’ of no more than four or five storeys. The hospital had to be a part of the community and blend seamlessly into the urban fabric.

These ideas had an avowed champion in the Rotterdam firm of Kruisheer+Hallink and in 1975 it took over the reins from Hoekstra & Westerhout. Team 4 Architecten, created that same year when four Groningen architectural offices joined forces, had a share in preparing a new line of action. One of the merging offices was the successor of that run by Evert van Linge, which had set its seal on the hospital since the construction of the new department of psychiatry. Hoekstra’s departure coincided with the decision to centralize the hospital. This resolved a fundamental issue of many years’ standing. The question remained of whether the AZG was to stay where it was, on the edge of the inner city, or would have to move elsewhere. While the hospital had chosen the first option in 1967, two years later the urban planning department voiced its preference for the second. Before deciding to do battle with the city on this issue, the hospital consulted the Institut für Krankenhausbau in Berlin. The advice given by this institute of hospital construction confirmed the possibility of new build and refurbishment on the existing site. Between 1969 and 1975 the AZG presented a number of alternatives. It was clear that the only way to win over the city was with firm projects.

In 1978, armed with a Development Plan drawn up two years earlier, Kruisheer and Hallink presented a provisional structure plan. At its core was a Central Medical Complex. The structure plan made provision for demolishing large parts of the original hospital. These could only be removed after their duties had been transferred to the
Three possible models according to the 1976 development plan
[trend model, organization model, integration model]
The linear structure cedes to a quadrangle, 1988

The AZG under construction
new build. So this had to be built first. The only way to achieve this was to fully develop the green lung. Then the original pavilions could make way for the (?????) next phase of the new build. This way, the ensemble of Van Nieukerken and his successors could be removed in stages to make room for an almost entirely new building. The designers made constant reference to the standard programme for academic hospitals, the so-called Westerprogrammering. Jan Wester had begun writing this hospital programme in 1967. Ten years later it had expanded to over eighty volumes. The government hoped that this brief would keep down the costs of new build for the academic hospitals in Amsterdam, Leiden and Utrecht. Groningen, originally the fourth member of this fraternity, looked likely to miss out as the city council clung to the idea of expanding the hospital in discrete departments, such as the one for gynaecology and obstetrics. Accelerated funding would only be made available if the new build were to adhere to the demands of Wester’s programme. This was arguably one of the motives for the AZG and its architects to proceed from this document when drawing up their plans. The AZG had roughly the number of beds the ‘standard programme’ considered requisite for a full-fledged academic hospital, but the existing buildings covered only 70 per cent of the surface area Wester regarded as necessary for this purpose. Accordingly, the structure plan made provision for more than clustering and replacing buildings and foresaw expansion on a major scale. The question was whether this could be done without saddling the city with a medical behemoth difficult to keep in its place.
Construction of the Central Medical Complex
Kruisheer+Hallink had proposed a Central Medical Complex (CMC), which in the sketch design of 1978 consisted of two parts. The northern half housed the department of internal medicine, the southern half the surgery department. The new hospital occupied the land extending from a straight line at right angles to Oostersingel level with Walstraat to the south point. Its structure was simple. Along each side of the elongated CMC was a zone of outpatient clinics with the wards above that. Open streets separated these zones from the central portion. Kruisheer+Hallink placed square to the elongated axis an internal medicine axis, a children’s axis, a surgery axis and a neurogenetics axis. This gave an easy-to-read linear structure with a zoning comparable to that of Wester’s standard programme. The height was restricted to medium-rise, the axial system giving a street network that seemed to slip effortlessly into the urban fabric. The architects sought to integrate it to the fullest, in accordance with the ideas of the Hospital, Human and Modern foundation. The outpatient clinics were visible not just from the interior streets but also from the outside. To flesh out the structure plan, Kruisheer+Hallink and Team 4 Architecten were teamed together under the name AAA-AZG. Besides the CMC they developed a standard ward building with standard nursing units. The proposal was to start by building those components that could be built without having to demolish the old pavilions first. This simple strategy laid the groundwork for the new build for the AZG. That changes to this strategy were inevitable emerged during the plan’s development. Kruisheer’s
ideal of integrating the hospital in the urban structure was relegated to the background in stages. The 1980 structure plan introduced a way through between Oostersingel and Petrus Campersingel. This countered the city council’s objection that the hospital grounds presented an impenetrable barrier. The streets between the Central Medical Complex and the outpatient clinics would meet at this connecting passage, making this an ideal place for the main entrance. This freed the way to doing away with the individual entrances to the clinics. This was one of the decisions taken by Jan Hamel when he took over as hospital director. He considered a hospital with so many entrances to be not only unmanageable but also confusing to patients and visitors alike. The linear structure in the draft proposal ceded to a quadrangle closed off in the north by a side street (later to become the shopping street) bounding the CMC. This quadrangle would be connected to the city only by way of the main entrance and via a second entrance at the gatehouse. It took a long time to decide on the form the main entrance should take. Kruisheer was against a grand gesture. This ran counter to his ideas about architecture. More than that, it would emphasize that the axial system with open ends locking into the urban fabric, had been replaced by a closed ring road. In 1984 or thereabouts it was decided to roof over the interior streets, thereby upgrading the inner ring road to the status of main access. In 1985 the government placed a limit of 1056 on the number of beds. Parking was only permitted above ground to keep costs down. These changes led in 1987 to a new structure plan. In it, virtually all the original buildings in the hospital grounds made way for parking space, including the ‘neurotics’ wing of the old psychiatry department, which had survived all preceding plans intact. The new plans were well under way when a number of drastic modifications were pushed through that would give the AZG the character it has today.
BUILDINGS

AAA-AZG (Kruisheer+Hallink and Team 4 Architecten), Central Medical Complex

The Central Medical Complex occupies the heart of the new building. It is where most of the facilities for treatment (including 22 operating rooms), diagnostics, research and education are concentrated. By combining these facilities, most efficient use can be made of the equipment and rooms for diagnostics and treatment as well as those for education. It also stimulates cooperation between the different disciplines.

A helicopter platform would later be constructed on the CMC's roof that would connect directly to the emergency department, which was originally designed at the front of the building but became internalized when the entrance hall was added at a later stage.

AAA-AZG (Kruisheer+Hallink and Team 4 Architecten), ward buildings

Nine ward buildings surround the CMC, abutting the two interior streets. On the ground floor of each is an outpatient clinic with three or four storeys of wards above it. The common rooms border on the interior streets, where they have a balcony. The patient rooms lie along the outer side and have a view across the city. The ward buildings are for the most part identical in design. White aluminium panels clad the outer side, with panels in soft hues facing onto the interior streets.
THE PATIENT COMES FIRST

The patient comes first – surely this speaks for itself. How else could it be? And yet this has been a much-repeated slogan since the 1970s. Evidently patients have often had the feeling that the hospital is more about other matters than about themselves. They feel they are not taken seriously; they do get treated but it seems as though they play no part in this. In the 1960s criticism of this state of affairs mirrored protests about the social system: this was said to ‘alienate’ people from their true nature. So did the hospital, it was felt, and in that sense the ‘medical bastion’ was a scale model of an oppressed society. The alternative was a system that proceeded from the patient’s personality and didn’t simply reduce them to an object with an ailment that needed attending to. This other approach to patients required another type of building. In the 1970s the ‘Hospital, Human and Modern’ working group sought to determine the criteria this building type should satisfy. A small scale, congeniality and integration in society were the principal themes, with low-rise structures replacing the ‘high-tech’ high-rise.

During the course of the 1980s ‘the patient comes first’ lost its slightly rebellious edge. Various alternative models to organize health care became popular, including the American Planetree model, which put people at the forefront. Patients were enabled to make their own decisions by being actively involved and well provided with information. In those same years the ideas about a ‘healing environment’ and ‘evidence based design’ drove home that an environment regarded by patients as positive has an impact on the process of healing. So if regaining personal sovereignty can be regarded as significant in human and political terms, it also had an effect on the hospital’s raison d’être, namely to aid patient recovery. Part of the solution lay in passing on a share of the medical staff’s responsibility to the patients. This met their wish to be taken more seriously as people. It additionally reflected two general social tendencies. The first was economic: consumerism was seen as the principal force driving the economy, presupposing that the customer was king. Customers would like to make choices in the health care sector too. Since 2000, the internet has increased the possibilities of organizing more and more services yourself – you can book journeys on your PC instead of having to visit a travel agency. Similarly, patients can access from home a share of the medical information they require. Indeed, the internet may well change the interaction between patient and hospital as radically as is the case in, say, the travel branch. There are interesting examples of this but the end is still a long way off. And so economic and technological innovations are giving new meaning to the old slogan that ‘the patient comes first’.
CHAPTER 6

1987 — 2004

The hospital as a city within a city
‘A large hospital with many patients and visitors and a large staff has something of a public place in a city’
As the 1980s came to a close there was little left of the idyllic green setting that the APSAZ had been at the start of the 20th century. Cranes had taken over the green lung of 1927. The plans made provision for large car parks on all sides of the new complex. Everything had to give way; next to nothing remained of the old departments. There were objections to the undue quantities of brick and metal. The low quality of life was a further subject of concern. Admittedly, the negligible height prevented the AZG from being a colossus that crushed its surroundings, but it seemed just as unlikely that the new build would have any great appeal.

Originally, the intention was to construct the hospital in stages, but in 1987 the board was granted permission to complete it at a single stroke. Financial resources were made available to speed up the construction process, so that the building could be taken into use in 1996 rather than at the onset of the next century. The board and the city council still needed to reach agreement on how to access the hospital, solve the parking problem and give form to the main entrance. Although construction was at an advanced stage by then, it still hadn’t been decided what the front of the building and the main entrance were going to look like. In 1989 the AZG board, chaired by Jan Hamel, brought in the Rotterdam architect Wytze Patijn. Even before he was officially commissioned, they together decided on the form the main entrance should take, namely an enormous canopy oversailing the main entrance hall with below it the entrance to the parking facility, all in the immediate path of approaching visitors. This way you would enter the hospital without losing your bearings. Patijn designed an urban plan for the south point. This plan was to make that part of the inner city more attractive and easier to reach. It included an access route that was to directly connect the new entrance to the ring road around Groningen. It also introduced a new road between Petrus Campersingel and Oostersingel.

In 1991, hospital and city reached agreement on relinquishing to the city the grounds south of the way through between the two above-named roads, where parts of the psychiatry department building of 1916 were still standing. Originally the idea had been to build a new energy plant there and set aside the rest of the site for parking. When Jan Hamel succeeded in convincing everyone that there was enough room to build an eighth ward building without having to demolish the old boiler house and that this could be converted into an energy plant, the hospital board decided to sell the south point to the city. The profits were used to construct a parking facility for 700 cars below the main entrance and approach road. The remaining buildings on the south point made way for facilities related to the hospital, including a care hotel. The Board of Directors resided above the main entrance hall on the south side as if on a ship’s bridge, and as such was spatially integrated in the new build. The architecture of the entrance hall and the parking facility beneath it are the work of Wytze Patijn. He also supervised the design and layout of the public spaces, including the interior streets and courtyards, as well as the application of art in the hospital. He suggested that the waiting rooms of the outpatient clinics should be the work of different interior designers. Even after being appointed government architect in 1995 Patijn remained
The hospital as a city within a city

Wytze Patijn, development study of the main entrance and south point, 1989

First floor plan
The hospital as a city within a city

Wytze Patijn, plan for fitting out the public outdoor spaces
committed to the hospital new build, converting the old boiler house into an energy plant. In 1898 his office merged with KuiperCompagnons, and continued its work under that name.

A noteworthy feature of the hospital is the separation between the public realm and the logistics. All transport takes place by way of an underground network of tunnels, as earlier proposed by Jan Kruisheer, extending throughout the complex. The public streets and squares are filled with a wealth of facilities including a restaurant, supermarket, internet café, travel agency and bookshop. In his design, Patijn avoided a typical hospital interior, aiming instead for an urban ambience. This way, the new AZG would become a city within a city. On 15 May 1997, the new hospital was opened in fine style. Not that this marked the end of all further expansion. On the contrary, the complex kept on growing. Its construction made it comparatively simple to alter and add to, but it was still impossible to avoid relocating entire departments. There was no end to the process of displacement and reallocation. Expansion was only an option on the north side. In 2001 work began on building a facilities block, linked by an aerial walkway to the hospital proper. The Executive Board moved from the ‘ship’s bridge’ above the main entrance to this new ensemble (‘De Brug’) which connects hospital and university literally like a bridge – hence its name. It further houses a share of the support services, the dispensary, the medical microbiology department and a radiology (X-ray) department. Rising stepwise to a height of eleven storeys, the building stands atop an underground car park for over 800 vehicles.
The hospital as a city within a city

Courtyard
BUILDINGS & VOLUMES

**Wytze Patijn, reception hall, completed 1995**

On the outside the building makes a friendly gesture with the semi-circular wall and the convex edge of the canopy above it. The front side of the hovering roof is borne aloft on slender round columns, its three other sides resting on existing buildings. And yet it scarcely seems to touch them anywhere. Daylight pours in along the wood ceiling to reach deep inside the building. Besides the reception area, the main reception hall contains a visitors’ restaurant, shops and the strikingly designed entrance to the underground parking. The entrance hall attaches on both sides to the hospital's two main arteries, the interior streets. Easy-to-read signage, street names and house numbers show visitors the way. The lighting has been paid particular attention. specially designed light fixtures hang like large dishes in the public spaces.

**Wytze Patijn, indoor car park**

The parking facility has three levels and can accommodate 700 cars. The entrance is on the front side of the main entrance hall, below the forecourt. Lifts and stair emerge in the hall itself.

**Interior streets**

The interior streets feed into the entrance hall and give access to the Central Medical Complex, the ward buildings and the outpatient clinics. These streets have roofs that allow in daylight and can be opened. The interior finishes in the internal streets are to a design by Wytze Patijn Architecten (completed in 1996). Just as a city exhibits great variety in its squares, streets and buildings, so the hospital evokes a variety of streetscapes and ambiances. There is a conventional garden and a tropical garden, a theatre and a sculpture garden. Much thought has been given to the layout with its arresting lighting (by Rob Jansen Lichtvormgevers) and furniture. Art works abound so as to make one’s stay in the hospital more pleasant.

**Courtyards**

A number of courtyards lie along the interior streets between the ward buildings and the CMC. These extend up five storeys and have roofs that allow daylight to penetrate deep into the building. Differences in colour and layout give each courtyard, generously decorated with art works, an ambience of its own.

**Outpatient clinics**

The outpatient clinics are located on the ground floor of the ward buildings (designed by Team 4 Architecten). At the instigation of Wytze Patijn, who acted as supervisor from 1988 on, different interior architects were engaged to work on the individual clinics, so that each has a character very much its own.
The hospital as a city within a city
Wytze Patijn, power plant, intermediate phase completed 1993, final phase 1997
This converted boiler house dating from 1942 is sited right behind the hospital new build, where it now does duty as a thermal energy plant, rendering the hospital self-sufficient in all its energy needs. The former coal-fired boiler house now contains such up-to-date equipment as generators, transformers, steam boilers, high-voltage units, expansion tanks and control cabinets, all present on each floor.

Wytze Patijn (KuiperCompagnons), mortuary, 1994–1898
Mortuaries are generally constructed of such materials as steel, glass and tiles in the interests of a sterile environment. Because the building is occasionally used for viewings, this one is divided into a publicly accessible space and an enclosed workspace. Coloured materials and wood in the public section seek to impart a suggestion of warmth.

Wytze Patijn (KuiperCompagnons), De Brug ('the bridge'), opened 2005
This building literally forms a bridge between the hospital ensemble and the buildings of the medical faculty, which have together constituted the University Medical Center Groningen (UMCG) since 2005. It is a facilities block atop a multi-storey car park for 800 cars. To be in keeping with the high-rise of the former women’s pavilion on the north side, the low-rise on the side to Oostersingel and the scale of the new build of the Academic Hospital, the firm designed a complex that was not to have an effect of great mass. On the street side the ensemble has just one storey, then there are two volumes of five and seven storeys and next a twelve-storey high-rise. Each part has its own character, with colour and materials serving to tie them all together. Aerial walkways connect the existing hospital buildings with the medical faculty. A cycle route from Oostersingel to Petrus Campersingel runs below the facilities block where it is marked by two semi-cylindrical end buildings.
Entrance hall

De Brug facilities block, 2005
The hospital as a city within a city

Interiors of outpatient clinics
The hospital as a city within a city
The hospital as a city within a city

Courtyard

Shopping street
The hospital as a city within a city
HEALING ENVIRONMENT

The concept of the Healing Environment is grounded in the notion that the physical setting in which people live and work can influence their health. Psychological effects, particularly efforts to reduce stress, are a big part of it. Roger Ulrich, one of the pioneers of Evidence Based Design (EBD), the scientific field of study behind the concept of Healing Environments, has been studying the effect on the healing process of the view patients have in or from their room. This is regarded as a major breakthrough. Research has shown that patients who look at paintings of nature are less prone to stress. Patients who see trees through their window instead of a wall recover faster and are less likely to suffer from complications. This group is also found to require less medicine. Unquestionably, the most important aspect of this discovery is the direct relationship between a physical – in fact largely visual – given and its measurable effects on the patient. Building on this line of research, the theorists of Healing Environments and EBD have widened the range of these concepts enormously. The essence of Healing Environments is that a well designed building can contribute to the recovery process.

What is it that makes a hospital a Healing Environment? An important element is the contribution made by nature. Just having a view of nature can be beneficial. Well-planted courtyards, with or without a roof, can give the entire hospital a more natural ambience. Another key consideration is to eliminate what there is of the unsettling, mechanical and clinical character of hospital buildings. In Jan Hamel's opinion, a hospital's ambience must take up a middle ground between the familiarity of a community centre and the solidity of a bank.

A large hospital with many patients and visitors and a large staff has something of a public place in a city where a cross-section of the population spends time. The UMCG provides pleasant, safe and weather-protective urban spaces, including streets and squares. Pitted against the urban aspect is one of domesticity: the spaces where the patient can be alone or in restricted company can be made agreeable through the use of colour and materials. Even the rooms that are impossible to normalize can enjoy certain basic qualities. Privacy is of particular importance, and this should begin at the hospital entrance where patients report when they first arrive. Freedom of choice is another aspect that contributes positively to the patient's stay. Important also is that patients feel they are in control; nor should they ever be allowed to feel they have lost that control – for example, if the signage in the building leaves something to be desired.
CHAPTER 7

2005

University Medical Center Groningen (UMCG)
‘This new build will have to meet the highest demands: nothing but state-of-the-art architecture will do’
In 2005 the medical faculty of the University of Groningen and the AZG joined forces as a new entity, the University Medical Center Groningen (Universitair Medisch Centrum Groningen or UMCG). It was clear even as the facilities block was being built that there was once again a real danger of lack of space. To compound matters, there were visions of a chaotic expansion with no underlying plan. As in 1927 and 1955 it required a plan of action, and as in 1927 this could only be brought about by making changes in the hospital’s spatial structure.

In 1997 the city drew up the CiBoGa plan, which was to be the basis for a new zoning plan (Bestemningsplan CiGa) for the land formerly occupied by a circus ground, a goods transportation service and a gasworks (CiBoGa is a corruption of the three Dutch names). The former goods transportation site or Boden site, a hefty triangular area north of the UMCG grounds, was omitted from the zoning plan, as the UMCG’s impending lack of space required that this area should be developed differently.

In 2007 Wytze Patijn of KuiperCompagnons drew up a structure plan and concept plan for the Boden site that included the UMCG. The plan adopted an intensive use of space as a means of achieving sustainable urban development, where possible by dual land use. It proposed an urban mix and clustering of functions: residential, services, health care, research, education and culture in combination with basement parking. Crucially, it regarded the UMCG as part of the city, with good accessibility and connected to the public transportation network. It sought also to enlarge the water surface area and enhance the green structure.

In 2010 the city presented a new zoning plan that added the Boden site to the UMCG and drew it all into the urban context. The one obstruction to this plan was a street, Antonius Deusinglaan. This hurdle could only be taken by banning all traffic from it except cyclists and pedestrians. All motorized traffic could make use of a new road, Vrydemalaan, from then on marking the northern edge of the UMCG. The planning area also took in the remaining parts of the former CiBoGa site. This saw Kruisheer's perspective of a hospital ensemble integrated in the urban fabric become a reality. Those remaining parts, known as the CiGa area, were largely given over to housing. This urban infill is a fine example of integrated area development. Key to the plan is the way the parking problem has been solved. A quarter of a century earlier, street parking had meant the demise of the old town centre. Even the green space had to make way for it. Now the parking issue had been resolved below ground. Of the large parking facility below the CiGa site, 300 of the 1100 spaces are for the UMCG. At the northern entrance on Vrydemalaan there is basement parking for a further 300 cars. These and the more than 800 spaces below the facilities block and upward of 600 below the main reception hall on the south side meant that cars no longer ought to negatively impact on the public domain.
The hospital as a city within a city

Wytze Patijn (KuiperCompagnons), UMCG structure and concept plan for Boden site, 2007
The hospital as a city within a city
In June 2011, Vera Yanovshchinsky, Wytze Patijn’s successor as supervisor, presented her ‘master plan for the UMCG’s public realm’. It replaced a draft plan made in 2009 that itself had taken the place of a proposal made by Patijn in 2007. The new scheme sought to resolve two issues: slipping the entire site, existing and new together, into Groningen’s urban structure, and clearing up the cluttered layout of the public realm and green spaces between the buildings. The proposal at the same time lent direction to the replacement new build on the east side of the complex, and to a number of smaller-scale buildings at Bloemsingel and along Oostersingel. The master plan was allotted a period of twenty years for its implementation. This explains its strategic character: with the broad lines laid down, the designs for individual components are to collectively meet the highest standards in architecture and landscape architecture as and when they leave the drawing board.

It was deemed necessary to slot the complex into its wider context, the principal theme of Kruisheer’s plans of around 1980, because in the meantime the UMCG had taken on the character of an assemblage of large, self-regarding structures that turned a cold shoulder to the surrounding built fabric. To change this situation, Yanovshchinsky proposed having the eastern interior street bleed seamlessly into a city street with a sheltered walkway that extends as far as the northern border of the grounds. Two cross-connections were to meet it at right angles, with bridges across the water to Petrus Campersingel. This would render the complex legible for cyclists and pedestrians. Particular attention has been paid to the edges of the complex, where the plan applies much park-like green space bordering on the widened watercourse at Petrus Campersingel and where the partly new buildings are to engineer a gradual transition to the surrounding context.

The spaces between the buildings have a wide variety of designs dating from different times and a low quality ambience, making this zone anything but inviting. Yanovshchinsky opts for an explicitly urban response whose demands on the various exterior spaces are directive for the architecture. Accordingly, these spaces are now fixed in every detail, section/profile, paving, street furniture, lighting... The only aspect of the new build that has been fixed is the image quality it has to satisfy. The exterior spaces bear the names of classic urban ensembles – a reflection of urbanism’s rebirth as a design discipline.

At the plan’s core is the ‘promenade’, as the central axis is called: a pedestrian route with below it a dispatch tunnel. The promenade is to take on the resonance of an urban throughway. The ground-floor ‘plinths’ of the large buildings on either side are transparent; this is where the main entrances are. The varied ‘sett’ paving extends right up to the frontage; rows of trees create a green ambience. Halfway along the route is a square with a fountain marking its intersection with De Laan (the avenue), a route for pedestrians and cyclists slicing through the complex. Here too the sett paving extends from facade to facade and there are rows of trees. The same holds for De Straat (the street), the second east-west connection. This converges on the east side of the promenade with a route for cars to the basement and a lorry track to the heart of the Central Medical Complex.
Situation in 2011

Vera Yanovshtchinsky, master plan for the UMCG’s public realm, 2011
At Bloemsingel the plan constructs a ‘Plein’, or square, with trees along its edges and partly new flanking development; a stone platform strengthens the square’s qualities as a place to spend time. Regional planning has made provision for a tram route and one of its stops is projected at this place. The square is one of the locations where new build is concentrated; its character has to be urban, so close as it is to the city centre. The extensions to the retained old buildings are to join with the square as a single entity.

At the side entrance, which was reached via the gatehouse in the old set-up, space has been made for a ‘drive’ with places for taxis to stop and a drop-off/pick-up point (Kiss + Ride). Lamps on cables have been designed for the lighting. A park (Bolwerkpark) marks the eastern boundary of the hospital, which was originally designed within the fortifications, hence the park’s name. Its grassy expanse is dotted with large solitary trees and crossed by a winding path. Bolwerkpark meshes well with the new buildings along the Promenade, provided as these are with green ‘courts’ on the outer side of the complex. This new build will have to meet the highest demands: nothing but state-of-the-art architecture will do here. The image quality is defined by ‘technical’ materials such as aluminium, steel, glass and concrete.

At Oostersingel on the east side, there is to be an urban park (Stadspark) passing behind the partially retained buildings on its way to the square. It is big enough to accept relatively small pavilions with striking sculptural forms, particularly the roofs. The park marks the transition between the large-scale buildings of the UMCG and the more modest scale of the surroundings. Here too there is a winding path, separated from the lawns by taller elements. Yanovshtchinsky’s plan gives pedestrians and cyclists priority, with cars kept off the grounds wherever possible. Hanzeplein gets its own Kiss + Ride facility. The plan attaches great importance to sustainability. This can be read off in the materials, the efficient use of energy and the efforts to achieve design qualities that invite the public to treat the hospital with due care. The intention is to run all the lighting in the hospital grounds on solar energy.

In 2003 the University of Groningen enlisted the services of two world-class architects for two new buildings on the corner of Antonius Deusinglaan and Oostersingel. UN Studio was commissioned to design a research (animal-) laboratory and Thomas Rau a building for educational purposes. Both were completed by 2007. Rudy Uytenhaak landed the commission to design the premises of the European Research Institute for the Biology of Ageing (ERIBA), which went into use in 2012.

A number of building projects are planned for the coming years. In the zone on the city side, where several discrete buildings are projected, there is to be a UMCG facility on the south side of the gatehouse that may include an out-of-hours medical service. Also in the pipeline are the new build for a University Psychiatric Centre and a department for child and adolescent psychiatry to a design by Vera Yanovshtchinsky, both in the zone on the side of Petrus Campersingel. There are also plans for a proton therapy centre in this zone. In proton therapy, a particle accelerator directs a beam of
Subareas

Impression of subarea
The hospital as a city within a city

Vera Yanovshtchinsky, artist’s impressions of the new build for the proton facility, 2012
protons at tumours with extreme accuracy so that the surrounding tissue is more effectively avoided than in other methods. The ERIBA building on the Boden site constitutes the heart of the Healthy Ageing Campus Netherlands. It also houses the scientific research centre of the LifeLines study, with a biobank containing the biological data of 165,000 participants. Here on campus are facilities for clinical research, a Research & Development hotel (R&D) where companies can hire laboratory and office space, and laboratories. This is where research is done into the effects of lifestyle changes in terms of nutrition and exercise.

The plan includes several major remodels. One concerns the operating theatre, which needs bringing up to date. Another is for the intensive care department. In the new build portion of the hospital taken into use in 1995, the intensive care units were fully internalized and without windows. The thinking these days is that daylight is important for patients and staff alike, so the ICUs for surgery and paediatrics are being refurbished accordingly.

Logistics and storage facilities are to be combined and relocated out of town, as space in the UMCG grounds is limited and this way can be used more efficiently, also by working together with other hospitals. This means that other hospitals in and around Groningen could make use of a joint infrastructure of electricity, emergency power, data lines and the like. There has been a logistics centre for the UMCG and the Martini Hospital at Eemspoor industrial estate since 2007. A new building for central sterilization is at present being developed by SteriNoord, a legal entity shared by the UMCG and a hospital group (Ommelander Ziekenhuis Groep). The group’s two hospitals in Delfzijl and Winschoten are to share this centre with the UMCG. Eemspoor also has a wide range of storage facilities, the most remarkable of which contains 13 million samples. These are kept at a temperature of minus 80°C in a gigantic freezer operated by a robot. In this building, known as the LifeStore, biological materials from those participating in the LifeLines biobank are to be preserved for at least thirty years. The UMCG is also building a facility of 150 freezers at minus 20°C for storing biomaterials for clinical cohort studies. Lastly, there is an ICT data centre, now at the preparation stage, partly given over to the digital storage of data and back-up facilities for patient care at the UMCG.
BUILDINGS

Thomas Rau, education building, 2007
Sustainability is the driving force behind the architecture of Thomas Rau. Rau’s philosophy is that of a ‘one planet architecture’. His designs are to make clear that human actions impact on nature and natural resources. So the design and the end-result have to be sustainable, but the building must pass on that sustainability to the people that use it.

UN Studio, research lab, 2007
Daylight must be kept out of the research rooms of this laboratory at all costs. On the other hand, two conical wells set centrally in the building deliver daylight into the circulation areas. The opaque frontage has a cladding of aluminium slats. Some of these undulate vertically in a rhythmic alternation with their neighbours. Areas of vivid yellow and green visible among them give the facade a suggestion of movement and plasticity. The building’s entrance is up on the first floor. A footbridge connects the research lab with its neighbour.

KuiperCompagnons, skills lab, opened 2007
The skills lab of the Wenckebach Institute is for training in surgical and non-surgical techniques. In the basement are frozen storage rooms containing human material used for educating students in the science and practice of operating. With its cladding of orange-red brick pointed up in a pattern, the building accords visually with the neighbouring power plant. The main entrance is via a sheltered walkway hitched to the courtyard structure of the hospital.

KuiperCompagnons / AG Architecten (interior), UMCG oncology outpatient clinic/ Cancer Center, 2006-2010
This multi-purpose outpatient clinic for cancer care stands between the skills lab and De Brug. Built between 2006 and 2010, it can be reached from Fonteinstraat, which has been extended and roofed over for that purpose. The oncology centre is where all relevant outpatient activity is concentrated. This has many advantages for the patients, who no longer need to commute between departments scattered throughout the hospital. The building has three floors, of which the ground and first floors are accessible to patients. The second floor is mainly given over to rooms for the staff and flexible workspaces. A large central well with a grand stair supplies the interior with daylight.

Rudy Uyttenhaak, ERIBA, opened 2012
In the European Research Institute for the Biology of Ageing (ERIBA), front-rank scientists and academics from numerous disciplines carry out research into ageing. The research building, sited along Antonius Deusinglaan, meshes well with the buildings of the Medical Faculty. The brief called for laboratory spaces and other research facilities, places where researchers can meet informally, and more public spaces. The building admits to two ambiences, an open, stepped layout containing the ‘informal’
places and well-lit, north-facing functional laboratory facilities. Unrestricted views from the lab zone of the informal places are to facilitate the desired encounter and collaboration between the researchers. The frontage consists of specially designed and developed elements in lightweight eco-brick and masonry fins.
The hospital as a city within a city

KuiperCompagnons, skills lab, 2007
The hospital as a city within a city

Rudy Uytenhaak, ERIBA, 2012
The term may be English, but its roots are in the UMCG and its predecessors. Why is this now established concept all at once a priority, not just in Groningen but throughout the Netherlands and far beyond? It is because there has been an enormous increase in the number of people who are unhealthy for an ever greater part of their lives. This is because people are living longer, whereas the age when signs of ageing first appear has remained the same. These appear at about the fortieth year, and it will stay that way if nothing is done. It also means that the period during which people appeal to the health care system is getting steadily longer. Add to that the effects of population ageing – almost a quarter of the population will be 65 or older in 2025 – and it should be clear that this trend is a public health time bomb. The growing cohorts of unhealthy aged are making the system prohibitively expensive. Healthy Ageing entails a programme targeted at getting people to live in good health for as long as possible, and so contribute to considerably improving the quality of life, reducing the risk of health care becoming unaffordable, and – an express wish of the authorities – taking an active part in furthering community life for as long as they can.

How is this to be done? The key lies in amassing scientific information about the causes of ageing. The symptoms are clear, but as yet too little is known about why they occur much earlier in some people than in others. One thing is certain: a major influence besides genetic factors is lifestyle. One of the characteristics of research in this field is that it isn’t limited to the group of people who are already victims of the incapacitating effects of old age. To discover the consequences of different lifestyles will require charting the way of life of vast numbers of people. And it is here that the UMCG has built up a sizeable head’s start. In Groningen they have been working for decades on so-called biobanks, repositories of biological samples from people who have been followed for many years. The population in the northern provinces of the Netherlands has proved representative of that of Western Europe, and because these northerners tend to stay put they make an ideal subject for study. We already know a great deal about the relationship between lifestyles and, for example, lung disorders, diabetes and obesity. The most ambitious study bears the name LifeLines, in which 165,000 people are followed for at least thirty years. The UMCG’s role as pioneer has culminated in the founding of ERIBA, the European Research Institute for the Biology of Ageing. This covers all the relevant fields, from genetic research to the effects of environmental factors.
The hospital as a city within a city

Passage between the hospital and De Brug
The hospital as a city within a city
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