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David Freis

Angaben zur Veröffentlichung / Publication details:

Freis, David. 2023. "Germany's medical centers, between utopia and disillusionment." In *Building to heal: new architecture for hospitals*, edited by Tanja C. Vollmer, Andreas Lepik, and Lisa Lutsch, 26–41. Berlin: ArchiTangle.

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Germany's Medical Centers, between Utopia and Disillusionment

Today it is almost impossible to imagine medicine without hospitals. Countless examinations and therapies take place there; so do the majority of major surgical interventions and intensive care treatments. The vast majority of people are born in hospitals, and a great many die there.[1] Aspiring doctors learn their profession in hospitals. This was not always so: for a long time, the hospital and its predecessors played little role in medicine. The hospitals of medieval Europe focused on housing the poor and sick and providing charitable care; medical treatment was of secondary importance at best. Not until the Age of Enlightenment did public institutions equally devoted to the treatment of the sick and to medical education begin to appear in European capitals (fig. 1).[2]

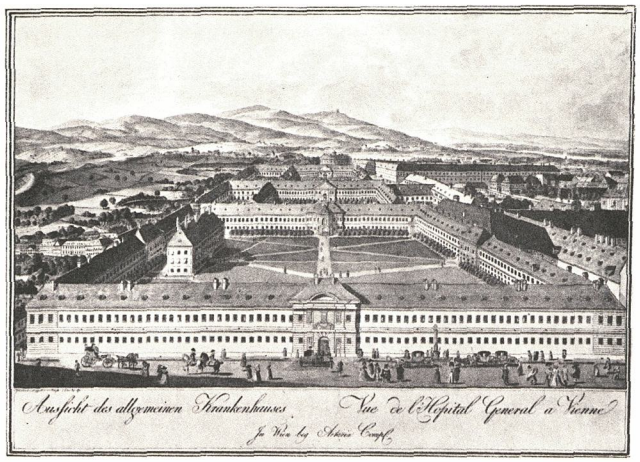


Fig. 1 General Hospital in Vienna, colored engraving from 1784

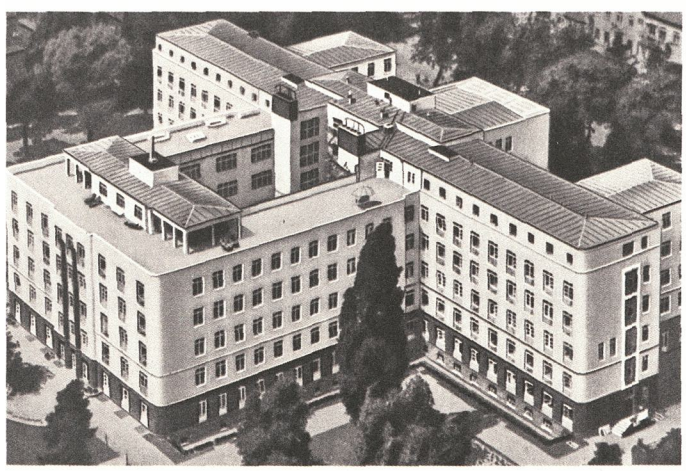


Fig. 2 Ernst Kopp, Martin Luther Hospital, Berlin, 1931

In Edinburgh, Paris, Vienna, and Berlin, the history of the modern hospital began in the late eighteenth century out of an interaction between architecture, medicine, and politics. Commissioned by the state, large institutions were built, focusing entirely on medicine. With specialized departments, bright, well-ventilated wards, and separate sanitary facilities, these complexes were designed to treat sick people under hygienic conditions and to promote their recovery. Advances in scientific medicine soon necessitated remodeling, expansion, and new buildings; all the same, a new type of architecture had been introduced—the general hospital—and its layout was to remain influential for over a century.[3]

The emergence of the welfare state in late nineteenth-century Germany made the hospital the central institution of modern healthcare, and in the decades around 1900 this led to a rapid increase in new construction and in bed numbers. Thereafter, hospital buildings underwent several distinct phases: from decentralized, flat, pavilion-style facilities to multistory blocks with independent clinics, to the more compact, taller buildings of the 1920s. The first high-rise hospital buildings, up to twenty-seven stories with reinforced concrete skeletons, were built in the United States from the second half of the 1920s. In German hospital building, too, vertical structures became more important, although until the 1960s the new buildings remained smaller and lower than American high-rises.[4] In the same way that economic considerations and scientific knowledge shaped medicine, so hospital architecture

also turned to functional and objective aesthetics. The hospital was increasingly thought of in terms of efficiency: as a sort of health-making factory (fig. 2).

Most German hospitals today date from a construction phase between the 1950s and the 1980s. Like the hospitals of earlier eras, they result from an interplay between architecture, medicine, and politics. During National Socialist rule, hospital construction had been neglected—unless it served to prepare for war. And then many were damaged or destroyed in the Second World War. Moreover, medicine, too, was in a state of upheaval in the decades that followed. New therapeutic possibilities—antibiotics, chemotherapy, psychotropic drugs—now changed the disease patterns that hospitals were treating, thus leading to the closure of specialized facilities, such as tuberculosis sanatoriums and many psychiatric institutions. New large-scale equipment was brought into the hospitals, newfound specialties became established, and student numbers rose steadily. Even where old buildings had survived the war largely unscathed, it usually seemed more practical to build new hospitals for a new medicine.[5] Although there was no uniform type of building, there were typical features: "Clear, simple, cubic structures with predominantly flat roofs and large glass surfaces. They are mostly functional buildings."[6] The use of reinforced concrete frameworks and elevators made it possible to build higher, and the shorter, vertical routes thus created were also intended to reduce through traffic in the wards (fig. 3).

Right from the early 1950s, preparations were underway for building the technically most demanding, largest, and most expensive category of hospitals. These new university hospitals introduced the type of large medical center (*Großkrankenhaus*) still predominant today. Munich made a start with the Großhadern Medical Center, its overall plan having been commissioned by the Bavarian State Parliament as early as November 1952 (fig. 4).[7] However, it was the Free University of Berlin's clinical center in the city's Steglitz district that proved the real trailblazer. One reason why the new building was needed was because the buildings of the university's old hospital, the Charité, in the east of the now divided city, were in the German Democratic Republic. Furthermore, in 1958, against the backdrop of the Cold War and East–West ideological competition, the United States committed to financially support a new building. Planning and construction were carried out under the direction of the American firm Curtis & Davis of New Orleans, with support from the German architect Franz Mocken.

The result of this transatlantic cooperation was a state-of-the-art hospital of a new type that was to translate the organization of American medical centers into a German university hospital. The idea was to integrate all the functions of a university hospital—patient care, training, and research—into a single building, so as to efficiently centralize such essential facilities as laboratories and operating rooms, and at the same time to counteract the fragmentation of medicine under the

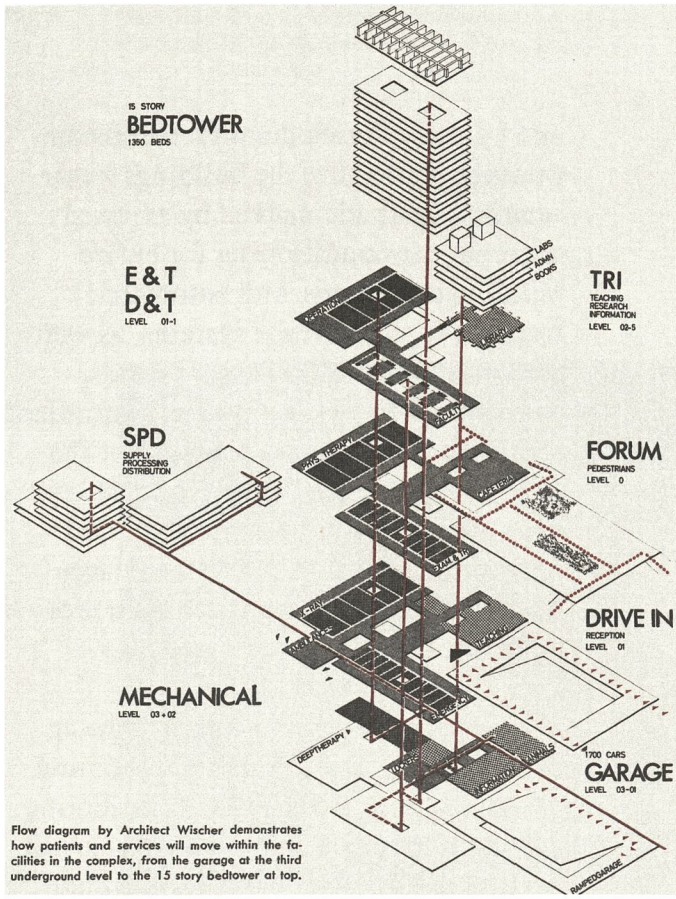


Fig. 3 Cologne University Hospital

Fig. 4 Großhadern University Hospital, Munich

pressure of increasing specialization and subdivision into individual specialties.[8] The Steglitz Clinic promised a new medicine, based on the US model. The hierarchical structure of German university medicine, with its independent "clinic kingdoms," would give way to a departmental system that would open the path to cooperative and democratic medicine. But after the clinic opened in October 1968—against the background of student movement protests—it was already a matter of bitter dispute whether this promise had been fulfilled (fig. 5).[9] Despite the controversy, though, the press and television celebrated the newly opened clinic as a "marvel of medical technology," as "Europe's most expensive and modern hospital," and as a "hospital of the future," but also criticized it as a "futuristic colossus" and an "oversized hospital city."[10] The Steglitz Clinic was indeed the prototype for many other large hospitals in the Federal Republic of Germany. Until the 1980s, new clinical centers built in many university cities pursued a similar concept despite their structural differences. These buildings—erected, for example, in Munich, Göttingen, Augsburg, Münster, and Aachen (and Vienna, too)—did not simply emerge as particularly large hospitals; they established their own building type, embodying the progress in construction and medicine over the second half of the twentieth century. Their common aspiration was to unite many units and functions in one building complex, achieving maximum efficiency by integrating the infrastructure. This was made possible by, among other things, techniques taken from high-rise architecture,

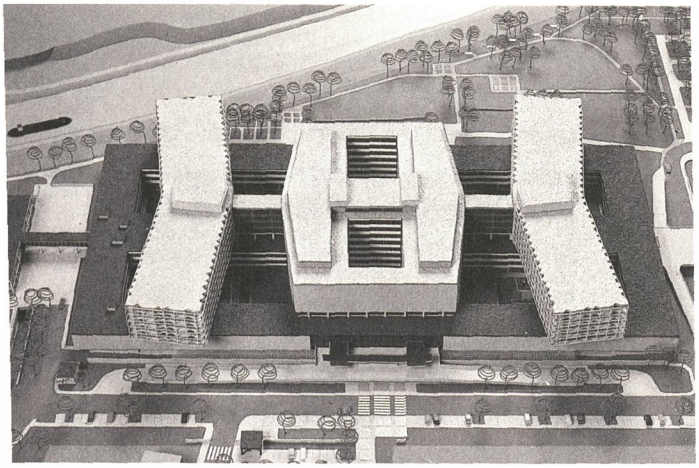


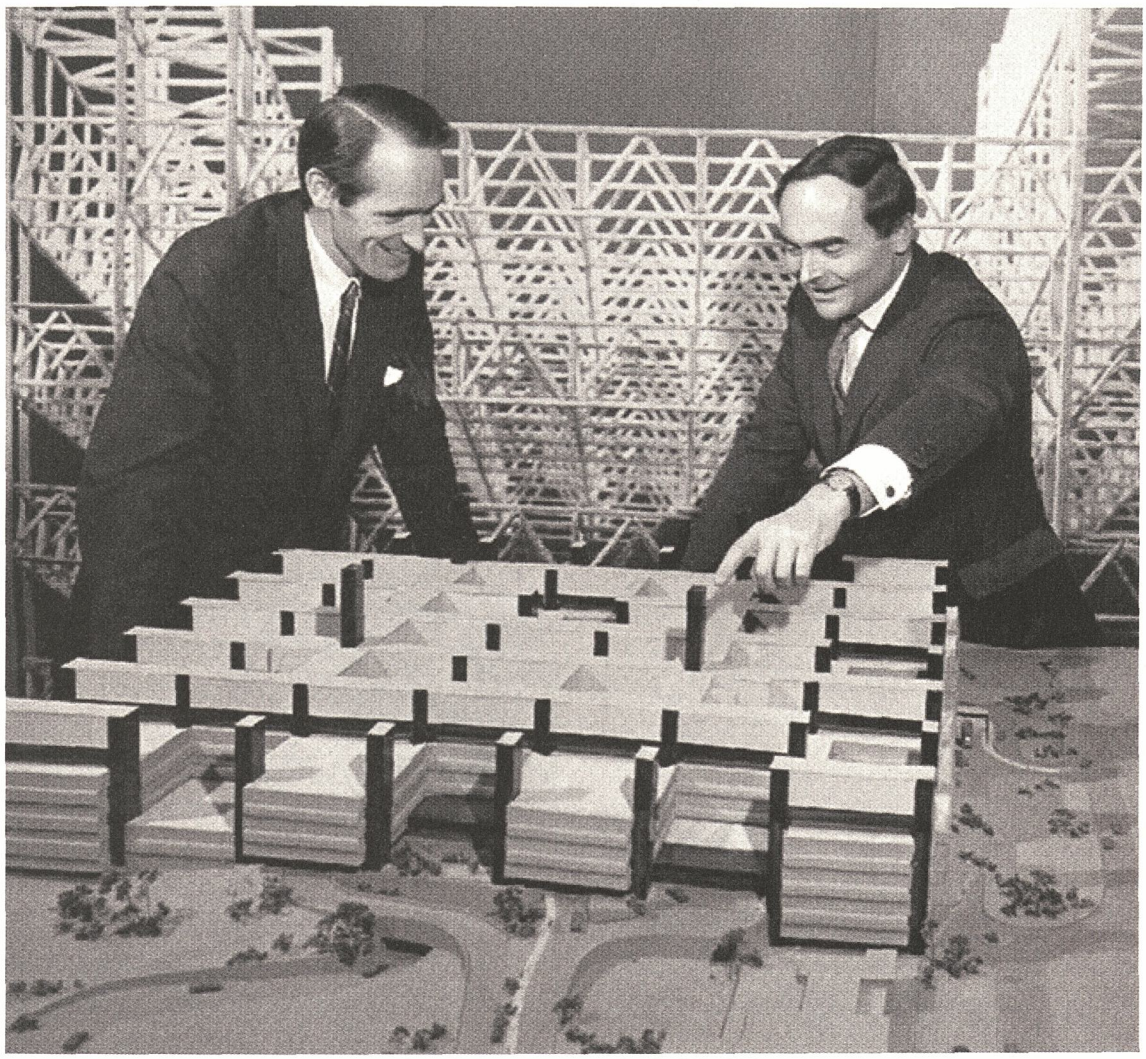
Fig. 5 Model of Steglitz Hospital, Berlin

Fig. 6 Construction site of the University Hospital Münster, 1976

and by using series-manufactured components; it also gave the buildings a characteristic aesthetic marked by exposed concrete, air-conditioning for entire building complexes, and automated transport and conveyor systems, as well as canteen kitchens for frozen foods, automatic control systems, and centralized computers.[11] The urban planning of the postwar decades, driven by the desire to be car-friendly and by zoning the land for future expansion, led to most large hospitals being built on the outskirts of cities (fig. 6).[12]

If large-scale structures were a defining element of architecture in the 1960s and 1970s, hospitals led the way.[13] Combining numerous facilities under one roof turned large hospitals into small cities through which different groups of temporary users—doctors, patients, nurses, therapists, visitors, and students, as well as medical, scientific, administrative, and technical staff—surged along their particular paths. However, already during the long phases of construction, often lasting over a decade, it became clear that the new buildings would only be able to keep pace with advances in medicine if adaptability to future requirements was built into the structure of the building from the outset. This is why the Münster University Hospital, erected between 1971 and 1982, incorporated interstitial spaces for subsequent changes and additions to technical systems.[14] The same architectural firm—Weber, Brand & Partner—went one step further with the Aachen Clinic, in which the basic support structure, built on a uniform grid, is clearly separated from the technical fittings,

Fig. 7 Dean John Evans and architect Eberhard Zeidler next to the model of the McMaster Health Science Centre

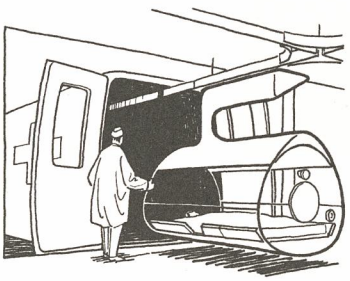


and the installations are at times out in the open. As modular and theoretically infinitely expandable large-scale buildings, hospitals like the Aachen Clinic or the McMaster Health Science Centre in Hamilton, Ontario (fig. 7), designed on similar principles, were prototypical "medical megastructures."[15]

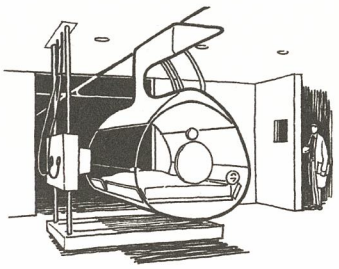
More than almost any other building, large hospitals embodied an optimistic belief in scientific and technological progress that had taken hold during the 1960s, and not only in medicine.[16] While in many places the hospitals of tomorrow were still being built or planned, people were already dreaming of those of the day after tomorrow. The idea of the hospital as a permanently self-renewing megastructure played an important role. Influenced by the opening of the Steglitz Clinic, the medical historian Heinrich Schipperges, in his keynote speech at the 5th German Hospital Conference in 1969, declared: "In the year 2000, gigantic 'medical centers' will already be standing before us: huge healing cities with hospital machines as self-learning matrix systems . . . in short: the disposable hospital of the future made of prefabricated plastic elements."[17] At the end of the 1960s, a patent for moving patients smoothly around the large hospitals of the future attracted particular attention. Patients were to be transported from admission through diagnostic, treatment, and recovery areas in individually air-conditioned capsules suspended from rails (fig. 8).[18] With the technological resources of the space age, the original idea of the hospital as a healing microclimate would be realized. However, this very example illustrates how quickly the dream of the hospital of the future could turn into a nightmare.

In reality, the age of megastructures ended much sooner than late-1960s futurological forecasts had assumed. The first real medical megastructure in West Germany was also the last. The ill-fated construction of the clinical center of the Rhenish-Westphalian Technical University of Aachen began in 1971, but developments in medical technology and new guidelines for lighting and ventilation necessitated revising the plans while it was still underway. Then the ground beneath an already completed foundation subsided; work came to a temporary standstill, and costs exploded. After fourteen years in the building, the clinic was handed over to the university in 1985 (fig. 9).[19] In this project, the idea crystallized of a mechanized medicine of the future housed in a large hospital seen as a constantly self-renewing machine. To this end, the hospital turned itself inside out. At the Steglitz Clinic, functional buildings were still hidden behind a "screen" of concrete, but the aesthetics of the Aachen Clinic were based not on earlier hospitals but on industrial buildings. Ventilation piping and its supporting structure were unashamedly fastened to the facade, lending the building an air of a colorful coalescence of technology and sculpture. The same approach continued on the inside. Untypically diverging from the often aesthetically conservative hospital construction, the architects were clearly referring to the utopian high-tech avant-gardism of the 1960s and early 1970s, as conceived, for example, by the British

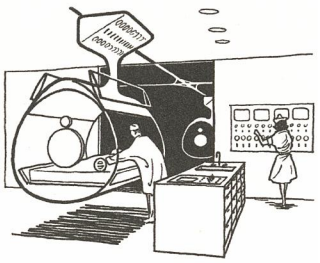
Fig. 8 "Capsules Replace Hospital Rooms," illustrations by Marguerite Villeco, 1970



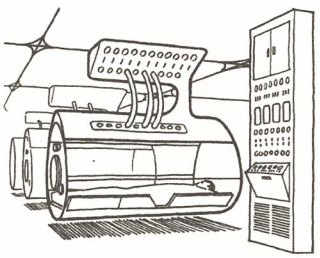
Receiving



X-Ray



Treatment



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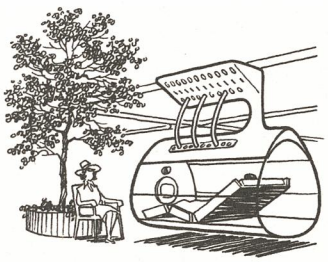

Visiting

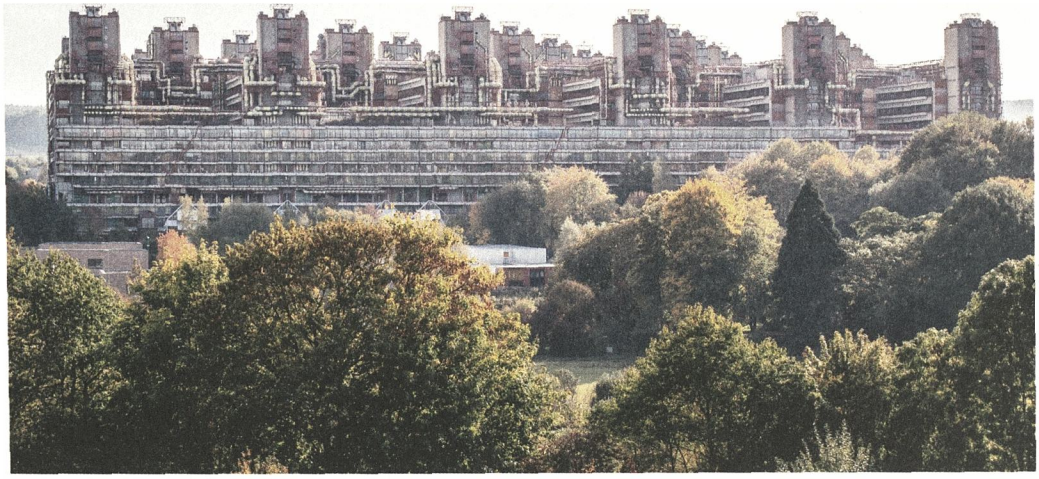

Fig. 9 RWTH Aachen University Hospital, north view

Fig. 10 Technoid aesthetics of the interiors at RWTH Aachen University Hospital

architectural group Archigram or implemented structurally with the Centre Georges Pompidou, which opened in Paris in 1977. But, while experts recognized the building's qualities, the public's reaction in the mid-1980s was dismissive or openly hostile. The "Monstrosity," said *Der Spiegel*, probably "eclipsed everything built since 1945 for detestability." Journalist Hans Halter was unable to recognize playful high-tech architecture, instead associating it with threats: "Embrasures, gun mounts, bunkers. It's as if the hospital were declaring war on its patients."[20] The age of megastructures had come to an end, and the Aachen Clinic seemed to have fallen out of time—a monument to the hubris and faith in technology of an earlier era (fig. 10).[21]

For some time there had been concerns about medicine losing its humanity in the face of both increasing mechanization and the efficiency and profitability constraints of hospital operations. However, their long planning and construction periods, in most cases extending beyond the social upheavals around 1970, proved to be the undoing of the German medical centers. The waning of the postwar economic boom and the emergence of new social and ecological movements, the 1972 "Club of Rome" report, and the 1973 oil crisis all contributed to the quick fizzling out of the 1960s euphoria of progress.[22] In medicine, too, critical voices were raised—by Ivan Illich or Thomas McKeown, for example—questioning the prevailing narrative of constantly improving human living conditions driven by the successes of scientifically and technologically focused curative medicine.[23] By the time large-scale medical centers began operating, with their promise of maximally efficient mass care, they no longer reflected the zeitgeist. Instead, patient-centered perspectives gained in prominence. And, as the World Health Organization's Alma-Ata Declaration of 1978 made clear, internationally the emphasis of health policy shifted from high-tech medicine and expensive hospitals to primary healthcare and a more socially integrated medicine with a social and preventive focus.[24]

Since the mid-1970s, German hospital architecture has been searching for alternatives and different designs. Instead of new large-scale buildings on greenfield sites, the trend was now to reorient the hospital to a human scale and bring it back into the city—although empty public coffers also contributed to a drop in new construction. An example is the Ruhr University in Bochum, built in the 1960s as a brutalist megastructure, yet its university hospital was created in the 1970s not by building a new hospital, but by amalgamating existing hospitals run by different bodies in the "Bochum Model." Planning new large hospitals gave way to adapting existing structures to new requirements and integrating them into larger healthcare systems.[25] In the mid-1980s, the hospital architect Robert Wischer predicted that the "large hospital of tomorrow . . . will manifest less as a big building and more as a networked system of medical care services."[26]

The twenty-first century brings new challenges. Large hospitals built from the 1960s onward are reaching the end of

their life span, which raises fundamental questions about new building, preservation of historic buildings, economics, and ecology. Digitalization and telemedicine enable medicine's spatial structures to be rethought. New approaches are also needed in the hospital workplace, where in recent decades increasing economic stringency has created unsustainable conditions, especially in nursing and aftercare. The climate crisis has made the adaptability and sustainability of present and future hospitals an urgent problem. In such circumstances, a historical, analytical review can and should help to open up the horizon for new ideas about the "hospital of the future."

1 Gesundheitsberichterstattung des Bundes, "Diagnosedaten der Krankenhäuser für Deutschland ab 1994" and "Entbindungen in Krankenhäusern," both available on www.gbe-bund.de/gbe/.

2 Guenter B. Risse, *Mending Bodies, Saving Souls: A History of Hospitals* (New York and Oxford, 1999); Axel Hinrich Murken, *Vom Armenhospital zum Großklinikum: Die Geschichte des Krankenhauses vom 18. Jahrhundert bis zur Gegenwart* (Cologne, 1988).

3 Murken, *Vom Armenhospital zum Großklinikum*, pp. 33–46.

4 Ibid., pp. 225–33.

5 Gustav Hassenpflug, "Krankenhaus-Neubauten und Neuplanungen in Deutschland (Bundesrepublik)," in *Handbuch für den neuen Krankenhausbau*, 2nd ed., ed. Paul Vogler and Gustav Hassenpflug (Munich and Berlin, 1962), pp. 642–60.

6 Ibid., p. 642.

7 Franz Friedberger, "Die Entwicklung des Klinikums Großhadern der Universität München," *Historia Hospitalium* 16 (1985), pp. 19–29.

8 Heinz Goerke, "Streiflichter aus der Frühgeschichte des Klinikums Steglitz," in *25 Jahre Universitätsklinikum Steglitz*, ed. Klinikumsvorstand des Universitätsklinikum Steglitz der Freien Universität Berlin (Berlin, 1994), pp. 19–34.

9 Andreas Jüttemann, *Das Klinikum Benjamin Franklin als Politikum: Die Verwirklichung einer (vermeintlich) US-Amerikanischen Krankenhauskultur im Kontext der Studentenbewegung (1957–1974)* (Berlin, 2022).

10 "Klinikum Berlin; Krankenhaus der Zukunft?" *Gesundheitsmagazin Praxis*, ZDF, June 16, 1969.

11 Frank Marguth and Klaus Peter, "Vorwort," *Historia Hospitalium* 16 (1985), pp. 7–9; Robert Wischer, "Das Großkrankenhaus—gestern, heute und morgen—aus der Sicht des Architekten," *Historia Hospitalium* 16 (1985), pp. 11–18.

12 Wischer, "Großkrankenhaus," p. 16.

13 Sonja Hnilica, *Der Glaube an das Große in der Architektur der Moderne: Großstrukturen der 1960er und 1970er Jahre* (Zurich, 2018).

14 Franz Werner Weber and Peter Brand, "Interessante Planung für die Universitätskliniken Münster," *Krankenhaus-Umschau* 42, no. 12 (1973), pp. 1279–88.

15 Peter Buchanan, "Medical Megastructure: Technical University of Aachen, West Germany," *Architectural Review* 180 (1986), pp. 94–100; Eberhard H. Zeidler, *Healing the Hospital: McMaster Health Science Centre, Its Conception and Evolution* (Toronto, 1974); Reyner Banham, *Megastructure: Urban Futures of the Recent Past* (London, 1976).

16 David Freis, "When Teleconferencing Was the Future: The 1970 'Medizin Interkontinental' Transmission and West German Medicine in the Space Age," *European Journal for the History of Medicine and Health* 79, no. 1 (2022), pp. 32–66.

17 Heinrich Schipperges, "Perspektiven des Krankenhauses im Horizont der Zukunft," *Das Krankenhaus* 61, no. 8 (1969), p. 293.

18 Marguerite Villecco, "Capsules Replace Hospital Rooms," *Architectural Forum* 132, no. 5 (1970), pp. 55–57.

19 Godehard Hoffmann, "Universitätsklinikum der RWTH Aachen: High-Tech-Architektur für ein Krankenhaus," in *Jahrbuch der rheinischen Denkmalpflege*, vol. 40–41, ed. Landschaftsverband Rheinland and Udo Mainzer (Worms, 2009), pp. 31–48.

20 Hans Halter, "Krieg den Kranken," *Der Spiegel* 4 (1983), pp. 174–78.

21 Hnilica, *Der Glaube an das Große*, p. 193.

22 Anselm Doering-Manteuffel and Lutz Raphael, *Nach dem Boom: Perspektiven auf die Zeitgeschichte seit 1970*, 3rd ed. (Göttingen, 2012).

23 Ivan Illich, *Medical Nemesis: The Expropriation of Health* (London, 1975); Thomas McKeown, *The Modern Rise of Population* (London, 1977).

24 "Primary Health Care: Report on the International Conference on Primary Health Care, Alma Ata, USSR, September 6–12, 1978," Geneva, 1978.

25 Robert Wischer and Hans-Ulrich Riethmüller, eds., *Zukunftsoffenes Krankenhaus: Ein Dialog zwischen Medizin und Architektur; Fakten, Leitlinien, Bausteine* (Vienna and New York, 2007); Christine Nickl-Weller and Hans Nickl, *Architektur für Gesundheit* (Salenstein, 2017).

26 Wischer, "Großkrankenhaus," p. 11.

13 Kreiskrankenhaus Agatharied

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4 Butaro Hospital

→ 164