

CLINICAL SCIENCE CENTER



Fig. 1. The "completed" Clinical Science Center. Clear visible is the modular nature of the building, with the towers being stacks of modules connected at their corners. Nearly indefinite expandability is a hallmark of the design. The building in the background is the Nielson Tennis Stadium. [7/4 folder #2, jf-97]

Built to replace old and outmoded facilities the Clinical Science Center was planned from 1961 to 1973. Groundbreaking took place in May 1973, and the move to the new building took place in March 1979. The building is designed as stacks of modules for easy expansion and remodelling. Its cost at opening was about \$100 million. Part of the medical school is still housed in the old hospital on University Avenue. The CHS became a semiprivate entity in 1995.

Built in 1925 the Wisconsin General Hospital served for more than 50 years as the clinical hospital for the UW Medical School, and as a cutting edge hospital for the citizens of Wisconsin. By the mid-1950s it needed and got a major upgrade when floors were added, and a number of the discrete buildings on the site were connected and modernized. It did not address the increasing crowding and obsolescence of the academic facilities of the Medical School housed mainly in the Service Memorial Institute.

The first external confirmation that a new hospital and clinics facility were needed came from the Hamilton Report in 1957. This report was commissioned just after the expansion of the Wisconsin General Hospital. The lack of modern Academic facilities was highlighted by the Hamilton Report. The Medical School began almost immediately to make preliminary plans for long-term future expansion.



Fig 2. Phase I construction April 1974. Construction had been underway for about 11 months. [7/4 folder #2, jf-98]

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These initial plans, prepared by the Medical School with the assistance of Professor Leo Jakobson of Planning and Construction, were presented to the regents in January 1961. The plans and their models examined development at the University Avenue site and the block south of it. The news was not good. The fully developed site would require the removal of the infirmary, Bradley Memorial, the old heating station, and the service building. The two blocks would be almost solid high-rise buildings. The regents voted to approve the plans in principal. This preliminary planning stage lasted several years. Most of the conclusions drawn were negative ones: more space was definitely needed, the site might be too small for the needed expansion, etc.¹

It was soon clear that more formal and long-range planning was necessary. A legislative task force determined that not only was the old facility inadequate for the Medical School but that a larger Medical School was needed to produce the number of doctors needed by the State of Wisconsin. In 1963, the legislature authorized and hired a consultant to aid the Medical School in planning a new and expanded Medical School.

By 1965 it was generally recognized that the University Avenue site would never be adequate for the hospital and Medical School, even if built to a very high density. A new site was proposed on forty five acres of land to the north of the Veteran's Administration Hospital, with which the Medical School was closely integrated. By the end of 1965 the new site had been accepted (and recommended by the Campus Planning Committee), even with the difficulties presented by the splitting of the Medical School facilities between the two sites for up to 20 years. In January 1966 the regents made it official, voting that the Medical Center Facilities be sited contiguous to and north of the Veteran's Administration Hospital.²

In June 1966, the regents approved the allocation of \$283,000 for a consultant and planning funds. The report by the consulting firm, Lester Gorsline Associates International, was presented to the state Building Commission in the fall of 1968 and to the regents on November 1, 1968. This report confirmed the new site on the west end of campus, the need to increase the size of the Medical School class (from 104 to 160) and asked the regents to request state authority to proceed to preparation of

master plans and implementation of Phase I. After 8 years, the planning phase was barely half over.³

The Master Development Plan by architects HOK (Hellmuth, Obata and Kassabaum) was received by the regents in July 1970. The regents passed two resolutions: the first approved the Master Plan, and the second approved the concept of Phase I, authorized the preparation of preliminary plans for Phase I, and attached "the highest priority to the implementation of Phase I as related to the building program of the University". The discussion for these resolutions betrays some impatience with the seemingly endless planning, and a strong desire to get on with it. Still it was almost two years before the plans for Phase I were approved. At the May 1972 regents meeting those plans were reviewed and approved. The project had been in the planning stage for so long that the enrollment estimates were starting to come into question. The total project was now estimated at \$120 million and eight years. Phase I was to cost \$45 million.⁴

Another year elapsed while final plans were completed. Construction contracts were signed in the spring of 1973. General contractor was a joint venture between J. H. Findorff and Hutter Construction of Fon Du Lac for \$23.2 million. Total contracts were for \$48.4 million. Funding was from state funds (\$21.3 million), Federal grants (\$14.6 million), and hospital operating funds. Ground-breaking on the phase I of the largest and most expensive building in the history of Wisconsin took place on May 23, 1973.⁵

The design of the building is unusual, even ignoring its enormous size. The planners (Hellmuth, Obata and Kassabaum) recognized that the old hospital was only 50 years old and obsolete as a hospital, regardless of modifications. To avoid this fate for the new hospital it was made as flexible as possible. This meant avoiding designing rigid areas such as "wards" that were designed for a particular purpose and unsuitable for any other. This consideration led the designers to a modular approach. The module they decided on was an open (unpillared) 120 foot square with interconnections not along the sides of the square as in conventional construction but on the corners, where elevators, stairs and utilities are run vertically between modules. These modules can be stacked either horizontally or vertically. In addition, each module has a space above its ceiling that is nearly a full floor in height. This "interstitial" space is used for the horizontal distribution of utilities. This arrangement allows very flexible remodelling, and much remodelling of a module can be done from above, without disturbing the current occupant of the module. Maintenance is also easier and non-disruptive. It also ensures that addition of new modules as the building grows will be easy and non-disruptive. Another significant design feature of the building is the orientation of the main traffic patterns along the diagonal axes of the square modules. This was done to provide outside exposure for the sides of each module, thereby allowing for windows in nearly every room in the building.⁶

Only a few months after construction began a major modification was made to the master plan. Under pressure of time, changing federal financing and the legislature, it was decided that the four phase plan was too large and unlikely to obtain adequate federal funding. As a result the University and the state decided to reduce the project. They decided that the total project should consist of the first two phases of the old project with a few changes, and a major remodelling of the old University Avenue facilities to accommodate the programs previously intended for the eliminated third and fourth phases. This major scaling back of the original plan from four phases to two reduced total cost to a figure judged likely to obtain federal funding. They also replaced the original architects with Flad and Associates. Construction contracts for phase II (the second half of the new version of the building) were let in the fall of 1975, to the same contractors already building phase I. These contracts were for an additional \$43 million. These bids were much higher than anticipated and caused much criticism of the project and its planners. It appears that most of this cost over-run was due to inflation.⁷

Although the huge scale of the project absorbed nearly all the skilled building workmen in the Madison area for many years, the actual construction went smoothly; but planning continued to be a

problem. In 1976 the regents authorized the addition of a module for animal facilities, at a cost of \$1.8 million. What was more troublesome, however, was the breakdown of the arrangements with the VA hospital. For many years during the planning phase negotiations had established what facilities would be shared between the new hospital and the adjacent Veteran's Administration Hospital. After construction had progressed considerably, it was revealed that these understandings were not in writing, and because of a number of altered conditions would not be honored. This meant that the new hospital, close to a decade in planning and \$100 million in known costs would not have rehabilitative or radiology facilities. The planners went to the regents, and the regents went to the legislature and \$6.4 million was added to the budget to add modules for the missing functions. It was estimated that these changes would add eight months to a construction schedule that had projected completion by September 1978.⁸

The various parts of the Medical School began to move into the new building in January and February of 1978 when the UW nursing school and the Wisconsin Clinical Cancer Center relocated from the old hospital complex on University Avenue. The move from the old building was completed on March 31, 1979 when 200 patients were transferred from the old hospital to the new. The move was supervised by Associate vice chancellor William Davis, assisted by Air National Guard medics, the 44th General Hospital Army reserve, and a fleet of tractor trailer rigs from Reynolds Transfer and Storage. The move, orchestrated from the 14th floor of the WARF building, went off without any significant delays or mishaps. The doors were locked on the old hospital after more than 50 years of service to the state.⁹

The completed (as of 1979) building was 6 stories high containing 1.5 million square feet, or about 35 acres of floor space, the size of a small farm, and had cost about \$100 million. Comparing the new structure with the old we see that the cost of the pneumatic tube system (\$1.1 million) in the new building exceeded that of the entire original Wisconsin General Hospital building. The new building was more than five times the size of the old one. The old one had a useful life as a hospital of 50 years. The new one is estimated by current building managers to have an expected useful life of 200 years.

There is little doubt that the new clinical science center was a success. Certainly some snags arose: several doors were too narrow to accommodate some of the older beds from the old hospital. Complaints were voiced about the difficulties in finding one's way around the huge structure. Staff was hired and acquired through volunteer organizations to serve as guides to patients and visitors. Mechanical systems needed to be sorted out, landscaping was incomplete and other normal inconveniences from the opening of such a huge new project. No serious problems arose with the new building.

A real and ongoing difficulty was that when the project was scaled back in 1974 it had been done in a hurry, and things were eliminated that were later deemed essential. In the twenty-five years since the Clinic for Health Sciences (CHS) opened it has been necessary to make a number of additions and modifications. Fortunately the modular approach taken by HOK (the original architects) made the addition of modules relatively painless, although not cheap. There is a general feeling in Madison and the legislature that the CHS is a kind of infinite sink for building funds. Earliest among the costly projects was the renovation of the old University Avenue complex. The price tag on this project escalated to nearly \$25 million, an astonishing figure to regents and legislators alike. This amazement was largely due to neglecting the fact that the old building was being made to stand in for phases III and IV deleted from the new building to save money. In 1984-85 it was necessary to perform a major (\$5 million) energy efficiency upgrade on the CHS, which had been designed and built before any widespread concern for energy conservation. The addition of four new modules (for surgical science, radiology, and records management), and the remodelling of two others were ap-

proved in 1986 at a cost of \$18 million. The radiology addition was an excellent example of the kind of change that the new building could handle that old kinds of hospitals could not. The radiology addition was driven by the development of Magnetic Resonance Imaging (MRI) which required large costly and very heavy equipment. At the old hospital this kind of development would have been impossible to accommodate. At the CHS it was a matter of adding a module near the existing radiology area. The other modules were to handle operations that had been left out of the redesign in 1974. A helicopter pad was constructed on the roof of the new modules to accommodate the helicopters leased by the Medflight program, a medical emergency and rescue operation. After severe winter weather caused the failure of the helicopter in several medflight emergencies, in 1987 a \$206,000 hangar was built into the hill outside the emergency room. In 1989 approval was given for the construction of a parking ramp at the CHS at a cost of \$6.9 million paid by parking revenue. An \$15 million expansion of surgical and critical care facilities was approved in 1990.¹⁰

The new hospital and clinics complex has been a tremendous (though expensive) success. The responsibility lies in large part with the enormous number of people who with diligence patience and vision shepherded the huge project through its long and difficult gestation. In 1995 it was decided that to escape the slow and laborious bureaucracy that gave it birth, but slowed its professional response time to unacceptable levels the CHS would become a quasi-private entity. The buildings will be leased from the University, medical education will still be provided there, but the administration of the hospital will be removed from the University and State.

- 1) *Regent's Minutes*, January 6, 1961, January 7, 1966 and exhibit C.
- 2) *Regent's Minutes*, October 22, 1965, December 10, 1965, January 7, 1966 and exhibit C.
- 3) *Regent's Minutes*, November 1, 1968 and exhibit E, June 10, 1966; Medical Center Task Force Report to the Chancellor, December 1970, series 4/31/9-1 box 9. There is some confusion regarding who hired the consultants. The minutes refer to "the employment by the State Department of Administration of a consulting firm..." But in the summary report included as exhibit E is the emphasized statement "a medical center consultant was employed by the University to plan the facilities expansion program"; the Master Plan filed with minutes of regent's meeting, May 1972 states that the planners were hired by the state.
- 4) *Regents Minutes*, July 10, 1970 and Master Development Plan filed with minutes of meeting, May 1972 and plans filed with minutes; *Wisconsin Alumni Magazine*, August-September, 1970, p. 15; *Wisconsin State Journal*, May 5, 1972; *Green Bay Press-Gazette*, May 7, 1972; The building was proposed to consist of four phases. Phase I would establish the core building and house the bulk of patient care, much research space and some academic space. Phase II through IV would be additions to the core and house more research space, additional patient care areas and the bulk of the academic facilities. The projected budget and period of time (\$100 million and 12 years) is roughly the original asking price of basketball player Glenn Robinson whose agent first asked the Milwaukee Bucks for a \$13 million, 13 year deal.
- 5) *Regent's Minutes*, June 8, 1973 Exhibit A; Building progress reports, June 8, 1973, series 83/35 box 6; *Wisconsin Alumni Magazine*, June 1973 p. 20.
- 6) Master Development Plan filed with minutes of regent's meeting, May 1972; *Wisconsin State Journal*, November 25, 1976.
- 7) *Regent's Minutes*, February 8, 1974, September 12, 1975 and exhibit A; "University of Wisconsin Center for Health Sciences", filed with Board of Regents Papers, May 5, 1972; *Wisconsin Alumni Magazine*, May 1972 p. 24.
- 8) *Wisconsin State Journal*, March 3, 1977, April 15, 1977, April 26, 1977; *The Capital Times*, April 26, 1977; The discussion of who was to blame for the failure of the shared facilities planning was occasionally rancorous, and distinctly unclear. The University believed that clear agreements had been made and that the VA reneged on them. The VA strongly objected to this characterization and stated that the UW had known for a long time that the facilities would not be available to them. Apparently most shared facilities were to be housed in an addition to the VA hospital that was not built due to reorganization of the VA facility. See series 4/31/9-1 box 9, Edwin Young to John Chase M. D., summary of Veterans Hospital Building Program, etc.
- 9) *Wisconsin State Journal*, April 17, 1977, March 3, 1979, March 30, 1979, March 31, 1979, April 1, 1979; *The Capital Times*, February 9, 1977.
- 10) *Regent's Minutes*, December 2, 1980, December 6, 1985, July 13, 1984, October 10, 1986, December 6, 1986, October 10, 1986, October 10, 1986, November 7, 1986, March 6, 1987, December 9, 1988, June 8, 1990, November 8, 1991; *Agency Request for State Building Commission Action*, November 1986, series 4/31/9-1 box 2.