The third in a series of articles on the history of the Department of Civil and Environmental Engineering
Part Three, The Newmark Years: 1956 - 1973

By John D. Haltiwanger, Professor Emeritus of Civil Engineering

Part I of this story, The Early Years (1867-1926), and Part II, The Huntington Years (1926-1956), were published in the Fall/Winter 2003 and the Spring/Summer 2004 issues, respectively, of this newsletter. Part III of this series, which I have called “The Newmark Years” will continue the story during the period from 1956 until 1973, the period during which Dr. Nathan M. Newmark served as Department Head.

Once again, it must be emphasized that this series of articles was not intended to be a detailed history of the department. As observed in Part II, they are intended to serve only as “a highly condensed overview of where we came from, who some of the primary contributors to our growth over the years have been, and what some of their major contributions were.” It is hoped that, through these articles, our alumni, especially our younger alumni for whom the years represented by these articles are ancient history, may come to appreciate more fully the truly magnificent heritage that is ours.

At the outset, it is probably worth noting that Newmark was not the unanimous, uncontested, candidate to succeed Whitney C. Huntington as head of the department in 1956. Probably because of his intense focus on and his extraordinary success in the development of the structural research program of the department during the Huntington era, there was substantial concern that Newmark was too one-dimensional to serve effectively as the leader of the entire, multi-dimensional department. Despite these concerns, he was selected as the sixth “head” of our department (the first two leaders were identified as “administrators.”) Newmark very quickly demonstrated that he would expand his focus to include all technical areas of the department and apply to the entire department the same level of effort that he had applied so successfully in prior years to the development of the structural research program.

To assist him in this work, he asked Professor J. W. (Jack) Briscoe to continue in the capacity of Associate Head that he had held during the later years of the Huntington era. In 1958, Professor William J. Hall joined the department administration with general responsibility for its graduate student and research programs. Following Briscoe’s elevation to the position of Associate Provost of the University in 1965 and later of Vice Chancellor for Administration, Professor John D. Haltiwanger also joined the department’s administrative team with primary responsibility for the undergraduate student and instructional programs of the department.

Because of its extraordinary growth during this era, it is impractical to try to describe the department’s activities chronologically in the space available. Instead of trying to do this (i.e., write a “history” of the department), we will address first a few major, department-wide events of this era, and then identify a few of the major personalities and accomplishments of the era in each of the department’s technical areas.

The single most significant event of that era was clearly the acquisition of our new building which, following his death, was named “Newmark Civil Engineering Laboratory.” The need for such a facility had long been recognized, and concerted efforts to acquire it were begun shortly after Newmark assumed office. At that time, the programs of the department were conducted in thirteen different buildings around campus, including what was then Civil Engineering Hall (now Engineering Hall), Talbot Laboratory, the Civil Engineering Surveying Building (immediately south of the University Library), a Sanitary Engineering Laboratory (south of Springfield Avenue and immediately west of Gregory Street in Urbana), a Hydraulic Engineering Laboratory (located in an unused Physical
Plant warehouse near the Sanitary Laboratory, and several smaller structures such as a highway test track in a Quonset hut in the vicinity of the Sanitary Engineering Lab, two old residences across Wright St. from Talbot Lab that were used for research assistant offices, and several others. The first phase of the new building was funded primarily by a state grant of $4,216,000, and construction of it had progressed in 1967 to the point that most of the offices in it could be occupied at that time, while work on the several laboratories continued. The second phase of the building, funded substantially by an NSF grant in the amount of $1,500,000 permitted the expansion of Newmark Civil Engineering Lab within the next few years to become the facility as we know it today. Our current building complex was completed with the construction of the Hydrosystems Laboratory in 1970. Unfortunately, despite continuing efforts, funds were not provided for the construction of a multistory connecting link between Newmark Lab and the Hydrosystems Lab that would have provided much needed classroom, meeting, and office space. Perhaps that dream can yet be realized.

A second major accomplishment that affected the general health of the department was the establishment of the Civil Engineering Alumni Association in 1963. The officers selected to oversee the initial program of this new group included Paul F. Kent (President of General Paving Co. of Champaign) as President; Frank Veasman (Vice President of Chicago Malleable Castings Co.) as First Vice President; Thomas D. Wolford Jr. (Ass’t. Chief Engineer, ICRR) as Second Vice President; Prof. E. E. Bauer as Secretary; and Prof. M. O. Schmidt as Assistant Secretary. As is evident from the nature and extent of its current programs, this organization has grown and prospered, and has evolved as a major force for good in support of the programs of the department. It provides a critical and much-needed link between the department’s faculty and students and the world of civil engineering practice.

While not physically or contractually connected with the department, the location of the U. S. Army Construction Engineering Research Laboratory evolved as one of the premier civil engineering research laboratories of both institutions has been greatly enhanced.

During this era, the department evolved as one of the premier civil engineering programs in the nation, at both the undergraduate and graduate levels. Evidence of this status is given by the following statement taken from the ECPD accreditation report of 1961: “This department was judged to be one of the finest in the nation with respect to faculty qualifications and scholarly production, curriculum, instruction, and equipment.” That report did note, however, that “physical facilities were inadequate”, a statement with which the department agreed fully, and which gave support to the department’s continuing efforts to acquire a new building.

Among the general observations that help define the growth of the department during this era in both size and stature are the following:
- Of the faculty members that were active during this era, 19 were elected to membership in the National Academy of Engineering.
- Of the faculty members that were active during this era, 14 were elected as Honorary Members of ASCE.
- Enrollments varied during this period from 1966 levels of 593 undergraduate and 154 graduate students to maximums of 627 undergraduate and 303 graduate students in 1970 and 1973, respectively. The all-time maximum enrollments to date were 816 undergraduates in 1978 and 410 graduates in 2004.
- The number of full-time-equivalent academic faculty increased to about 70 in 1973.
- The annual research budget for the department grew from about $750,000 in 1956 to over $2 million in 1973.
Both Professors Newmark and Peck were awarded the National Medal of Science.

As noted earlier, in the limited space that is available, a comprehensive listing of the activities of the department during this era is impractical, but a highly condensed overview of those activities, as given below, might help portray the character of the department at that time.

Under Newmark’s leadership, the general focus of the department underwent an interesting change. Up until that time, with a few exceptions, the faculty consisted essentially of two faculties, a “teaching faculty” and a “research” faculty. But within a few years, those two faculties had become one, with all faculty members being involved in both teaching and research, to the benefit of the entire department, especially its students.

The structural engineering and mechanics programs continued to be the largest and most widely regarded of the programs of the department, with general focus of the department under Newmark’s leadership, the character of the department at that time. As given below, might help portray the condensed overview of those activities, including in this era is impractical, but a highly considerable overview of those activities, as given below, might help portray the character of the department at that time.

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include water quality control, emphasizing both drinking water and wastewater, air pollution control, solid waste management, aquatic biology, and environmental systems analysis. With the development of programs in these areas, it became one of the premier environmental engineering programs in the nation. Participating closely with Professor Engelbrecht in this program growth and expansion were such highly regarded engineers and scientists as E. Downey Brill, Richard L. Dick, J. W. Eheart, Benjamin B. Ewing, E. E. Herricks, Jon C. Liebman (who later became Head of the Department), John T. Pfeffer, Vernon L. Snoeyink, and James J. Stukel (who became President of the U of I).

Similarly, under the direction of Prof. L. R. Shaffer (who was appointed later as the first Technical Director of the new U.S. Army Construction Engineering Research Laboratory in Champaign), the program in Construction Engineering and Management blossomed. Among the notable additions to that faculty were L. T. Boyer and J. W. Melin.

During this period, having been stimulated by a newly enacted “State Technical Services Act,” the closely related area of Civil Engineering Systems achieved self-identification, and a significant program of research and instruction in this area was developed. Instrumental in this development were S. J. Fenves and L. A. Lopez.

Contributing also to the developments of this era was Professor Judith S. Liebman (later to become Vice Chancellor for Research on this campus) who applied her background in operations research to further expand the scope of the department’s interests.

The long and distinguished history of research, service and teaching in the area of Transportation Engineering, which was led in earlier years by C. C. Wiley, was continued and expanded under the guidance of Ellis Danner, with the able assistance of John E. Baerwald, Eugene Huang, John Hutchinson (all of whom completed their careers elsewhere), W. W. Hay, who had responsibility for the railway engineering aspect of the program, and Moreland Herrin. Upon the retirement of Professor Danner, Moreland Herrin assumed the leadership role for this program, and E. J. Barenberg, S. H. Carpenter, M. I. Darter, B. J. Dempsey and M. R. Thompson joined its faculty. During this era, the Transportation Facilities program grew in both size and stature to become one of the widely regarded centers of transportation engineering study in the nation, a position that it still enjoys.

With the advent of the new Hydraulics and Hydrology Laboratory Building in 1970, the department’s program in that area of teaching and research also expanded. This era saw a marriage between the well-established hydrology program and the then-emerging laboratory-oriented hydraulic engineering program that had been housed in the old hydraulic engineering laboratory building. This merger fostered the development of a strong and highly regarded program in water resources systems. Until his untimely death in 1981, Professor Ven T. Chow, an internationally known authority in the area of Hydrology Systems Engineering, directed the program. Participating with him in this work were fellow faculty members such as William C. Ackermann, John C. Guillou, E. R. Holley, W. H. C. Maxwell, Murray B. McPherson, J. P. Murtha, H. G. Wenzel, and B. C. Yen.

Under the guidance of Professor M. O. Schmidt, Surveying and Photogrammetry continued during this era to be a small but vital area of departmental instruction and research programs. Participating with Professor Schmidt in the conduct of this program were W. H. Eldridge, H. M. Karara and K. W. Wong.

The department completed this era larger, stronger, more broadly based and more highly regarded, both nationally and internationally, than at any time in its impressive and illustrious history to that time. But this little narrative that attempts to reflect, in a very general way, the nature and extent of that growth, falls short of that goal. Neglected in this piece were the names of countless men and women who participated on the faculty for relatively short periods of time, but who, during those periods, contributed greatly to the ultimate successes of the groups of which they were parts. To these people, many of whom were his personal friends, and all of whom were his highly regarded and respected associates, the author extends his apologies – there simply wasn’t enough space to permit the inclusion of all of their names.

Also neglected in this piece are the extraordinary contribution of the non-academic staff of the department – people like Professor Newmark’s secretary, Doyn Proudfit; V. J. McDonald who directed the instrumentation of the laboratory tests; and Wyck McKenzie of the staff of the concrete laboratory. It is much to be regretted that we can’t give due credit to these folk, for without their committed support, not much of what happened in the department would have happened.

Unmentioned also are the untold, but profound, contributions that were made to the profession and to society by the department’s alumni. To include this, even reasonably adequately, would require books. Suffice it to say that the reputation of the department is reflected, perhaps most brilliantly and effectively, by and in the works of its graduates.