

HISTORY OF THE DEPARTMENT OF FORESTRY AND ENVIRONMENTAL  
RESOURCES AT NORTH CAROLINA STATE UNIVERSITY, 1979-2008

IV. PHYSICAL FACILITIES

**Raleigh campus facilities**

In 1980 the Department was housed in Biltmore Hall, together with the rest of the School of Forestry (except Wood and Paper Science) having moved from Kilgore Hall in 1970. Biltmore Hall was planned in the early 1960s. Its construction was delayed a number of years as it was originally part of an higher education bond package that was defeated in 1963. Thus a building that was conceived in the early 1960s was finally occupied by programs that had experienced almost 10 years of growth beyond what was envisioned during planning. A major problem was the necessity to accommodate the Recreation Resources program that had been transferred to the School of Forestry in 1967 in a move that was not at all anticipated in planning for Biltmore. Between 1970 and 1980 the Department had grown substantially, adding several new faculty positions and two new research programs, the Forest Nutrition and Forest Engineering Cooperatives.

Thus, in 1980 the Department was occupying extremely crowded quarters. One symbol of the crowded conditions was that there was only one teaching laboratory for the entire undergraduate teaching program! It was used by dendrology and other forestry courses (silvics, management, aerial photography) either shared laboratories with other departments or went without. In some cases (silvics) no attempt was made to include a lab and in others (management) teaching was essentially all done in the field. It is doubtful that any other major US forestry program was carried on in more limited facilities than those at NC State. In fairness, the School administration was painfully aware of this situation and regularly included requests for new space in its biennial change budget. These requests never reached an high enough priority at the University or General Administration level to have any hope of being realized.

Obviously, this critical space dilemma was one of the first priorities facing Cooper when he became Department Head. Being unable to obtain or create more space, he sought to subdivide and make priority assignments of what space the Department did have as he made major reassignments of space during 1980-81. Several criteria were used in reassigning space one of which, how much time a faculty member actually spent in Raleigh, derived from the fact that the faculty members involved in the research cooperatives spent a good deal of their working time away from Biltmore Hall. The result of this subdividing and reassigning was that several very important programs (the Hardwood and Nutrition Cooperatives) were crammed into rooms that had been divided into cubicles smaller than prison cells and without windows. In response to one faculty member's impassioned complaint about feeling imprisoned, Cooper offered to buy him a window, nail it on his wall, and

provide four changeable seasonal scenes. A flippant solution to an obviously serious problem!

Planning for a new building began in earnest during the early 1980s. In an attempt to make the proposal more attractive the new facility was designed around a "Natural Resources Research Center" concept involving Forestry, the Department of Marine, Earth, and Atmospheric Sciences, and the Water Resources Research Institute. Members of the School of Design faculty assisted in this planning effort, the result of which was a building in which most of the core natural resource programs at NC State were to work synergistically on the State's natural resource management issues. The concept even included a position as coordinator of the Natural Resources Research Center whose duties were to facilitate the coordinated teaching and research of the occupants of the building. Although the building never achieved a very high place in University priorities it nevertheless was attractive to external constituencies. Through their support, and particularly that of the then Lieutenant Governor Bob Jordan, the building was eventually approved by the General Assembly and construction began in 1987 on a site immediately east of Biltmore Hall.

The decision to locate the new building adjacent to Biltmore Hall was not as easily made as one might suppose. At the time the new building was approved, the University was beginning construction on the Centennial Campus located south of the main campus on part of what had been Dorothea Dix Hospital property. Chancellor Poulton had put a great deal of pressure on the College of Textiles to locate its new facilities, which would house all of the Textile academic and research programs in toto, on the Centennial Campus rather than remodeling Nelson Hall where there was clearly no space for additional growth. For a variety of reasons, not the least of which was the fact that such a move would mean that the Textiles undergraduate program would become the first such program to locate away from the core of the main campus, Textiles resisted moving. Eventually, they did agree to move and it is now clear that this move was a very positive one for the Textiles program.

Similar pressure was brought on Dean Ellwood to move the new Natural Resources building to Centennial Campus. Ellwood and his Associate Deans and Department Heads to a person felt that this would be a major mistake as it would leave the College with its programs split between two separate physical locations. Eventually, this argument won the day and the new building was built next to Biltmore Hall. Although Dean Ellwood and his administrative associates believed that this location was the best decision for the College at that time, there was a general feeling, however, that viewed in the long perspective as to where the major growth of the University would be directed in the future, our successors years hence might view the decision to locate on the main campus as short-sighted in the extreme.

None of the planning for the new building provided any immediate relief for programs and faculty shoe-horned into Biltmore Hall. For-

unately, other alternatives proved available. In 1982 Bill Dvorak and his CAMCORE program were moved to Grinnells Lab across Dan Allen Drive on Faucette Drive to the west of Biltmore. CAMCORE remained there for 25 years. The analytical laboratory that served the Forest Nutrition and Hardwood Cooperatives was moved in early 1983 to a new trailer complex across the Beltline where a number of agriculture research facilities were located. Throughout the 1980s the Loblolly Pine Tissue Culture Program, supported by industry funds through the Southern Forest Research Center (a School of Forest Resources entity manned largely by Department of Forestry faculty) operated out of a lab facility in the basement of Gardner Hall in Department of Botany space until it was terminated in the early 1990s. The Atmospheric Research Program, developed and funded largely through grants to Ellis Cowling from various sources and by the US Forest Service, was started and has spent its entire life in a trailer complex off Varsity Drive south of the McKimmon Center. Finally, the Forest Equipment Research Cooperative directed by Awatif Hassan throughout its existence occupied a small amount of space in Hodges Wood Products Lab. This arrangement was never at all satisfactory to Hassan or the occupants of Hodges Lab and was a continued source of low-level irritation to the Departments of Forestry and Wood and Paper Science until the Equipment Cooperative was dissolved. The Fisheries and Wildlife Program, jointly shared by Forestry and Zoology (until fall 2003 when it was transferred to Forestry) moved to a remodeled private dwelling, the Turner House, on the corner of Brooks Avenue and Hillsborough Streets in 1990 where it remains located today.

The new building was finally occupied in the spring of 1989. As no funds were available for moving or for new furniture, the actual moving of furniture and personal possessions was largely done by the students of the College Forest work crew. In a dedication ceremony in the fall of 1989 the new building was named Jordan Hall for the Jordan family.<sup>1</sup> Jordan Hall offered the Department some relief from its space problems. The lion's share of space in the two towers went to Marine, Earth, and Atmospheric Sciences with Forestry assigned the 3<sup>rd</sup> floor of one tower, several rooms on the third floor of the other tower, the fifth floor of one tower, and a part of the sixth floor. Only one program then located in a separate facility, the lab of the Forest Nutrition and Hardwood Programs, was relocated to the third floor of Jordan. The fifth floor space was assigned to the Computer Graphics Program of Forestry and Dr. Hugh Devine's geo-based mapping program. The sixth floor space was ultimately assigned to the new Biotechnology Program headed by Ron Sederoff. Thus, although a number of faculty were moved into more satisfactory office space, only one outlying program was brought together with the bulk of the Department's other programs. The others remained in their separate facilities throughout

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<sup>1</sup> The Jordan family had a long connection with the College. Bob Jordan, who was so instrumental in obtaining funds for the building, his brother Jack and sister Genie all graduated from the College and all had made major contributions of time and wealth to NC State and the College.

the entire 15 years between the opening of Jordan Hall and its third tower.

Although the Forest Biotechnology Program was moved into space in Jordan Hall it was generally agreed that its rapid growth in faculty and graduate students and the increased sophistication of its lab facilities would quickly demand some other solution. Ultimately, this was achieved when the Program moved in 2000 into much larger facilities on the Centennial Campus. The space relinquished on the sixth floor of Jordan was taken over by the College of Agriculture and Life Sciences for use by an interdisciplinary instruction program in biotechnology.

The original plans for what was to become Jordan Hall called for three six floor towers at a total cost of upwards of \$18 million. When Lt. Gov. Bob Jordan privately informed the College administration that it would be virtually impossible to obtain more than \$11 million for the building, plans were scaled back to two towers. This decision meant that several programs and anticipated growth in the Department scheduled for inclusion in the new building could not be accommodated. Nonetheless, plans for the third tower remained alive, if dormant. Passage of the massive higher education bond issue in 2000 revived the 55,000 square foot project and in November 2005 construction was begun on the third tower. Occupancy took place during the late spring of 2007.

The Department occupies all of the second and third floors and half of the fourth and fifth floors. Two Environmental Technology labs are on the second floor and one ET research lab is on the third floor. Each floor contains 8-9 faculty offices and 1-2 bull pens for graduate students. Environmental technology occupies the second floor offices, CAMCORE and the Christmas tree breeding program the third floor offices, Forestry Extension the fourth floor offices, and other forestry faculty moved from Biltmore are on the fifth floor. Thus, all of the Department's programs except for Tree Improvement and Rooted Cuttings have moved out of Biltmore Hall and are together in Jordan. The Fisheries and Wildlife and Biotechnology Programs, however, will remain where they are outside the Biltmore-Jordan complex with little hope that they will be united with the remainder of the Department any time in the foreseeable future.

In 1979-80 the Department had little in the way of dedicated laboratory space, either for teaching or research. Most research involved field studies and required little in the way of indoor lab space. Some exceptions to this were Tom Perry's physiology lab on the second floor of Biltmore, another shared lab on the second floor of Biltmore used for soils analysis and dendrology teaching, and forest engineering work space in Hodges Lab.

Over the 30 years since 1979-80 there has been a dramatic change in this situation. New programs that demand dedicated lab space have

been established and requisite lab space and facilities developed. These include:

--a soil and tissue analysis lab used primarily by the Forest Nutrition Cooperative, first fully developed in trailer facilities in Method and now located in the core of the western third floor of Jordan;

--a rooted cutting facility with laboratory space on the first floor of Biltmore and additional greenhouse space;

--the Forest Biotechnology Program, initially using the space in Biltmore made available when Tom Perry retired (now used by Anne Stomp in her bioremediation research), then moved to the fifth floor of Jordan, and finally to an entire floor of a research building on the Centennial Campus;

--an earth observation center located in the core of the fifth floor of the west wing of Jordan. When Siamak Khorram arrived to handle remote sensing teaching and research, the Department had no facilities other than aerial photo equipment used in a shared lab on the third floor of Biltmore. Because of his joint appointment in Electrical Engineering, Khorram was appointed director of the Computer Graphics program shortly after his arrival in 1980. With this program's facilities as a base, Khorram and his associates (primarily Hugh Devine in Recreation Resources and Heather Cheshire, one of his graduate students) built up what is now the Center for Earth Observation. The Center has a large teaching laboratory and research facilities including a specialized UNIX workstation, several powerful NT workstations, a softcopy photogrammetry work station, and other associated equipment.

--in the new wing of Jordan Hall, fully equipped laboratories for teaching and research in Environmental Technology, plus lab space for CAMCORE and the Christmas tree program.

No discussion of physical facilities would be complete without mention of development of the Department's computer capability.<sup>2</sup> In 1979-80 personal computers were essentially unknown. The Department and College were relying on computing facilities provided at the University level that depended for input on cards processed on a punch machine. The first item resembling a computer was a dedicated word processor purchased by the Tree Improvement Program only after intense discussion with Dean Ellwood and Cooper as to the wisdom of the purchase. By the early 1980s the personal computer had become a reality, albeit an antiquated reality by later standards. Several faculty members obtained personal computers for their research and it became evident that this capability should be provided for students as well. The first such College-wide facility was a lab equipped with 20 or so Apple personal computers and a few IBM PC "clones" located in a second-floor room (2006) of Biltmore. It was lovingly known as the "Apple orchard." It also housed the servers for the primitive beginnings of a College-wide computer network. Because the cost of such equipment vastly exceeded the meager equipment budget of any of the College's departments, this lab served as a College-wide facility. With-

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<sup>2</sup> Thanks to Gary Blank for providing some details on this facility.

in just a year or so Gary Blank had received a grant for word processing software to serve as an aid in improving the quality of student writing and Hugh Devine was using primitive graphics software to teach students to develop basic maps. Several years of forestry senior management plans were developed in this facility.

However, this first computer room was small, crowded, and due to the heat generated by the computers and bodies in the room, uncomfortably hot most of the time. Consequently, the College computer lab was shifted to a larger room (3032) on the third floor of Biltmore where it has remained ever since. Throughout the 1980s the College continually upgraded this computer lab and provided technical assistance to students and faculty, both in the lab and in faculty offices. As mentioned earlier, in 1987 the Department tied its computers together in a network by providing telephone wire connections running from individual offices to servers in the computer lab and began using Departmental-wide email, albeit in a severely limited form.

As a generalization, NC State University was slow and perhaps naive in its judgments as to how fast students and faculty alike would begin using computers in their everyday teaching and research work. Beginning in the early 1990s, the University began a crash program of updating computing capability throughout the entire campus. The College and Department shared in this program and within a short time full blown campus-wide computing capability, including email and administrative services was available. Since then campus, College, and Departmental computing capability has continued to grow and by 2008 had become state-of-the-art and an indispensable part of the administrative, teaching, research, and outreach functions of the College and University. The College computing lab on the third floor of Biltmore has regularly undergone equipment upgrades and is now an integral part of instruction in the Department. In addition, the College employs a PhD level information technology specialist, a hardware specialist, and several associates who provide professional-level guidance in all areas of information technology.

### **Summer Camp facilities**

A discussion of the Department's physical facilities would be incomplete must consider the Hill Forest facilities that are so essential to the summer camp program. The Hill Forest Camp facilities were initially constructed by Civilian Conservation Corps workers in the mid-1930s using materials harvested on the forest. Ever since, construction of additional Hill Camp facilities has never involved State funds and has always been either with moneys derived from operation of the Piedmont (Hill, Schenck, Hope Valley, Goodwin) forests or from a fund held by the North Carolina Rural Rehabilitation Corporation that was composed of moneys derived from the forced sale of a part of the Hope Valley Forest to the Corps of Engineers for construction of the B. Everett Jordan Reservoir. Use of these funds had to be approved by the Corporation and initially had been used for land acquisition. Later an agreement was reached that they could also be used for facility construction and improvements on the School Forests. Use of the

proceeds from timber sales on the Piedmont forests was greatly hampered because they had to be budgeted and spent on a fiscal year basis with limited carry-over authority to the next fiscal year. Thus, a building project had to be carefully manipulated so that planning took place in one fiscal year with construction and payment for work begun and completed in the next fiscal year<sup>3</sup>.

In 1980 an expansion of the camp, necessitated by growth in student numbers, advent of women into the program, and addition of the Wildlife summer camp in the 1970s, had just been completed using both School Forest receipts and Rural Rehabilitation funds. It involved construction of 5 new cabins, a new bath house facility, a classroom building, a tool shed, and a caretaker's cottage at the entrance to camp. However, the original buildings of the camp (the lodge, faculty cabin, Thacker House, dining hall, and garage/work facilities) remained much as they had been since World War II.

Although the new classroom opened in 1979 was vastly superior in construction to its predecessors, it proved to be uninhabitable after mid-day. Addition of insulation and a large exhaust fan provided only marginal relief. Learning and teaching in that building were not easy experiences what with the steady beat of the exhaust fan and heat oppressive enough to put teacher and student alike asleep. In the spring of 1991 the classroom building was air conditioned, not only to make instruction more comfortable, but also because it was necessary to protect the computers that came into widespread use at summer camp in the late 1980s.

Another essential project was remodeling of the kitchen and dining hall located in an old World War II barracks building which was badly in need of an overhaul. In the spring of 1982 the dining hall was improved and a new ice machine added. Plans for a new kitchen were approved and new equipment purchased in 1982-83; the kitchen itself was finished in 1983-84 in time for use during the 1984 summer camp program.

The septic tank and waste disposal facilities, though not as exciting as buildings, were obviously essential to the smooth operation of summer camp. For years the camp got along with a system that needed constant upkeep and repair. Visitors to the camp looking for Larry Jervis often found him down with some students digging out the septic lines to remove beer cans or other debris that some disenchanted students had thoughtfully stuffed down the commodes!

The potable water supply was an equally serious problem. Since the beginning of summer camp in the 1930s water was taken from a driven pipe in a spring on the slope above camp. This source proved adequate and passed all health testing for years. Although the system

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<sup>3</sup> See the Section on College Forests for a further elaboration of this problem.

never ran completely dry, there were times during particularly dry summers when water was scarce.

The urgency of repairing these basic utilities led to a decision in 1994 to seek permission to use one-half of the remaining \$450,000 Rural Rehabilitation land acquisition fund toward camp renovations. These proposed renovations included upgrading the wastewater treatment system, replacing the men's toilet building, construction of additional student and faculty housing, and expanding the dining hall. All work was to be completed by the 1996 camp season. This proved to be an optimistic plan!

In 1996-97 a new toilet and shower building was completed and a new well drilled. Planning for the waste disposal system ran into continued snags with contractors and County and State permitting authorities. Ultimately approval to construct the new waste disposal system was obtained and it was completed in March 1999. These three projects used \$274,000 of the available money and improvements to housing and the dining hall were deferred.

The Thacker House, located on the far side of the lake and used for years as faculty housing, was razed in 2002-2003 and new faculty housing was erected in time for the 2004 camp session. This new facility allows for several faculty members to reside at summer camp at the same time and is winterized for year-round use.

Plans for new dining hall are moving ahead and construction is contingent at this time on selling the Hope Valley Forest.