

**Creating A Ten-Year Facilities Plan – A Model Approach**  
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## ***Abstract***

*University Housing at NC State supports the mission of North Carolina State University by providing programs, services and facilities which promote educational and personal development for campus residents.*

*Responding to the “facilities” portion of our mission statement, University Housing determined the need for a comprehensive, flexible strategic planning tool to aid in maintaining (and acquiring) clean, comfortable and modern living and learning space that students would want to live in for the duration of their college careers. Most of the information was available, but not in a consolidated form that could be referenced quickly and adjusted freely to address a plethora of variables.*

*The Associate Director for Finance and the Technology Support Analyst devised and constructed the tool, and the Housing leadership team determined the needs and wants of the buildings and resident community. The fruit of our labor is a document that succeeds in meeting the goal for a corporate planning model that is current, timely and adaptable.*

## **Introduction of the Organization**

North Carolina State University is the largest constituent institution of the University of North Carolina system. Founded in 1887 as a land-grant institution, the University's main campus is located on 2,110 acres in the state capital of Raleigh, with more than 101,000 acres in research and extension farms, forests and facilities throughout North Carolina's 100 counties.

A nationally recognized leader in science and technology with historic strengths in agriculture and engineering, NC State offers bachelor's degrees in 102 disciplines, master's in 108 fields and 60 doctoral programs, as well as a Doctor of Veterinary Medicine degree. The University has almost 30,000 students and 7,000 employees, including 1,638 full time and another 187 part-time faculty. NC State is ranked 6th in technology strength of patents, 7th among national research universities in industry-funded research, 12th among national research universities in non-federally funded research, and has received more than 500 patents for beneficial technologies developed by our faculty. More than 50 companies have spun out of NC State since 1980, and those companies now employ almost 2,000 people in fields like textiles, pharmaceuticals, software and environmental engineering.

University Housing is a completely self-supporting auxiliary enterprise reporting to the Division of Student Affairs. With a \$30M operating budget, Housing employs approximately 100 full-time staff involved in residence life, business operations and facilities planning and operations. The facility inventory includes 21 residence halls with 6,460 beds, a 1,200 bed upper-class and graduate student apartment complex, a 118 unit garden apartment complex and 294 unit family housing apartments. The organization is

decentralized into seven distinct residential areas plus administration, each led by an associate director. Each of these units has a separate operating budget, and the associate directors have fiscal responsibility for their individual operations including planning for maintenance and renovations. NC State has no on-campus residency requirement, so University Housing exists in a competitive environment with housing enterprises in the surrounding communities.

### **Statement of the Problem/Initiative**

University Housing was at a crossroads. The department had recruited a consulting firm to study the housing market and the perceived need for additional student housing in the Greater Raleigh area, and in 1998 it was determined that as many as 1,800 beds would be needed before 2010.

As a result, the department embarked on the construction of Wolf Village, a 1,200 bed upper class and graduate student on-campus apartment complex. During construction, the surrounding area began to experience rapid growth in the development of off-campus, privately-held, student-centric housing; the State of North Carolina had approved a \$3.1 billion dollar bond issue for the whole of the University of North Carolina system, which would encourage significant construction and renovation of academic and laboratory space and promote enrollment growth. Competition was increasing to fill student housing needs. In addition, many of the other campus residence hall structures were showing their age, and the State mandated the installation of sprinkler systems in all residence halls as a result of a fatal fire on the campus of a constituent institution in the mid 1990s.

Auxiliary enterprises are self-sufficient. The total financial burden for Wolf Village and the many renovation projects on the horizon would fall squarely on the shoulders of University Housing. An aggressive repair and renovation scheme was needed, one that would allow the department to comply with State law with regard to life safety improvements as well as improving the quality of the facilities which house our students...from deferred cosmetic upgrades to air conditioning the few buildings which still did not have that amenity. In the meantime, life goes on at NC State – operating expenses continue to increase as the cost of utilities rises, normal inflationary pressures squeeze the budget tighter and personnel costs continue to climb. As a state agency, there are the usual administrative hurdles, checks and balances which need to be navigated for a project to get underway, so the timeframe from concept to reality can in many cases be months if not years. All of this requires a firm handle on all of the details.

## **Design**

As with most businesses, University Housing had a pro forma financial statement that was used for operations analysis and annual budgeting. The plan included routine inflationary factors and a section for capital projects, but most were five-figure or low six-figure projects that would be paid out of operating income as a fiscal year progressed. Housing was also carrying a maturing fixed-rate debt load from work that had been done on existing buildings in the late 1980s – early 1990s, so relatively speaking not much had changed to dramatically impact operations in the past 15 years. Housing saw the need for a comprehensive document that could be used to address changes “on the fly;” the driving force behind the need being the uncertainty of occupancy levels on campus as the local market became saturated with available properties. Additionally, several major

renovation projects ranging from \$2M to \$18M would be initiated over the next several years which would utilize debt financing, directly impacting the flexibility with which large projects had been previously undertaken.

Step one was to create a document that was easily amended and limited the opportunity to “forget something.” Since the financial pro forma was already in place in an Excel format, the entire document would be done with the same tool. A tab was added to the existing document containing a matrix which addressed occupancy levels and rent amounts for each of the seven different property types.

A second tab was added which linked to the first, in which another matrix was created which fine-tuned the prior to a more exacting level. Due to the variety of room configurations in our inventory, there are 21 different rent levels in place in a given year. While the first matrix inflated rents by percentages and altered occupancy levels, it’s application to the second actually “did the math” and produced revenue projections. These in turn linked to the financial pro forma, so a single-cell adjustment to one spreadsheet would flow through a second and adjust the revenue projection for a given year on a third. In this way, the question of what happens with a 1% change in occupancy can be answered with a single keystroke.

While University Housing staff was creating the functional report, we had solicited the assistance of NC State’s Facilities Division to perform a detailed needs analysis of all buildings and systems in our inventory. The Facilities Division presented us with a report citing which buildings would require how much work and to what level, both functionally and cosmetically. This information was used not only to help develop Housing’s corporate model, but also later in planning meetings with the campus facilities

planning staff when projects entered the formal planning stages.

## **Implementation**

Now that the financial underpinnings of the corporate planning model were in place, the director-level team could begin to create the final and most intricate phase. The team, consisting of the Associate Vice Chancellor for Student Affairs, the Director of Housing and the Associate Directors for Finance, Administration, East, Central and West Campuses, Facilities and ES King Village met on a biweekly basis to develop the capital renovation plan for the next ten fiscal years. Another matrix was created, with its bottom line going directly to the financial pro forma in a cell for “capital projects” which is addressed after Net Income After Operating Expenses and Debt Service. The total is placed here so as not to impact the spreadsheet’s formula calculating debt ratio, as any spending adjustments that may need to be made during the course of a year can be directly addressed in one line.

Over the course of several months the team met to brainstorm current and future capital projects. Included in the calculations were any and all projects that could be considered pertinent to a particular year, building or campus area. Design fees were accounted for separate from actual construction/renovation/purchase costs, and projects which would carry across fiscal calendars or those targeted for future years were inflated by 3% per year. Costs were determined by experience, market studies by Housing personnel and consultation with the university’s Construction Management Division.

Next, projects were assigned a priority status of A (critical), B (important) or C (improvement). Status was determined by operational need or the priority with regard to

spending.

While Housing's associate directors were preparing the projects portion of the model, Housing Facilities determined the predicted maintenance needs of existing buildings, and scheduled roof, carpet and furniture replacements as well as painting of all residence halls and apartments for the ten year life of the model. These figures were then linked to the capital projects line of the financial model.

Our Ten Year Plan is now a living document. Eight spreadsheets are linked together into the financial pro forma, which shows a ten-year current and forward window.

## **Benefits**

We are tied to two measurements (other than to not operate at a deficit) as per University requirement: A 1.25 debt ratio, and a 20% of operating expense cash balance. With our Ten Year Plan in place, adjustments to project schedules can be visualized by simply moving a project to another year to see what impact moving the dollars has on a particular period's ratios or bottom line. This flexibility also lends itself to timely project reviews; by analyzing what's included in a project and it's associated cost by project phase, certain plans can be expanded or value-engineered depending on the availability of funds or the impact on fiscal mandates. Knowing well in advance what our needs are allows us to prioritize and move projects based on a variety of uncontrollable factors.

We can also adjust the anticipated costs of projects as more information becomes available and view immediately the change's impact on our parameters. Since many

large-scale projects are several years from concept to completion, cost projections are bound to change from the time a project first makes it on the Ten Year Plan until formal planning documents are finalized and contracts are awarded.

This comprehensive, living document allows us to stress-test our future plans with simple adjustments to a cell or two. We are able to quickly answer any of the what-if questions regarding room rate changes, variances in occupancy or even the interest rates on general obligation construction bonds not only internally but also for key University administrators.

Finally, the Ten Year Plan has helped streamline the department's annual budgeting process. In the years before the completion of the Plan, many capital projects were presented in a wish-list format, then inclusion in the annual budget would be negotiated. Now, the capital project list is completed well beforehand during the biweekly planning meetings, and the information is simply included in the annual budget documents each year. This greatly reduces the number of meetings required every spring to formulate the subsequent fiscal year's operating budget.

The University Housing Ten Year Plan has proven to be a very valuable tool in planning our current and future needs. It continues to allow us to make decisions quickly and confidently, and to adjust our plans in response to changes in our environment. We can respond to questions from top administrators in minutes, allowing them to continue to have confidence in our operation. The plan now serves as our operational template; is reviewed continuously and formally updated at least annually, so it is truly a living document.