MEASURING THE SUCCESS OF A 21ST CENTURY CENTER FOR LEARNING

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Anne Arundel Community College (AACC) in Arnold, Maryland began planning for a new library in 2006 to replace its nearly forty-year old building. The comprehensive, two-year suburban college grew dramatically since the library opened in September 1967 as one of the first buildings on the newly constructed campus. Named for library advocate and first President of the college, Dr. Andrew G. Truxal, the original library served the student population well. But by 2006, it was time for a larger and more modern, energy-efficient library for the college. The planning process took approximately five years, followed by a year of construction. By December 2013, when the architects approached the library director about conducting a post-occupancy assessment, the new library had been open for fifteen months, sufficient time to learn more about how the building was being used and if it met the goals of the building program. The college agreed and beginning planning with the architects for interviews, observations, and online surveys to gather as much information as possible.

AACC Builds a Library

As a first step AACC completed a building program in 2007, which recommended a complete renovation of the existing library coupled with an expansion that would almost double the square footage of the building. The program allowed the college to

apply for state and county funds to design and construct a new library. (Community college construction projects in Maryland typically are funded in equal parts by the state and the county/counties served by the college.) State and county agencies supported the project and by fall 2009, AACC contracted with an architectural firm to design the building. The college formed a planning committee co-chaired by the Director of Facilities Planning and Construction and the Director of the Library. As is typical of a building committee at AACC, it included representatives from every area of the college that would play a role in planning and construction. Several faculty members and college staff representing areas with vested interests in the building were included, as were representatives from those units that would eventually occupy the new building. Architects, supported by Student Services personnel, conducted focus groups with students to gather input from this important group of stakeholders. The final goals for the building were based on the building program developed earlier and finalized during initial conversations among committee members. Goals included:

- Focus on renovating and expanding the existing Truxal Library because of its central location as one of four buildings along the perimeter of AACC's "quad," rather than constructing a new building elsewhere on campus.
- Create a modern, student-focused library.
- Support best practices in the delivery of library and related academic support services.
- Create a facility that would be the right size to support the student body.
- Create a building that would be efficient in its operations, aiming for a LEED Silver designation.

- Provide a pleasant and energizing environment for students, staff, faculty, and visitors.

The building design was completed in fall 2010 and a contract with builder in place in February 2011. AACC required the builder to meet a mandate from the college President that the library could not close for moving while classes were in session, so the construction schedule was carefully planned around the academic calendar. Exterior site preparation began in March 2011. Library services moved to a 22,000-square-foot modular building beginning July 31, 2011, during the waning days of summer school, and opened for service August 22, 2011, the first day of fall semester classes. Planners aimed for completion in July 2012, so that the library could move from its temporary home in time to re-open August 27, day one of the fall semester. The contractor and college met the schedule.

Library staff hosted tours for faculty and staff the week prior to the official opening and visitors praised the new facility. When the first students arrived at the library a week later, they were as complimentary of the building as the college employees and quickly became comfortable with the new facility. The library director was heard commenting that when she saw students moving the furniture less than two days after the opening, she knew that they had claimed the building as their own. A student journalism class that roamed the building during the first week of classes tweeted their news reports about the new library and urged other students to use it.

Planning the Assessment

About fifteen months after the building opened, the architects approached the library director and ask if there was interest in conducting a post-occupancy building

assessment to determine if project goals were met. With a culture of assessment firmly in place at AACC, the college did not hesitate to agree. The architects used a seven-step process to design and conduct the assessment:

1. Identify the need for the assessment project, set goals, and determine how results would be used.
2. Determine the strategies to use for the assessment.
3. Create a written plan outlining who will conduct the assessment, topics to be addressed, and where it would take place, to present to college administration for an internal review process.
4. Prepare survey instruments, questionnaires, and an outline for observations; set a schedule for conducting the assessment.
5. Execute the survey, conduct interviews, and observe the library.
6. Analyze results and report to the college.
7. Take action by reporting on the assessment through conference presentations, publications, and other means, and implementing changes as a result of the feedback gathered through the survey.

The assessment would include a review of data detailing use of the library building and resources; group interviews with faculty, other college employees, and students; observations by the architects of patrons using the building; and online surveys completed by students and college employees.

AACC's academic administrators agreed that the assessment would benefit the college and sent the proposal to the Office of Planning, Research and Institutional Assessment (PRIA) for review. The proposal package included drafts of survey and

interview questions, Suggestions from the PRIA Executive Director were incorporated in the study design and the project was approved. The PRIA director took responsibility for launching the online surveys. The library director recruited faculty to participate in interviews; they responded so enthusiastically to the invitation that architects held three sessions for faculty instead of the single one originally planned. The library director worked with library staff and student services personnel to recruit students for their interviews. College administrators and employees from information technology, public safety, and facilities maintenance also participated in interviews, as did library employees. Two architects conducted the interviews and observations over a two-day visit to the library and the online survey was posted approximately two weeks later.

Data and Observations

A review of library use data confirmed observations that the library was more heavily used than in the past. The gate count for FY2011, the last full year the library occupied the old building, was approximately 300,000. (The count is an estimate, as one of the three entrances to the building did not have a counter on it.) In FY2013, a year that included eight weeks that in temporary locations, the total gate count for all locations was 523,822. Reference inquiries increased from 22,337 in FY2011 to 26,939 in FY2013. Circulation of library materials declined from 35,139 in FY2011 to 27,315, likely as a result of new electronic books and streaming videos added to the collection during the year the library was in its temporary location.

As part of observing patron activity, architects used library floor plans to note where individuals were seated at 10:00 a.m., 1:00 p.m., 5:00 p.m., and 9:00 p.m. on one day of their visit. The 1:00 p.m. hour showed the heaviest usage, followed by 10:00

a.m., 5:00 p.m., and 9:00 p.m. (Insert Chart #1) Architects observed a tendency for one student to sit at a table designed for four, indicating a desire for personal space with invisible boundaries. Other observations led the architects to conclude that group study spaces were fully utilized and there was a high demand for window seats. The architects observed that the library was used as a neutral location for faculty members to meet with students. Student success was supported by the increased study space in the new library and the addition of non-traditional library materials, such as biology and chemistry models, graphing calculators, and mobile white boards that students could borrow for use in the building. Information gained through both interviews and observations led the architects to conclude that some of the building features that worked best were group study rooms, library staff presence on all three floors, and acoustic separation with the loudest activity on the first floor and the third floor designated as “quiet study” and also included a “silent study” room.

Interviews: Students, Faculty, Staff

Group study rooms were a topic of much discussion in the interviews with faculty, students, and library staff. Twenty group study rooms, each designed to seat from three to 14 individuals, are clustered on the second and third floors. All but the two smallest rooms have computers sand large wall-mounted monitors. Wall-mounted white boards are installed in all of the rooms. Full glazing allows staff and public safety officers to observe activity inside study rooms. Students are permitted to bring food and beverages into the rooms, though this can create housekeeping problems. The rooms are “first come, first served,” a policy that some patrons and library staff members would like to see changed, but works for others.

Furniture was also a topic of discussion with many of the groups. Most felt that the furniture was comfortable and flexible enough to meet patron needs. The library staff accepts minor rearrangement of furniture, such as moving chairs between study rooms. The architects concluded that the furniture is one of the successes of the building. One improvement that could be made is sturdier tablet arms on easy chairs that have them.

Library staff workspaces were generally viewed favorably. Staff believed that the design of workspaces was compatible with their work processes. Furniture is comfortable and space in work areas generous. Staff felt secure in work areas and in most cases, felt that they had the privacy that they needed to complete tasks. Circulation staff noted concerns with the circulation desk. They felt that the countertop was too deep and the book drop was incorrectly placed. Nearly all staff reported that the modular desks used in all workspaces contained seams or joints in inconvenient places that interfered with writing and side chairs were too heavy to move easily. Circulation staff reported that lights in their “back office” workspace were too bright. Some staff felt that workspaces designed with windows to monitor public service areas did not offer sufficient privacy.

Facilities maintenance staff spoke favorably about most building features. Remarkable utility costs savings resulted from a building automation system and occupancy sensors that automatically turn lights in offices and stacks off when an area is empty of people for a certain amount of time. Exterior materials, interior finishes, and furniture generally perform beyond expectations. For example, carpet tiles withstand the high traffic volume and black work surfaces on tables and workstations deter vandalism.

Facilities staff noted that the 30-foot high bay above the computer lab and the green roof's narrow pathway and curtainwall adjacency are maintenance challenges. They also reported that the entry vestibule and exterior door operation create a wind tunnel effect that allows cold air to enter the building.

Appropriate lighting in the building was an important focus during planning. Students participating in focus groups prior to planning the building spoke of the need for natural lighting. Most study areas are located adjacent to windows to take advantage of daylight and these are among the most popular areas in the library. Most staff offices also have windows, though smaller than in study areas, allowing employees to benefit from natural daylight. In areas of the building with large expanses of windows, gray glass with embedded ceramic frit controls glare. While planners paid an equal amount of attention to artificial lighting as to daylight, an unexpected problem is glare from pendant fluorescent lighting fixtures, especially in the evening. Adjusting the settings in the lighting control system might provide a resolution to this situation.

Information Services, the information technology department at AACC, is generally satisfied with technology in the building. The IS staff felt that wireless and wired bandwidth in the library was sufficient; however, many patrons and library staff disagreed.

Twenty-five security cameras are located in the building and monitored by the college public safety department. Staff from that unit believe that the presence of library staff at service desks near the two building entrances deter theft. They feel that lighting levels are good and contribute to a safe environment. They are concerned about black

partitions in restrooms, because they have low reflectance, which creates reduced lighting conditions.

With a goal of a LEED silver rating for the new library, planners paid close attention to sustainability features of the building. Interviews and observations revealed interest and satisfaction with this aspect of the building. The green roof was mentioned frequently. One faculty member noted that it is “impressive and inspiring … [and] reflects the mission of the college.” The building serves as a teaching tool for environmental education classes offered by several departments, including Biology, Architecture, and a “Kids in College” course for middle school children. Areas for improvement mentioned in interviews are better education for students regarding recycling, easier to use recycling containers, changes to the green roof to allow patrons to occupy it, and advanced lighting controls to accommodate different levels of daylight in various areas of the building.

As part of the assessment, the architects listed areas of the building that saw exceptionally high use and others that were underutilized. Among their observations of areas that are “trending up” are:

- Group study rooms are extremely popular and there is a need for more.
- Some activities undertaken in group study rooms would lend themselves to “maker space” and consideration should be given to converting underutilized space to this function.
- The Writing Center is extremely popular and in need of additional space.
- With the addition of science models and other non-traditional library materials, additional storage in the circulation desk area is warranted.

Areas that were identified as being underutilized or “trending downward” included:

- A small area of vending machines located near the popular Fireside Study, does not appear to be heavily used.
- The archives collection is not being set up in the space designated for it.
- Patrons have almost abandoned use of bound periodicals, except when an article is not available in one of the library’s electronic databases.

Library staff has begun addressing these areas. The Writing Center in partnership with the library recently launched a popular virtual service modeled on its traditional, face-to-face work with students. Shelving was relocated from the bound periodicals section to the circulation workroom to accommodate the growing collection of science models. Work on the archives ceased several months prior to the architects’ visit, while the college conducted a search to fill a vacancy created when the library’s cataloger resigned. A new cataloger started the month before the visit and began working on archival materials three months later. Conversations regarding “maker space” with college administration are occurring.

Online Surveys: Students, Faculty, Staff

In order to solicit feedback from even more members of the college community, the architects prepared two online surveys, one for students and the other for college employees. After review and slight modifications by college staff, the surveys were launched on April 10, 2014, and remained open until May 4, 2014. Library staff members were surprised to learn that 228 students completed surveys, as this group is known for its resistance to surveys. Surveys completed by college employees numbered 165.

Of the 228 students who responded to the survey, 170 (74%) were female, 56 (25%) were male and 2 (1%) did not respond. The age of respondents ranged from “Under 18” to “55+.” The wide range of ages using the library is not surprising; as a community college, AACC offers dual-enrollment to county public high school students, serves adult students who deferred higher education beyond the traditional age, and provides life-long learning opportunities to adults of all ages. Slightly more than half (53%) of respondents were between 18 and 25 years of age. Fifty-five percent were full-time students and 45% attended college part-time. Forty-three percent visited the library two to five times per week, 25% visited the library at least once a week, and 25% at least once a month. More than half (51%) of the students responding reported spending one to three hours in the building on a visit.

The survey questioned students about their overall level of satisfaction with building design, as well as with specific areas and features of the building. They were also asked to rate aspects of the library building on quality and respond to a series of yes/no questions about availability of services. Students rated satisfaction and quality questions on a five-point scale ranging from “very satisfactory” to “very unsatisfactory.” Following these were questions that gathered open responses and comments about various aspects of the library building. Students were also asked to indicate satisfaction with library resources (such as electronic books), library services, hours of operation, and other matters not related to the building or its equipment and furnishings. Because this last group of questions is not directly related to the building, they are not addressed in this paper.

For most of the questions in the “satisfaction” series, 82% to 87% of students gave ratings of “very satisfactory” or “satisfactory.” These included questions about meeting student needs; enhancing productivity; personal safety; interior finishes; and furniture in various types of study spaces and computer labs. Outliers at the high end were overall building quality (92%) and general building layout (90%). At the low end, the outliers signage and wayfinding (76%), and library instruction labs (75%). (Insert Chart #2) Because students in the focus groups held prior to planning the building frequently mentioned the insufficient numbers of electrical outlets in the old building, the architects included a question about them. Eighty-three percent of the students responding said that they had sufficient and convenient access to electrical outlets in the new building.

Questions relating to quality addressed such topics as computers, wireless service, various types of study areas, and environmental factors. Questions addressing study spaces had significantly more students selecting “no response,” presumably because some students did not use certain study areas. “No response” as the answer ranged from 10.5% of all responses to the question about quality of group study rooms to 15% of all responses to the question about the Fireplace Study. “No response” answers were included in the analysis of the survey, but readers should be aware that they skewed overall results.

Most of the quality questions were in the 72-78% for responses of “very satisfactory” and “satisfactory,” including wireless service (72%), group study rooms (74%), general study space (75%), desktop computers (76%), and silent study room (78%). The outlier in the quality category was the Fireplace Study, with 69% of

respondents ranking it as “very satisfactory” or “satisfactory.” For questions relating to quality of environmental factors, 80% to 86% of respondents rated the quality as “very satisfactory” or satisfactory, including environmental friendliness, 80%; view of the outdoors, 81%; artificial light, 81%; air temperature, 83%; natural daylight, 85%; and ventilation and air quality, 86%. The outlier in this category was noise, at 70%. (Insert Chart #3) When non-response answers were removed from the results, the percentage of “very satisfactory” and “satisfactory” responses for study areas increased as follows: general study space, 84%; Fireplace Study, 81%; group study rooms, 84%, and silent study room, 85%.

The open response section of the survey for students asked for comments regarding amenities or services that students would like to add to the building (examples were given); to suggest improvements to technology, library hours (not addressed here because hours are not specific to the building project), and food service; note other area on campus where students study; and to comment on anything relating to the new library. A representative selection of responses to each question is included as Appendix 1. (Insert Appendix #1) Many responses to the question about additional amenities and services related to the examples listed. Others recommended more vending machines, group study rooms, and rest rooms; more building entrances; and improved accessibility. Recommendations for improvements to technology included improved wireless, computers, printers, and network services; more electrical outlets; and cell phone chargers. Students study in a variety of other areas on campus, including classrooms, computer labs, hallways, outdoors, and the Student Union, with no single location rising to the top. Suggestions for improvements to food service

included more vending machines, healthier food, a café, a microwave, and banning food and beverages in the library. Responses to a request for comments on different areas of the library focused on some of the previously mentioned topics, as well as adding specific types of furniture, implementing a reservation system for study rooms, placing restrictions on what can be done in study rooms (i.e., no viewing YouTube or other videos, not permitting children to accompany their parents, limiting the number of students in a group), and improved housekeeping services.

The survey for faculty and staff asked questions similar to those on the student survey and used the same response scale. They were asked to rate their level of satisfaction with various features of the building and also rate them on quality. As with students, employees were asked to rate aspects of the library not related to the building; those are not discussed in this paper. Open questions were similar to those posed to students. The number of staff and faculty members responding to the survey was 165. Seventy-seven percent were female; 22% were male. Eighty-one percent worked at AACC for more than five years. Thirty-eight percent used the library at least once a month; 9% used it between one and five times per week. Nearly two-thirds spend one to two hours when visiting the library. There was a higher rate of “no response” answers on the faculty survey, ranging from a low of 5 for satisfaction with desktop computers to a high of 42 for satisfaction with the silent study room. The “no response” answers skewed faculty results to a greater degree than in the survey of students.

Most of the questions about satisfaction with the building were in the 71% to 78% range for responses of “very satisfactory” and “satisfactory.” Satisfaction with overall building quality and personal safety were rated at 78%, general building layout at 76%,

and interior finishes and signage and wayfinding at 64%. The lone outlier is satisfaction with enhancing productivity at 55%. When “no response” answers are removed, most questions had scores in the 81% to 85%, with two outliers, signage and wayfinding at 70%, and enhancing productivity at 61%. (Insert Chart #4)

Questions relating to the quality of areas and features of the building generally scored between 56% and 63%. Instructional labs were at 56%; Fireplace Study at 58%; wireless and the silent study room, 60%; wireless service at 60%, group study rooms, 62%; and general study spaces, 63%. After removing “no response” answers, most ratings ranged between 76% and 81%. Ratings for quality of environmental factors covered a wider range than any of the other groups of questions in either the student or faculty survey and also had more “no response” answers than any other category. When all responses were included, the satisfaction ratings ranged from 62% to 76%. Once “no response” answers were removed, ratings ranged from 72% to 87%. (Insert Chart #5)

Faculty and staff members were asked open questions similar to those asked in the student survey. A selection of responses for these questions is attached as Appendix 2. (Insert Appendix #2)

Conclusions from the Assessment

Because the main goal of the assessment was to determine if the goals of the building project were met, the architects and library staff compared information gathered during the assessment to the goals. All project goals were met, as follows:

- Focus on renovating and expanding the existing Truxal Library – College leadership, including the Board of Trustees concurred with planners that the

existing building's central location on the quad was an important factor to consider. Other available land for new library building was along the edges of the campus, so the renovation and expansion option was selected.

- Create a modern, student-focused library - The new library is modern in its design and services aim to meet student needs. Student opinions about the building and its services document that the library is focusing on student needs.
- Support best practices in the delivery of library and related academic support services – The building contains the technology needed for a 21st century library that follows current and best practices in serving students.
- Create a facility that would be the right size to support the student body – While there are sometimes waits for group study rooms, the library has sufficient space to meet the needs of students and faculty who use the building and to support its physical collections.
- Create a building that would be efficient in its operations, aiming for a LEED Silver designation – Data from the college's facilities department document a reduction in utility costs. Many "green" features were included, allowing the library to earn a LEED Gold designation, one level above the goal of LEED Silver.
- Provide a pleasant and energizing environment for students, staff, faculty, and visitors – Comments by students, faculty members and staff document that this goal was met. AACC's now-retired President, who was involved through the planning and construction process, refers to the new Truxal Library as "the jewel of the campus."

Benefits of a Post-Occupancy Assessment

What can a post-occupancy assessment reveal? How can it help the library? For AACC, there were several benefits:

- The college community came together to support the assessment project, its members eager to convey their enthusiasm for the new library. When planning interviews, one session with faculty was on the schedule. AACC's faculty members were so eager to participate that two more sessions were added. The response rate for the online survey was good and answers to the open questions on the survey were plentiful and useful.
- The survey allowed the library to learn about how patrons were using the library and what was important to them. It made it possible to implement small changes quickly and begin discussions about more complex changes and innovations for the future.
- Many observations made by library employees during the first 18 months that the library was open were confirmed by the results of the assessment. This includes the need for "maker space" and better navigational aids.
- The larger library community can learn from AACC's experiences in planning, creating, and conducting a post-occupancy assessment.

At the time that this article is being written, it has been a year since the architects' visit to conduct observations and interviews and about 7 months since the results of the online surveys were made available to the library. The results of the post-occupancy assessment, as well as staff observations, generated improvements to the library. As noted above, in direct response to the architect's observations and interviews, the

library partnered with the Writing Center to launch a similar virtual service, relocated shelving to the circulation workspace to provide a home for science models, began working on organizing archival materials, and engaged in discussions about “maker spaces” with college administration. Library staff continued to observe activity in the building and reviewed the results of the surveys, resulting in these actions:

- Based on conversations with patrons, library staff learned that the vending contractor was not resupplying snack and beverage machines near the Fireplace Study as frequently as was needed. Conversations with the vending contractor resulted in a more regular and frequent schedule of servicing the machines.
- Custodial services have improved in the past 8 months.
- Signs listing use policies, posted at the doors to all group study rooms, were revised. Clearer language is used to note that while a single patron may still use a group study room, groups have priority.
- As they move through the building, library staff members are more observant of noise levels in group study rooms and speak to patrons when the sound in a room is audible to someone walking past it.
- The college public relations office assisted library staff in the creation of small signs that refer students to the third floor for quiet study. These were placed on tables on the first and second floors, where conversations are permitted.
- Signs indicating call numbers for materials housed on each floor have been placed near the elevators.
- Chemistry models and additional biology models have been added to the collection maintained for use within the library building.

- Cell phone chargers for the most common phone types were purchased and patrons may borrow them from the circulation desk for use within the building.
- Coming soon, as a result of staff observing patrons using the Silent Study Room for group meetings, will be clearly worded signs at the doors to remind patrons that it is not a group study room.

The post-occupancy assessment was of great value to Truxal Library. Staff will continue to study the responses and make observations. Truxal Library, the “jewel of the campus,” will remain that, both for its appearance and in the way that it supports students.