



EYP/ research

Living-Learning Research Report:
University of Michigan

June 2014



Table of Contents

Introduction	3
Purpose of Study	4
Methodology	4
Results	6
Conclusion and Implications of the Study	19
References	20

Research Team

Leila Kamal, AIA, LEED AP BD+C
Vice President / Design & Expertise
EYP Architecture & Engineering

Sara G. Stein, AIA, NCARB, LEED AP BD+C
Student Life Expert, Senior Associate
EYP Architecture & Engineering

John Baxter AIA, LEED AP BD+C
Education Sector Leader, Principal
EYP Architecture & Engineering

Paul King AIA, LEED AP BD+C
Lead Designer, Principal
EYP Architecture & Engineering

Karen Inkelas, PhD,
University of Virginia

Kim Tanzer, FAIA,
Dean of University of Virginia School of Architecture

Greg Merritt, PhD.
University of Michigan
Sr. Housing Director, University Housing

How College Students Use their Residence Hall Spaces and its Contributions to Student Learning

Introduction

The earliest residence halls in American colleges and universities were designed to be at the center of student learning, “to bring the faculty and students together in a common life which was both intellectual and moral” (Brubacher & Rudy, 1968, p. 42). Modeled after the British university system, the residential college model combined into one space students’ sleeping quarters, dining halls, lecture halls, tutor residences, and common areas. However, that model was not to be sustained, as the growth in student populations due to the Morrill Land Grant Act of 1862, changes in postsecondary education toward a more German inspired and discipline-focused model in the latter half of the 19th century, and finally, a vast population swell of students in the post-World War II era as a result of the G. I. Bill changed the nature of the American university residence hall considerably. By the 1960s, the role of the residence hall had become relegated to that of a living quarter only: residence hall functions were described as a place to “secure housing, and maintain standards of hygiene, safety, and behavior” (Student Personnel Services in Colleges and Universities, 1961, p. 31).

Yet, university leaders in the latter half of the 20th century began to question whether the residence hall was merely a place to house students, or if it could be a place where living and learning were integrated. Moreover, as universities began to recognize that an education involves the “whole student” and not just students’ minds, out-of-classroom environments became places where young adults could grow and develop, practice interpersonal skills, and possibly put to use that which they learned in their coursework (Schroeder & Mable, 1994). Since then, numerous studies have examined the effects of living in a residence hall on various student outcomes, and a recent summary by Pascarella and Terenzini (2005) of research published between 1989 and 2002 showed that:

- Students who live on-campus tend to be more satisfied with their college experiences, which lead to greater persistence in college. They also exhibit greater growth in several areas of development, and tend to change their values and attitudes more significantly;
- Students who live on-campus tend to interact more often with their peers and participate more frequently in co- and extra-curricular activities, which often leads to a greater likelihood to persist in college and eventually graduate; and
- The above effects tend to be more pronounced in living environments that are intentionally designed to achieve those goals. For example, students who live in residential environments that intentionally encourage student interaction with individuals from different cultures tend to generally hold more inclusive and open attitudes toward diversity.

The physical design of the residence hall can play a major role in shaping how successful a residence hall staff can be in facilitating certain learning goals. For example, if a residence hall staff wished for students to interact more frequently with their peers, it would be difficult to enact those ambitions in a facility with few public gathering spaces. Thus, as higher education moves back to the belief that the residence hall can be a central force in student learning and development, the architectural design of residence hall buildings is a critical element in shaping the learning environment in American colleges and universities.

Purpose of the Study

EYP is committed to designing and creating college residence halls that promote and enrich student life and learning. This research is thus measuring the impact of the built environment on students who live in residence hall buildings intentionally designed to be living and learning spaces. This study examines student usage of academic and social spaces in a live/learn designed hall. In addition, it compares the experiences among students living in the live/learn designed hall and a more traditional residence hall on a number of student outcomes, including interactions with peers, faculty, and residence hall staff; satisfaction with their residence hall experience; and co- and extra-curricular involvement.

This study utilizes a mixed-methods research design, including an observation component, in which student resident assistants performed observations of public spaces in Spring 2013 within two different residence hall buildings at the University of Michigan: North Quadrangle, an EYP live/learn designed residence hall, and Stockwell, a recently renovated traditional residence hall. The results from the observation study informed the development of questions on a survey instrument, which was administered to all students living in North Quadrangle and Stockwell in late-Fall 2013. Together, the results of the two studies reveal distinctive patterns within which students utilize their residence hall spaces, and how their space usage may or may not contribute to their learning and growth. It is our hope that this work will inform University Housing and Residence Life practitioners on how to make the best use of their spaces, and more importantly, architectural designers and builders on how students use their residence halls, and how their usage links to learning.



University of Michigan, Stockwell Residence Hall

Methodology

Study Site and Sample

This study took place at the University of Michigan in Ann Arbor, Michigan. The University of Michigan is the flagship public research university of the state, with an undergraduate enrollment of over 28,000 students. Ninety-six percent of first-year students live in an on-campus residence hall, and there are 19 residence halls in total at the University.

Two samples of students were selected for the study: the first sample (the experiment group) included students living in an EYP residence hall (North Quadrangle) intentionally designed to be a living-learning space. The second sample (the comparison group) included students living in traditional residence hall space (Stockwell) not necessarily designed to be a living-learning space.

North Quadrangle was designed by EYP and officially opened in 2010. It houses approximately 450 upper-level undergraduates (i.e., sophomores, juniors, and seniors) in a suite-style layout featuring single, double, and triple occupancy rooms. North Quadrangle boasts many new features, including an open lounge area with seating nooks on the main floor called the Media Gateway, a large meeting room open to U-M faculty, staff, and students (the Residence Hall Opportunity Space), a marketplace-style dining room with a café and a grand ballroom feel, a multicultural lounge reservable for culturally-themed programs and events, and a video teleconference studio. The residence hall also features classrooms and seminar space, lounges on every floor, two lofts, a kitchen, a community learning center, and office space for two living-learning programs (Global Scholars Program, Max Kade German Program).

Stockwell Hall was reopened in 2009, after an extensive renovation. The new layout of the building houses approximately 400 upper-level residents in single, double, and triple occupancy rooms. Like North Quadrangle, Stockwell's physical plan includes a community learning center, several lounges, a kitchenette, and study rooms. One of the centerpiece features of Stockwell is the enclosure of the former exterior courtyard under a glass skylight to form a multiple-level rotunda within the building. Stockwell also hosts the Sophomore Year Experience, a themed community focused on the unique needs of second-year students. Finally, the residence hall includes two music practice rooms, but the dining center is adjacent to the building instead of attached to it.

Study Phase One: Observations

In the spring of 2013, undergraduates living in North Quadrangle and Stockwell Residence Halls conducted observations of the public spaces within the two buildings. The public spaces chosen to be observed in both buildings included:

- Classrooms
- Community Learning Center
- Corridors
- Courtyards
- Dining Room
- Faculty or Staff Offices
- Kitchen or Kitchenette
- Lofts
- Lounges
- Meeting Room
- Study Rooms
- Video Teleconference Room

Three undergraduates performed eleven observations of eighteen different spaces in North Quadrangle between March 27 and April 24, 2013. The undergraduates recorded the time of the observations, who was using the space, what the users of the space were doing, and why they thought the space was preferred by those who were using it. Due to a flood in North Quadrangle during that time, not all observations that were scheduled could be performed, but enough of a baseline of information was collected.

Study Phase Two: Survey

Based on the results from the observations, a survey instrument was developed to query all students living in North Quadrangle and Stockwell about their space usage patterns. Similar to the observation protocol, the survey asks students which spaces they used the most often, the time they used the space, what activities they performed in those spaces, and why they preferred to use that space. The activities and preference response choices were populated using the data collected from the observations. The survey also asked the students in both residence halls to provide the researchers with recommendations or feedback they would offer to architects who design residence halls about their particular building.

Because EYP is interested in understanding how live/learn designed residence halls facilitated student learning, the survey instrument also asked students to respond to a series of questions regarding their:

- Relationships and interactions with students, professors, and staff in their residence hall
- Co-curricular (e.g., student clubs, organizations) involvement
- Extra-curricular (e.g., socializing, partying, exercising) activities
- Satisfaction with their residence hall experience
- Sense of belonging to their university

Moreover, for the interactions and co- and extra-curricular activities, students were asked if they performed those activities in their residence hall. Finally, students were asked on the survey to respond to a series of demographic questions. (See Appendix B for a copy of the survey instrument.)

Upon gaining University of Michigan Institutional Review Board and University Housing approval to conduct the study, the survey instrument was administered online to all students living in North Quadrangle and Stockwell residence halls in Fall 2013. The web survey firm, Survey Sciences Group, hosted the online survey from November 11 to December 2, 2013. A total of 859 students (North Quadrangle N=448; Stockwell N=411) were sent an initial email invitation to participate in the survey, and non-respondents were followed-up with up to three additional times. The final sample includes 333 students (a 38.7% response rate), 175 of whom lived in North Quadrangle (39.0% response rate) and 158 of whom lived in Stockwell (38.3% response rate).



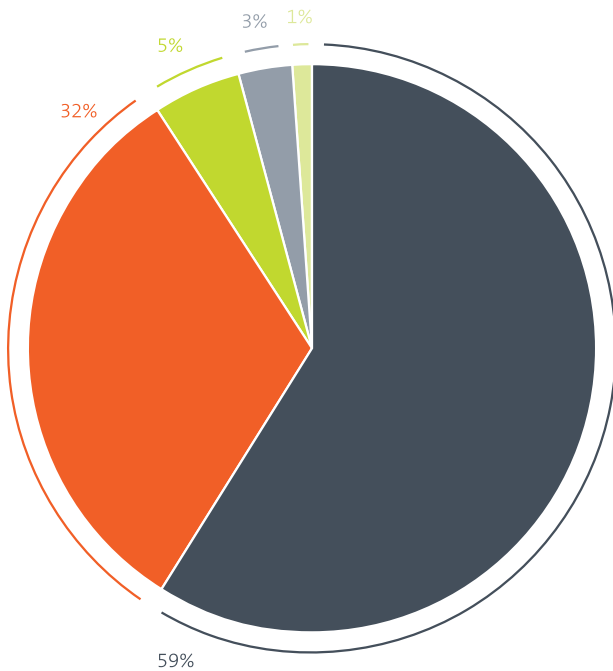
University of Michigan, North Quad Residence Hall

Results

Findings from the Phase One Observation Study

Who Uses the Building? Not surprisingly, North Quadrangle is used most often by its own residents: 59% of observations noted that residents were using the spaces being observed. However, it is notable that, nearly one-third of the time (32%), the observers commented that non-resident students (i.e., students at the University of Michigan who did not reside in North Quadrangle) were using the space. Given that the North Quadrangle building is shared with academic offices, it was surprising to learn that only 5% of observations were of faculty using any of the spaces. Finally, it was also somewhat surprising to learn that only 4% of observations included space usage by Residence Life or other staff. See Figure 1.

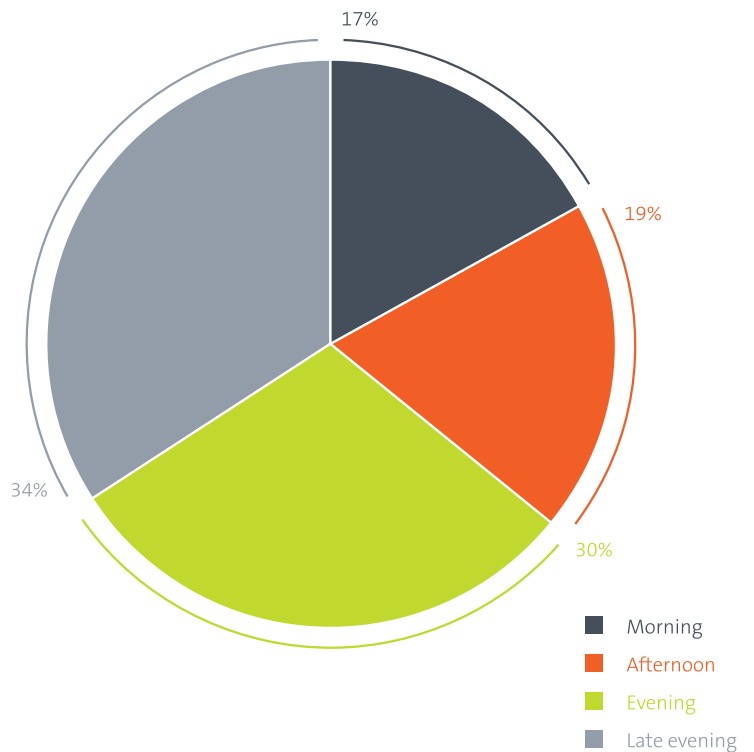
Figure 1. Profile of North Quadrangle Building Users



- Non-Resident Students
- Faculty
- Residence Life Staff
- Staff
- Non-Resident Students

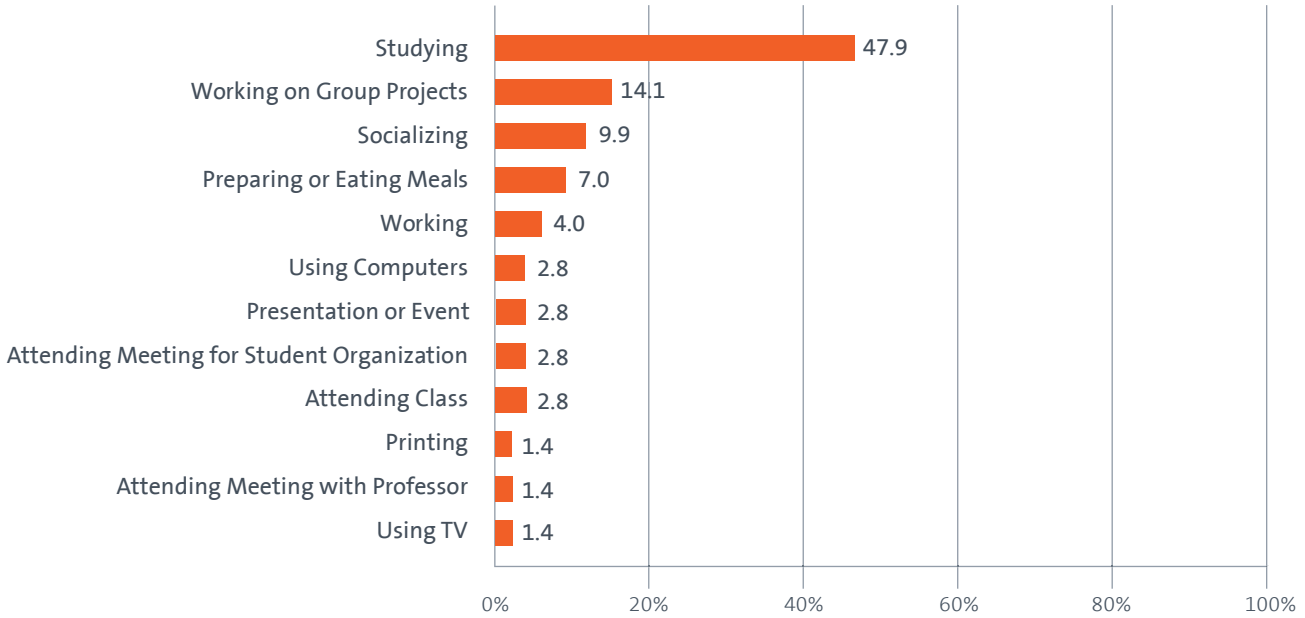
When is the Building Being Used? Given typical undergraduate student schedules that involve late nights and less frequent activity in the mornings, the North Quadrangle observations fit that pattern. Heaviest usage of the public spaces in North Quadrangle occurred in the evening (30%) and late evening (34%) hours. Thus, nearly two-thirds of the activities in these public spaces in North Quadrangle occurred during this time. See Figure 2.

Figure 2. North Quadrangle Usage by Time of Day



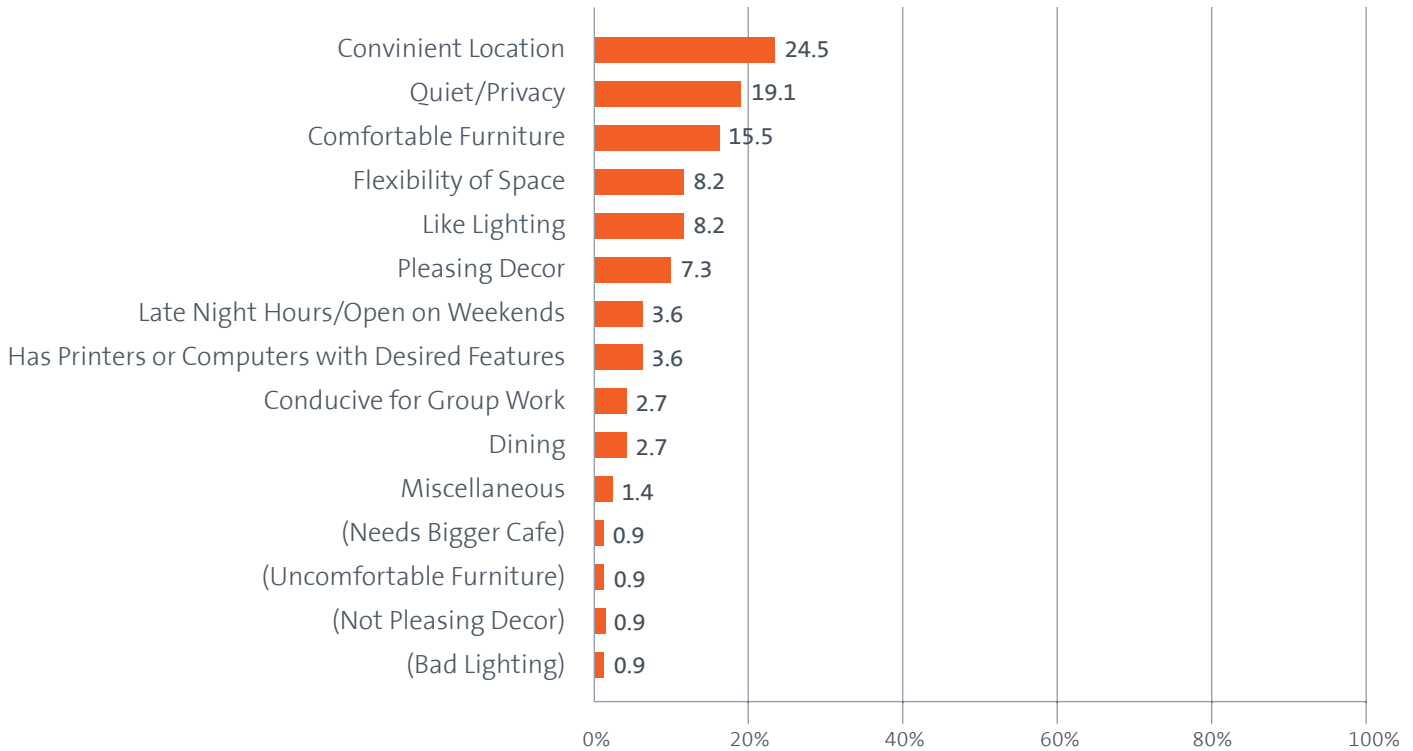
How Are Users Using the Spaces? During the time that the observations of North Quadrangle were made, users (mostly residents and non-residents) were primarily using the public spaces in the building to study (47.9% of observations), work on a group project with peers (14.1%), and socialize (9.9%). However, Figure 3, on the following page documents all of the observations made regarding how the spaces were being used.

Figure 3. How North Quadrangle Spaces Were Being Used



Why Users Prefer Using the Spaces. Since we learned above that the most popular reasons for using public spaces in North Quadrangle were related to studying, working on group assignments, and socializing, the three most popular reasons why users preferred using the North Quadrangle spaces make logical sense: the space is in a convenient location (24.5%), the space is quiet and/or provide privacy (19.1%), and the space has comfortable furniture (15.5%). However, the ambiance of a space also appears to be an important consideration: factors such as the flexibility of the configuration of the space (8.2%), the lighting (8.2%), and the décor (7.3%) appeared to be prime considerations among users. See Figure 4.

Figure 4: Why Users Preferred North Quad Spaces



Note: Items in parentheses in figure denote reasons why users did not prefer the space.

Observations about specific public spaces in North Quadrangle were also recorded during the observation study, the results of which can be found in Appendix A.

Findings from the Phase Two Survey

In order to understand how *all* students utilize their residence halls (and not just those were observed over a one-month period), and how they feel about their living and learning spaces, we administered a survey to all residents of North Quadrangle and Stockwell halls. Before moving to the results of the survey, it is important to compare the student respondents in both residence halls to see if there are any significant differences between the two groups. Such differences may affect the interpretation of the findings.

As Table 1 shows, the North Quadrangle and Stockwell residence hall samples are statistically similar by gender, race/ethnicity, and college grade point average. The only way in which they are different is in regards to the academic class standing of the residents in the two buildings: the Stockwell sample has slightly more second-year students (sophomores), and slightly fewer fourth-year students (seniors). This is most likely due to the fact that Stockwell hosts a themed community specifically focusing on the sophomore year.

Table 1: Demographic Comparisons of the North Quadrangle and Stockwell Hall Samples

		North Quad (n=449)	Stockwell (n=412)	Significant difference
Gender				
	Male	47.4	46.8	Non significant
	Female	52.6	53.2	
Race/ethnicity				
	American Indian/Alaskan Native	0.0	0.2	Non significant
	Asian/Pacific Islander	26.5	22.3	
	Black/African American	9.8	10.4	
	Hispanic/Latino	3.6	2.7	
	White/Caucasian	47.0	52.7	
	Multiple ethnicities	3.3	3.4	
	Race not indicated	9.8	8.3	
Academic class level				
	First year	1.4	1.2	Significant difference ($\chi^2=26.3$; $df=3$; $p<.001$)
	Second year	60.5	68.6	
	Third year	25.3	27.0	
	Fourth year	12.8	3.2	
College GPA				
	3.50 - 4.00	42.8	49.4	Non significant
	3.00 - 3.49	41.6	38.5	
	2.50 - 2.99	10.4	9.6	
	2.00 - 2.49	3.5	2.6	
	No GPA	1.7	0.0	

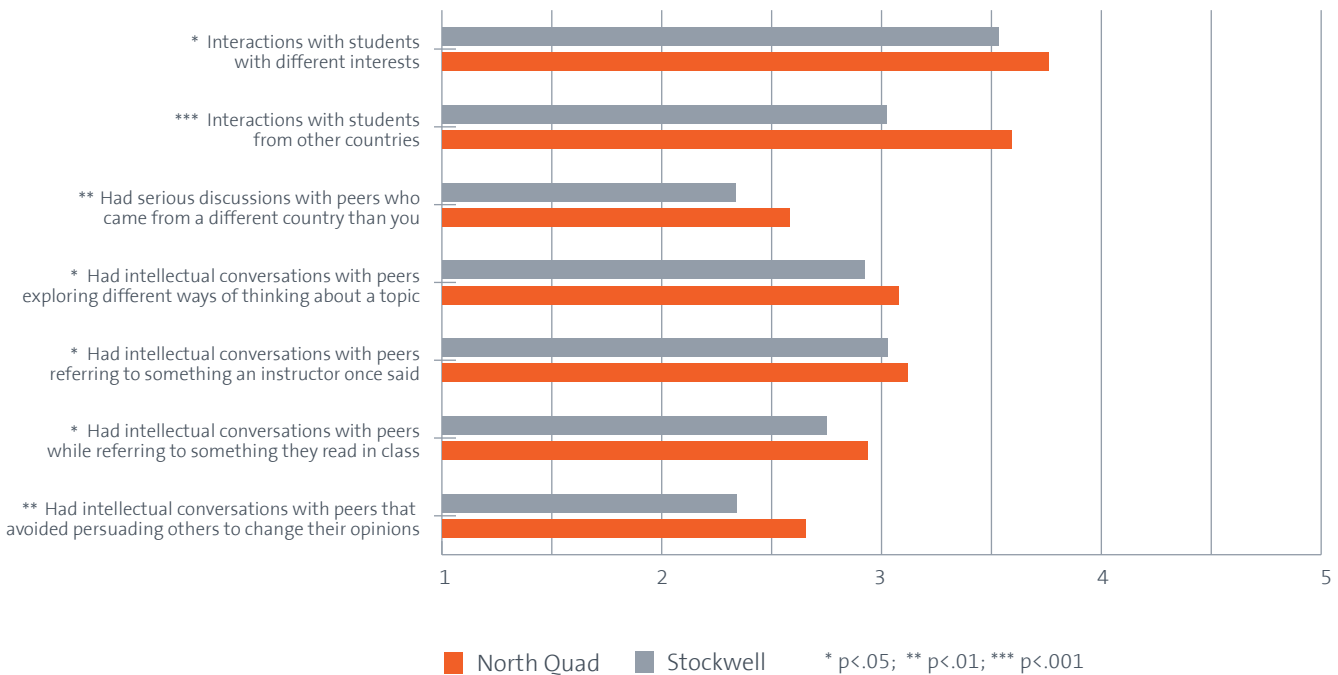
The results from the survey can be divided into six primary findings.

Finding #1: North Quadrangle students participate more often in learning-related activities, and tend to use their building more often than Stockwell students for such activities.

As Table 2 shows, students living in North Quadrangle are significantly more likely than students in Stockwell to interact with their peers in learning-facilitative ways. North Quadrangle students are significantly more likely to:

- Interact with students with different interests
- Interact with students from other countries
- Have serious discussions with students from other countries
- Have intellectual conversations with peers that explored different ways of thinking about a topic
- Have intellectual conversations with peers while referring to something an instructor once said
- Have intellectual conversations with peers about something they read in a class
- Have intellectual conversations with peers that involved persuading others to change their opinions

Table 2: Comparison of Average Interactions with Peers

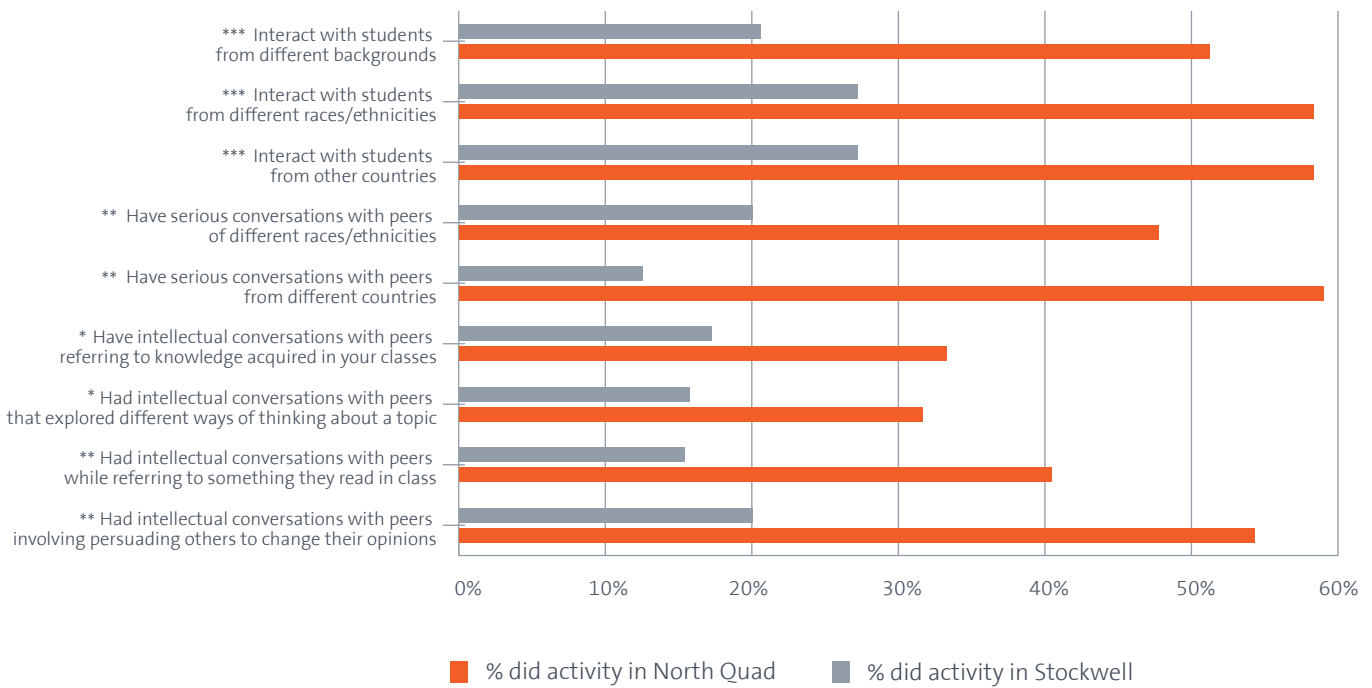


1=Never, 2=A little/A few times a semester, 3=Sometimes/A few times a month
4=Frequently/Once or more a week, 5=All of the time

Because the above types of peer interactions could occur anywhere on- or off-campus, we also asked North Quadrangle and Stockwell residents if they typically had those interactions in their residence halls. Among those students who frequently interacted with diverse peers, or those who had conversations with peers once or more per month, a significantly higher percentage of North Quadrangle students were more likely than Stockwell students to interact or converse with peers in their residence hall. North Quadrangle students were significantly more likely to do the following in their residence hall:

- Interact with students from different backgrounds
- Interact with students from different races/ethnicities
- Interact with students from other countries
- Have serious conversations with peers of different races/ethnicities
- Have serious conversations with peers from different countries
- Have intellectual conversations with peers referring to knowledge acquired in one of their classes
- Have intellectual conversations with peers while referring to something an instructor once said
- Have intellectual conversations with peers that explored different ways of thinking about a topic
- Have intellectual conversations with peers that involved persuading others to change their opinions

Table 3: Percentage of Students Who Performed Interactions in Residence Hall



* p<.05; ** p<.01; *** p<.001

In general, students in both North Quadrangle and Stockwell were not very likely to interact with faculty or residence hall staff, but as Table 4 shows, students in North Quadrangle were significantly more likely to meet or talk with their resident assistant (RA) and attend an event organized by their RA or hall than Stockwell students.

Table 4: Comparison of Average Interactions with Faculty and Staff

	North Quad		Stockwell		Significant Difference
	M	SD	M	SD	
Experiences with faculty (1=Never to 4=Once or more a week)					
Talked with instructor about course you were taking	2.44	0.78	2.38	0.86	
Discussed academic program with faculty member	2.15	0.78	2.08	0.76	
Discussed ideas for a paper or class project	2.18	0.80	2.12	0.84	
Discussed career plans and ambitions	2.07	0.82	1.89	0.84	
Worked harder as a result of feedback from instructor	2.46	0.86	2.37	0.90	
Asked instructor for comments/criticism about academics	1.96	0.91	1.96	0.93	
Worked harder to meet instructor’s expectations	2.43	0.98	2.27	0.92	
Cumulative scale	15.71	4.50	15.01	4.73	
Experiences with residence hall staff (1=Never to 4=Once or more a week)					
Had a meeting/conversation with your RA	2.70	1.11	2.34	1.02	**
Had a meeting/conversation with your Hall Director	1.46	0.81	1.33	0.74	
Attended an event organized by your RA or hall	2.14	0.92	1.94	0.80	*
Participated in your residence hall council	1.35	0.84	1.33	0.87	
Used the community center (front desk)	2.92	0.82	2.90	0.07	

* p<.05; ** p<.01; *** p<.001

Finding #2: North Quadrangle and Stockwell students tend to participate in co- and extra-curricular activities less frequently, but in several cases, North Quadrangle students were more engaged than Stockwell students.

Generally speaking, students in both North Quadrangle and Stockwell residence halls did not participate frequently in co-curricular activities. As Table 5 shows, most students participated in student clubs and organizations less than 1-5 hours per week. However, North Quadrangle students were slightly more likely

to participate in arts/music performances and activities, varsity sports, and ethnic/cross-cultural activities or clubs.

Students in both residence halls responded that they attended classes and studied/did homework about 11-15 hours per week. However, North Quadrangle students were more likely to respond that they socialized and partied with friends, as well as exercised. And, they were significantly less likely to watch TV alone. Thus, North Quadrangle students were not only more involved with learning-related activities, but they also tended to socialize and entertain themselves more as well.

Table 5: Involvement with Co-curricular and Extra-curricular Activities

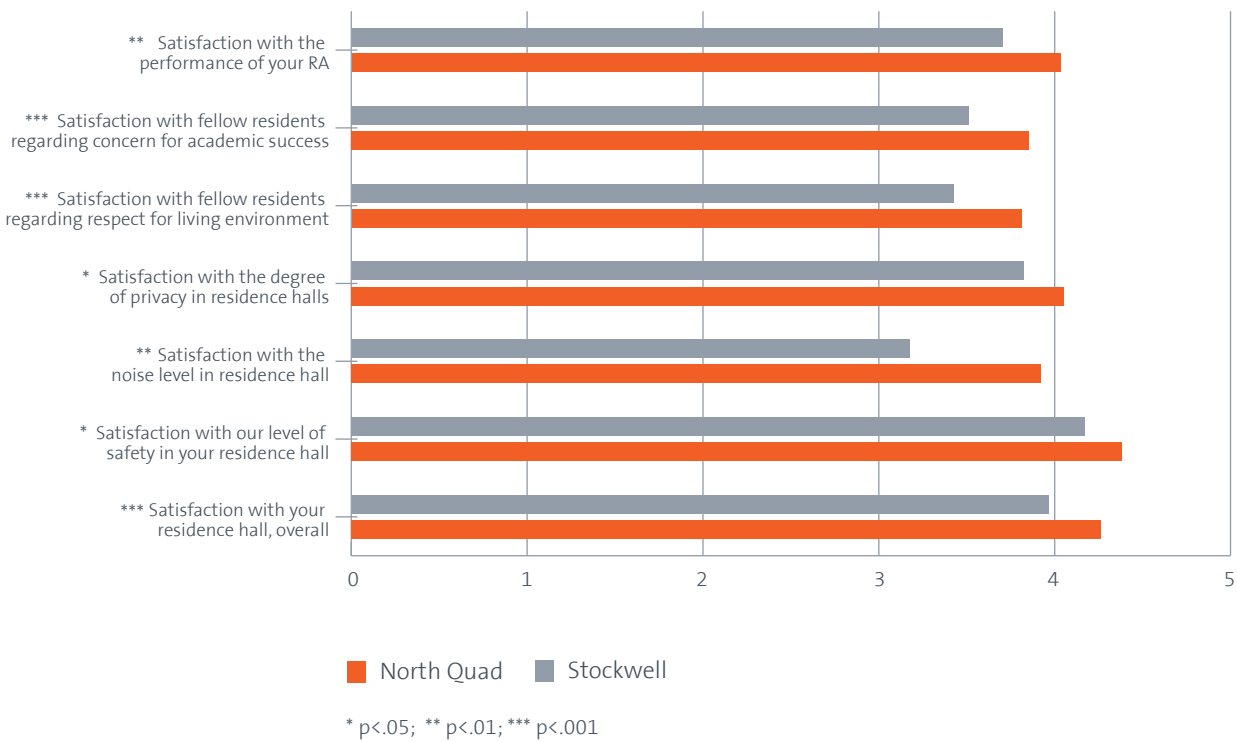
	North Quad		Stockwell		Significant Difference
	M	SD	M	SD	
Involvement with co-curricular activities (1=Not at all, 2=1-5 hrs/w, 3=6-10 hrs/wk, 4=11-15 hrs/wk, 5=16-20 hr/wk, 6=21+ hrs/wk)					
Fraternity/sorority	1.31	0.87	1.29	0.77	
Arts/music performances and activities	1.76	1.07	1.40	0.63	***
Intramural or club sports	1.50	0.94	1.44	0.90	
Varsity sports	1.16	0.60	1.05	0.35	*
Student government	1.14	0.50	1.10	0.51	
Political or social activism	1.33	0.70	1.26	0.77	
Religious clubs and activities	1.42	0.92	1.49	0.91	
Ethnic/cross-cultural activities, clubs	1.52	1.00	1.23	0.51	**
Media activities (e.g., newspaper, radio, web)	1.62	1.24	1.41	1.02	
Work-study or work on-campus	2.10	1.45	2.19	1.47	
Work off-campus	1.20	0.75	1.17	0.66	
Community service activity	1.68	0.84	1.71	0.08	
Involvement with extra-curricular activities (1=Not at all, 2=1-5 hrs/w, 3=6-10 hrs/wk, 4=11-15 hrs/wk, 5=16-20 hr/wk, 6=21+ hrs/wk)					
Attending classes	4.45	0.96	4.61	0.91	
Studying/doing homework	4.33	1.28	4.51	1.23	
Socializing with friends	3.60	1.25	3.22	1.08	**
Exercising/sports	2.30	0.99	2.02	1.00	*
Partying	1.84	0.83	1.63	0.70	*
Watching TV alone	1.88	0.88	2.12	1.12	*
Email or texting	2.72	1.09	2.60	1.00	
Playing video/computer games	1.48	0.84	1.47	0.92	

* p<.05; ** p<.01; *** p<.001

Finding #3: North Quadrangle students are more satisfied with their residence hall experience than Stockwell students.

Overall, North Quadrangle students are more satisfied with various aspects of their residence hall than Stockwell students. Whether it be related to their RAs’ performance, their fellow residents, their degree of privacy, their perceived safety level, or the noise level in the building, North Quadrangle students were highly satisfied with their residence hall, with average scores ranging in the “satisfied” response.

Table 6: Satisfaction with Residence Hall



Finding #4: North Quadrangle students tend to use spaces in their residence hall most often for studying or academically-related activities.

Similar to the observation data, the results of the survey (Tables 7 and 8) show that the most popularly used spaces in North Quadrangle were most frequently used for studying and group projects. However, those same spaces were also regularly used for informal socializing as well.

Table 7: Top Five Spaces Used Most Often in North Quadrangle

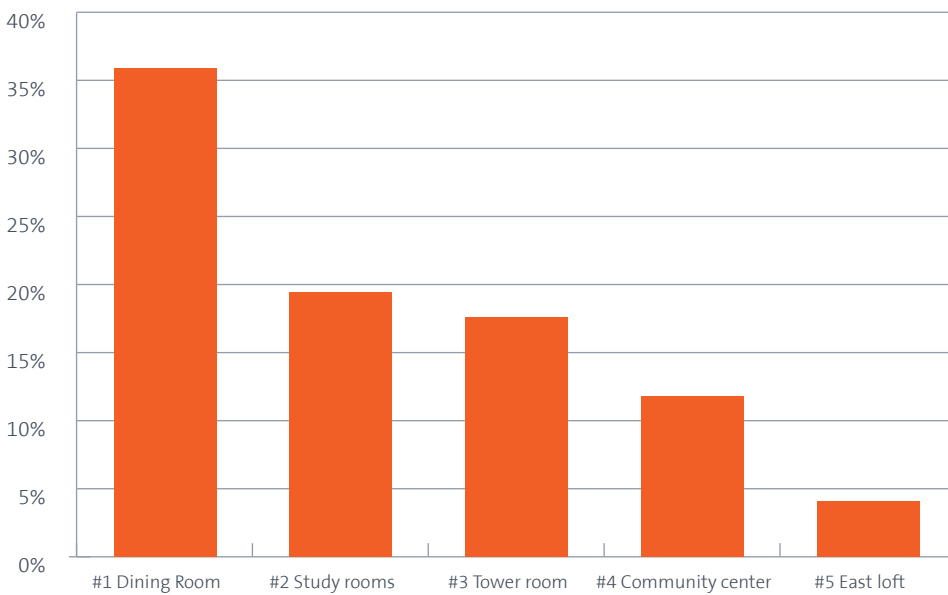


Table 8: Top Reasons North Quadrangle Residents Preferred Residence Hall Spaces

Dining Room	Study Rooms	Tower Room	Comm Center	East Loft
Eating 100%	Studying 100%	Studying 100%	Studying 80%	Studying 100%
Studying 60%	Group projects 64%	Socializing 68%	Printing 50%	Socializing 71%
Socializing 52%	Socializing 45%	Group projects 29%	Socializing 30%	Watching TV 71%
		Student clubs 29%		
		Events 25%		

Even the Dining Room, which North Quad residents would—not surprisingly—use daily for meals, was reported to be used over half of the time for studying and socializing. Thus, it would appear that the greater amounts of peer interactions and conversations are happening while students are engaged with studying, working collaboratively on group projects, and gathering for informal and impromptu socializing.

Finding #5: The features of North Quadrangle spaces that students preferred the most are related to comfort and convenience.

Consistent with the notion of using the public spaces in North Quadrangle most frequently for studying and meeting with students (either for working on group projects or for informal socializing), the reasons cited most often by residents as to why they preferred to use certain spaces had to do with factors commonly associated with good studying and socializing spaces (see Table 8). For four out of five of the top most used spaces in

North Quadrangle, the most common reason cited by students for preferring to use the space was related to the comfort of the furniture—which is essential for sedentary activities such as studying. Other factors also conducive to studying that were frequently cited as factors why students preferred certain locations included the fact that the room was generally quiet, had good lighting (either natural or synthetic), and was open late. Two factors that were conducive to using the spaces for group project meetings and socializing included the fact that the room was situated in a convenient location in the building, and that the layout and furniture in the room were flexible such that they could be rearranged according to students’ needs. It is important to note that students in North Quadrangle appear to be using the same rooms for both studying and socializing; thus, they do not see these two activities as mutually exclusive, or needing to be undertaken in different locations.

Table 9: Top Reasons North Quadrangle Residents Preferred Residence Hall Spaces

Dining Room	Study Rooms	Tower Room	Comm Center	East Loft
Comfortable furniture 55%	Comfortable furniture 79%	Comfortable furniture 96%	Convenient location 65%	Comfortable furniture 86%
	Open late 79%	Natural lighting 96%	Open late 60%	Quiet 86%
	Quiet 76%	Quiet 82%		Good lighting 71%
	Convenient location 73%	Convenient location 82%		Flexible space 57%
	Good lighting 61%	Pleasing décor 79%		Convenient location 57%
		Flexible space 71%		

Finally, findings from the study appear to show that the top five most often used spaces in North Quadrangle are in use throughout the day and evening, although late night usage was sometimes the most frequent (see Table 10). This suggests that lighting and security issues should be considered when designing these spaces and access to them, given the need for personal security in the late evening hours.

Table 10: Time of Day/Evening When North Quadrangle Spaces Are in Use

Dining Room	Study Rooms	Tower Room	Comm Center	East Loft
Dining Room	Study Rooms	Tower Room	Comm Center	East Loft
Morning 63%	Morning 13%	Morning 10%	Morning 15%	Morning 0%
Afternoon 51%	Afternoon 20%	Afternoon 17%	Afternoon 10%	Afternoon 4%
Evening 38%	Evening 20%	Evening 18%	Evening 11%	Evening 4%
Late night 36%	Late night 30%	Late night 20%	Late night 16%	Late night 6%

Finding #6: Feedback students provided to architects regarding changes and/or improvements they would make to North Quadrangle also revolved around studying.

Finally, we asked North Quadrangle students on the survey in an open-ended question what feedback they would provide architects about improvements or changes they would recommend for their residence hall. Consistent with the theme of studying, many of the most commonly mentioned changes in the feedback involved study spaces: 25 separate comments advocated for more individual or small study rooms, 16 students recommended larger private study rooms for groups, and 13 requested more technology (such as white boards) in the study areas. Other recommendations related to the most densely used areas of North Quadrangle; for example, 23 students wanted a larger dining room that was internally connected to the main residential building, and 18 students requested larger common lounge spaces. It is important to note that Stockwell students responded similarly with their feedback to the architects: 52 students wanted more individual or small study rooms, 11 sought lounges or study spaces on every residential floor, and 13 recommended overall better noise reduction. Again, similarly, 14 Stockwell students left feedback regarding larger lounge spaces. Thus, it seems fairly clear that University of Michigan students desire more study space, as well as general meeting and gathering places for both studying and informal socializing. See Table 10 for the full list of feedback provided by both North Quadrangle and Stockwell residents.

Table 11: Student Feedback for Architects

North Quadrangle	Stockwell
More individual/small study rooms (25)	More individual/small study rooms (52)
Larger Dining Hall with Building Connect (23)	More residence room options (singles/doubles/suites) (15)
Larger Common Lounge Spaces (18)	Larger Lounge Spaces (14)
Larger Private Study Rooms for Groups (16)	Noise Reduction (13)
More Residence Room Options (singles/doubles/suite)(15)	Lounge/Study space on every residential floor (11)
More technology/whiteboards in study areas (13)	Dining Option (8)
More natural light (12)	More TV's & Comfortable Furniture (7)
Sound-proof music rooms (5)	More natural light (7)
Improve Elevators/Stairs (3)	Improved Bathrooms (5)
Improve handicap accessibility (3)	Game/Entertainment/Music Rooms (4)
Game/Entertainment Room (2)	More outlets (3)
	Larger Private Study Rooms for Groups (3)

Conclusion and Implications of the Study

Summary

This study utilized two different data collection techniques to examine student usage of public spaces in their residence halls, and how that usage may contribute to their learning and development. The study also compared students' perceptions and experiences in two different residence halls at the University of Michigan: one which was intentionally designed to be supportive of live/learn goals (EYP designed North Quadrangle), and one that followed more of a traditional residence hall design (Stockwell). Both residence halls were either constructed (North Quadrangle) or extensively renovated (Stockwell) between 2009 and 2010, and the students living in both residence halls were similar by gender, race/ethnicity, and academic achievement. Both residence halls are inhabited by returning students only (i.e., sophomores, juniors, and seniors), although the Stockwell sample was slightly younger than the North Quadrangle sample.

The results of the observations and survey components reveal the following:

- Students living in the live/learn residence hall environment (North Quadrangle) were more likely than students living in a traditional environment (Stockwell) to:
 - Interact with diverse peers
 - Have serious discussions with peers
 - Hold intellectual conversations with peers about academic issues
 - Be more satisfied with their residence hall experience
- Moreover, students in the live/learn residence hall were more likely to conduct the above activities in their residence hall.
- Students in both residence halls, but especially in the live/learn environment, preferred public spaces that were conducive to studying, working on group projects, and informal socializing.
- Features that students in the live/learn environment preferred in their residence hall spaces related to their comfort and convenience. Popular features of spaces that the students liked included:
 - Comfortable furniture
 - Quiet and privacy
 - Adequate lighting
 - Good location
 - Flexible usage and ability to rearrange furnishings

Implications for Future Residence Halls

While this research was conducted at one university, institutions with student bodies similar to that of the University of Michigan can note that the most important consideration for public spaces inside residence halls is their utility with respect to studying. This finding may not be terribly groundbreaking, but its implications for design features can be significant. For example, students' primary preferences for rooms did not involve high-tech equipment or cutting-edge entertainment-oriented appliances. Instead, they were most attracted to rooms with comfortable furniture, good lighting, and furnishings that could be rearranged to suit different purposes.

Students also preferred rooms that were beneficial for group projects. Thus, workspaces should not only have reconfigurable furniture, but plenty of flat surfaces for multiple students to work on at one time. In addition, given that students working in groups will likely bring their own technology (e.g., laptops, tablets, smartphones), it will be important to provide ample electrical outlets that are spaced uniformly around the room.

Additionally, while effective studying space was the primary consideration for room usage within their residence halls, it is important to note that every room that students named as good study spaces were listed as good places to socialize or meet with other people. Thus, students do not see spaces in their residence hall as exclusively useful for one activity only. A room that is primarily designated as study space could easily turn into a place to hold an event or meeting, or just hang out with friends. With this in mind, open spaces in residence halls should be designed so they can be used for multiple purposes, and so that changing the purpose of the room can be accomplished with little-to-no difficulty and on an impromptu basis.

Finally, live/learn architectural design components that are intentionally integrated into a residence hall's plans can make a difference in terms of facilitating student learning and development. At the University of Michigan, students with similar demographic and academic backgrounds living in two buildings that were either constructed or significantly renovated during the same time period, demonstrated considerably different outcomes with respect to peer interactions and discussions about intellectual and academic matters. Students living in the EYP designed North

Quadrangle at the University of Michigan were significantly more likely to exhibit stronger outcomes in a variety of indicators. Thus, as universities return to their roots and strive to create residence hall environments where students not only live but also learn, EYP can pave the way to improved student learning and development by designing buildings that will enrich students' lives.

References

- Brubacher, J. S., & Rudy, W. (1968). *Higher education in transition: A history of American colleges and universities*. Piscataway, NJ: Transaction Publishers.
- Williamson, E. G. (1961). *Student personnel services in colleges and universities: Some foundations, techniques, and processes of program administration*. Columbus, OH: McGraw-Hill.

EYP/®

Architecture & Engineering

eypae.com

expertise driven design