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In the spring of 2016, Emory University hired Sasaki Associates to conduct a Space Utilization and Planning Study for the College of Arts and Sciences (CAS). As of Fall 2015, CAS includes 45 departments, roughly 5,640 students and 1,400 faculty and staff, spread throughout 36 buildings. A key driver of the study is the need to assess and leverage existing resources to meet long term needs.

Over the course of several months, Sasaki toured buildings, conducted stakeholder interviews with each CAS department, and worked closely with a core team of planners from Facilities and CAS, as well as University leadership to arrive at a set of recommendations. The effort commenced with a robust analysis of existing space use, which subsequently informed the creation of a set of space policies—policies that engender both near term, catalytic projects, along with projects that work toward CAS’ long term vision. The following Executive Summary introduces the primary goals and objectives of the study, describes key analysis findings and resultant policies across a variety of space categories, and concludes with a road map of both near term and long term opportunities.
A number of planning goals underpin the CAS space utilization study, and reflect a synthesis of key themes that surfaced during the stakeholder interview process. Recommendations should:

**SPACE EFFICIENCY**
- Promote more efficient and effective use of facilities

**SPACE POLICIES**
- Develop space policies that reinforce best practices and reflect the highest and best use of facilities
- Reinforce equity and space standards across departments

**EQUITY**
- Provide space to meet programmatic need, now and in the future
- Reinforce districts for communities and desired adjacencies

**PROGRAM ACCOMMODATION**
- Address deferred maintenance issues in critical buildings

**CAMPUS DISTRICTS**
- Promote community within and across departments

**DEFERRED MAINTENANCE**
- Develop strategies that minimize cost and maximize results

**COMMUNITY**
- Develop strategies that minimize cost and maximize results

**COST**
- Develop strategies that minimize cost and maximize results
RECOMMENDATIONS

1. Classrooms
2. Offices
3. Research Space
The planning team analyzed the Fall 2015 course schedule to understand existing utilization patterns and right-sizing needs. Classroom histograms, which reflect the number of classrooms in use against the total number of rooms that are available in five minute increments throughout the course of the day, reveal very few instances where classroom demand exceeds the 65 percent level. Overall, Emory records an average weekly classroom use rate of 38 percent. In particular, it highlights opportunities for improved use during the shoulder periods of the day, including early morning, late afternoon, and throughout the day on Friday. When analyzing utilization rates for individual classrooms, only six classrooms out of 105 classrooms (or 5 percent of rooms) achieve 30 hours of weekly room use, which roughly translates into a 65% use rate, assuming a 45 hour academic week. From a seat fill, or occupancy perspective, 29 out of 105 classrooms (or 27 percent of rooms) achieved the occupancy target of 70 percent or more.

Leveraging the same course schedule information, a right-sizing assessment was prepared that compared the existing classroom inventory against the demand for classrooms as determined by current section sizes. Keep in mind, that demand does not reflect the University’s aspiration to increase the size of lower level courses in order to provide additional smaller higher level courses. The right-sizing assessment assumes that each classroom can accommodate 30 hours of room use per week, and that a 70 percent room seat occupancy level is achieved. Findings from the right-sizing assessment reveal that there is a surplus of classrooms in each room size range (0-20 seats, 21-45 seats, 46-100 seats, 101-175 seats, and 176-275 seats). Based upon the existing course schedule, there is demand for 63 out of the 105 existing classrooms, highlighting opportunities to repurpose excess spaces to meet alternative needs and accommodate growth over time.
From a classroom station size perspective, existing classroom station sizes span from 10 to 40 asf per seat, excluding outliers. Roughly 60 percent of classrooms fall below 25 asf per seat, which reflects the lower end of the station size range to support active learning.

Conversations with the individual departments provided added insight into the needs and use patterns of classrooms. There is a strong desire for purpose built learning environments and active learning classrooms, especially for lecture halls with capacity to seat up to 75 students. Stakeholder conversations also included dialogue around the nature and use of dedicated seminar rooms. While departments use seminar rooms for instructional purposes, a significant amount of use is associated with departmental activities and meetings. Analyzing Outlook calendars revealed an average of roughly 10 hours of instructional use per week in the seminar rooms. It was noted that some, but not all, departments have access to seminar rooms. The lack of consistency in technology was also mentioned as having an impact on use levels.

The right-sizing analysis was prepared once more after modifying the station sizes of existing classrooms to better support active learning. By doing so, it suggests that 11 classrooms with between 1-20 seats could be removed from the inventory, and converted to another use. In addition, if the Registrar was to assume management of the seminar rooms, effectively placing those rooms in the existing classroom pool, an additional 25 classrooms with between 1-20 seats (for a total of 36 classrooms) could be removed from the inventory and converted to another use.

Lastly, the final classroom assessment involved examining the percent of teaching hours conducted during different times of the day, including 8-10am, during the primetime hours of 10am - 4pm, and 4-6pm. While the overall quantity of hours taught by each department vary, it revealed that significant number of departments teach more than 60 percent of their instructional hours within the primetime window. Sixty percent is typically used as a good ceiling to encourage instruction to be spread throughout the day.
POLICY 1.1 OPTIMIZE THE INVENTORY
Systematically evaluate and optimize the inventory relative to future curricular needs and utilization and occupancy metrics (30 hours of room use and 65 percent occupancy level). Optimize the classroom supply to demand as policies are enacted.

Policy 1.1 results in an overall classroom inventory that more closely reflects the types of classes taught at Emory now and in the future.

POLICY 1.2 FLATTEN THE PEAKS
Section meeting times should be spread more evenly through the instructional window. Require a percentage of classes to be scheduled outside of peak time, according to a sliding scale, based upon the overall number of courses taught each term.

Policy 1.2 helps alleviate demand at peak times and provides parity among departments.

POLICY 1.3 REGISTRAR MANAGED SEMINAR ROOMS
All classrooms and seminar rooms should be “owned” by the Registrar. It is recommended that 20 hours/week be dedicated to instructional use in the seminar rooms. After this target has been reached, departments can have access to rooms for other purposes.

Policy 1.3 encourages more efficient utilization, which allows for targeted rooms to be converted to other high-need uses.

POLICY 1.4 EQUALIZE SEMINAR ROOM ACCESS
While the seminar rooms are not owned by the departments, each department should have access to a minimum of 1 seminar room.

Policy 1.4 ensures all departments have easy and convenient access to seminar rooms for meetings, events, lectures, etc.
POLICY 1.5 STANDARDIZE TECHNOLOGY
Maintain equity in technology across classrooms.

Policy 1.5 ensures that no matter what room faculty and students enter, it will meet minimum standards for technology that supports today’s pedagogy.

POLICY 1.6 ENABLE ACTIVE LEARNING
Implement a flat floor classroom space standard of 25-30 ASF / seat

Policy 1.6 provides sufficient space for rooms to be easily reconfigured to meet a variety of teaching and learning styles, including lectures, seminars, group work, etc.

POLICY 1.7 DATA-INFORMED ENROLLMENTS
Use historic trends in enrollments to adjust enrollment caps to create a better fit between classroom capacity and seat fill.

Policy 1.7 encourages more efficient utilization, which allows for targeted rooms to be converted to other high-need uses.

POLICY 1.8 PRIORITIZE SECTION SIZE AND ROOM CAPACITY FIT
Given the compact nature of campus, the best classroom fit should take precedence over departmental proximity to any given space

Policy 1.8 encourages more efficient utilization, which allows for targeted rooms to be converted to other high-need uses.
Sasaki reviewed existing space and employee data to understand considerations related to office space. In total CAS has roughly 1,400 offices, with significant variation in office size among both buildings and departments. Within this spectrum of offices, the median office size is roughly 143 assignable square feet (asf) per office, which is larger than the typical median of 120 asf per office. Standardizing office sizes during selected renovations offers substantial potential for growth-in-place; up to 37,000 asf of space from a theoretical perspective. Offices were also analyzed as a pure comparison between the number of work stations or office seats against combined FTE levels for faculty and staff. The data suggests that there is enough capacity to accommodate existing staff levels.

In addition to individual offices, office support spaces—such as work rooms, copy rooms, and conference rooms—were examined. Based upon the current space inventory, approximately 88 percent of departments have dedicated office support spaces and 71 percent have dedicated conference rooms. Sharing these amenities where possible can provide additional space for growth.

In addition to the analysis, stakeholder feedback reinforced the need to provide additional office space to accommodate anticipated growth in the future. One of the most common office shortages is associated with graduate students, especially those that teach. While there may be enough office space from a quantitative perspective, for many departments their office locations were split among various buildings, and they cited the desire to be contiguously located.
POLICY 2.1 RIGHT-SIZE OFFICES, ADD INFORMAL AND MEETING SPACES
Implement space standards for offices and support spaces:

- 200 asf - Department Chair
- 160 asf - Director
- 120 asf - FT Faculty
- 60 asf - PT Faculty
- 80 asf - FT Staff
- 40 asf - Graduate Students (Teaching)
- 20 asf - Graduate Students (Non-teaching)
- Note: All standards based on 20 asf base module

Policy 2.1 creates consistent office sizes and equity between departments when completing renovations or new construction, and promotes efficiency and standardization of office space allowing for incorporation of more informal space in office areas.

POLICY 2.2 SHARE OFFICE SUPPORT ACROSS DEPARTMENTS
Office support amenities should be allocated at the building level, not by department. Amenities should be located centrally, and ideally adjacent to corridors.

Policy 2.2 allows for incorporation of a higher ratio of in-demand collaboration and meeting space to facilitate open interaction among faculty, staff, and students.
RESEARCH

OBSERVATIONS & ANALYSIS

Sasaki conducted a review of all research laboratory space in the College of Arts and Sciences by conducting interviews with representatives from each department, touring the space, analyzing utilization based on grant activity, and the allocation of space to open laboratory and support functions.

While research space in the College of Arts and Sciences is generally well managed, it suffers from the typical fragmentation and entropy that occurs over time. Much can be done in the short term to optimize and increase space utilization through renovations and space moves. In the long term, research space management policies can better support faculty by synchronizing space assignments with funding activity on a regular basis.
RESEARCH

OBSERVATIONS & ANALYSIS

Renovation and space move recommendations result from the evaluation of program growth as well as considerations regarding the highest and best long-term use of facilities. Some buildings, such as the Psychology and Interdisciplinary Studies Building and the Math and Science Center, are well suited to long term lab use. Other facilities, including 1462 Clifton Rd. and Rollins Research Center, will require large investments to keep pace with research lab environments in the future. Even with significant investments, these buildings will continue to be limited by structural constraints and existing floor-to-floor heights.

In the Rollins Research Building, recent renovations to convert closed cellular research labs into open labs with shared support spaces have maximized space within the current footprint. Based on these layouts, it is estimated that growth for up to 10-11 research faculty could be accommodated by continuing this phased renovation strategy. Growth is based on the assumption of an average of 125 LF of bench per PI and the conversion of internal graduate workstations to an open-office environment directly adjacent to the labs. Virtually all of the research functions in Rollins can be co-located in shared, open lab spaces. Those requiring higher levels of containment or separation can be accommodated in isolated space without compromising a modular, generic layout that will serve the majority of investigators.
As part of the overall study, Sasaki and the College of Arts and Sciences jointly developed a tool to help visualize the relationships between research data and space on campus. Users can actively sort and view a variety of metrics, including direct/indirect costs per square foot by department or primary investigator at the campus or building level. By providing a visual element in mapping research data across campus, the tool aims to aid in the objectives of improving the quality and allocation of research space while also accommodating future growth. Further analysis of space, faculty, and funding will be a critical tool as the College implements space standards and policies to better manage research space utilization. By enabling more efficient funding, this type of tool will unlock more useful space and better equipment in the pursuit of high quality research at Emory.
POLICY 3.1 SYSTEMATICALLY MANAGE RESEARCH SPACE
Actively manage research space at the department level. Underperforming space allocation should be systematically re-evaluated. The Department of Chemistry can serve as a model for implementing this policy.

POLICY 3.2 INDIRECT COST RECOVERY
Evaluate the research funding mix to maximize indirect recovery. Consider policies that require institutional or departmental subsidies to recover total space costs and fund facility upkeep. Incentivize sponsorship from agencies that recover indirect costs. Measure & monitor space utilization based on indirect dollars per square foot.

POLICY 3.3 PROMOTE SHARING & SPACE STANDARDS
Establish space standards for investigators based on their space needs and grant activity. Require investigators to share open lab and lab support spaces and create core facilities to reduce research costs.

POLICY 3.4 INCENTIVIZE BUILDING LONGEVITY
Incentivize energy efficient equipment purchases to reduce stress on building systems. Hold friendly competitions to reduce lab energy use and raise energy awareness.

POLICY 3.5 REDUCE FUME HOOD IMPACTS
Evaluate safety standards and commission fume hoods at lower face velocities per NIH standards. Reduce hood use for chemical storage. Educate users and hold competitions to close sashes.
OPPORTUNITIES
The policies described in the previous section provide mechanisms to implement changes over time and in many ways serve as foundational, enabling elements that provide access to critical spaces. In addition to developing a set of policies, a long-term vision was developed that reinforces the creation of campus districts and supports desired adjacencies, locates mission-specific functions in the campus core with back of house functions on the periphery, and helps address critical space needs impacting CAS. The long-term vision is comprised of the following moves:

Two key enabling moves set the strategy in motion including the relocation of OUE (~7,200 asf) to an alternate location, and relocation of the Anthropology department (~10,500 asf) to the fifth floor of the Psychology Building, which would enhance synergistic connections between Anthropology and Psychology. The library was considered as one potential location for OUE. It should be noted that the relocation of Anthropology to the fifth floor of the Psychology Building is contingent upon right-sizing some of Psychology’s existing space.

The next step focuses on decanting functions from the Rich Building. The Economics department (~8,000 asf) relocates from the Rich Building to the third floor of White Hall, which would undergo a renovation that results in the capping of the second floor, introducing an additional 6,000 square feet of space. The Theater Department (~7,300 asf) similarly vacates from the Rich Building and relocates to the Anthropology Building. Additional Theater space (~2,500 asf) located at the Burlington Road Building also relocates to the Anthropology Building, creating a consolidated Theater Department in close proximity of the MGM Theater.

With these relocations in place, the Rich Building now has capacity to accommodate the Music Department (~9,600 asf), which would relocate from the Burlington Road Building.

This then allows the business functions from 1627 N Decatur, 1655 N Decatur, 1707 N Decatur, and 1715 N Decatur to relocate and consolidate within the Burlington Road Building.
NEAR & LONG TERM OPPORTUNITIES

Achieving the long-term vision relies upon a strategy of both near and long-term investments, which are described in greater detail on the accompanying pages. “Small-scale Renovations” are made possible through the implementation of space policies and increased utilization of existing space, and may be funded through CAS. Small-scale renovations include general upgrades to existing spaces and the repurposing and conversion of existing spaces to support other needs.

The second level of investment is categorized as “Program Re-Alignments.” These projects are slightly larger in scale and include the relocation and renovation of departments to support the creation of campus districts and desired adjacencies. These projects are also intended to address critical areas of deferred maintenance, and would likely require funding beyond CAS.

The final set of projects is associated with “Enabling Research and Learning.” These projects address improvements and investments to both teaching and research labs. While not identified specifically in the long-term vision, these investments can occur as funding becomes available.

GROUP A - SMALL-SCALE RENOVATIONS [$11.5M]

Phased upgrades to classrooms/seminar rooms, including:
- Room finish upgrades (paint, carpet, ceiling, lights, window treatments, etc.)
- Furniture upgrades (tables and chairs where possible)
- Technology upgrades (following standards for each room type)
- Combination of selected adjacent rooms to meet active learning standards

Renovations to selected areas to convert classrooms to other high-need uses, right-sizing of offices, and shared building-wide amenities and multi-use areas.

OUTCOME: Provides parity across all classrooms on campus and enables scheduling flexibility. Paired with the implementation of other classroom policies, these projects can unlock targeted classroom space for conversion to alternate high-need uses. Creation of more dynamic office areas that accommodate today’s unmet needs, future growth, and facilitate faculty/student/staff interactions through the inclusion of multi-use collaboration areas and shared building-wide amenities.

GROUP B - PROGRAM RE-ALIGNMENTS [$43.0M]

Building-wide renovations that allow for strategic department re-alignments, fulfillment of unmet programmatic needs, and desired campus adjacencies while concurrently addressing major deferred maintenance needs.

OUTCOME: Provides a long-term strategy for growth-in-place by maximizing the use of existing facilities and infrastructure while meeting goals for co-location and desired departmental adjacencies.

GROUP C - ENABLING RESEARCH AND LEARNING [$33.5M]

Phased renovations to teaching and research labs in selected facilities

OUTCOME: Creates high-quality teaching and research labs to support current and future faculty needs, and promote active learning in the sciences.
POTENTIAL PROJECT PHASING

Sasaki worked closely with Emory University and Palacio Collaborative to generate an overall phasing strategy and cost estimates for implementing the long-term vision. Projects within each opportunity category were phased with cost estimates over time. Planning-level costs were allocated on a per square foot basis and were related to the level of renovation required from low to high. Allowances for infrastructure work were included in projects where required. The colors associated with each project correspond to the campus district identified in the long-term vision.

GROUP A - SMALL-SCALE RENOVATIONS [$11.5M]
- Minor / Moderate level of renovation
- Funded by the College of Arts and Sciences

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<th>Year</th>
<th>PHASE 1</th>
<th>PHASE 2</th>
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- PHASE 1: <Tarbutton or Location TBD>
  - Ofc. Equity & Inclusion / ADSR
  - Modern Languages - Classroom Upgrades
  - Bowden Hall - Classroom Upgrades
  - N. Decatur Bldg. - Business Operations
  - Various Locations - Classroom Upgrades
  - (Dept. Seminar Rms.)

- PHASE 2: <Location TBD - OUE Relocation>
  - Various Locations - Classroom Upgrades
  - Callaway Phase 1 - Ctr. Human Health / Humanities Depts.

- PHASE 3: Callaway Phase 1 - Math & C.S. / Physics
  - Creative Writing / Classrooms
  - Carlos Hall - Classroom Upgrades
  - Atwood - Teaching Lab / Classrooms

- PHASE 4: Math and Sci. Center Phase 1 -
  - Callaway Phase 2 -

- PHASE 5: Math and Sci. Center Phase 1 -
  - Callaway Phase 2 -

- PHASE 6: Emerson Hall - Classroom Upgrades
  - Atwood - Teaching Lab / Classrooms
**POTENTIAL PROJECT PHASING**

**GROUP B - PROGRAM RE-ALIGNMENTS [$$43.0M]$$

- Moderate / Major level of renovation
- Re-aligns selected programs and fosters academic communities
- University funding support required

$4.0 M  
WHITE HALL - FLOOR 1  $7.8 M  
WHITE HALL - FLOOR 2  $5.0 M  
WHITE HALL - FLOOR 3  
WHITE HALL SITE - $2.6 M  
WHITE HALL TOTAL - $19.4 M

$1.2 M  
PSYCHOLOGY BUILDING  $6.7 M  
ANTHROPOLOGY BUILDING  
RICH BUILDING  $5.5 M  
BURLINGTON ROAD

**GROUP C - ENABLING RESEARCH AND LEARNING [$$33.5M]$$

- Moderate / Major level of renovation
- Encourages University-wide research and learning communities
- University funding support required

$13.0 M  
1462 CLIFTON - PHASE 1  $3.0 M  
1462 CLIFTON - PHASE 2  
1462 CLIFTON TOTAL - $16.0 M

$5.5 M  
ROLLINS - PHASE 1  $6.2 M  
ROLLINS - PHASE 2  $5.8 M  
ROLLINS TOTAL - $17.5 M
PRIORITY DEPARTMENTS

Program spreadsheets have been prepared for each department, and identify existing square footage, anticipated growth, and space needs; they are provided in the digital appendix materials. While individual assessments were prepared, a number of departments were identified as priority areas with critical space needs. Those departments are identified on the accompanying page. The individual spreadsheets provide a springboard for future discussions and serve as a resource as projects get implemented.