



2018 Facilities Master Plan Update



April 2018

ikon.5 architects

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ACKNOWLEDGEMENT

A special thank you to the Board of Trustees for their time and contribution

We would like to thank the Building and Ground Committee members for their time, assistance and guidance.

Our deepest respect and thanks to the following persons for their invaluable contribution:

Study Director:
Andrew Christ, VP of Real Estate Development and Capital Operations

Study Manager:
Todd Miller, Director Campus Planning and Design

In partnership with:

Paulien & Associates, Inc.
Space Needs Analysis for the Master Plan



EXECUTIVE SUMMARY

ikon.5 architects and Paulien & Associates were engaged to update the facilities master plan in order to ensure that the planning decisions implemented and to be implemented were focused to fulfill the NJIT 2020 Vision. Paulien & Associates updated and refined the Space Needs Analysis through all-inclusive interview process with Campus unit leaders and an in-depth analysis of the current and future programs. The projected future end date for the analysis was year 2030 with a targeted population, not a defined goal, of 15,000 students.

Concurrently, ikon.5 architects developed a complimentary facilities strategy in order to meet the demands generated from the Space Needs Analysis; all within the parameters of the approved 2008 NJIT facilities master plan.

The Space needs analysis identified a short fall of 660,000 GSF for a number of Academic, Academic Support Spaces and Auxiliary spaces; incrementally growing from year 2020 to year 2030. The shortfall for year 2020 can be accommodated by repurposing and reallocation of existing programmatic spaces, the year 2025 shortfall requires new facilities of 283,000 GSF and the year 2030 requires additional facilities of 324,000 GSF.

An analysis of existing NJIT owned properties confirmed that the projected programmatic gross square footage shortage of 660,000 GSF can be accommodated on existing NJIT properties, giving NJIT the ability to favorably negotiate new acquisitions, new leases and grow in a strategically controlled manner.

An in-depth review of existing program locations in conjunction with new programmatic requirements, identified programmatic adjacencies that would accelerate the need for strategic acquisitions to reinforce the perimeter of the Campus as well as providing a new facility for Student centric programs and research.



PREFACE

One of the main objectives of the facilities master plan update was to assess the progress towards the goals set in the 2008 NJIT facilities master plan and make strategic recommendations to New Jersey Institute of Technology in order to plan for short and long term projects and meet the 2020 Vision of educational program and facilities investments.

The 2020 strategic vision is to focus NJIT on a path to becoming renowned for excellence in education, achieve eminence in research, generosity in service and dedication to economic expansion.

NJIT's guide to achieve its 2020 Vision is based on the following priorities:

- Students: Create an appropriate environment and engagement from admission to employment.
- Learning: Innovative program building on NJIT's strength in engineering, design, computing, science and technology.
- Scholarly Research: Provide environments to recruit, develop and retain high caliber faculty.
- Community: Engage all diverse NJIT communities, faculty, students, staff, administrations and alumni.
- Investment: Continually renew high caliber faculty and support all with cutting edge facilities.

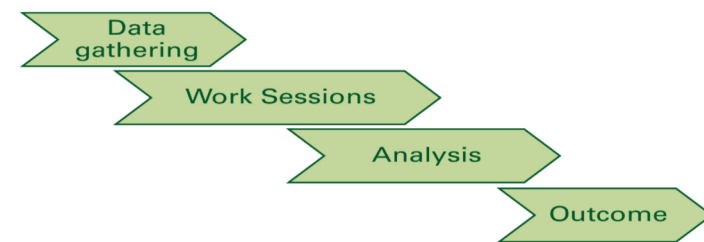
NJIT has made tremendous strides in fulfilling a number of strategic goals as identified in the 2008 NJIT facilities master plan: Such as renovation/ repurposing of existing buildings for 21st century learning environments, landscape and hardscape improvements to unify the Campus and new academic facilities that reinforce the academic and social goals.



PROCESS

The facilities master plan update was a dual track process based on evaluating the progress of meeting the goals towards the 2008 NJIT facilities master plan and the 2020 Vision.

The academic space analysis, led by Paulien and Associates, commenced with gathering of all relevant Academic, Academic Support Spaces and Auxiliary spaces programmatic data (current and future projections), followed by verification of the data through interviews and work sessions with Department Heads and Executive Administration. The information gathered through evaluation of existing data and interview sessions were reviewed, analyzed, compared to peer institutions and then synthesized into a Space Needs Analysis.



Analysis Flow Diagram

Concurrently, ikon5 analyzed the current campus facilities plan and on-going capital projects in order to identify repurposing opportunities and sites for future facilities development. The future development site recommendations were based on the strategic development of the 2008 NJIT facilities master plan, maintaining programmatic adjacencies, reinforcing the architectural context, massing and materiality of the Campus.

After the conclusion of the Space Needs Analysis, ikon5 confirmed the potential sites, refined the potential site capacities (possible floors and gross square footage) and identified the appropriate program location based on existing and future programmatic adjacencies. The recommendations were based on 5-year cycles; Starting in year 2020 and ending in year 2030.



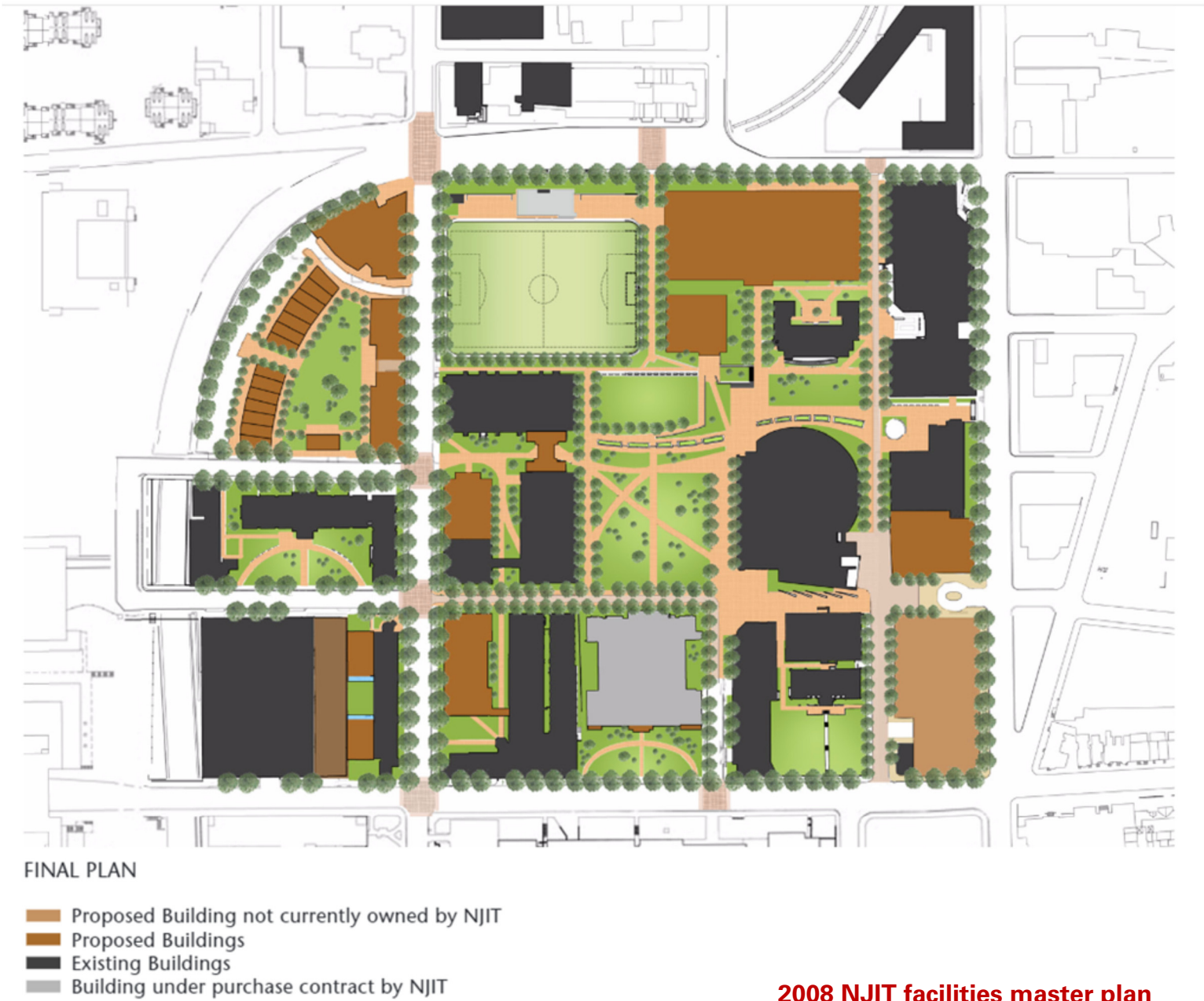
MASTER PLAN 2008 ASSESSMENT

The 2008 NJIT facilities master plan identified a number of needs that were essential in the future growth of the University while creating a first class educational environment, reinforces a cohesive campus and has the ability to attract the best and brightest students and enhance the overall student experience.

NJIT’s progress towards addressing these goals has been remarkable and noteworthy for it reinforces its commitments to the NJIT Community, the city of Newark and its urban environment.

The following goals were identified in the 2008 study and almost all of them have been addressed by 2017 and the remaining will be addressed in the near future.

- Renovate aging buildings ✓
- Expand the Library (near future project)
- Develop new academic sites ✓
- Replace recreation and athletic facilities ✓
- Well-defined campus edges ✓
- Improve the landscape ✓
- Establish more green space (near future project)
- Reduce space deficit ✓
- Construct mixed use village at Warren Street ✓



2008 NJIT facilities master plan

MAJOR FACILITIES ON LINE

The 2008 NJIT facilities master plan identified a number of proposed building locations to meet the future space requirements as well as creating a unified campus with well-defined boundaries. Over the last 25 years, through strategic interventions, the NJIT Campus has transformed from a fragmented urban campus into an energetic and cohesive academic urban environment. This cohesive environment goes beyond the facilities and landscape; it includes the reorganization of departmental adjacencies and synergies to enhance the student experience.

In order to address the needs, as highlighted in the 2008 NJIT facilities master plan, number of essential facilities have been constructed during the last several years:

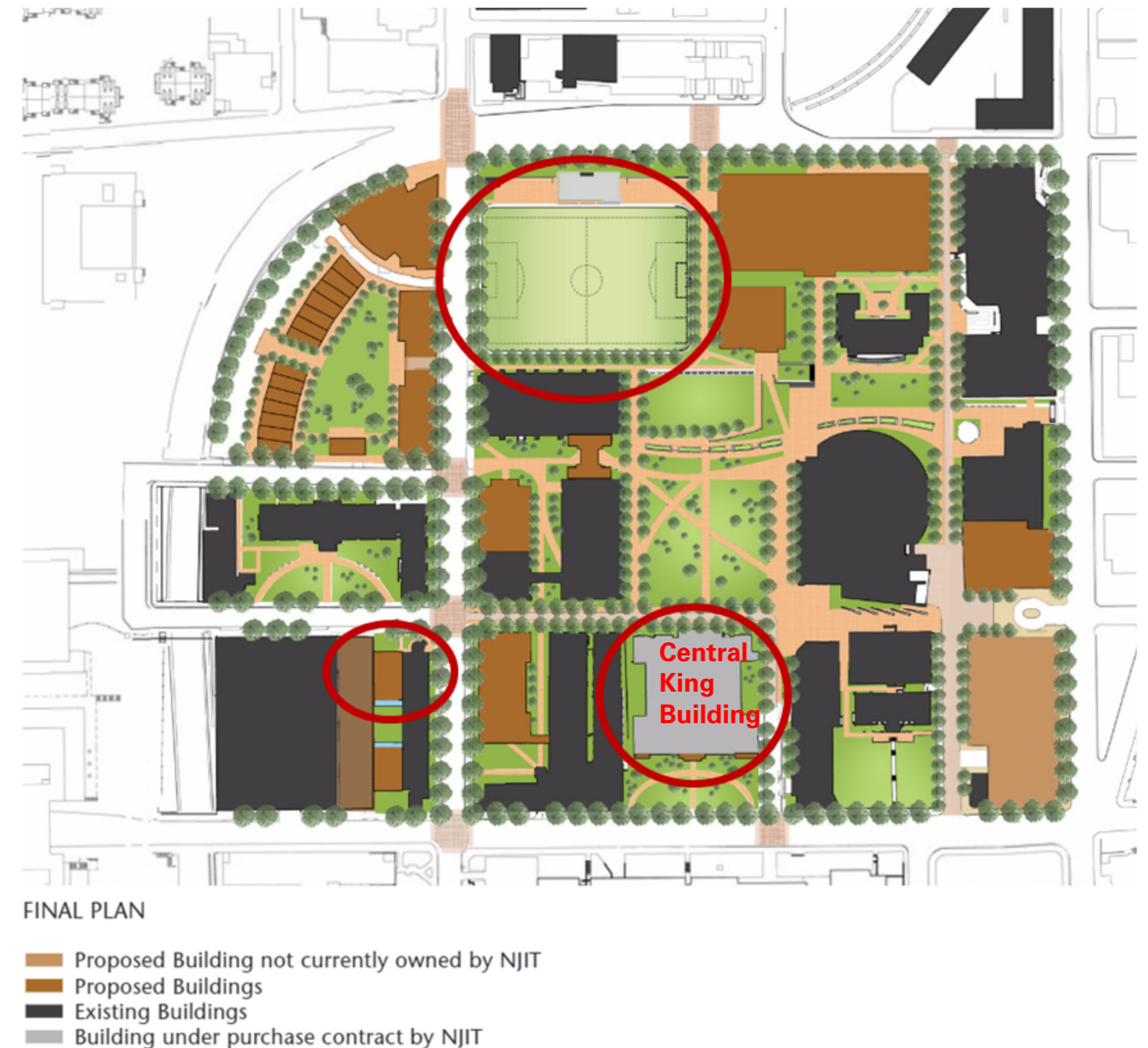
Central King Building

The Central King Building is an essential facility to advance the educational and research goals as defined in the 2008 NJIT facilities master plan.

The renovated building will contribute to the strategic 2020 Vision of NJIT by providing state of the art technological teaching and learning environments. The renovation of the existing facility, building on the NJIT's commitment to its neighbors, and adaptive reuse of an architectural landmark into a place of productive innovation and invention in the STEM sciences.

The LEED GOLD facility includes new collaborative learning spaces and places of flexible learning environments that can easily be transformed from a traditional lecture style into break out areas for group projects.

A new highly transparent academic pavilion provides an insight into the inner workings of this technology laden environment filled with team orientated students working and learning in a collaborative 21st century setting.





Central King Building

MAJOR FACILITIES ON LINE, cont'd

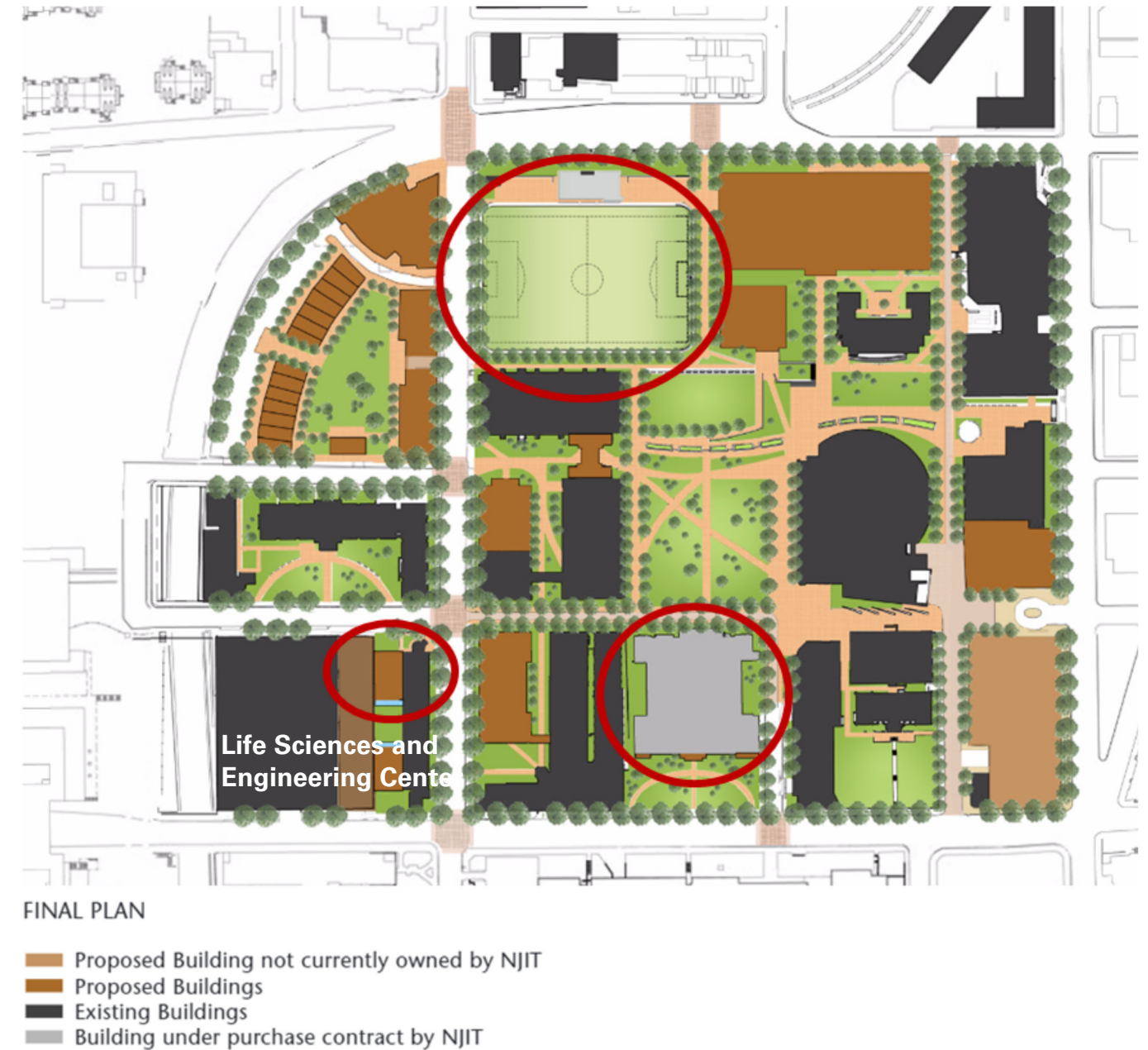
Life Sciences and Engineering Center

The Life Sciences and Engineering Center advances the University's educational and research goals promoting cross disciplinary research in an environment of openness and collaboration.

The new state of the art research facility houses wet and dry laboratories, offices and collaborative spaces planned for 21st century environments.

The new research facility is connected to the adjoining Otto H. York Center for Environmental Engineering and Science and will build on NJIT's strengths in engineering and the life sciences. The Research will be focused towards the development of new applications in clinical healthcare, therapeutic interventions and pharmaceutical drug development. The new facility, approximately 24,500 gross square feet, houses a two-story atrium for non-traditional learning, informal teaching and presentation environments and a variety of spaces for productive student and faculty gatherings, quiet study areas and places for group study and relaxation. The facility includes unfinished space on 3rd & 4th floors for future growth and the building site can accommodate another addition/ expansion.

The new center is essential to the addressing the goals as noted in the 2008 NJIT facilities master plan and providing a state of the art learning and research environment to meet the strategic 2020 Vision of NJIT.





Life Sciences and Engineering Center

MAJOR FACILITIES ON LINE, cont'd

Wellness and Events Center

The Wellness and Events Center is a multi-purpose facility that is essential to meeting the multi-dimensional needs of the current student body and the future students; therefore fulfilling the strategic needs of the 2020 Vision. The new multi-purpose building provides new meeting rooms, a fitness center and state of the art sports facilities for the entire community of NJIT Students, Athletes, Faculty and Staff.

The approximate 200,000-square-foot building houses a variety of study spaces and learning environments, a sports arena for competitive athletic events and a social hub for students to unwind and participate in physical activities and a venue for the University to host conferences and on-campus events. The new facility, filled with meeting and large venue spaces, provides another opportunity for the students to engage and collaborate with business partners and create synergies to spur economic development; thereby providing the University with another amenity/ resource to attract and retain students and be an essential component in creating a sense of community and legacy.

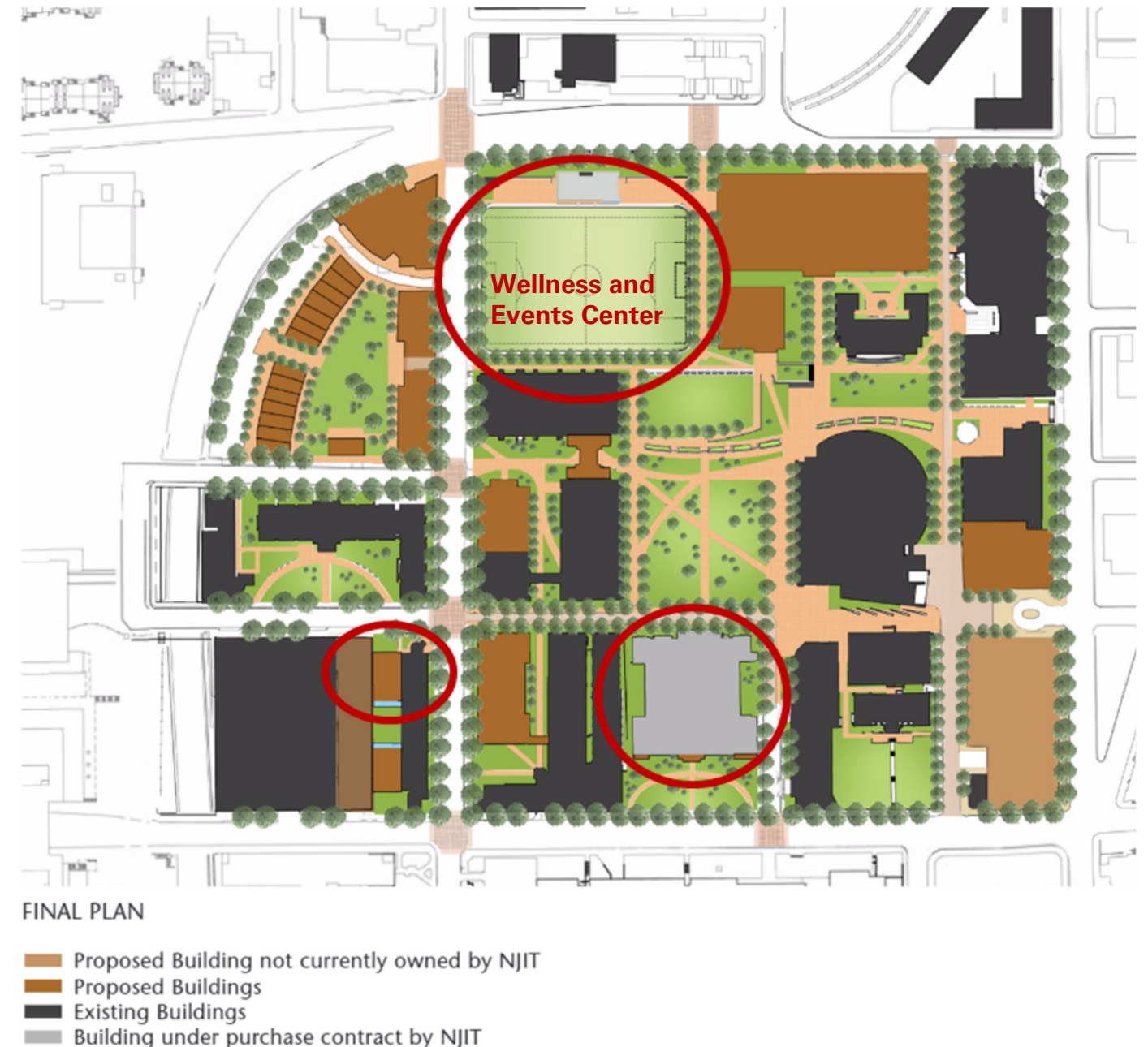
The following are several key programmatic components of the Center:

Athletics: Dedicated locker rooms and athletic staff offices, two full-length practice court, a main-concourse running track, an 11,580-square-foot indoor turf facility and a 25-yard eight-lane swimming and diving pool.

Training and wellness: Training room with three hydrotherapy pools, a strength and conditioning room and a 5,710-square-foot fitness center.

Community spaces: Retractable seatings enable the arena to easily convert to a hall for concerts, conventions, convocations and other large events.

Learning spaces: High-tech meeting rooms and open floor space for science fairs and competitions.





Wellness and Events Center

POTENTIAL FACILITY(S) SITES

The 2018 NJIT facilities master plan supplements the adopted 2008 NJIT facilities master plan and it identifies several new locations that can support new building opportunities while confirming others that were identified in the 2008 NJIT facilities master plan.

The proposed locations build on the current campus zones, such as Research, Engineering and Academic, while reinforcing the urban fabric in scale and the campuses architectural context of mass, and materiality.

The sites were also identified for appropriate program adjacencies to existing programs or future programs while accommodating growth.

In an Urban campus, land is a precious commodity and its potential needs to be maximized, and to that extent our recommendations are a reflection of those economic realities.

The proposed locations also take into account the ground realities of neighboring institutions, physical urban infrastructure and the possibility of acquiring non-NJIT parcels.

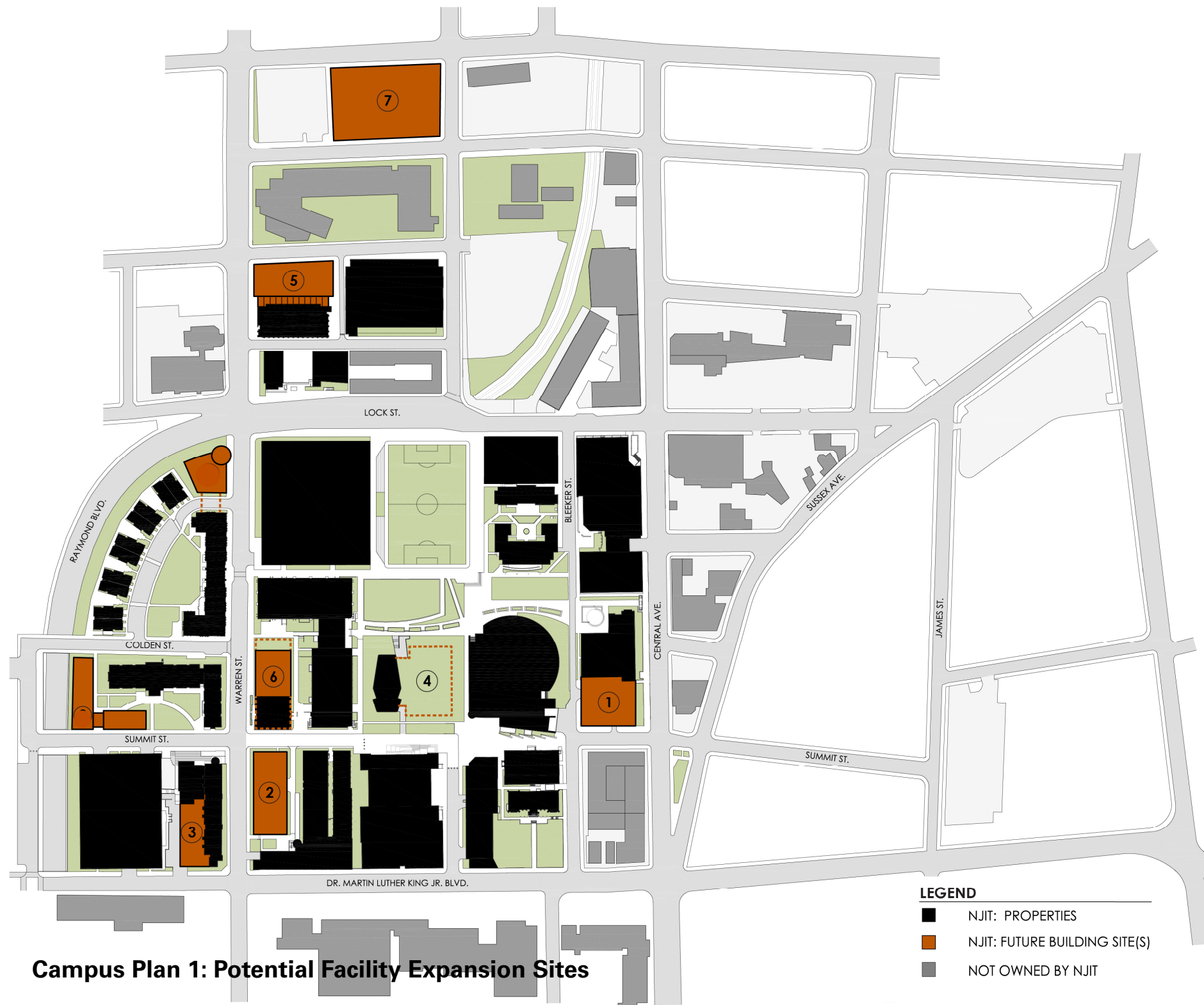
The proposed locations are on all NJIT owned properties and several are active parking lots. Their displacement will require alternate solutions (i.e. parking surface or peripheral surface lots). There also are a number of current facilities that have outlived their original program and occupy underutilized sites.

The proposed locations also includes buildings that are to be demolished in order to adhere to the 2008 NJIT facilities master plan goals of improved landscape and established green spaces.

The findings from our analysis of NJIT owned parcels confirmed that the University could add 673,000 GSF to its facility inventory and therefore be able to address its overall shortage of 660,000 GSF for the year 2030.

Several of the potential sites include the following:

- Academic facility: Located on the existing underutilized Specht building, Specht building site provides the ability to fulfill the goal of establishing green space by removing Kupfrian Hall and retaining the existing Theater. The existing theater can be revitalized as an object in the new quadrangle landscape.
- Research expansion: Linked to the adjacent Otto H. York Center for Environmental Engineering and Science the new facility will further augment NJIT's strengths in engineering and the life sciences.
- Instructional academic environments: Connected to the adjacent engineering disciplines, the new learning environments will be flexible to support traditional learning as well as group settings for collaborative study.
- Expansion of the Library: Provides the opportunity to address the current and future expansion of new academic curriculums.



FUTURE FACILITY EXPANSION

(Net to Gross: 1.65 Factor)

Optional Site

① Library	4 stories, 68,000 GSF
② Academic Facilities	6 stories, 100,000 GSF
③ Research Facilities	5 stories, 50,000 GSF
④ Quad Expansion (19 Classrooms)	Loss of 40,000 GSF
⑤ Research Facilities	6 stories, 90,000 GSF
⑥ Engineering Facilities / Instructional Facilities	4 stories, 65,000 GSF
⑦ Research Facilities	6 stories, 300,000 GSF

available 673,000 GSF

POTENTIAL for EXPANSION

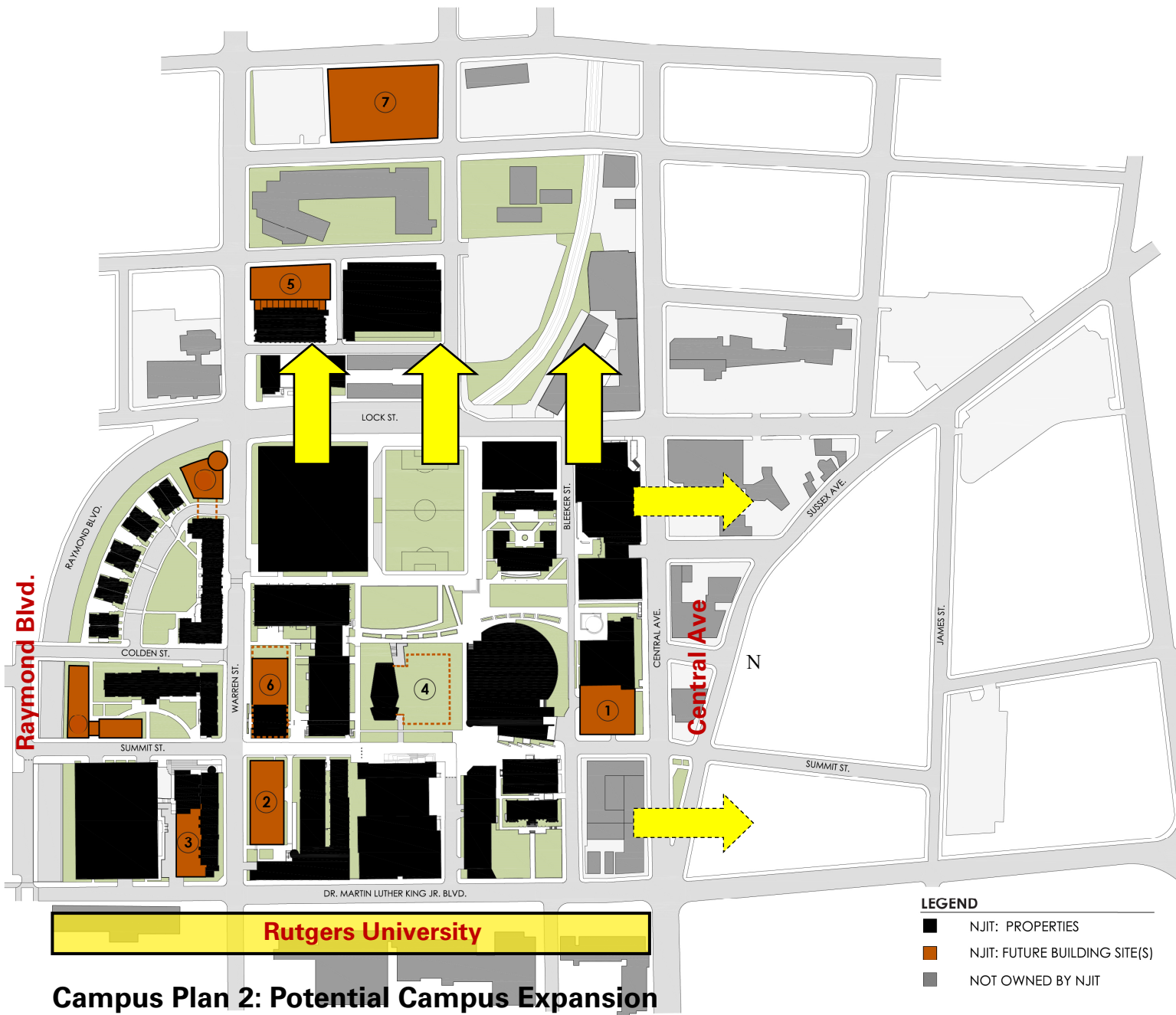
For the University to achieve its 2020 Vision and continue on the path of being a pre-eminent University recognized for its re- search excellence, the Campus boundaries need to expand in a strategic manner through new facilities and strategic acqui- sitions.

An analysis of the Campus and its neighborhood provided insight as to the best opportunities for expansion:

- * Expansion to the east is not feasible because of Rutgers Uni- versity.
- * Expansion to the north is feasible but challenging due to a major urban artery, Central Avenue. The ability to transverse it via pedestrian traffic will necessitates major traffic interven- tions and/or pedestrian bridges.
- * Expansion to the south is not feasible due to a below grade roadway, Raymond Boulevard.
- * Expansion to the west provides the greatest opportunity to expand by developing existing NJIT properties and possible building and land acquisitions as they arise.

As the Campus strategically expands to the west there are sev- eral potential sites available for research facilities to meet the space deficit for the year 2030. These sites will be critical to ful- filling NJIT’s 2020 Vision and the proposed facilities will be desti- nations for outside groups and students.

(See Campus Plan 2: Potential Campus Expansion)



CURRENT FACILITIES

The next step in the evaluation process was an analysis and confirmation of the existing space allocations and future needs of each Department. The initial steps included a space inventory that identified all of the existing Departments, location within existing facilities and verify its space allocation, on a floor by floor basis. After the Departmental space was identified, site observations were conducted to confirm the existing spaces and ascertain each Departments short term and long term requirements, while ensuring that the Department be spatially cohesive and adjacent to complimentary programs.

The analysis identified several Departments that require spatial reorganization, repurposing of underutilized spaces, relocation of program to promote synergies through physical adjacency and programming of shell spaces.

The following facilities offer opportunities for space reorganization and reassignment: (Building no. | Building name | Floor)

- 2 Campus Center: First Floor
- 3 Central Avenue Building: Ground, First, Second, and Third Floor
- 5 Colton Hall: Second, Third, and Fourth Floor,
- 7 Cullimore Hall: First Floor,
- 14 Fenster Hall: Fifth Floor,
- 16 Guttenberg Information Tech Center: Partial Third and Fourth Floor
- 21 Parking Deck Student Mall: Lower Level
- 22 Specht Building: Lower Level
- 26 Life Sciences: Shell space on Third and Fourth Floor,

(See Campus Plan 3: Existing Departmental Square Footage)

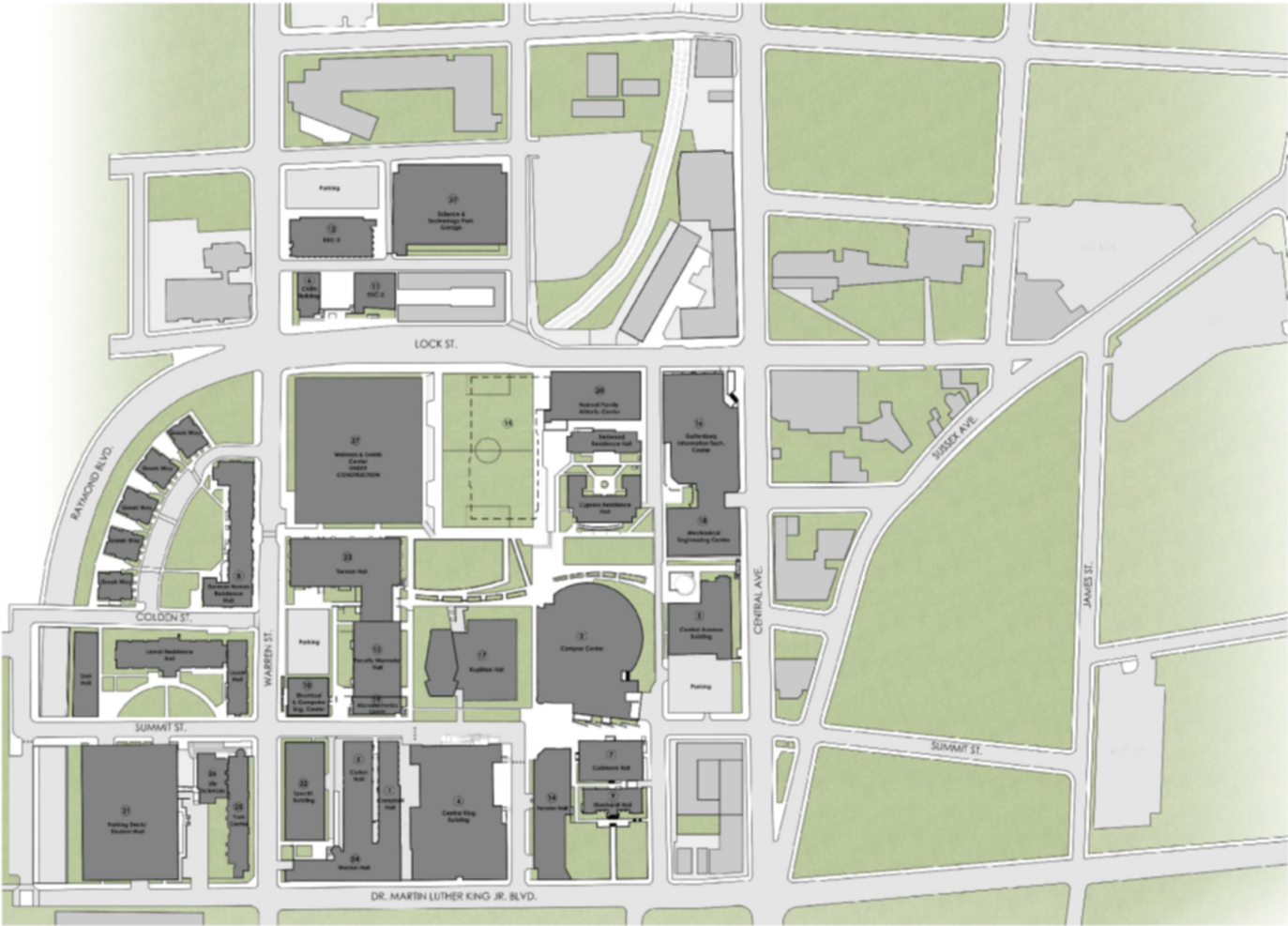
Space Category	2015				2020				2025				2030			
	Student Headcount = 10,646 Staff Headcount = 1,853				Student Headcount = 12,201 Staff Headcount = 2,045				Student Headcount = 13,600 Staff Headcount = 2,316				Student Headcount = 15,000 Staff Headcount = 2,475			
	Existing ASF	Guideline ASF	Surplus/ (Deficit)	Percent Surplus/ (Deficit)	Projected ASF	Guideline ASF	Surplus/ (Deficit)	Percent Surplus/ (Deficit)	Projected ASF	Guideline ASF	Surplus/ (Deficit)	Percent Surplus/ (Deficit)	Projected ASF	Guideline ASF	Surplus/ (Deficit)	Percent Surplus/ (Deficit)
Academic Space																
Classroom & Service	87,630	87,610	20	0%	103,173	98,839	4,334	4%	103,173	130,708	(27,535)	(27%)	103,173	144,340	(41,167)	(40%)
Teaching Laboratories & Service	138,862	126,911	11,751	8%	141,963	142,149	(186)	0%	141,963	153,253	(11,290)	(8%)	141,963	169,728	(27,765)	(20%)
Open Laboratories & Service	48,634	53,230	(4,596)	(9%)	57,877	61,005	(3,128)	(5%)	57,877	68,000	(10,123)	(17%)	57,877	75,000	(17,123)	(30%)
Research Laboratories & Service	134,075	121,853	12,222	9%	145,214	194,801	(49,587)	(34%)	145,214	250,188	(104,974)	(72%)	145,214	304,295	(159,081)	(110%)
Academic Offices & Service	170,018	135,140	34,878	21%	181,389	155,955	25,434	14%	181,389	180,670	719	0%	181,389	194,750	(13,361)	(7%)
Academic Space Subtotal	579,019	524,743	54,276	9%	629,616	652,749	(23,133)	(4%)	629,616	782,819	(153,203)	(24%)	629,616	888,113	(258,497)	(41%)
Academic Support Space																
Administrative Offices & Service	173,246	170,900	2,346	1%	175,498	176,925	(1,427)	(1%)	175,498	191,445	(15,947)	(9%)	175,498	198,090	(22,592)	(13%)
Library	53,058	58,869	(5,811)	(11%)	53,058	67,524	(14,466)	(27%)	53,058	75,521	(22,463)	(42%)	53,058	83,957	(30,899)	(58%)
Athletics & Recreation	86,406	77,730	8,676	10%	121,929	106,905	15,024	12%	121,929	113,900	8,029	7%	121,929	120,900	1,029	1%
Assembly & Exhibit	34,780	47,857	(13,077)	(38%)	38,512	54,855	(16,343)	(42%)	38,512	61,150	(22,638)	(59%)	38,512	67,450	(28,938)	(75%)
Physical Plant	40,804	35,652	5,152	13%	40,804	36,527	4,277	10%	40,804	42,049	(1,245)	(3%)	40,804	46,605	(5,801)	(14%)
Other Department Space	37,907	42,584	(4,677)	(12%)	49,929	48,804	1,125	2%	49,929	54,400	(4,471)	(9%)	49,929	60,000	(10,071)	(20%)
Academic Support Space Subtotal	426,201	433,592	(7,391)	(2%)	479,730	491,539	(11,809)	(2%)	479,730	538,465	(58,735)	(12%)	479,730	577,002	(97,272)	(20%)
Auxiliary Space																
Student Center	91,465	95,814	(4,349)	(5%)	91,465	109,809	(18,344)	(20%)	91,465	122,400	(30,935)	(34%)	91,465	135,000	(43,535)	(48%)
Auxiliary Space Subtotal	91,465	95,814	(4,349)	(5%)	91,465	109,809	(18,344)	(20%)	91,465	122,400	(30,935)	(34%)	91,465	135,000	(43,535)	(48%)
CAMPUS TOTAL	1,096,685	1,054,149	42,536	4%	1,200,811	1,250,097	(53,286)	(4%)	1,200,811	1,441,684	(242,873)	(20%)	1,200,811	1,601,115	(399,304)	(33%)
Inactive/Conversion Space	49,009				11,365				11,365				11,365			
Outside Organizations	83,504				83,504				83,504				83,504			

ASF = Assignable Square Feet

year 2030 overall needs: 660,000 GSF

Space Needs Analysis
(Each cycle is accumulative; aggregate amount in 2030)

existing departmental
square footage



BUILDING : EXISTING DEPARTMENT / NET SQUARE FEET : 2018

10 Electrical and Computer Eng. Center FIRST FLOOR Register Electrical and Computer Engineering SECOND FLOOR Electrical and Computer Engineering THIRD FLOOR Electrical and Computer Engineering FOURTH FLOOR Electrical and Computer Engineering	2,328 1,638 5,131 4,449	Civil & Environmental Engineering Chemistry and Environmental Science THIRD FLOOR Dean of Student Services Electrical and Computer Engineering Register Instructional Technology/Media Svcs FOURTH FLOOR Electrical and Computer Engineering Register Acad & Research Computing Systems Dean of Student Services FIFTH FLOOR Facilities Management Center for Solar Research	881 146 387 4,014 43,643 57 5,877 4,476 146 134 342 342	11 Enterprise Development Center 2 FIRST FLOOR Enterprise Development Center SECOND FLOOR Enterprise Development Center THIRD FLOOR Enterprise Development Center FOURTH FLOOR Enterprise Development Center	5,255 4,849 5,130 5,098	12 Enterprise Development Center 3 FIRST FLOOR Enterprise Development Center SECOND FLOOR Enterprise Development Center THIRD FLOOR Enterprise Development Center FOURTH FLOOR Enterprise Development Center FIFTH FLOOR Enterprise Development Center	8,081 10,156 5,742 4,836 10,591 9,730	13 Faculty Memorial Hall LOWER LEVEL Electrical and Computer Engineering Physics Facilities Management FIRST FLOOR Register Electrical and Computer Engineering Facilities Management SECOND FLOOR Register Electrical and Computer Engineering Aerospace Studies Pre-College Programs	3,858 1,431 2,468 9,730 1,431 145 2,475 5,161 1,502 701	14 Fenster Hall LOWER LEVEL Facilities Management FIRST FLOOR Enrollment Services Human Resources Graduate Studies Office of International Students Office of Strategic Communications SECOND FLOOR Career Development Services Facilities Management VP for Acad Supp & Student Affairs VP for University Advancement Advancing Success Center THIRD FLOOR Office of the President Sr VP for Admin and Treasurer Office of the General Counsel Institutional Research Instructional Technology/Media Svcs Sponsored Research Administration Grant and Contract Accounting UNASSIGNED Bio-Medical Engineering Provost and Sr VP for Acad Affairs University Auditor FOURTH FLOOR NUI Administration Facilities Management Office of Strategic Communications Institutional Research Office of the General Counsel FIFTH FLOOR Human Resources Accounts Payable	17,911 3,536 116 1,534 731 4,529 461 5,674 440 2,913 582 2,271 5,148 668 306 364 77 2,958 705 926 110 3,342 376 8,818 125 3,374 1,477 1,572 3,881 2,868	15 Reischer Athletic Center (to be demolished) LOWER LEVEL Physical Education FIRST FLOOR Health Services Physical Education Dean of Student Services SECOND FLOOR Physical Education THIRD FLOOR Physical Education	4,400 921 37,270 127 6,798 9,775	16 Guttenberg Information Tech. Center LOWER LEVEL Research Labs Facilities Management Instructional Technology/Media Svcs Bio-Medical Engineering Register FIRST FLOOR Register - Classroom Facilities Management Information Technology UNASSIGNED Mechanical and Industrial Eng Mechanical and Industrial Eng VP for Acad Supp & Student Affairs NUI Administration SECOND FLOOR Engineering Technology Mechanical and Industrial Eng Engineering Technology Office of the Dean - NCE Computer Science Acad & Research Computing Systems Telecommunications and Networking UNASSIGNED	1,354 125 1,023 1,834 2,438 371 179 576 428 958 15,487 302 4,400 921 37,270 127 6,798 9,775 3,046 302 4,199 3,406 98 5,526 26 2,135 58 325 1,489 340 13,236 7,503 2,468 418 4,237 9671 2,144 311	17 Kuprian Hall LOWER LEVEL The Learning Center Register Drama/Theater Instructional Technology/Media Svcs Facilities Management FIRST FLOOR The Learning Center Register Drama/Theater Instructional Technology/Media Svcs	3,374 9,484 3,619 754 352 3,898 10,266 4,447 54	18 Mechanical Engineering Center LOWER LEVEL Mechanical and Industrial Eng Facilities Management FIRST FLOOR Mechanical and Industrial Eng Facilities Management SECOND FLOOR Mechanical and Industrial Eng Engineering Technology Register Facilities Management THIRD FLOOR Mechanical and Industrial Eng	2,151 131 11,215 94 8,135 278 2,492 37 10,462	19 Microelectronics Center LOWER LEVEL Clean Room FIRST FLOOR Microelectronics Fabrication Center SECOND FLOOR Microelectronics Fabrication Center Center for Manufacturing Systems Physics THIRD FLOOR Electrical and Computer Engineering Chemistry and Environmental Science FOURTH FLOOR Physics	3038 3,038 827 1,501 963 3,263 125 1,387 2,193	20 Naimoli Family Athletic Center FIRST FLOOR Physical Education	24,301	21 Parking Deck / Student Mall LOWER LEVEL Technology Support Center Register Student Financial Aid Services Busier's Office FIRST FLOOR Facilities Management FIRST FLOOR Facilities Management SECOND FLOOR Public Safety and Security Facilities Management THIRD FLOOR Facilities Management FOURTH FLOOR Facilities Management FIFTH FLOOR Facilities Management SEVENTH FLOOR Facilities Management EIGHTH FLOOR Facilities Management	12,099 4,854 2,180 3,294 4,302 7,094 41,312 2,953 58,274 42,757 42,760 42,760 42,760 42,760 42,760	22 Specht Building LOWER LEVEL Facilities Management/Vehicles FIRST FLOOR Bookstore SECOND FLOOR Bio-Medical Engineering Physics Chemistry and Environmental Science Civil & Environmental Engineering THIRD FLOOR Chemistry and Environmental Science Chemical Biological and Pharm Eng Register Facilities Management Instructional Technology/Media Svcs FIRST FLOOR Center for Solar Research Chemical Biological and Pharm Eng Register Chemistry and Environmental Science Facilities Management SECOND FLOOR Bio-Medical Engineering Physics Chemistry and Environmental Science Civil & Environmental Engineering THIRD FLOOR Chemistry and Environmental Science Chemical Biological and Pharm Eng Register Albert A. Dorman Honors College Center for Solar Research FOURTH FLOOR Physics Facilities Management Center for Solar Research Chemical Biological and Pharm Eng Chemistry and Environmental Science Electrical and Computer Engineering Facilities Management	3,128 1,581 7,709 1,171 7,233 566 1,379 7,058 2,931 2,321 200 1,303 3,931 9,402 1,893 30 1,171 732 17,056 3,754 4,789 11,422 2,193 1,256 307 16,534 5,131 668 4,329 1,094 454 489	24 Weston Hall FIRST FLOOR Civil & Environmental Engineering Register College of Architecture and Design SECOND FLOOR College of Architecture and Design Register College of Architecture and Design THIRD FLOOR College of Architecture and Design FOURTH FLOOR Van Houten Library College of Architecture and Design FIFTH FLOOR College of Architecture and Design SIXTH FLOOR College of Architecture and Design SEVENTH FLOOR College of Architecture and Design	3,448 2,342 1,531 116 1,048 8,338 4,597 409 7,457 7,682 7,307	25 York Center LOWER LEVEL Chemical Biological and Pharm Eng Chemistry and Environmental Science FIRST FLOOR Chemistry and Environmental Science Chemical Biological and Pharm Eng Mechanical and Industrial Eng SECOND FLOOR Chemistry and Environmental Science Bio-Medical Engineering Chemical Biological and Pharm Eng Civil & Environmental Engineering THIRD FLOOR Bio-Medical Engineering Chemistry and Environmental Science Chemical Biological and Pharm Eng	514 4,440 1,474 490 5,483 182 1,288 196 2,174 3,619 1,080	26 Life Sciences FIRST FLOOR Research Labs Labs SECOND FLOOR Research Labs Labs THIRD FLOOR Open Labs Labs FOURTH FLOOR Open Labs	1,953 1,046 1,843 439 3,713 391 4,752
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Campus Plan 3: Existing Departmental Square Footage (Highlighted items are program reorganization opportunities)

FACILITIES UPDATE for 2020

The space analysis identified a 660,000 GSF program deficiency from year 2015 to year 2030 and the following is a five year cycle breakdown by space category of the overall deficiency: (See Space Analysis: year 2020)

- 88,000 GSF in 2020: Academic and Academic Support spaces
- 313,000 GSF in 2025: Academic and Academic Support spaces
- 259,000 GSF in 2030: Academic, Academic Support and Auxiliary spaces.

A further analysis of each 5-year cycle identified an opportunity to address each cyclical shortfall; starting with year 2020.

In order to meet the shortfall for year 2020, existing underutilized spaces are to be repurposed, departmental spaces are to be consolidated and a number of small space shortages are to be deferred to the next cycle or to a point that there is a critical need. A number of the needs have been already addressed, while others are under design or construction.

The assessment of existing conditions and cross-referencing them to the needs of year 2020 eliminated the requirement for new facilities and increased the utilization of existing spaces and eliminated the need for significant capital outlay.

(See Campus Plan 4: Space Needs / Opportunities Year 2020)

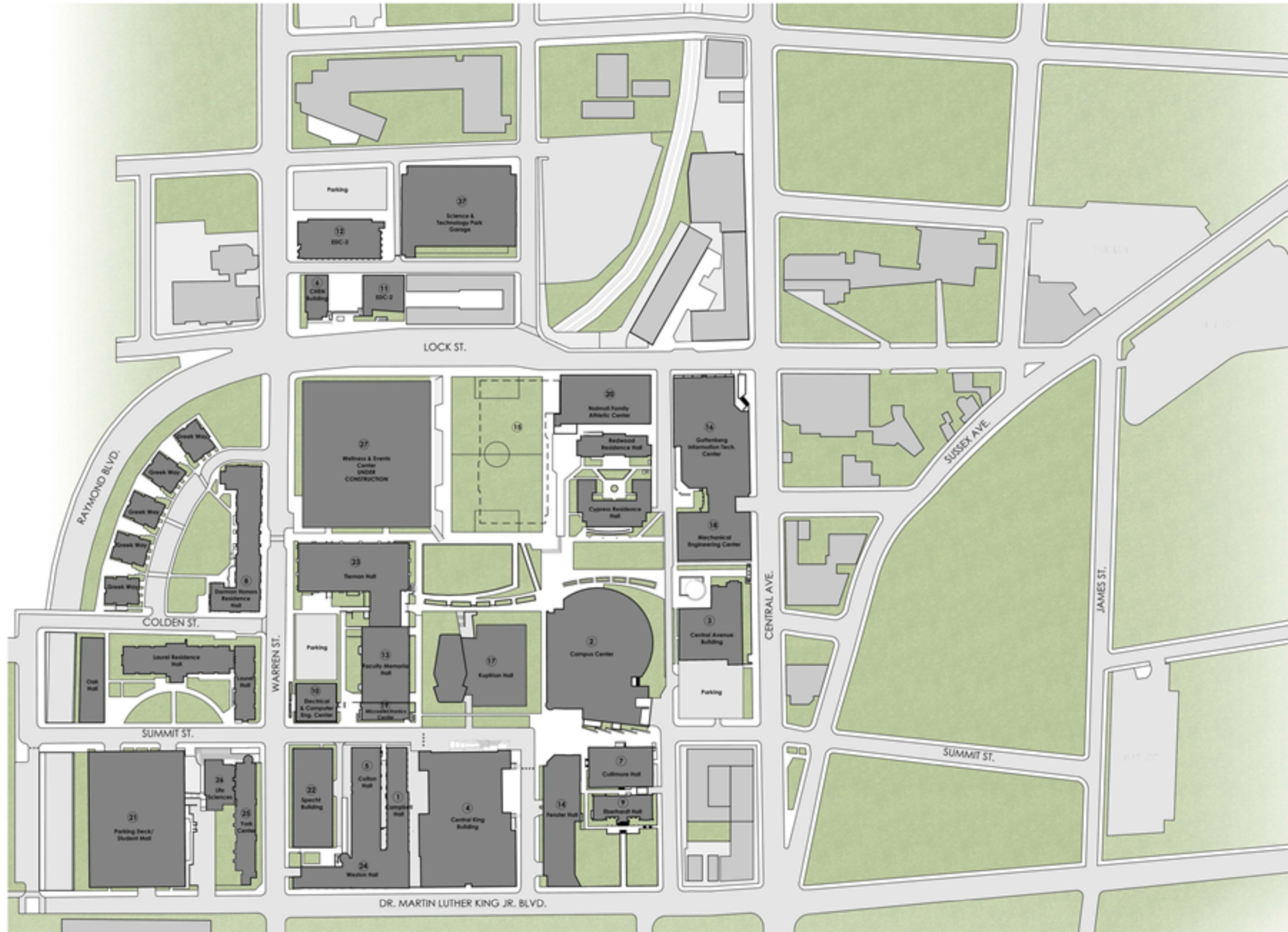
The elimination and deferment of the year 2020 new facility requirements revise the requirements for year 2025 and year 2030 by the following amounts:

- 0 GSF in 2020,
- 283,000 GSF in 2025
- 324,000 GSF in 2030

Space Category	2015				2020				2025				2030			
	Student Headcount = 10,646 Staff Headcount = 1,853				Student Headcount = 12,201 Staff Headcount = 2,045				Student Headcount = 13,600 Staff Headcount = 2,316				Student Headcount = 15,000 Staff Headcount = 2,475			
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Academic Space																
Classroom & Service	87,630	87,610	20	0%	103,173	98,839	4,334	4%	103,173	130,708	(27,535)	(27%)	103,173	144,340	(41,167)	(40%)
Teaching Laboratories & Service	138,662	126,911	11,751	8%	141,963	142,149	(186)	0%	141,963	153,253	(11,290)	(8%)	141,963	169,728	(27,765)	(20%)
Open Laboratories & Service	48,634	53,230	(4,596)	(9%)	57,877	61,005	(3,128)	(5%)	57,877	68,000	(10,123)	(17%)	57,877	75,000	(17,123)	(30%)
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CAMPUS TOTAL	1,096,685	1,054,149	42,536	4%	1,200,811	1,254,097	(53,286)	(4%)	1,200,811	1,443,684	(242,873)	(20%)	1,200,811	1,600,115	(399,304)	(33%)
Inactive/Conversion Space	49,009				11,365				11,365				11,365			
Outside Organizations	83,504				83,504				83,504				83,504			

ASF = Assignable Square Feet

Space Analysis: Year 2020



Campus Plan 4: Space Needs / Opportunities Year 2020

SPACE NEEDS FOR 2020

Academic Space

Research Laboratories & Service Deficit		49,587 ASF
College of Computing Sciences	6,657	
A Big Data Cybersecurity		
College of Science and Liberal Arts	13,710	
B Mathematical Sciences:	4,367	
Physics:	5,844	
Newark College of Engineering	36,817	
C Center for Brain Imaging (Biomedical):	3,232	
Center for Injury Bio Mat. & Medicine (Bio):	7,759	
Chemical Biological and Pharma:	4,831	
D Civil and Environmental Engineering:	21,742	
Center for Nat Res Dev & Prot (Civil & Env Eng):	6,144	

Academic Support Space

Library Deficit		14,466 ASF
E Van Houten Library (Collection and Study Space)		

Assembly & Exhibit Deficit

College of Architecture and Design	3,360	
College of Science and Liberal Arts	3,681	
Provost and Sr. Executive Vice President	2,626	
F Sr. Vice President for Acad Sup. and Student Affairs	5,191	
Athletic & Recreation	1,486	

Auxiliary Space

G Student Center Deficit		18,344 ASF
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OPPORTUNITIES TO MEET 2020 GOALS

- A** Expand Computer Science on the vacated 3rd floor and renovated space on the 4th floor of the Guttenberg Information Tech. Center
- B** Requirement for Mathematical Science and Physics are negligible - **Defer to 2025**
- C** Biomedical to be located in Life Sciences 3rd and 4th floor, and/or Biomedical to be located in Fenster Hall on the 5th floor
Existing Administration offices on the 5th floor to be relocated off-site in lease premises
- D** Civil and Environmental to be located in Colton Hall - 2nd, 3rd, and 5th floor
COAD program space to be re-assessed/re-programmed and/or
Civil and Environmental to be located in Specht Building - lower level
CM to be relocated to Hotel Supply
- E** General collection to be housed in compact shelving, reducing 50% of overall collection area
Reorganize and re-assess existing library space
- F** Requirements for Assembly & Exhibit space are negligible - **Defer to 2025**
- G** Requirements for Student Center space are negligible - **Defer to 2025**

FACILITIES UPDATE for 2025

In year 2025, the programmatic requirements of several departments reach a critical point and the shortfall needs to be addressed through capital projects and strategic acquisitions.

The overall departmental needs increase to 283,000 GSF and are allocated as follows: (See Space Analysis: Year 2025)

- Academic Facilities (100,000 GSF)
- Research Facilities (50,000 GSF)
- Engineering and Instructional Facilities (65,000 GSF)
- Library (68,000 GSF)
- Quad Expansion (Loss of 40,000 GSF)

The Quad Expansion will require demolition of Kupfrian Hall which will decrease 40,000 GSF of classroom space, but the loss will be mitigated with the construction of a new 100,000 GSF Academic Facility. The new Quad will reinforce the 2008 NJIT’s master plan goal for expanded green space and well landscaped spaces while the new academic facility will address the classroom shortage and take advantage of a an underutilized site.

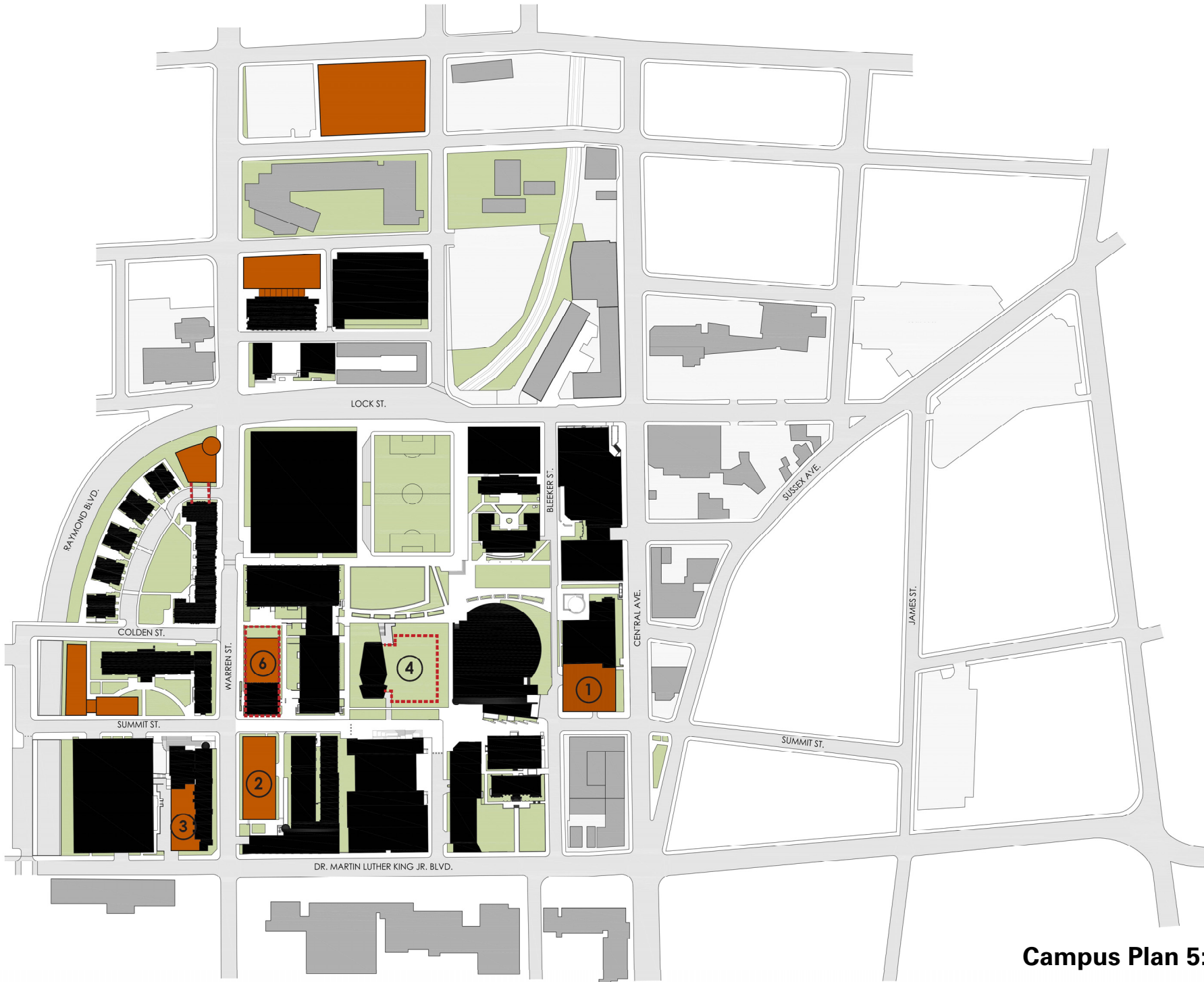
The library expansion will be essential in defining the east boundary of the Campus as well as providing the opportunity of an expanded curriculum. A library is the heart of any Campus and is extremely important in the recruitment of new students and enhancing NJIT’s academic standing.

(See Campus Plan 5: Space Needs / New Facilities Year 2025)

Space Category	2015				2020				2025				2030			
	Student Headcount = 10,646 Staff Headcount = 1,853				Student Headcount = 12,201 Staff Headcount = 2,045				Student Headcount = 13,600 Staff Headcount = 2,316				Student Headcount = 15,000 Staff Headcount = 2,475			
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Student Center	91,465	95,814	(4,349)	(5%)	91,465	109,809	(18,344)	(20%)	91,465	122,400	(30,935)	(34%)	91,465	135,000	(43,535)	(48%)
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CAMPUS TOTAL	1,096,685	1,054,149	42,536	4%	1,200,811	1,254,097	(53,286)	(4%)	1,200,811	1,443,684	(242,873)	(20%)	1,200,811	1,600,115	(399,304)	(33%)
Inactive/Conversion Space	49,009				11,365				11,365				11,365			
Outside Organizations	83,504				83,504				83,504				83,504			

ASF = Assignable Square Feet

space needs: 2025



2025: 283,000 GSF
(Available site 1-4 & 6) (\$120M)

Optional Site	Needs Analysis 2016 / 2017
① Library 4 stories, 68,000 GSF	28,000 GSF (Library 2025 & 2030) 40,000 GSF (Assembly & Exhibit)
② Academic Facilities 6 stories, 100,000 GSF	60,000 GSF (Classroom) 40,000 GSF (Classroom) New Quad
③ Research Facilities 5 stories, 50,000 GSF	50,000 GSF
④ Quad Expansion (Loss of 19 classrooms)	40,000 GSF [See ②]
⑥ Engineering Facilities / Instructional Facilities 4 stories, 65,000 GSF	40,000 GSF (Teaching Labs) 25,000 GSF (Open Labs)

LEGEND

- NJIT: PROPERTIES
- NJIT: FUTURE BUILDING SITE(S)
- NOT OWNED BY NJIT

Campus Plan 5: Space Needs / New Facilities Year 2025

FACILITIES UPDATE for 2030

In year 2030, the remaining Departmental programmatic needs have reached a critical point and the shortfall needs to be addressed through additional capital projects and strategic acquisitions.

(See Space Analysis: Year 2030)

The departmental needs are as follows:

- Research Facilities (290,000 GSF)
- Administrative offices (36,000 GSF)
- Department Space (16,000 GSF)
- Student Center (72,000 GSF)

In the upcoming decade, strategic acquisitions will be extremely important for particular programmatic needs, need for critical adjacencies and the natural growth of the Campus. NJIT’s current properties meet the overall space needs up to year 2030, the location and the adjacencies are not optimal to unify the campus and boundaries.

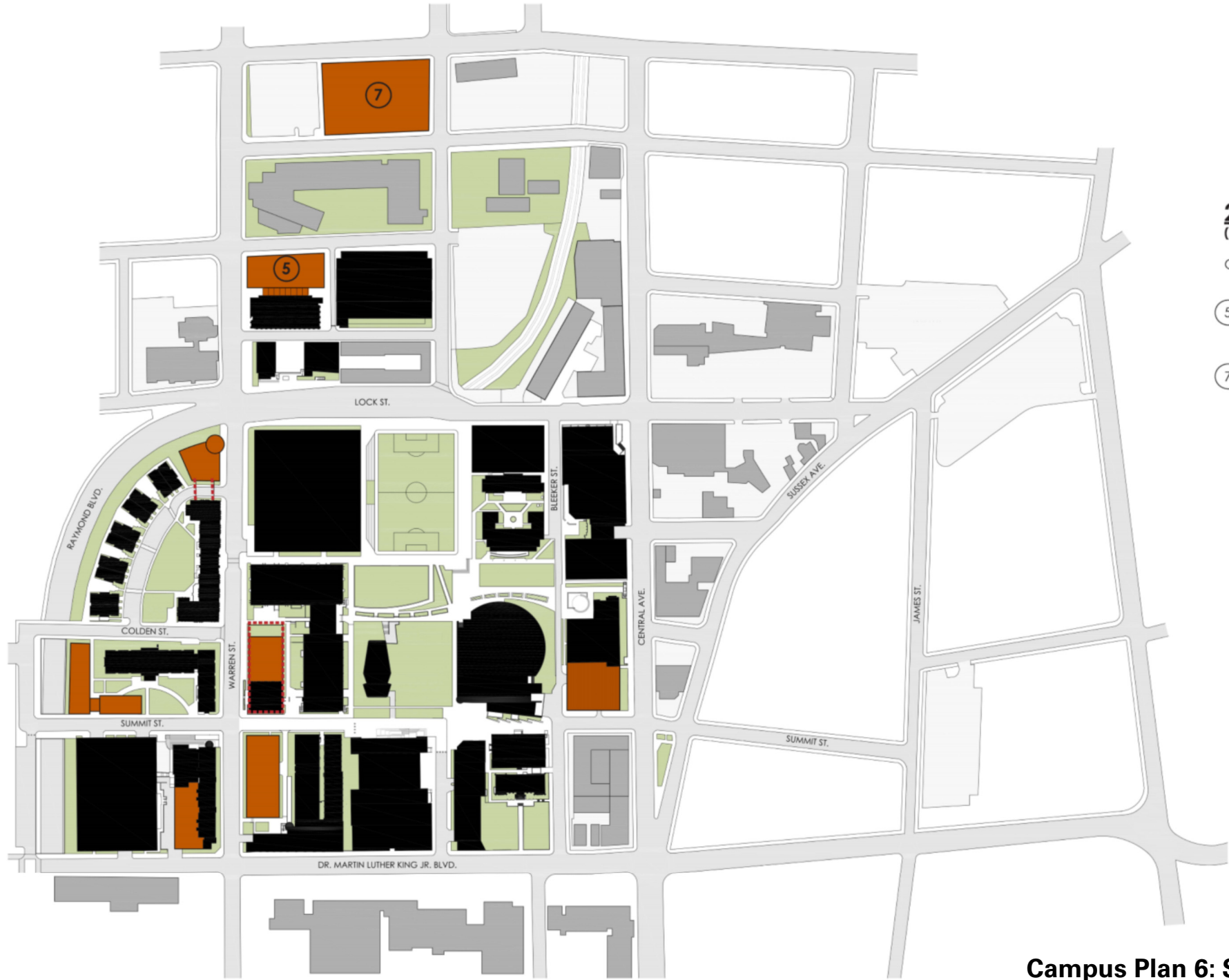
(See Campus Plan 6: Space Needs / New Facilities Year 2030)

Space Category	2015 <i>Student Headcount = 10,646 Staff Headcount = 1,853</i>				2020 <i>Student Headcount = 12,201 Staff Headcount = 2,045</i>				2025 <i>Student Headcount = 13,600 Staff Headcount = 2,316</i>				2030 <i>Student Headcount = 15,000 Staff Headcount = 2,475</i>			
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ASF = Assignable Square Feet

Space Analysis: Year 2030

space needs: 2030



2030: 324,000 GSF	
(Available site 5 or/and 7 or/and possible acquisition) (\$165M)	
Optional Site	Needs Analysis 2016 / 2017
5 Research Facilities 6 stories, 90,000 GSF	90,000 GSF (Unassigned)
7 Research Facilities 6 stories, 300,000 GSF	200,000 GSF (Research) 100,000 GSF (Unassigned)
Site(s)/Building To Be Confirmed	36,000 GSF (Admin. Offices) 16,000 GSF (Department Space) 72,000 GSF (Student Center)

LEGEND	
■	NJIT: PROPERTIES
■	NJIT: FUTURE BUILDING SITE(S)
■	NOT OWNED BY NJIT

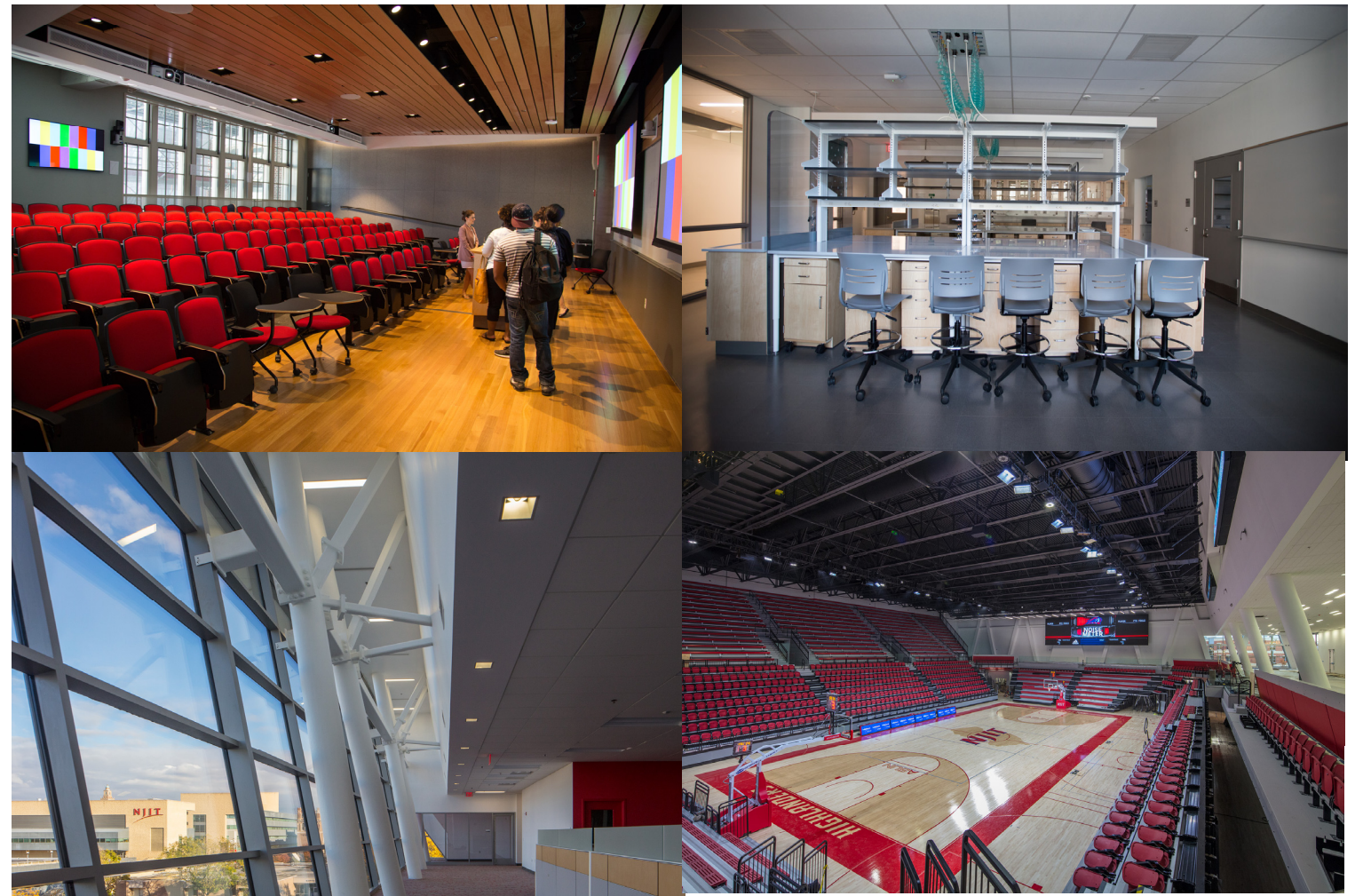
Campus Plan 6: Space Needs / New Facilities Year 2030

CONCLUSION

Over the last several decades, New Jersey Institute of Technology has transformed into a major research university. As it grew into a research university, NJIT also developed as an educational institution. In short, since 1979 the university has grown from its roots as a commuting college focused on teaching into a residential and highly selective research institution. NJIT remains true to its urban mission and its commitment to helping motivated and talented students overcome educational challenges. The future direction of NJIT will build upon the transformations that have brought the university to where it is today. As stated in the 2020 Vision, the goal is to keep NJIT on course to becoming one of the premier institutes of technology in the country, renowned for excellence in education, eminence in research, generosity in service and dedication to economic expansion.

The 2018 Facilities Master Plan Update's goal was to assess the accomplishments of the 2008 NJIT Master plan and craft an updated plan aligning with the 2020 Vision strategic plan. NJIT's accomplishments from 2008 to the present have been phenomenal in its ongoing strategic growth of faculty and facilities to support the goals of being a renowned research university. It has adhered to the 2008 Facilities Master Plan goals by renovating the aging Central King building into a state of the art teaching and learning environment, developed and renovated existing academic facilities to enhance the teaching and learning environment, and replaced existing recreation and athletic facilities with the new Wellness and Events Center. In addition, NJIT reinforced well-defined campus edges with enhanced landscape and signage and replaced surface parking with new structured parking, reduced space deficit and enhanced research capacity through the construction of the Life Sciences and Engineering Center, and increased the residential community with the construction of a mixed-use village at Warren Street.

Throughout the 2018 Facilities Master Plan update process, we found NJIT progressing expeditiously toward its goals of being a renowned research university. The updated Facilities Master Plan will guide the University into its next decade, one of growth and change, in support of its mission. NJIT will continue to strategically execute the findings within this study including, renovating its existing facilities, constructing new academic and research facilities as the campus population grows, and acquiring properties to meet its needs. The 2018 Facilities Master plan update was a collaborative effort of students, faculty, staff, administration, alumni, and the Board of Trustees. This document will provide guidance and ensure the human, physical and technological resources for student learning and faculty research have the highest priority.





The 2018 NJIT facilities master plan effort would not be complete without acknowledging the following supplemental documentation that will affect how the master plan is implemented:

- NJIT Landscape Master Plan (January 2005)
- Housing Market Analysis (October 2016)
- Facilities Condition Assessment (January 2017)
- Housing Demand Update Memorandum (April 18, 2017)
- Jim Wise Theater Revitalization Study (June, 5, 2017)
- Parking Adequacy and Financial Analysis (December 22, 2017)
- Wayfinding and Signage Master Plan (February 2018)