

CS 3.11.3 Physical facilities - The institution operates and maintains physical facilities, both on and off campus, that appropriately serve the needs of the institution's educational programs, support services, and other mission-related activities.

 X Compliance

 Non-Compliance

The University of Louisville (UofL) operates and maintains on and off-campus physical facilities that appropriately serve the needs of its educational programs, support services, and other activities.

UofL is a state-supported metropolitan university located in Kentucky's largest metropolitan area and consists of 3 campuses. The 345-acre Belknap Campus is located 3 miles from downtown Louisville and houses 8 of the university's 12 colleges and schools along with a child care center (the Early Learning Campus). The 63-acre Health Sciences Center is situated amid Louisville's downtown medical complex and houses the university's health-related schools (Medicine, Nursing, Dentistry and Public Health), the new Clinical and Translational Research Building, and UofL Hospital . The 232-acre Shelby Campus, located in eastern Jefferson County, houses the National Crime Prevention Institute, the Delphi Center for Teaching and Learning Unit for Continuing and Professional Education, and the Center for Predictive Medicine, a \$44 million facility that contains one of the nation's 13 Level Three biosafety labs.

The Belknap Campus is undergoing a major expansion funded primarily by the University of Louisville Foundation. The UofL Foundation (ULF) established the UofL Development Company, LLC to develop and manage foundation real estate property for the benefit of the university [1]. The Belknap expansion is focused on creating collaborative business developments that benefit the main campus students, faculty, and staff. The Health Sciences Campus has facilities adequate for its teaching, research, and clinical service activities on and off the HSC campus. UofL health sciences operations include a Level 1 trauma center, a cancer center, university hospital, and community-based clinics. The School of Public Health and Information Sciences facility is in close proximity to the Louisville Metro Department of Public Health and Wellness (LMPHW) and has a collaborative agreement with LMPHW that enhances its community-focused mission. On the Shelby Campus, construction is continuing on ShelbyHurst, a state-of-the-art office and research campus development, which is being developed to accommodate business, office, technology, and research uses.

A campus map tour has been developed to provide an online view for each of the three campuses and their related buildings. Each building view includes a picture, construction year, square footage, primary use, and description of its function [2].

Additional off-campus locations include undergraduate and graduate programs offered on the army base at Fort Knox, KY; dual credit courses at local high schools; program offerings at business sites (General Electric, Owensboro Medical Health Systems); cooperative programs: Brescia University (social work), Western Kentucky University (engineering); international program locations (Germany, Panama, Russia, and China); and the medicine program in the Trover hospital, located in Madisonville, KY. All of these activities highlight the university's instructional outreach efforts, which insure that adequate space is available. [3].

However, online learning accounts for the greatest portion of student credit hours earned off-campus. The university's strategic plan [4] provides guidance in setting the academic, research, student life, and infrastructure needs of the institution. The university's master plan [5] is routinely updated to anticipate the physical growth of the institution's three campuses.

The Vice President for Business Affairs (VPBA) [6] is responsible for the primary assets of the University, including facilities. The VPBA ensures that the assets and operation of the unit fulfill the academic mission of the university. The VPBA reports to the Executive Vice President and University Provost. The VPBA has responsibility for overseeing the development, construction, and, ultimately, the maintenance of all physical assets of the university. The VPBA office also maintains and improves the grounds and buildings of the physical plant; oversees the updates and administration of the university facilities' master plan; administers and continually improves operating procedures for managing and maintaining plant assets, undeveloped real estate, inventory of moveable equipment, and disposal, salvage or demolition of equipment as needed; manages the university's purchasing needs, including interests in real property, contractual services, renewals of all types, supplies and materials, equipment and services; administers, under the statutory authority granted to the university, all capital construction contracts and renovation projects, including the hiring of architects, engineers, and other consultants.

The university is actively engaged in expanding sustainability initiatives as stated in the 2020 plan [7]. These initiatives include promoting an environmentally friendly campus through responsible construction practices; single stream, chemical, and other recycling programs; "green" purchasing policies; public transportation use; and responsible energy management practices. Since the university established the green purchasing policies, the Center for Translational Research, Duthie Center, and Center for Predictive Medicine have received LEED [8] Gold designation. Also, the Dental School addition/renovation and the School of Medicine Imaging Suite renovation were designated LEED Silver, and the university received a STARS silver rating from the Association for the Advancement of Sustainability in Higher Education (AASHE) for its sustainability efforts [9]. The scope and depth of sustainability initiatives at UofL are documented on the university's website. [10].

The Department of Planning, Design, and Construction (UPDC) [11] reports directly to the VPBA and operates on an annual budget of \$1.1 million. UPDC provides guidance in matters of physical facilities planning, master planning acquisitions, and building design and campus exterior features. This department also manages university capital construction and renovation projects, including architectural and engineering selection, facilities programming, design, bidding, construction, equipment, furnishings, and operational start-up. The department is responsible for preparing cost estimates and ancillary information for all capital improvements for the agency's six-year capital plan and biennial budget requests. Additionally, the unit provides in-house design services for minor building renovations and furnishing projects, along with maintaining the university's buildings and land inventory database. UPDC also does scheduling for the general purpose classrooms (not unit specific) on the Belknap Campus.

The Physical Plant Office [12] oversees maintenance and renovations to university facilities. Physical Plant reports directly to the VPBA and operates on an annual budget of \$25,650,000. Physical Plant also manages the university's utilities, budgeting approximately \$18,000,000 annually for those expenditures as they occur on each of the campuses connected to the University of Louisville (Belknap, Health Sciences Campus, and Shelby).

Campus Planning and Capital Construction

The university maintains a comprehensive master plan for each of the three major campuses. Periodic updates are made as required. Recent updates have been completed on the Belknap Campus (2009) [13], Health Sciences Campus (2006) [14], and Shelby Campus (2009) [15]. These updates incorporated the university's intention to achieve dynamic growth while demonstrating a commitment to sustainability through Brownfield Reclamation (sites that are abandoned or unused former industrial and commercial land and buildings available for reuse), responsible construction practices, chemical recycling, facilitating the use of public transportation, responsible energy management practices, recycling programs, enhancing the campus landscape, and making the campuses more pedestrian friendly.

As a complement to the strategic and master plans, UofL conducts a facility condition assessment of all buildings and exterior campus areas approximately every two years. This assessment is undertaken by offices reporting to the VP for Business Affairs and becomes the basis for inclusion of projects in the capital renewal, major maintenance, and life safety portions of the larger six-year capital plan. A key component of this review is the assessment of classroom and laboratories, teaching and research, and facility conditions. The assessment is used to select projects for inclusion in the overall capital plan and to prioritize projects in order to provide the highest potential for increased utilization, to foster gains in academic performance, and to increase research productivity, all of which contribute to overall student and faculty satisfaction with institutional facilities and infrastructure. The university also gathers student satisfaction with its facilities through the student course evaluation administered in each course at the end of each semester. These evaluations are conducted for each school. An example is provided at [16] of the survey of the biology department in the College of Arts and Sciences. The Office of Information Technology (IT) [17] also conducts surveys [18] of students, faculty and staff to determine the adequacy of UofL's technology and services for campus needs. IT develops and implements an action plan to address the items from the surveys.

The university's six-year capital plan (a requirement for all Kentucky state agencies) includes funding requests for new construction projects, lists needs for capital renewal on the existing facilities, and itemizes major end items of equipment. The 2012-2018 Six-Year Agency Capital Plan is available for public review on the university's website [19]. The first two years of this plan are used in the capital budget submitted to the State on a biennial basis. The state of Kentucky's HB 265 [20] funds both the operating and capital budgets for all government agencies, including public institutions of higher education. Clearly, state economic conditions and debt capacity dictate the amount of funding available to service UofL requests.

Since completion of the master plan updates in 2006 and 2009 and the 2007 SACS reaffirmation, the university has constructed several buildings (listed in Table 1 below).

The master plans have been instrumental in providing organization and guidance in the expansion and placement of housing, parking, and athletic facilities on the Belknap campus and the expansion and placement of biomedical research, patient care, teaching facilities, and adequate parking on the HSC campus.

Table 1 – Building Construction since the 2007 SACS Reaffirmation

Year	Building Name	Square Ft.	Campus	Sustainability
2007	Inhalation Lab Renovation	2,000	HSC	NA
2007	Musseleman Golf Practice Facility **	5,690	Other	NA
2007	Phi Kappa Tau Fraternity	7,740	Belknap	NA
2007	YUM! Center **	85,546	Belknap	Brownfield
2008	Early Learning Campus	22,943	Belknap	NA
2008	Marshall Center	17,722	Belknap	Brownfield
2008	Papa John's Stadium Expansion **	214,113	Belknap	Brownfield
2008	UofL Outpatient Center	12,883	HSC	NA
2009	620 Parking Garage	678,477	HSC	NA
2009	Cardio-Vascular Innovation Institute Shelled Floor	25,692	HSC	NA
2009	Center for Predictive Medicine	38,135	Shelby	Gold LEED
2009	Clinical Translational Research Bldg.	287,824	HSC	Gold LEED
2009	Conn Center Renovation	3,800	Belknap	NA
2009	Duthie Center for Engineering	34,300	Belknap	Gold LEED
2009	Ekstrom / McConrell Archives	2,023	Belknap	NA
2009	Public Health/Information Sciences	34,000	HSC	NA
2010	Burhans Hall First Floor. Renovation	5,250	Shelby	NA
2010	Eastern Parkway Pedestrian Safety	*	Belknap	NA
2010	Energy Reduction Project Phase I	*	Belknap	NA
2010	Founders Union Renovation	8,100	Shelby	NA
2010	HSC 55- A Seventh Floor. Renovation	11,024	HSC	NA
2010	The "Ville Grille"	13,771	Belknap	NA
2010	University Tower Apt. Lobby Renovation	1,612	Belknap	NA
2011	Brown Rowing Facility **	16,766	Other	NA
2011	Freedom Park Improvement	*	Belknap	NA
2011	Oval Entrance Improvement	*	Belknap	NA
2011	School of Dentistry Renovation/Addition	212,200	HSC	Silver LEED
2011	Stevenson Hall Renovation	34,180	Belknap	NA
2011	Third & Eastern Pkwy Gateway	*	Belknap	NA
2012	Business School Equine Addition	7,245	Belknap	Silver LEED
2012	Energy Reduction Project Phase II	*	HSC	NA
New Construction	Student Recreational Center	128,300	Belknap	Gold LEED pending
New Renovation	HSC Imaging Suite	3,000	HSC	Silver LEED

* Square ft. is not applicable to these infrastructure projects.

** Athletics facilities/space

NA Not applicable as there is no sustainability related designation related to this project.

The University of Louisville Foundation (ULF) is developing several projects that are expected to have revenue to support the university. The ShelbyHurst Research and Office Park development involves all but 20 acres of the more than 200 acres that comprise UofL's Shelby Campus. The 20-acre core is reserved for academic purposes. The first 125,000 square foot building recently opened, and construction recently started on the second one. The research and office park development will bring in revenue to support UofL's academic mission.

The Foundation is also currently constructing an eight story structure in downtown Louisville near the health sciences center. The Nucleus Innovation Center is expected to be 60-80 percent occupied when it opens in spring 2013. Nucleus, a non-profit LLC, is charged with becoming the next significant life science commercialization center in the United States. It is the research, innovation, and commercialization arm of the ULF. It provides business management and consulting services to support entrepreneur engagement in innovation and research. The new building will offer space and dry labs to start-up companies and other innovators.

The Belknap Engineering and Applied Sciences Research Park, another Foundation project, will be constructed on 39 acres just south of Belknap Campus. The road system for the Park has been funded and design work is in process. The road system is expected to be completed by 2015. This business park will complement the ShelbyHurst and Nucleus facilities mentioned above.

The university does have a shortage of space, as demonstrated in a 2007 space study conducted by Paulien & Associates and updated by the Council on Postsecondary Education (CPE). The study found the university to have an overall deficit of 74 percent with significant shortage in nearly all categories [21]. A new classroom building has been the number one priority in the capital budget request for the past two biennia but the state has not funded the request. The university has been able to accommodate the current need for classroom space to this point but there is not much flexibility left for future growth.

The university is developing a "Campus Town Center" [22] on the Northwest side of campus. This is the area where much of the new student housing is located, as well as Cardinal Towne, a privately developed mixed use project that includes student housing and several retail establishments. The Student Recreational Center (under construction) will provide facilities complementing the ongoing development of the "Campus Town Center" concept. The 128,000 gross square feet facility will feature recreational sports programs along with lifestyle educational activities serving needs of both the residential and commuting students and providing multi-functional space for informal recreation, competitive intramural sports, fitness classes, life wellness programs, along with space for a variety of university sports clubs. The facility is being constructed using agency bonds, which are supported by a student fee endorsed by the student body.

The assignment and reallocation of space are administrated and approved by the Provost for the Belknap and Shelby Campuses and the Executive Vice President for Health Affairs for the HSC campus, with the input of administrative and academic representatives to ensure compliance with the university's strategic plan priorities. The Department of Planning, Design and Construction is responsible for tracking space utilization, scheduling general education classrooms, and reserving these facilities for other academic and non-academic use. The utilization of general

education classrooms is tracked using Resource 25 software, Archibus (used at HSC), and customized building inventory system (BIN) to gather and analyze space information. Current strategies and tools include actively monitoring instructional space usage information, conducting classroom condition surveys, centralized scheduling of general use classrooms, and making use of scheduling policies. Use of these strategies and tools allows the university to conduct analysis of current space usage in order to identify inefficiencies and to determine the necessary course of action in our current environment of limited resources.

Maintenance, Renovations and Capital Renewal

University of Louisville staff can report needed preventative maintenance by directly contacting Physical Plant's work control office or by completing an online web form [23]. The types of services provided by Physical Plant include carpentry, custodial, electrical, flooring, grounds, HVAC, painting, plumbing, and roofing. Physical Plant utilizes the MAXIMO system, which allows for the assignment of work order numbers, the tracking of related charges, and the billing of departments for requested jobs. In addition, departments may request estimates [24] for anticipated work through another online form, which in turn affords departments the ability to plan and budget appropriately for projects.

Internally, capital renewal and renovation funding are received from a distribution of year-end surplus funds and from funding in the physical plant operating budget. This funding has helped the university address items on the deferred maintenance list [25] [26]. The university also addresses capital renewal through renovation projects such as the recently completed \$45 million Dental School project, which was estimated to have addressed \$22 million of renewal.

The university has completed a \$46.2 million performance contract with Siemens Industry, Inc. for all three campuses. This project includes energy efficient facility improvements in 88 buildings and will generate \$64 million of guaranteed savings over the 14+ year term. Performance Contract Phase 1 (Belknap Campus) established a contracted, guaranteed yearly dollar savings for the amount of \$2,342,929. The first "Full Year (January 1, 2011 through December 31, 2011)" Measurement and Verification Report identified that the actual savings during that period amounted to \$2,572,537. Performance Contract Phase 2 (HSC Campus, Shelbyhurst Campus, and additional Belknap Campus items) established a contracted, guaranteed yearly dollar savings for the amount of \$1,979,129. This project has just been completed, with construction period data being compiled at this time. "Full Year" documentation is projected to begin January 1, 2013.

The performance contract project has helped to address a large portion of the backlog of needed capital renewal and has made our campus much more efficient. During 2010 and 2011, the university estimates it spent approximately \$48 million on capital renewal. This was accomplished through renovations, performance contracting, and the Physical Plant budget.

Housing and Residence Life has completed several capital projects and upgrades in the resident halls per recommendations from an initial 1997 consultant report and the 2005 facilities review conducted by a consultant [27]. A 10-year deferred maintenance plan [28] is in place that helps give direction in budgeting and project planning. The university has also developed a hybrid

affiliation program to partner with privately owned and managed apartment communities on the edge of campus. The agreements provide standards for the private communities in construction, staffing, and student care, as well as partnering the housing professional staff with managers in order to provide a connection to campus. These new communities have allowed UofL to make available an additional 2,000 beds in modern apartment communities that provide independent living environments for upper-class students. In 2006, UofL had approximately 2,900 beds available for students who wanted to live in campus housing. These new communities have increased that capacity for fall 2012 to 5,350 beds available both on and off campus for UofL students. Other services such as an expanded and improved dining program on campus, increased service hours in the Library and other areas, and redesigned student space on campus have provided support for the residential campus environment.

With the improved campus environment and services and the additional beds in campus housing, the university has been able to address its 2020 strategic goal of increasing retention and graduation rates [29]. Studies have shown that students who live on campus during their first year of college will retain and graduate at an almost 15 percent higher rate than those who don't. This is credited to the connection made while living on campus to academic and social services and support, as well as a higher participation rate in campus events. Beginning fall 2012, all first-year students were required to live in on-campus housing unless they have been granted approval to live at home with custodial parents or have an approved exemption for extenuating circumstances. The goal of this requirement is to help first-year students make strong connections to the academic environment through intentional programming and mentoring, as well as to foster focused participation in campus events, services, and support.

Campus Security

The University Police department [30] provides protection to UofL's Physical Plant and all campus communities. University Police report directly to the VPBA. Building Emergency Action plans are in place for all buildings on all campuses and available to ensure the highest and most appropriate response and actions in support of the campus communities. In addition, since 2007, the university has had an Emergency Planning Group that meets on a monthly basis to focus on emergency prevention/remediation, preparedness, response, and recovery. This group's first priority was the development of the RAVE system [31] that alerts the university community of emergency situations through email, text alerts, and campus phone messages. This system has been used in many instances since its implementation. Emergency events [32] included multiple bomb threats; one bomb hoax that resulted in a felony conviction; two tornadoes; a twelve-inch snow; a hostage situation; Hurricane Ike; a massive ice storm; a gun event in a campus department; an H1N1 flu threat; a 40-million gallon water main break; and the August 4, 2009 flood, which resulted in \$21 million worth of damages to the campus.

The most challenging emergency event was the 2009 flood, which happened in August just three weeks before the fall semester began. The university developed an emergency response plan in preparation for starting fall classes as scheduled. Physical restoration of the campus was described by President Ramsey as "inspirational." Claims preparation, processing, and payment were called "exceptional" by the national claims adjustor. The university is stronger due to its flood response and recovery. As a result of the flood and a subsequent FEMA request

opportunity, the university applied for and received two Hazard Mitigation grants totaling over \$88,000 for the Chemistry Building and Crawford Gym. These grants will fund projects to prevent future damages. The university also received a FEMA award for \$850,000 to replace high voltage feeder lines at the Health Sciences Center with underground feeders. Burial of the lines eliminates vulnerabilities of power lines to ice, snow, motor vehicles, wind, and falling trees.

Technology Resources

The Information Technology unit provides an extensive technology infrastructure “backbone” in direct support of the university’s teaching and research mission. Computer labs across the campus provide students access to the equipment and software required for interactive learning. The campus network is capable of providing 1Gbps service to the desktop and provides communication with over 20,000 campus Ethernet connections, including approximately 800 connections within the libraries. Approximately 3,500 Ethernet connections serve residence halls, and pervasive wireless networking is provided on all campuses. The university is a member of the Internet 2 network with direct access to the Internet2 backbone at 10Gbps. In addition to technology available inside the enhanced classroom, remote learning opportunities have been initiated and have increased exponentially over the past several years via the addition of lecture capture and plagiarism-detection software to our learning management system. The IT research computing group supports the Cardinal Research Cluster as well as general consulting support for research that is heavily dependent on computation. [33]

The university measures satisfaction of Information Technology services through an annual survey [34] distributed to all employees and students. Both the quantitative and qualitative results are shared with Information Technology for their review. Qualitative results are coded by themes, such as email, wireless, Help Desk, etc. Information Technology reviews the results, looking for common trends, and creates an action plan to address the issues prior to the next survey.

Online learning at the University of Louisville is coordinated by The Delphi Center for Teaching and Learning [35] with the participation of faculty throughout the university and is supported by the Office of Information Technology and the Office of Distance Learning Library Services (DLLS) in the University Libraries+. Distance education students and faculty have access to the Distance Learning Library Services program, which provides off-campus access to readings and databases and also offers delivery of library resources that are unavailable online. The IT Instructional Technology/Instructional Support unit provides assistance in the classroom.

UofL programs in distance learning have existed since the mid-1990s. As of the 2011-2012 academic year online enrollment has reached over 11,000 students in 560 courses sections. Online or distance learning provides students with the opportunity to enroll in courses wherever they may be physically located. One unintended benefit of online courses is that they help us to, in-part, alleviate issues of space for on-campus courses and expand the ability of the university to offer courses and programs to students world-wide. Through Blackboard and other communication technologies supported at UofL, online students are able to interface with their instructors and classmates online. The Online Learning unit in the Delphi Center serves as a

central point of contact for online students. Federal Requirement 4.8 has additional information about online education and the necessary information technology support.

This report demonstrates that the University of Louisville does operate and maintain facilities that appropriately serve the needs of the mission related activities, and provides appropriate support services for on and off campus operations.

[1] University of Louisville Foundation (ULF)

http://www.louisvillefoundation.org/who-we-serve/future-generations/3_11_3_fn01.pdf

[2] Campus Map Tour

http://louisville.edu/campustour/3_11_3_fn02.pdf

[3] CPE Table 29

3_11_3_fn03.pdf

[4] UofL 2020 Plan

3_11_3_fn04.pdf

[5] Belknap Campus 2009 Master Plan

3_11_3_fn05.pdf

[6] Vice President for Business Affairs (VPBA)

http://louisville.edu/businessaffairs/3_11_3_fn06.pdf

[7] UofL 2020 Plan--Sustainability

3_11_3_fn07.pdf

[8] LEED

http://www.usgbc.org/DisplayPage.aspx?CategoryID=19/3_11_3_fn08.pdf

[9] STARs from AASHE

http://stars.aashe.org/institutions/university-of-louisville-ky/report/936/3_11_3_fn09.pdf

[10] UofL's Sustainability Initiatives

http://louisville.edu/sustainability/3_11_3_fn10.pdf

[11] Department of Planning, Design, and Construction (UPDC) http://louisville.edu/updc/3_11_3_fn11.pdf

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- [12] Physical Plant
<http://louisville.edu/physicalplant>
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- [13] Belknap Master Plan Update
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- [14] Health Sciences Campus 2006 Update
(http://louisville.edu/updc/masterplan/HSC_TRUSTEES_PRESENTATION_Feb_21%2C_2007.pdf)
3_11_3_fn14.pdf
- [15] Shelby Campus 2009 Update
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- [16] Student Course Evaluation Example: Biology Department
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- [17] Information Technology
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- [18] Information Technology Survey
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- [20] HB 265 – University of Louisville Capital Request List
<http://louisville.edu/businessaffairs/about>
3_11_3_fn20.pdf
- [21] UofL Space Study Conducted by Paulien & Associates and Updated by CPE
3_11_3_fn21.pdf
- [22] Campus Town Center Article
3_11_3_fn22.pdf
- [23] Online Maintenance Form
http://louisville.edu/physicalplant/forms/service_request
3_11_3_fn23.pdf
- [24] Estimate Request Form
<http://louisville.edu/physicalplant/forms/request-for-estimates>
3_11_3_fn24.pdf

[25] Deferred Maintenance List, Capital Renewal
3_11_3_fn25.pdf

[26] Deferred Maintenance List, Code Improvement
3_11_3_fn26.pdf

[27] Housing Assessment
3_11_3_fn27.pdf

[28] Housing Deferred Maintenance Report
3_11_3_fn28.pdf

[29] 2020 Plan--Increase Retention and Graduation Rates
3_11_3_fn29.pdf

[30] University Police Department
<http://louisville.edu/police>
3_11_3_fn30.pdf

[31] RAVE System
<http://louisville.edu/alert/>
3_11_3_fn31.pdf

[32] Campus Emergencies 2008-2012
3_11_3_fn32.pdf

[33] IT Research Computing Group
<http://louisville.edu/it/research/cyberinfrastructure/systems>
3_11_3_fn33.pdf

[34] Information Technology Services Annual Survey
3_11_3_fn34.pdf

[35] Delphi Center Office of Online Learning
<http://louisville.edu/online/about-online-learning.html>
3_11_3_fn25.pdf