Designing for Education, Research, and Service: The University of the Philippines School of Library and Information Studies (UP SLIS) New Building

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Abstract

This paper presents a case study of the new building of the University of the Philippines School of Library and Information Studies. It examines the design concerns for a facility that supports LIS education, research, and extension services through building standards for university buildings, libraries, and archives spaces. The study highlights the importance of communication between project stakeholders, the representation of different interest areas in a building committee, and familiarity with architectural plans and construction language. The case study offers insights for architects, designers, and policymakers involved in designing and constructing a building for a library and information studies school.

Keywords: Library and Information Science Education; College Facilities; Higher Education Facility Planning

INTRODUCTION

The University of the Philippines School of Library and Information Studies (UP SLIS) is the first library science school in the Philippines and Southeast Asia, and it is the only LIS school in the Philippines recognized by the Commission on Higher Education (CHED) as a Center of Excellence in LIS education (Golfo-Barcelona, 2021). As an academic unit and part of the University of the Philippines System, UP SLIS has responsibilities mandated by the University of the Philippines Charter of 2008 (Republic Act No. 9500), among which are to:

- lead in setting academic standards and initiate innovations in teaching, research, and faculty development;
- serve as a graduate university and provide advanced studies and specialization;
- conduct, promote, and disseminate research;
- provide community, public, and volunteer services; and
- provide scholarly and technical assistance to the government, the private sector, and civil society (Republic Act No. 9500, Sec. 3, 2008).

Consequent to this mandate, the UP SLIS requires specific facilities in addition to typical classrooms, such as laboratories, to support teaching, research, and extension services. An opportunity to create a purpose-built space arose when the General Appropriations Act for Fiscal Year 2019 (Republic Act No. 11260) allocated funds for the construction of an LIS building on the site of the former Zoology Building in the UP Diliman campus. The former

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Zoology building was in a state of disrepair due to termites and weathering when it was transferred to the School. The architects and design consultants thus opted to demolish internal walls while maintaining and reinforcing the shell of the building. This approach enabled the placement of new rooms and spaces for specific applications, alongside the addition of a third level for additional space.

This new building was designed with several functions in mind:

- spaces for teaching, discussion, and study to support the undergraduate LIS courses with 15-30 students and graduate courses in LIS and Archives and Records Management (ARM) with 5-15 students;
- laboratories and collaboration areas to support research activities;
- specialized laboratories to conduct extension services and programs while also accommodating the teaching of students;
- storage areas for UP SLIS records and University records;
- spaces for exhibitions, public lectures, and research dissemination; and
- a functional library that may also serve as an experimental space for LIS services.

UP SLIS formed a building committee chaired by the Dean that includes representatives from the faculty with a familiarity with the specifics of various courses, particularly those using the specialized laboratories, the college librarians who are best acquainted with collection, services, and needs of the UP SLIS Library, and members of staff who are involved in procurement and managing student records. This diversity allowed for the representation of a variety of interests and perspectives that might not otherwise have been highlighted in building design.

This paper examines the different standards that apply to the different functions of the UP SLIS New Building and evaluates the design and construction of a purpose-built space for LIS education using a case study approach as seen through the author's experiences as a building committee member who joined in the middle stage of the design process in 2019 to advise on the specific technical requirements of the building. The study serves as a reference for other LIS schools that plan to build a new facility or renovate existing buildings.

STANDARDS FOR UNIVERSITY FACILITIES

In the Philippines, most universities fall under the supervision of CHED. The CHED *Manual of Regulations for Private Higher Education* (2008) requires "adequate" provisions on fire safety, hygiene, lighting, ventilation, furnishing, rooms, and laboratories designed in conformity with the National Building Code of the Philippines (Presidential Decree No. 1096; 1977).

The specific requirements of interest in the Building Code are those on ceiling heights, ventilation, and fire protection. As a three-story building, the Code requires a ceiling height of 2.70 m for the first story, 2.40 m for the second story, and no less than 2.10 m for the third. Section 807 of the Code also requires a minimum air space of 3.00 m^3 for school rooms with 1.00 m^2 of floor area per person. Given the minimum height of 2.10 m for a room, a classroom needs to have a floor area of 1.43 m^2 per student. As a standard undergraduate class would have a maximum of 30 students, a room with a minimum floor area of 42.86 m^2 is required. This highlights the importance of calculating the number of students as part of the building design stage.

Furthermore, as UP SLIS offers a general education course with larger class sizes, classrooms of varying sizes are needed. This was addressed in the design by creating large classrooms by default and dividing the room with movable partitions to accommodate multiple classes with fewer students. The ceiling height of the SLIS classrooms was constrained by the existing floors of the building but more than meets the standard at 3.45 m. Two big classrooms were created, one that was intended for 90 students, which is 111.28 m^2, and the other intended for 60 students, with a floor area of 74.24 m^2. Rooms such as computer laboratories and conference rooms intended for 15 or fewer students had an average floor area of 36 m^2. These floor areas still fit the air space requirements of the Building Code because of the high ceiling space.

The Building Code also requires automatic fire-extinguishing systems in every story as it has an area of more than 200 m^2 and clearly has an occupant load of more than 20. As a three-story building, the Code calls for interior wet standpipes with an internal diameter "sufficient to deliver 190 L of water per minute under 2.0 kg per cm^2 pressure at the hose connections" (Sec. 1212, (c), 2.1). It is important to note that the Building Code does not contain provisions for inert gas and chemical agent

suppression systems other than a clause that all fire-extinguishing systems should meet the approval of the Bureau of Fire Protection.

The Building Code further details requirements for doors, exit points, windows, lighting, and load that should be familiar to architects and building engineers and accommodated by default in a design. However, it is still worth verifying that these were considered during the consultation process.

STANDARDS FOR LIBRARIES AND ARCHIVES BUILDINGS

The Philippine Association of Academic/Research Librarians, Inc. (PAARL) publishes the 2022 *PAARL Standards for Academic Libraries.* Assessment Area 7.1.4 of the Standards indicates the need for the head of the library to be consulted in all aspects of planning and design. This was done by directly showing the floor plans and architectural drawings to SLIS librarians over several sessions and examining different areas of concern during each session, such as the floor layout, placement of lights and electrical outlets, location of collections and library services, office spaces, and security concerns.

This was an important consideration as the UP SLIS Library was allocated half of the total space of the new building, that is, its own wing. This far exceeds the seating requirement in the standard, which calls for space for 10% of the total user population. Of note during the consultation process was that provisions for security systems were not originally in the electrical and wiring plans of the building. The comments from library and faculty stakeholders resulted in the identification of this gap and the amendment of the plans before construction, saving a potentially costly after-the-fact installation of CCTV and access control systems.

The laboratory and research spaces in the building were identified by referencing and mapping the requirements of each course in the undergraduate Bachelor of Library and Information Science (BLIS), postgraduate Master of Library and Information Science (MLIS), Master of Science in Library and Information Science (MSLIS), and Master in Archives and Records Management programs, as well as through benchmarking the facilities of LIS schools overseas. Further, these facilities were identified with an eye towards improving UP SLIS's capability to support university functions, such as providing digitization and conservation services to the university libraries and housing a records office for administrative units.

A big body of work had to be undertaken in the design of the digital preservation laboratory. Because of the bulkiness of different machines involved in processing paper, books, photographs, film, and moving image formats, the architects requested a list of all equipment that will be used so as to properly calculate the structural and electrical loads, decide on the placement of electrical outlets and sinks, and the allocation of space for the lit and dark sections of the laboratory. It was a daunting task to compile a list of equipment when there was uncertainty regarding the availability of funds for their procurement. Nevertheless, it was important to specify the ideal layout so that the space would be fit for purpose once the equipment is actually procured.

There is a gap in standards for laboratories used in LIS programs in the Philippines. The CHED Revised Policies, Standards, and Guidelines for the Bachelor of Library and Information Science (BLIS) Program (CMO No. 24, s. 2015) simply notes that specialized laboratories should be maintained without any indication of how those laboratories are designed or furnished.

In the case of computer laboratories, the CHED Revised Policies, Standards, and Guidelines for Bachelor of Science in Computer Science (BSCS), Bachelor of Science in Information Systems (BSIS), and Bachelor of Science in Information Technology (BSIT) Programs (CMO No. 25, s. 2015) contains more specific requirements. It specifies that the number of terminals should be at least ⅕ of the total number of students, and there should be a 1:1 computer-to-student ratio in each laboratory class. This requirement should be in excess of what is required by an LIS program, given that not all courses would require the use of terminals, unlike in a computer science program.

To meet the specific needs of different courses, UP SLIS designed three different computer laboratories, each with a capacity of 15 students. This is a total of 45 terminals, equivalent to 22.5% of the total number of students. The three laboratories, while similarly intended to be equipped with the same computers, were arranged differently according to the classes they would host. It was necessary to decide this in the design stage for the architects to determine electrical and network outlet placement. One computer laboratory was designed with computers arranged in rows, similar to seats in a lecture classroom. This was intended for classes where the instructor would be

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demonstrating code or how to use an application, where students can comfortably face the screen. Another laboratory has computers surrounding the walls of the room, with the middle area empty. This allows all students to easily see each other's terminals and to collaborate with each other, even across the room. This layout is ideal for classes on data science and digital humanities, where students would be developing ICT solutions and software to address specific issues. The third laboratory has computers arranged in rows but with larger desks and dividers between each terminal. This laboratory was designed to include telephones and recorders for use in research data gathering and oral history projects.

The conservation laboratory, similar to the digital preservation laboratory, required the equipment to be specified during design. While there was no shortage of literature on the layout and equipment for conservation laboratories (Archives Society of Alberta, 2016; Henry, 1992; MacLeod, 1990; Yale Library, n.d.), a lot of these equipment units are sourced from specialty suppliers not in the Philippines. Because there was no certainty on the availability of specific models of workbenches, presses, and racks, the laboratory was designed to accommodate the movement of most furniture apart from the sinks, which were placed to divide the room between a discussion or lecture area and a work area.

The final rooms that required specific design attention were the records center office and storage spaces. The most recent standard on storage spaces is the *Conservation of Cultural Heritage – Specifications for location, construction and modification of buildings or rooms intended for the storage or use of heritage collections* (BS EN 16893:2018). This standard specifies the use of insulation and moisture barriers to achieving environmental stability with passive or low-energy structures, with a goal of keeping temperature variation within 10 °C. The standard also requires the air infiltration rate to be less than 0.5 m per m^2 per hour at 50 Pa.

BS EN 16893:2018 also recommends that windows are, at the least, double-glazed with UVA filters and that shutters, louvers, or blinds are to be used in addition. Furthermore, unlike classroom spaces, storage spaces should not have false ceilings that might harbor pests or combustible materials. The most significant aspect of the standard that was referenced during building design was on fire detection and firefighting, particularly on the use of higher sensitivity smoke detection systems and the installation of inert gas and chemical agent suppression systems. As the water used in wet standpipes would cause as much or more damage to the collection as the fire it was intended to suppress, a suppression system using a clean agent, specifically 3M Novec 1230, was deemed essential for the protection of physical and digital collections, that is today, the records storage spaces and the server room.

PRACTICAL CHALLENGES

The complexity of the building's design comes from its multifaceted role as an LIS school, a research institution, a service provider, and a records center. This necessitated the reconciliation of the varying standards for those types of institutions and a compromising mindset to balance the standards' requirements with cost and university priorities.

Communicating standards to architects and design consultants

While most of the referenced standards used clear language in their requirements, the building designers were not necessarily familiar with these standards. Further, this was also their first time building a facility for an LIS institution, and they were not necessarily aware of library services or of the function of specific laboratories that informational professionals might take for granted. This resulted in more attention being paid to aspects of the building the consultants were more familiar with, such as the classrooms and server room, over the specialized laboratories and record stores.

Hans-Peter Jost (2003) highlighted the importance of collaboration between project managers, designers, construction managers, and the users of the building. This dialogue is essential so that the functional requirements of the building project are communicated, understood, and built into reality.

One of the barriers faced was communicating changes in architectural plans. Not all members of the committee were familiar with reading blueprints and designs. This was exacerbated by the original plans being sent as static PDF documents, which were hard to read because of their size. This was resolved by working with the CAD files instead. It was easier to indicate changes, such as the placement of furniture or an electrical outlet, when the CAD file could be edited. However, this requires someone on the committee who is both familiar with architectural plans and the use of AutoCAD software. As the

project progressed and the design was only receiving minor revisions, perspective drawings also assisted all parties to better visualize the end result.

Advocacy and end-user signoff

The management structure for the construction of the UP SLIS building had complexities specific to UP's nature as a government institution. Because it is a government building built with public funds, the project was implemented by the Department of Public Works and Highways (DPWH), with UP as the beneficiary. The UP System Office of the Vice President for Development (OVPD) stood as the on-paper "end user" and coordinated with the project consultant and contractors. Consequently, the role of the UP Diliman Office of the Campus Architect (OCA) and UP SLIS as project stakeholders was primarily to give recommendations.

A key responsibility of the UP SLIS Building Committee was thus to negotiate and advocate for its active involvement in the building design. This was done by establishing a regular dialogue with the various offices involved in the project. This requires a lot of goodwill and the strategic use of both formal and informal channels of communication.

Continual updates and on-site inspections

A building project is executed in phases starting from its foundation and structural components, progressing to electrical, network, lighting, and water, then the installation of doors, windows, and other fixtures, and culminating in furnishing. Having updates and evaluation meetings during and after each phase allows for revisions and adaptation in response to identified blockers or new concerns.

While the architectural plans are meant to be the authoritative reference for the building design, what is on paper may not necessarily be the reality on the ground. Deviations might result from issues relating to the availability of materials or having to work around existing fixtures. For example, one wall in the entry hall was supposed to be an area for hanging cabinets, but it was found that there was a pre-existing fire hose cabinet in the location.

It could also be easy to miss some details on a blueprint with a top-down perspective. Walls, doors, and windows are rendered as cross-sections, and the existence of windows in the records storage could go unnoticed until they have been built. There are also aspects of the design that require specialist knowledge to interpret, such as the electrical plan, and evaluation by a third-party consultant would be beneficial.

Procurement and Cost

It is also important to highlight the role of procurement during the design process. As previously mentioned, the various laboratories required the listing of all equipment to the extent of specific models and dimensions to allow for the sufficient allocation of space, structural load, and the routing of electrical and network wiring. Consequently, it is essential to identify and communicate with vendors early on, even if prices might change or new models are released. This also facilitates compliance with the Government Procurement Reform Act (RA 9184, 2002) as it enables the institution to identify potential bidders and ascertain either the existence of sufficient competitors or the need for limited source bidding due to the specialized nature of the equipment.

Cost is also one of the key drivers in the design and subsequent revisions of the UP SLIS building. While it would have been preferable to use chemical agent fire suppression systems in all areas where records would be kept, including the library and conservation laboratories, the availability and cost of installing 3M Novec 1230 are prohibitive and resulted in only the records stores and the server room being thus equipped. Because these changes were clearly identified and communicated, they can be accounted for through policymaking and workflow management, for example, through rules that records should be returned to storage at the end of the day and not kept out in a laboratory and that records outside the store should be boxed for protection against water damage.

However, it should be stressed that compromises arising from cost have to be considered and agreed upon by all stakeholders. Stakeholders should be given sufficient opportunity to advocate for the use of fiscal resources in specific areas of the building, with an eye towards demonstrating the benefit of their services or explaining the consequences of inaction.

FUTURE CONCERNS

The UP SLIS is in a privileged position to be able to design and build a new building from practically the ground up. While the current priority has been to support and progress the ongoing construction project to support curricular instruction and services the soonest, attention should also be paid to the environmental sustainability of the building, with an eye towards achieving net-zero emissions in the

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future. Tests should be conducted once the building has been constructed to determine if the insulation in storage spaces provides sufficient stability in temperature and humidity to reduce the use of air conditioning, which is by far the largest electrical load. Landscaping of the surrounding area post-construction should also be in harmony with the surrounding environment and green spaces in the University.

It is hoped that this case study can serve as a reference for other LIS schools that seek to renovate or develop their premises. There is an opportunity to research the existing facilities of LIS schools in the Philippines, with an eye towards developing a building standard or a facilities roadmap. It would also be interesting to revisit the SLIS building a few years after it was built and examine how the use of each room and laboratory has changed from the design intent.

Ultimately, the purpose of a building is in its use. The test of a truly effective LIS building is in how well it supports the classes, laboratories, research, and services of the School.

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