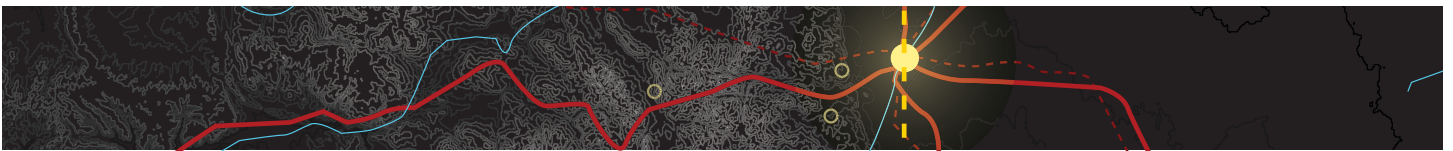




CHAPTER 7

FACILITIES, EQUIPMENT AND TECHNOLOGY



7. FACILITIES, EQUIPMENT & TECHNOLOGY

STANDARD 7: Faculty, students and staff shall have access to facilities, equipment, library and other technologies necessary for achieving the program's mission and objectives.

INTENT: The program should occupy space in designated, code-compliant facilities that support the achievement of program mission and objectives. Students, faculty, and staff should have the required tools and facilities to enable achievement of the program mission and objectives.

A. FACILITIES

The Department of Landscape Architecture's academic space is at a single location at the CU Denver Building at 1250 14th Street in Denver's urban core. It is an eight-story building plus two levels of below-grade parking, located adjacent to and across Speer Boulevard and Cherry Creek from the multi-institution Auraria Campus. The College of Architecture and Planning occupies six of the eight floors of this building (as opposed to three and one-half floors occupied in 2009). The Department of Landscape Architecture shares its portion of this building with the Department of Planning and Design and the Department of Architecture. The space on Level 1 is assigned to CU Denver's Inworks lab and a few general use classrooms. The College of Arts and Media occupies Level 8. Floor plans of this building can be found in Addendum F Facilities Information. Including the adjacent annex, the college controls approximately 103,437 ASF of space of which approximately 41,000 ASF is dedicated studio space.

The main reception area for the college is on the recently renovated Level 2. This floor also includes a gallery space, large lecture room, studio space, student lounge, and student services such as advising, recruiting, mentorships and internships.

The central administrative suite of the College of Architecture and Planning, including the Dean's office and the offices of the Departments of Landscape Architecture, Architecture, and Planning are located on the 3rd Level. This administrative suite includes the Dean's office, Associate Dean, Assistant Dean, Department Chairs, and some of the college's administrative staff. It is a visible and highly accessible area. In addition to these spaces, Level 3 also includes a large open area for Centers.

The building has three exhibition spaces: the Main Lobby area (shared with the College of Arts and Media; the Dean's Gallery (a large reception area that is used for changing displays and occasionally for design studio juries); and the 2nd Floor gallery (a flexible reception and gallery space used for exhibits as well as public openings). All of these spaces are easily visible to students during their day-to-day activities in the building, and the Main Lobby provides convenient display space for visitors to see.

1. How are faculty, staff, and administration provided with appropriate office space?

All tenured/tenure track faculty members in the department have an office with a phone and a computer exclusively for their own use. Shared offices are available for instructors/lecturers/adjunct faculty, again with a computer and phone. Currently, most part-time faculty share an office with two to four other part-time faculty.

2. How are students assigned permanent studio workstations adequate to meet the program needs?

Design studios are located on Levels 2, 5, 6 and 7. Generally, the landscape architecture studios are located on Level 7. Students taking studios in the graduate program have a desk within the studio space dedicated to their own exclusive use that is accessible 24 hours a day. The three graduate level disciplines share the studio spaces, in order to encourage multi-disciplinary interaction. The furniture provided by the college is high-quality, drafting table height wood desks with tilt tops, most of which are of recent manufacture. Lower desk heights, regular chairs and portable drafting tables are being tested in upper level studios for Fall 2015. Design studios have a high degree of flexibility and re-configurability; while there are several smaller rooms where individual studios are placed, most of the space is "open planning" in character. From a pedagogical standpoint, this flexibility is useful in that it easily allows for various groupings of studios by theme, year and size. Half-size lockers are aligned and available to students in the immediate studio area. In some locations these lockers are used to partially "partition" the studios, giving each working group some sense of individuality within the open plan.

3. How are facilities maintained to meet the needs of the program?

Significant renovation of the building in phases from 2012-2014 (following on the remodeling of Level 7 in 2009) has made for vast improvement in the ability of the program to provide adequate space for all functions. The designation of CU Denver as the sole provider for architectural degree programs by the state led to assignment of nearly the entire building to the college. A combination of funding sources enabled the university to remodel existing space and to convert space previously occupied by other academic programs. The renovation of Level 2 included a large classroom/auditorium that seats 100 comfortably plus studios and pin-up space for undergraduate students studying architecture. Levels 6 and 7 have been renovated for studio space with dedicated pin-up rooms. All programs within the college share the classroom space. The classrooms vary in size accommodating from 15-45 students and are located on Levels 2-5. Most of these rooms are equipped for computer presentations. Since the building is prevented by existing physical constraints from having a large lecture hall sufficient to assemble the entire graduate or undergraduate programs, auditoriums across Speer Boulevard on the Auraria Campus are used intermittently for this need.

In addition to the renovations described above, a comprehensive renovation master plan has been developed, covering most areas of the building and including minor additions as well as interior remodeling. The list of future building renovations is included in Addendum F Facilities Information: Section 2. Planned Building Improvements.

4. Are facilities in compliance with ADA, life-safety, and applicable building codes?

Three elevators serve all eight public floors, and one additional elevator connects the lobby to the two levels of below-grade parking, making the entire facility accessible. All floors have restrooms, which are ADA accessible.

5. If known deficiencies exist, what steps is the institution taking to correct the situation? (Provide documentation on reasonable accommodation from the institution's ADA compliance office and/or facilities or risk management office.)

No known ADA deficiencies exist.

B. INFORMATION SYSTEMS AND TECHNICAL EQUIPMENT

Computer Lab

The college requires all students admitted to its graduate programs to own a computer. ITS support, and the power and networking infrastructure on the Denver Campus and at 1250 14th Street, allow students to use their own laptops in the facilities. The college has a dedicated computer lab for all of the college's disciplines of approximately 1800 square feet on the 4th Level. It consists of a main computer space suitable for projection and teaching purposes, a secondary area for additional day-to-day computing needs, a system manager's office, and a printing area. An additional computer lab is under construction on Level 5 and will be completed this fall.

The lab was established by the college in cooperation with the Office of Information Technology (formerly CINS – the information technology services group of the university on the Denver Campus) and is managed by the university's OIT Services. The facilities have increased since the last accreditation visit and continue to grow. The list below reflects the equipment in the computer lab prior to the addition of the 5th floor lab. Additional equipment is being added but had not been finalized at the time this report was being prepared.

Computers: 36 Intel Pentium Dual Core PC's and 11 Intel i7 PC's running Windows 7 Pro; 4 Apple Mac's running OS 10.6.8

- 18 computers in a classroom format for instruction. 16 are in a general use area. 5 are used exclusively for Ph.D. 1 to run the print shop.
- 42 machines were purchased for Fall 2014 term. 38 new Intel i7 PC's and 4 Apple iMacs running OS 10.9.2

Scanners: 16 small format (8.5 x 11); 4 small format (11 x 17); 1 large format color (36"); 1 large format B&W (36")

Server: 1 Windows 2008R2 server with 8TB of storage for entire college. Purchased in 2011.

Printing: 1 large format laser printer/plotter; 2 large format color printer/plotter; 1 small format color laser printer; 2 small format B&W laser printers.

Network: All systems are 100baseT Ethernet/Internet savvy and are accessible 24 hours a day in a secure room. Lab and classroom machines are connected to University domain over a wired Ethernet network. Throughout the CAP building there is a secure wireless network that students, staff and faculty use.

Software: Software upgrades within the main lab are a constant occurrence. The most recent versions of all major interdisciplinary software are available to students and faculty in the labs, including: AutoDesk Education Master Suite (AutoCAD, 3D Studio Max, Revit), SketchUp, Adobe Creative Suite Design Premium (Photoshop, InDesign, Illustrator, Dreamweaver), Microsoft Office 2013. These are updated regularly to stay current with the newest release.

Classrooms: 11 instructional classrooms (320A, Octagon, 320C, 340, 440, 460, 470, 480, 490, 495, 505) that contain a computer and projector. 1 studio area (7th Floor) has a high definition large format LCD TV and separately partitioned a projector. There are large LCD monitors in the three breakout rooms and class room 2005 located on the Level 2, and also in the breakout rooms on Level 6. There is 1 dedicated Polycom for video conferencing located in room 490.

FAST Lab

The Facility for Advanced Spatial Technology (FAST) Lab forms the core of geo-spatial analytical activity at the University of Colorado Denver. The FAST functions as a partnership among the College of Architecture and Planning, the Department of Geography and Environmental Sciences/College of Liberal Arts and

Sciences, and the School of Public Affairs. This multidisciplinary laboratory provides state-of-the-art GIScience technology (geographic information systems, remote sensing, GPS, and cartography) for teaching and research on the downtown Denver campus. At present, the FAST supports the following proprietary spatial analysis and visualization software: ArcGIS desktop 10.2.2 (ArcInfo Version), ArcGIS server, ERDAS Imagine, ENVI, LizardTech, Google Earth Pro, and Adobe Design Standard. And the following free and open source software: QGIS 2.4., GRASS GIS, DIVA-GIS, uDig, MapServer, PostgreSQL/PostGIS, GPS Utility, GPS Babel, 3DEM, GeoDa, Inkscape, the GIMP, SketchUp Make, Pencil, Dia, and R/R-Studio. The FAST runs Windows 7 desktops, and a mix of Windows Server 2008 R2, Citrix XenApp 6.5, and CentOS 6 to support our in class and online classes.

1. How does the program ensure that students and faculty have sufficient access to computer equipment and software?

In addition to the computers and software in the computer labs described above, the college requires all students admitted to its graduate programs to own a computer. All full-time faculty are provided with a laptop computer. CAP provides and maintains the networking infrastructure for a secure wireless network throughout the building for use by students, staff and faculty.

2. What are the program's policies on the maintenance, updating, and replacement of computer hardware and software?

The college has a policy specifically for the allocation and replacement of computers and software for faculty and staff.

The purpose of this policy is:

- To ensure that faculty and staff have an adequate computer to effectively perform their work,
- To ensure that CAP-purchased computers are replaced on an equitable and regularly scheduled basis, and
- To ensure an equitable distribution of new computers into the college.

The goal of this policy is to replace one-fourth of the computers in the program every year. The actual number of computers replaced annually will depend on the funds allocated by the college for computer replacement. Computers that do not meet the minimum specifications for support by the ITS offices on the downtown Denver campus will be priority candidates for replacement.

The full policy is available at the following link.

[http://www.ucdenver.edu/academics/colleges/ArchitecturePlanning/facultystaff/PoliciesForms/Documents/Policy-Computer Replacements 7-9-07.pdf](http://www.ucdenver.edu/academics/colleges/ArchitecturePlanning/facultystaff/PoliciesForms/Documents/Policy-Computer%20Replacements%207-9-07.pdf)

3. What are the hours that the computer lab (if applicable) and studios are open to students / faculty?

Students, staff and faculty in the College of Architecture and Planning have 24-hour, 7-day-a-week access to the building, which includes the computer lab, studios and offices. It is accessed with an encoded identification card. There is a continuously staffed security station at the entry to the building. Outside of normal business hours to the building, swiping an encoded identification card at the main entrance's card reader and signing in at that station afford evening and night access. In addition swiping an encoded card is required for the elevators and the entry stairwell on the ground level. Security cameras are operative in the Level 2 reception area and at many locations throughout the entry zone and the stairwells. No major security incidents have been recorded within the college.

The computer lab is managed by Mike Haring. He supervises the student lab monitors, facilitates the printing room, addresses technical maintenance in the lab and in classrooms, and assists faculty, staff and students with computing issues. The computer lab is staffed from 8am to 10pm on the weekdays and 10am to 6pm on the weekends during the spring and fall semesters. These times are concurrent with the print hours.

4. How does the program determine if these times are sufficient to serve the needs of the program?

As the lab manager, Mike Haring monitors the needs of the students, staff and faculty. If the hours need adjustment he would address this with the college-wide computer committee and the college executive committee. The computer lab is open 24 hours; printing and technical assistance are limited to the specified staffed hours. (See the response to question 3 above.)

5. How does the program assess the adequacy of equipment needed to achieve its mission and objectives?

CAP continues to invest heavily in computer resources and infrastructure. This process is managed by a college-wide computer committee to oversee operations and recommend policies to the faculty and administration concerning the integration of computer technologies into design education.

C. LIBRARY RESOURCES

The Auraria Library is unique among the University of Colorado (CU) libraries in that it serves Metropolitan State University of Denver, and the Community College of Denver in addition to the University of Colorado Denver Downtown Campus. The combined population of the three schools is the largest and most diverse in Colorado—over 50,000 students and faculty. The Auraria Library is one of the busiest academic libraries in Colorado. Over 900,000 users enter the library building each year and the Library's web pages record over 5 million "hits" annually.

The Auraria Library is the campus library serving students, faculty, and staff of the graduate and undergraduate programs of the College of Architecture and Planning. Karen Sobel is the Research and Instruction Librarian for Art, Music, Landscape Architecture, Architecture, and Urban Planning, and is the library liaison to the College of Architecture and Planning.

The Auraria Library has a written Collection Development policy that supports the curriculum and programs of the College of Architecture and Planning. The policy addresses and satisfies the needs of master's degree and higher level graduate studies as well as faculty research and creative activities, which require more specialized (and usually more expensive) materials. Despite budgetary constraints, the Auraria Library purchases specialized, often more expensive, materials required for architectural research. Ms. Sobel, in communication with faculty and students, dispenses budget monies for landscape architecture, architecture, planning, and related discipline spending. She works with the Auraria Library's acquisitions vendor, Yankee Book Peddler (YBP), to create an approval plan profile. This profile expedites preview information about the most relevant book titles in various landscape architectural, architectural and planning sub-disciplines, which are then made available in a timely fashion for quick ordering/pre-processing. Periodic communiqués are distributed in the weekly CAP newsletter highlighting database updates, newly purchased titles of interest and general library news.

1. What library resources are available to students, faculty and staff?

The Auraria Library building houses over 1,162,000 online and print titles, including 274,000+ eBooks, 100,075 online journals, 310 databases, and numerous government publications. The Auraria Library owns over 12,275 print and digital design-related monographs classified "NA" in the Library of Congress classification system. Related titles are also classified in the "HT"; "NK"; and TH areas, representing such topics as parks and community planning, interior and garden design, and landscape architectural construction.

It is a collection priority to support the College of Architecture and Planning's curriculum, with attention also paid to faculty research needs. To that end, the Auraria Library endeavors to purchase books, ebooks, DVDs, streaming videos, databases, or journal subscriptions requested by any student, faculty, or staff member associated with the College of Architecture and Planning, insofar as budget permits.

Though information resource expenses climb precipitously due to costs associated with serials maintenance, format changes, and the desire and need to expand collections, the Auraria Library has worked to maximize priority purchases and maintain a useful collection through responsive collection development, aggressive price negotiations, cooperative purchasing, sensible subscription cancellations, and creative fund-raising initiatives.

To care for aging, though still valuable books and other materials, the Auraria Library is a charter member of PASCAL, a state-of-the-art off-site storage and preservation facility located on the Anschutz Medical Campus, shared with CU Boulder and CU Denver, Anschutz.

In accordance with the Library's collection development policy, e-journals are the preferred format to facilitate anytime/anywhere access. Print subscriptions are purchased and retained when desirable for quality, teaching and research reasons (such as better image quality) or if online access is not available.

For journals not owned by the Auraria Library, both Prospector (a shared catalog and loan service) and the Library's Interlibrary Loan/Information Delivery (ILL) system, ILLiad, provides convenient access to the many article requests it receives via e-mail, delivering the full-text of a document to the requestor electronically at no charge. These loan services are free to CU Denver students, faculty, and staff. Additionally, the Library supplies a special in-house document delivery service for faculty members to assist with their research needs by providing e-mailed photocopies of articles found in journals owned by the Library. Faculty request these articles using the Library's ILL form and the articles are delivered to their e-mail, office, or home.

The Library subscribes to core journal titles in the field of landscape architecture, including *Landscape Architecture Magazine*, *Journal of Landscape Architecture*, *Landscape Journal*, *Landscape and Urban Planning*, *Anthos*, *Green Places*, *Landscape Research*, and *Landscape and Ecological Engineering*.

The Auraria Library collects DVDs and streaming video related to landscape architecture and its allied disciplines. Notable online collections and databases include the *Avery Index*, *Art Full Text*, *Art History Retrospective*, *ARTstor*, and expansive multi-disciplinary databases, including *Academic Search Premier* and *Academic OneFile*.

The Auraria Library subscribes to "Shared Shelf" to provide server space and cataloging/metadata analysis of our own images, e.g., those photographed by CAP faculty. The Auraria Library and the College of Architecture and Planning are collaborating on the storage and promotion of locally-owned images. Matthew Mariner, Head of Special Collections and Digital Initiatives from the Auraria Library is working with Jesse Kuroiwa, Visual Resources Center Coordinator, College of Architecture and Planning, to add many thousands of local images to the Shared Shelf server.

Monies are allotted for Library resource development in "Landscape Architecture." Additionally, monies allotted to several other disciplines at the three campus schools benefit our landscape architecture students and faculty members, including Engineering, Art, Art History, Urban Design and Planning, and Architecture. The Library purchases books, films in DVD and in streaming video, journals, and databases intended to address all areas of architecture, planning, urban design and planning, and landscape architecture.

In addition to visiting the Library for resources and expert support, students, faculty, and staff use the Library to study, relax and collaborate. The Library has over 1,000 seats and 174 computers in a 180,000 square-foot building and welcomes nearly 800,000 visitors annually.

A generous infusion of state funding has made the Library's remarkable renovation a reality. Renovation that has and will enhance the learning experiences of CU library users include:

- Installation of the large video Discovery Wall used for teaching, exhibits, class projects, and performances. A Learning Spaces Technology Coordinator was hired in 2014 to facilitate scheduling and collaborating on best uses of the Wall for learning and interaction. User-friendly forms on the Library web page enable faculty, students, and staff to easily reserve the space for classes, meetings, and events or submit digital content for display in featured monthly playlists
- Creation of pleasant and practical study rooms and areas. Enhancements include the addition of 10 newly constructed, in-demand, reservable group study rooms with large LCD screens and glass writing surfaces. Throughout the Library, attractive and practical furniture has been added; there has been a significant increase in electrical outlets; and wireless access has been improved.
- Decreased building congestion. With a holistic design plan developed by campus stakeholders, Library employees, and project architect, Studiotrope, Library spaces and programming are being developed collaboratively. Thus, well-planned spaces are being achieved through improved "way-finding" throughout the Library and through a strategic approach to identifying new demands, changes in higher education, and evolving pedagogies.
- Upgrades in equipment and space to foster an accessible environment.
- Added technology for students to work with and learn about. Additions include Dell Inspiron 2-in-1 laptops, Doodle printing pens, Logitech Webcam C310, Vivitar digital video camera and Wacom Intuos Pen and Touch Tablet.

All of the Library's 154 computer workstations on the first and second floors of the building offer multiple choices for study and research. In addition to accessing the library holdings and the Internet, the computers offer popular programs for word processing, spreadsheet creation, and audio visual use. Twelve new Macs in the Library's Research Zone offer SPSS and the Adobe Creative Suite.

The transformation of the first floor of the Library has created a learning commons environment for the students, with such amenities for study and research support as scanners, white boards, tutoring services, wireless printing, color printing, and a collaborative computing station appropriate for group interaction.

In 2010 (and renovated in 2014), the Library created a comfortable room for use by faculty only, the King Faculty Room (funded by the King Foundation). Any faculty member may enter the room by code number (available at the Ask Us Desk or through contacting any library staff member) to use this quiet space equipped with computers, a scanner, wireless access, and phone. Details on completed, in-progress, and planned renovations are on this site:

<http://libnews.auraria.edu/renovations>.

2. How does the program determine if the library collections are adequate to meet its needs?

The program's faculty representative, Joern Langhorst, is responsible for communicating the needs of the faculty and students to the CAP library liaison, Karen Sobel. Annually, faculty are asked for suggested materials to be purchased for the program. Additionally, faculty are encouraged to make a materials requests at any time directly to Karen or through the simple form supplied on the [Faculty Resources](http://library.auraria.edu/services/faculty) support page at <http://library.auraria.edu/services/faculty>.

3. How do instructional courses integrate the library and other resources?

General and subject-specific library research instruction for students at both introductory and more advanced levels, synchronous or asynchronous, may be scheduled by faculty. The Library has a large instruction room, currently divided into two smaller spaces, with flexible seating, laptops for students, and smart classroom attributes. A new, state-of-the art classroom is underway which has been carefully planned to incorporate reliable and adaptable new technology and configuration options to suit different teaching and learning styles. Once the new classroom is completed in 2015, the existing instruction room will also be upgraded.

Online class and subject research guides are created by librarians to supplement the discipline-specific instruction given to many upper division and graduate level classes. In preparing class guides, Ms. Sobel works closely with the landscape architecture professors, perusing their syllabi and requesting actual topics being researched by students in order to provide real-life topic searches and examples in class. In addition, Ms. Sobel is available for one-on-one consultation with students who have chosen their topics or are exploring potential topics for their theses, dissertations, or other research projects, as well as providing assistance to professors for their research and creative activities.

Students have access to efficient introductions to research skills via the Library's many tutorials and online instructional materials, with assessment tools often included. Sample tutorials include: Quality Research for Better Papers, Database Searching, and Book Searching Basics. Additionally, teachers can ask that instruction librarians create short tutorials covering specific research skills, strategies, or materials, tailored to their needs. The link to the Library's Tutorials page is <http://library.auraria.edu/tutorials-slideshow-page>.

Librarians are available to work with faculty in selecting and embedding search boxes and specific resources on their Blackboard site or elsewhere. Examples of embedded items include links to specific streaming videos, online articles, or ebooks; the Library's IM chat box; or search boxes that search the Library's overall collection or specific databases.

The Library is in the process of integrating Library tutorials onto Canvas to make "click and drag" choices a simple reality for professors who would like to include these in their online teaching and learning environments. Initial offerings are now available, including a Blackboard link to the Library's main search box and quick access to 24/7 online research help.

Further options for instructional and research help support from the Library include: IM services which are operational 24/7, with chat boxes displayed on many Library web pages representing the AskAuraria IM service (staffed by Auraria Library) and the AskAcademic IM service (operated off-hours by partner libraries), the Library's Research Help Desk, staffed with librarians and library graduate students the busiest hours the Library is open to assist with research questions, assistance from staff at the Ask Us Desk who are trained to answer most questions all hours the Library is open, help for more involved questions or for those needing assistance when the Research Desk via scheduled consultations with librarians; and help via texting and e-mail. The Library's Ask Us page, at <http://library.auraria.edu/services/askus>, linked from the Library's home page, outlines all of the Library's Research Help choices.

Faculty and classified staff of the Auraria Library receive an orientation to the landscape architecture, architecture and planning materials and reference work for those disciplines conducted by Ms. Sobel. Student workers and library interns also receive an orientation to the resources.

4. What are the hours that library is open to students and faculty?

During the fall and spring semesters the library is open Monday-Thursday 7:30am – 10:00pm, Friday 7:30am – 6:00pm, and weekends 9:00am – 5:00pm.

Access to IM research assistance is 24/7.

5. How does the program determine if these hours are convenient and adequate to serve the needs of faculty and students?

The department survey's sent to the faculty and students affirmed the collections are adequate and convenient. Refer to Appendix D Student Surveys and Appendix E Faculty Survey.

6. How does the program assess its library resources?

Annually, the department invites Karen Sobel to a faculty meeting during which time she provides an overview of resources and services available as they directly relate to our department. Faculty members are proactive in requesting materials, and supplying feedback on collection trials. These interactions assist the Library in maintaining a relevant and well-used collection. Additionally, use of all databases and collections is assessed during annual renewals.

The Library continues to expand its overall assessment efforts to be certain services and resources offered are leading to learning and understanding. These efforts are evidenced by the 2015 hiring of a new Head of Instruction and Outreach Services and the hiring of an Assessment Librarian in 2014 to more fully support fact and information-based decision making.

D. ADDITIONAL RESOURCES

Design and Digital Fabrication Lab Facilities

The design and digital fabrication lab is located on the 4th Floor of the building. This space was expanded in 2010. Occupying total space of 3,000 square feet, it includes a storage/assembly area of 700 square feet, a machine shop of 1,200 square feet, a 300 square foot spray booth, and a digital lab of 800 square feet. The equipment list is extensive.

Since 2000, the design fabrication lab has been run by a full-time professional employee, T.J. Brauer, who is a member of the Society of Academic Woodshop supervisors (S.A.W.) and the Furniture Society.

The keys to the risk management and instruction for the lab are:

- Implementation of comprehensive safety orientations for all students, Basic Safety Orientations, which include fire and building safety policies;
- The availability of up to 16 hours of specialized, dedicated, and structured training for any student wishing further expertise on specific pieces of equipment (Tool Seminars) including written tests;
- Procedures for the proper storage and use of hazardous materials, including flammables;
- Processes for chemical waste pick-up and disposal, as well as dust collection;
- Management of MSDS listing library for materials in use;
- Installation of the "Saw Stop" safety table saw;

- Extensive student monitor training and supervision; and
- Expanded hands-on teaching capacity in the lab.

All landscape architecture students are required to participate in and pass a test related to the Basic Safety Orientation and have a signed Safety Agreement on file. The Basic Safety Orientation informs students of their responsibilities while using the facilities and instructs them in the use and basic techniques of the bench-mounted tools located in the machine area.

Up to 14 students are hired and trained per semester to assist the full-time lab employee, and they are paid according to their expertise with woodworking machinery and operations. The design fabrication lab is open and monitored 98 hours per week with extended hours during crunch periods. The maximum number of students the area can accommodate is 45. The lab also operates as technical support for faculty members teaching studios requiring extensive shop use.

All flammable materials are used in the spray booth area including spray painting and spray mounting. The digital lab includes 4 laser cutters for making models and a small 3-D printer.

Visual Resource Center (VRC)

The college maintains a Visual Resource Center on the 4th floor of the CU Denver Building, with the following resources:

VRC Digital Image Collections:

The VRC has been for some time an academic leader in digital images and computerized access to its image collections, having begun the transition from recording with analog 35mm film slides to digital images as early as 1988. The college has amassed a digital image library of over 108,000 images, which depict contemporary practices as well as the history of architecture, landscape architecture, and urban and regional planning. Faculty and students in the college, for research and as a teaching tool, use the Architecture and Planning Digital Library and other image collections. This digital image library comprises several image collections.

The College of Architecture and Planning collection includes over 100 videos of visiting lecturers who gave talks as a part of the college's visiting lecturer series. This collection includes approximately 46,200 images owned by the college. The College of Architecture and Planning has also licensed over 58,000 images from professional vendors that are accessible to students and faculty for research and teaching purposes. These images include the Archivision base collection and modules 1-4 and modules 6-8.

The digital library has the distinction of being the largest teaching image database on the Auraria Campus. Access to the digital image library is achieved by logging on to <http://www.artstor.com> from a campus computer. Students and faculty can create a username and password, which allows them to log on from any computer for 100 days. Every time they log on from campus, the 100-day counter resets.

The digital library database allows a user to save groups of images for student review within the database, the ability to create PowerPoint style presentations in the Luna Insight software, as well as the ability to easily export images from the database to the end-users' computers for use in PowerPoint or Keynote presentations. The database also has the capability to play videos, and display pdfs or Microsoft office files. Access to the CAP image collection is IP-restricted to users at the Auraria Campus.

The digital library grows by approximately 5,000 images each year in response to requests by faculty members and students. New digital images are purchases from commercial vendors, made by the professional photographers on the VRC staff, or donated by students, faculty members, or private contributors from their own personal image collections.

The VRC also sponsored a website from 1998-2013 called the "Electronic Library of Colorado Architecture, Landscape and Planning" which showcases Colorado buildings and sites that were photographed by students as part of photography courses in the college since 1998. This web site contains over 4700 images depicting more than 300 buildings and sites and is essentially a sub-collection of the CAP image collection. These digital images remain available for review and use by the public since the college owns the copyright to all of these images. (<http://vrc.colorado.edu>)

Flickr Image Collection:

The VRC produces an image collection of college events, projects, and initiatives that is available to the public at http://www.flickr.com/photos/cap_vrc/. This collection contains more than 4,250 images and grows by approximately 2,500 images per year. The Flickr collection provides a showcase for photographs taken by CAP professional photographers, as well as a repository for sharing images via social media. This collection highlights college reviews, projects, builds and other special events.

Campus Digital Image and Movie Collections:

Another visual resource image collection is available to students and faculty members at the University of Colorado campuses through a subscription image database called "ARTstor." The ARTstor Digital Library has amassed 1.6 million images since its launch in 2004 and continues to grow each year. Over 454,000 of those images are classified as Architecture and City Planning images, and all 1.6 million are available to students and faculty via <http://www.artstor.org>. Educational movies pertinent to architecture are found in other primary university locations including the Auraria Library, which purchases and stores movies at the request of college faculty members each year.

35mm Slide Collections: The VRC continues to maintain its legacy collection of 35mm analog slides for use by college faculty members who may not have made the transition yet to digital instruction. The slide collection in Denver has approximately 33,000 images.

Services: Staff members of the VRC provide a number of technical educational services in order to produce materials for course-related work, research and student portfolios. These include professional portfolio digital photography instruction, coordinated by the VRC staff, and provided to graduate and undergraduate students upon request. Students are taught how to use high-end digital cameras and to professionally light the models and drawings created in their courses. Student employees of the VRC are available to scan images from faculty members' personal slide collections for use in current architecture and planning courses. Faculty members may keep their own digital image files. Staff also provide training on scanning images to course teaching assistants, who further facilitate digital classroom presentations.

The VRC pays for and provides access to high quality digital cameras, both still and video, for faculty and students to use for educational purposes, whether documenting a local site that will be redeveloped as a class project, interviewing local professionals for a research paper, or capturing images for a scholarly publication. Equipment carts and traditional audiovisual equipment, such as overhead, opaque, and 35mm slide projectors and a TV/VCR/DVD mobile unit, are also available through the VRC for instructional use.

Additionally, the VRC coordinator and student employees serve as staff photographers for the college, documenting important events such as awards ceremonies, graduation receptions, field charrettes, research center activities and projects, and student competition entries. The resulting photographic images are used to illustrate a variety of publications, including the University Course Catalog, brochures for prospective students, the college's web site, faculty professional publications, research center web sites and publications, and alumni newsletters.

The VRC's hours of operation vary from 32 to 42 hours per week, Monday through Friday during the semester. The VRC is staffed by one 80% FTE employee, Jesse Kuroiwa, who has been trained as a

professional photographer and visual resources curator. Student fees and the general fund are used to maintain the VRC.

Materials Library

A room on the third floor is dedicated to a materials library for students to reference. This room includes samples of building materials such as stone pavers, concrete pavers, both building and paving brick, wood members, hardware and drainage materials. Students have access to this room weekdays from 8am – 5pm during the semester.

Lending Library

A collection of design magazines and books are also available for students to reference on the third floor. This small collection is not curated but meant to provide students with quick access to back issues of magazines such as *Landscape Architecture Magazine* or *Metropolis* as possible inspiration.