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2009 CSEL Needs Assessment for eScience Mall

University Libraries

CENTENNIAL SCIENCE AND ENGINEERING LIBRARY

Needs Assessment for

eScience Mall

Revised 20 May 2009

Prepared for UNM

Office of the Provost
University Libraries
Office of Planning and Campus Development

Prepared by
Brawley and Company LLC, Albuquerque

SUMMARY

The Centennial Science & Engineering Library (CSEL) is approximately 24 years old. Since its construction, there have been changes in science and engineering technology as well as related methods of teaching. This is seen most dramatically in the shift to the production, storage and dissemination of data in the form of digital media. Further, the trans-disciplinary nature of modern science and engineering research and teaching make the CSEL a natural nexus of the collection, manipulation and dissemination of these data. It provides "neutral ground" where multiple disciplines can be brought together in a collaborative manner to answer the challenge of complex research, exploratory student projects, and with unprecedented access to understanding not otherwise met by a distributed approach.

Students, faculty and staff, on the leading edge of these changes both technically and culturally, have identified a series of specific measures that would bring the CSEL more in line with the needs of today and the future.[1] These include:

1. an area that brings together all the digital tools they use in their studies;
2. an updating of the building interior which, after many years, has become "dismal" and "dated";
3. the creation of facilities to make possible the hosting of interdisciplinary programs; and,
4. to have the execution of these facilities rendered in energy efficient and "green" materials.

No such venue exists for UNM's science and engineering faculty and students today. A facility as envisioned above, would not only support the academic and institutional mission but would also provide a useful tool for recruitment and retention of undergraduates, graduates and faculty.

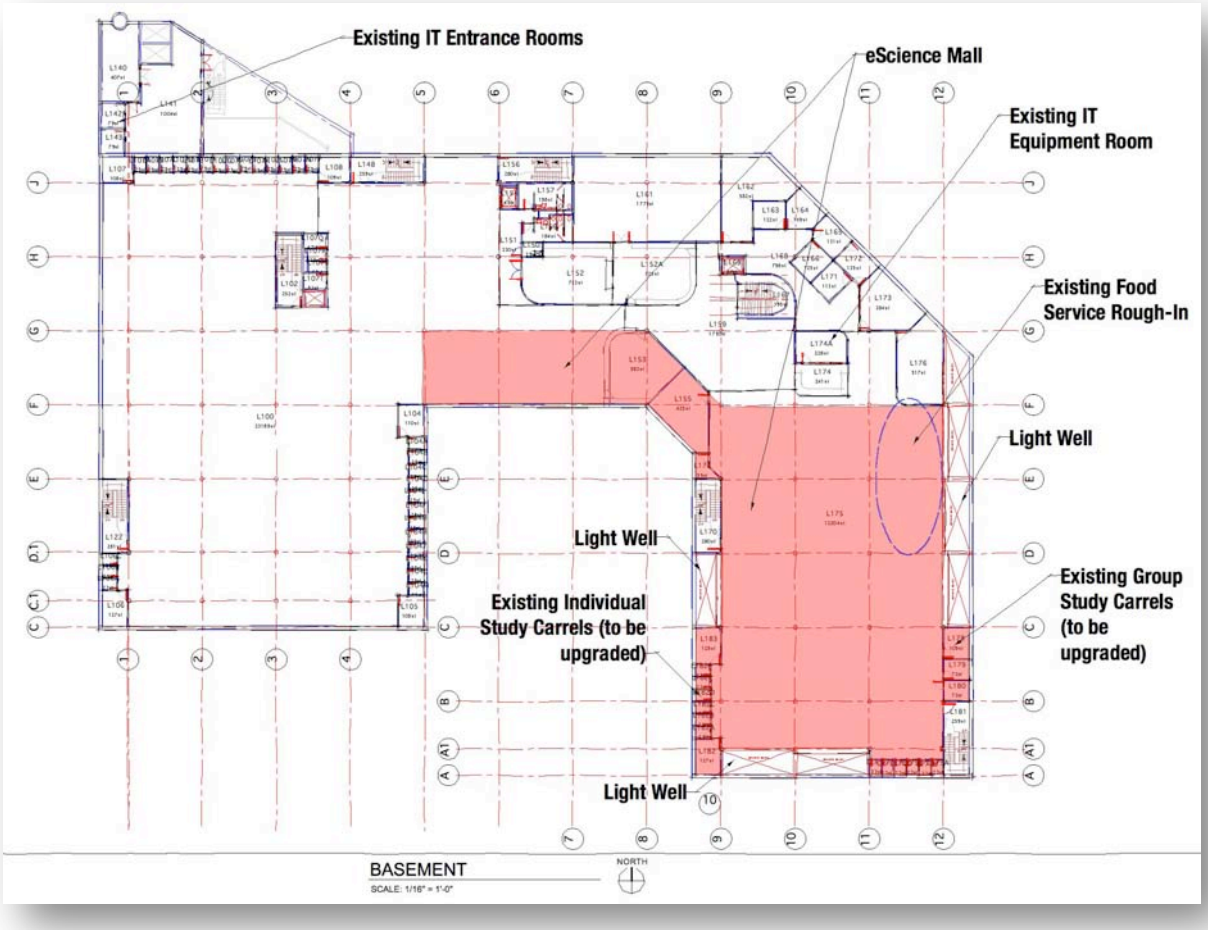
The concept stimulates curiosity by offering easy access to a wide variety of science and engineering disciplines in a concentrated area and supported by a flexible and renewable-by-design technological backbone. It is a place for focused effort as well as a place to browse a wide variety of ideas and tools. It has been termed the ***eScience Mall.***

[1] Summary of CSEL Focus Groups; March 9, 10, and 11, 2009

DIGITAL TOOLS

GENERAL NEEDS

- An array of computers and software available to students
- Digital production & presentation hardware and software for project teams
- The place to come and experience the latest technical innovations in software and hardware



SPECIFIC PROJECT ELEMENTS

- Multi-media computing hardware (large high resolution displays)
- Multi-media computing software
- General purpose software for word processing, spreadsheets and presentations

- Mac and PC based platforms and Operating Systems – also Unix & Linux for limited application
- Large motorized screens for group use
- Smaller portable screens
- Surface area and floor space for peripherals
- Provide spaces for vender-supported demonstrations of cutting edge technology related to science and engineering
- Provide signage (digital and otherwise) in appropriate locations to alert students and faculty to changes in vendor displays, upcoming presentations, and map the facilities and services available for those new to the facility
- While not necessarily part of the eScience Mall the Mall installation will need to coordinate with Institution-wide IT planning for possible location for one or more digital archives (DataONE, D-Space, etc.)

LIVELY AND UPDATED SPACE

GENERAL NEEDS

- Update style to foster interest and curiosity; to be attractive and interesting to today's students including those from other disciplines
- Make space a destination
- Provide options for subject matter, seating, lighting, etc.
- Use technology to improve the space – even virtual space
- Make it a place where people will come and linger
- Food service in the form of healthy food and drink available in a barista format or high quality fresh vending machines
- Permeable walls; barriers to define space but allow visual access
- Use existing secure wall space for art collection
- Take historic engineering equipment out of the display cases and use it to create a contemporary atmosphere that shows its "roots" (i.e. similar to theme restaurant)
- Utilize existing and new sites for art installations
- Super Graphics
- Comfortable, moveable, updated furniture
- Task lighting as well as improved general lighting
- Allow auditory and visual communication in areas where communication is preferred and sound and visual attenuation where it is not

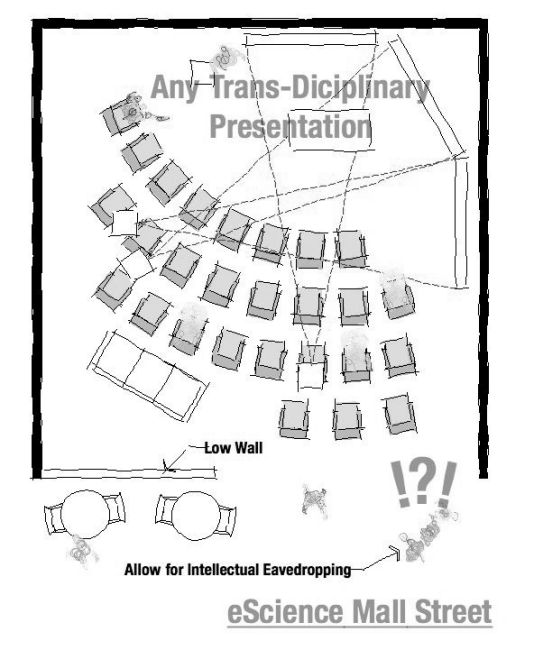
SPECIFIC PROJECT ELEMENTS

- Use open floor plan to allow for quick open visual access to most of what the eScience Mall offers
- Provide walls with sound attenuation (even with windows) where it is required for concentrated individual or project-related effort
- Define major spaces with changes in materials; define general circulation away from presentation, food service study and other areas
- Create islands of activity allowing easy and casual access for the passerby
- Bring the art and the historic collections out of the corner and into the main floor making them available and accessible
- Arrange for appropriate security for long term and rotating art exhibits

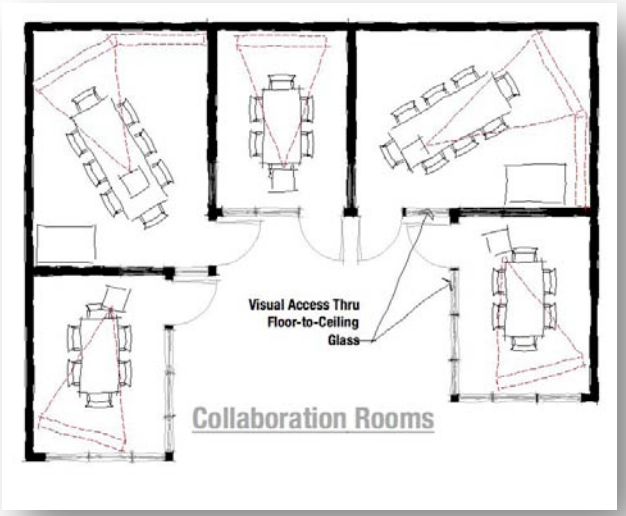
HOSTING INTERDICIPLINARY PROGRAMS

GENERAL NEEDS

- Venues for small to large group presentations
- Some venues must be open for "walk-up" participation



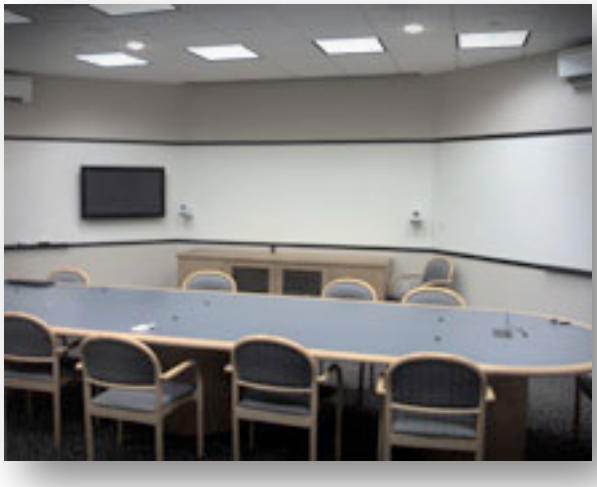
- Venues must be flexible for re-configuration
- Take a lesson from Street Theater: Street theatre is a form of theatrical performance and presentation in public spaces without a specific paying audience. These spaces can be anywhere, including shopping centers, car parks, recreational reserves and street corners. They are especially seen in spaces where there are large numbers of people. The actors who perform street theatre range from buskers to organized theatre companies or groups that want to experiment with performance spaces, or to promote their mainstream work. One of the most interesting points about modern street theatre is its unique sociopolitical place. People who might not have ever been to, or been able to afford to go to, the "legitimate" theatre can watch a street show. By virtue of where the shows take place, their audience is made up of anyone and everyone who wants to watch. If an audience member cannot afford it, then it is free.
- Some activities may make use of the plaza level as a venue?
- Additionally, some Collaboration Rooms should provide visual access through glass walls. The glass wall would be adjacent to the eScience Mall circulation.



- Spaces should be equipped with “brain storming” or “Creativity” wall surfaces as well as digital/internet equipment.
- Collaboration rooms should have floor-to door height glass walls that allow high visibility, another writing surface, and, at the same time acoustic separation for multiple groups to work simultaneously.

SPECIFIC PROJECT ELEMENTS

- Low walls at entrances to some Presentation Areas; glass walls at Collaboration Rooms.



- Comfortable seating arranged for presentation but able to be moved for follow-up discussion after the presentation is done
- Provide multi media capability for the invited presenters
- Provide enough space (i.e. 12 feet at the front of the presentation area for kinetic demonstrations)
- Provide WallTalker, white boards, pin-up areas for creative use at Collaboration Rooms.
- Provide equipment for videoconferencing in Collaboration Rooms.

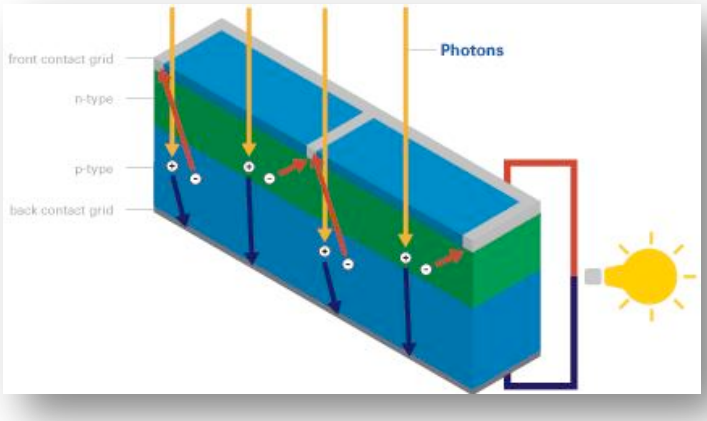
LEADERSHIP IN GREEN, ENERGY EFFICIENT FACILITIES

GENERAL NEEDS

- A natural role for Engineering & Science
- FF & E to be "green"
- Natural lighting through technology (not standard skylights that leak and will create a maintenance problem)

SPECIFIC PROJECT ELEMENTS

- Furniture with sustainable materials. reuse, re-cycle, certified wood, eco-friendly materials like bamboo, re-claimed and recycled materials, buy local to reduce transportation costs, materials with low or no VOCs, seek out certified furniture.[2]



- Low energy lighting fixtures
- Maximize natural lighting opportunities
- Carpet made of recycled materials
- Solar panels to power battery re-charging stations

[2] Sierra Club Green Home Web

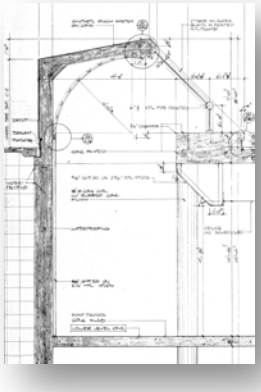
CONCEPTS RELATED TO QUALITATIVE ASPECTS OF THE SPACE

- The limited amount of natural light should be carefully gathered and distributed to help provide a sense of color and liveliness in the public spaces. It is preferable that this be done using smart energy technological means without compromising the maintainability of the facility.
- Spaces ranging from more private for some types of individual and small group study to more public for larger group activities should be provided.
- Private spaces should provide acoustic and visual isolation along with the basics of good seating, work surfaces and lighting along with power and data connectivity.
- Public spaces should be flexible and be able to be re-configured for a variety of uses and be capable of multi-media presentations.
- Public spaces sufficient for inviting and open encouraging group study and project production to very public.
- Public spaces should allow for intellectual eavesdropping. Walls should be permeable to allow ad hoc participation in formal presentations to group discussion.
- Definition may be given to separate areas by using materials on floors, walls and ceilings with varying colors and textures.
- Create reasons for non-science and engineering students to come.

EXISTING CONDITIONS

Building Water Leaks –

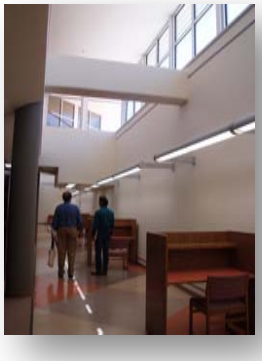
There have been at least three major areas of concern related to rain/surface/ground water leakage since the building was constructed: the plaza deck, the exterior retaining walls and the skylights.



UNM Physical Plant Department (PPD) has, as resources have become available, remedied the plaza leaks and the skylights. The remediation to the light monitors has resulted in the removal of the 45° angled skylights in favor of vertical glass. This has reduced the amount of light to the lower levels; however, the leaks are now under control. The reduced light contributes to the comments by users that the area is dark and dingy.

Most of the leaks related to the retaining walls have either been remedied or are under control in the sense that they no longer cause a threat to the collection. One area along the perimeter wall at the Southwest corner of the upper level is now being controlled. The existing water leaks at the North wall of the CSEL have been controlled by PPD.[3]

Internet Technology Infrastructure



Cabling within the building is a mix of Cat 3, 5 and 5E. This is older technology and would not be able to support high bandwidth requirements. There is single mode backbone fiber to the building so high speed data would function with the right equipment. The present switches in the building are 10/100 MB. They are not giga bit switches. New equipment is need for high speed. The main IT rooms in the basement are L142/143 & L174A. there are some code issues in the building for IT. The existing general condition for this building would not support high speed data.[4]

[3] Briefing from Joel Straquadine, UNM PPD

[4] Preliminary research by George Thorning, UNM ITS

PROPOSED SPACES

			Occ	ASF/FTE	ASF
A.	**Food Service (Self-Serve); Lounge Corner; Jolt, Revive, Refresh**		60	30	1,800
		Microwaves			
		Vending (healthy food choices)			
		Filtered Water			
		Big LCD Video Display			
		Gaming zone			
		Couches			
		Soft Chairs			
		Juice Bar			
		Casual Tables/Chairs			
		Music Stations/Head Sets			
		Mobile Charging Station			
B.	**Future Zone**		30	20	600
		Interdicplinary Displays/Shop Fronts			
		Next Generation Hardware			
		Next Generation Software			
C.	**Recreation Corner**		30	40	1,200
		Performance Space			
		Games (Wii/ Nintendo, etc.)			
		Science & Technology Workshops Venue			
		Recording Equipment for Lectures and Paper/Thesis Presentations			
D.	**Digital Corner**		60	45	2,700
		Recording Booth for creating podcasts and other multi-media presentations			
		Digitization Innovation Park			
		Team Computing Circle w/ Networked Computers, Headsets, Team Competative Work & Gaming			
		Software resources: metlab, mathematica, maple, spice, other multimedia			
		Open Computer Lab Including Modeling Computers			
		Supplies (or at food service)			
		Departmental Software & Lectures			
E.	**Study Corner**		120	45	5,400
		Video Conference Station			
		Small Instruction Group Study Room w/ Sound Attenuation multi-media Equipment			
		Private Rooms			
		Academic Advising			
		Thesis/Disertation Advising			
		Paper Editing			
		Statistics Clinic			
		Small Storage Room for Group Projects			
		Printing			
		Meditation Room			
		TOTAL FTE	300		
		NASF PROGRAM SPACE			11,700
		EFFICIENCY			80.00%
		NASF + CIRCULATION			**14,625**

BUDGET

AREA AFFECTED

- Approximately 12,000 – 14,000 SF of the upper level of the CSEL (just below the plaza ground level) would be affected.
- Building/Area entrance rooms for IT services (L142 and L143) as well as an existing equipment room (L174A).
- The following is an Order of Magnitude Cost Model. It is intended only to establish a reasonable upper limit for the project as it is now envisioned.

	UNIFORMAT Heading	UNIFORMAT Division		ITEM		UNIT	QTY	UNIT COST (Materials + Installation)	EXTENSION
A.	SUB-STRUCTURE			N/A					
B.	SHELL			N/A					
C.	INTERIORS	1010		Partitions (fixed)		SF	3,600	$5	$17,393
				Partitions (moveable)		SF	2,000	$20	$40,020
		1020		Interior Doors		EA	100	$1,000	$101,000
		1030		Fittings	Whiteboards	EA	50	$500	$25,500
		3010		Wall Finishes		SF	45,000	$2	$90,002
		3020		Floor Finishes		SF	14,000	$10	$140,010
		3030		Ceiling Finishes		SF	14,000	$8	$112,008
D.	SERVICES	2010		Plumbing Fixtures	Floor Drains/Water	EA	4	$1,200	$4,800
					3-Comp Sink & Cabinet	EA	1	$3,500	$3,500
		3030		HVAC Systems & Equipment	Chilled Water, Air-Cooled Condenser (IT Equip Rm)	EA	1		$25,000
		4010		Sprinklers & Equip	Relocation of existing Heads, Minor Additions	SF	5,000	$4	$25,000
		5020	110	Power Distribution	Receptacles, 2.4 Watts/SF	SF	14,000	$4	$56,000
			130		Wall Switches	EA	14,000	$2	$28,000
			135		Miscellaneus Power	SF	14,000	$1	$14,000
			210	Lighting & Branch Wiring	Fluorescent Fixtures, 4 Watts/SF	SF	14,000	$8	$112,000
		5030		Communications & Security	Horizontal Cabling (10G to SOME areas)	LS		$500,000	$500,000
					Equipment	LS		$600,000	$600,000
E.	EQUIPMENT & FURNISHINGS	1010		Mercantile Equipment	Display Cases	EA	6	$5,000	$5,000
		1020		Presentation	Sound System		2	$28,000	$56,000
				Projection Screens			10	$2,500	$25,000
		1090	110	Food Service Equipment	Refirgerator		1	$6,000	$6,000
					Microwave		8	$800	$6,400
				Artwork	Prep for Existing Collection	LS	1	$50,000	$50,000
					Super Graphics	LS	1	$50,000	$50,000
					New Tech-Art	LS	1	$50,000	$50,000
				Computer Hardware		LS	1	$800,000	$800,000
				Computer Software		LS	1	$300,000	$300,000
				Assembly Chairs		EA	250	$125	$31,250
				Training Tables		EA	125	$500	$62,500
				Soft Chairs (w/ Tablet Arms)		EA	60	$750	$45,000
				Couches		EA	6	$2,000	$12,000
				Café Tables & Chairs		EA	20	$3,000	$60,000
				Task Lamps (Standing or Table)		EA	40	$500	$20,000
F.	Special Construction			N/A					
G.	Site Improvements			N/A					
					S. T.				$3,473,383
					O & P	15.00%			$521,007
					S.T.				$3,994,390
					Soft Costs (Design, Contingency, Tax, etc.) at	25.00%			$998,598
					TOTAL Project Cost				$4,992,988
	Other			Phase 2 Compact Shelving LL2					$600,000