Schematic Design Presentation



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Vision Summary

























Highly Desired (2+ green dots)

High-Tech
Modern
Illumination
Interactive
Immersive
Updatable/Dynamic
Content
Ceiling Mounted
People Focused























Desired (1 green dot)

Variety of visuals/content
Variety of Scale/Density
People Focused
Interactive
Setting within a setting
Illumination





















Not Desired (1+ red dots)

Timeline
Updatable/Movable
Panels
Non-Integrated Screens
Static Photography
Library like Furniture
Setting
Community Table





























No Votes (No dots)

Lounge Furniture
Large Furniture Pieces
Low-Tech Interactive
Static Display
Large Scale Immersive







Centralized feature/function

Integrated technology, illumination

Variety of visuals: Digital, Physical Artifacts, Graphics

Variety of scale: Large and individual AV displays

Wow factor! Bold Graphics – Inspirational imagery















Hall of Champions



Leavy Library



Institute of Creative Technology



Fertitta Hall of Entrepreneurs



Ralph and Goldy Lewis Hall



The School of Cinematic Arts



Loker Hydrocarbon Institute



Ronald Tutor Campus Center (Sample Hall & Moreton Fig)



John McKay Center



Law School





Hall of Champions









Highlights

Central Feature
Iconic Elements
Museum Quality
Big Budget
Impressive



Fertitta Hall of Entrepreneurs









Highlights

Comfortable setting
Transitional style furniture
Warm colors and
materials
Large LED screen
Fixed Display monitors



Institute of Creative Technologies









Highlights

Future-oriented content 3D and virtual technology Existing interactive content How do we take advantage?



The School of Cinematic Arts













Highlights

Cinematic history Nostalgic posters and artifacts Wall displays Platform displays



John McKay Center







Highlights

Bold Graphics
Inspirational Imagery
Large AV display
Trojan Athletics Pride
Donor Wall

Clear function/organization

Integrated technology

Variety of visuals: Digital, Physical Artifacts, Graphics

Variety of scale: Large and individual AV displays

Predominate use of white/neutral + USC Pride (use of red and yellow)

Wow factor! Bold Graphics – Inspirational imagery











Feasibility Study



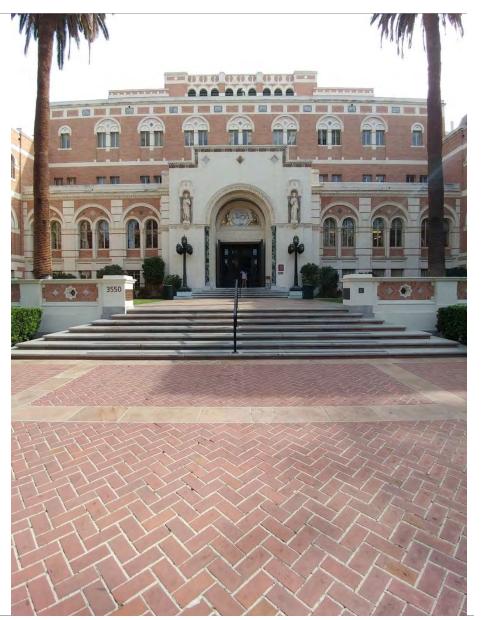
Validate increasing the max occupancy of Room 121 via code, program and cost.

Code Analysis

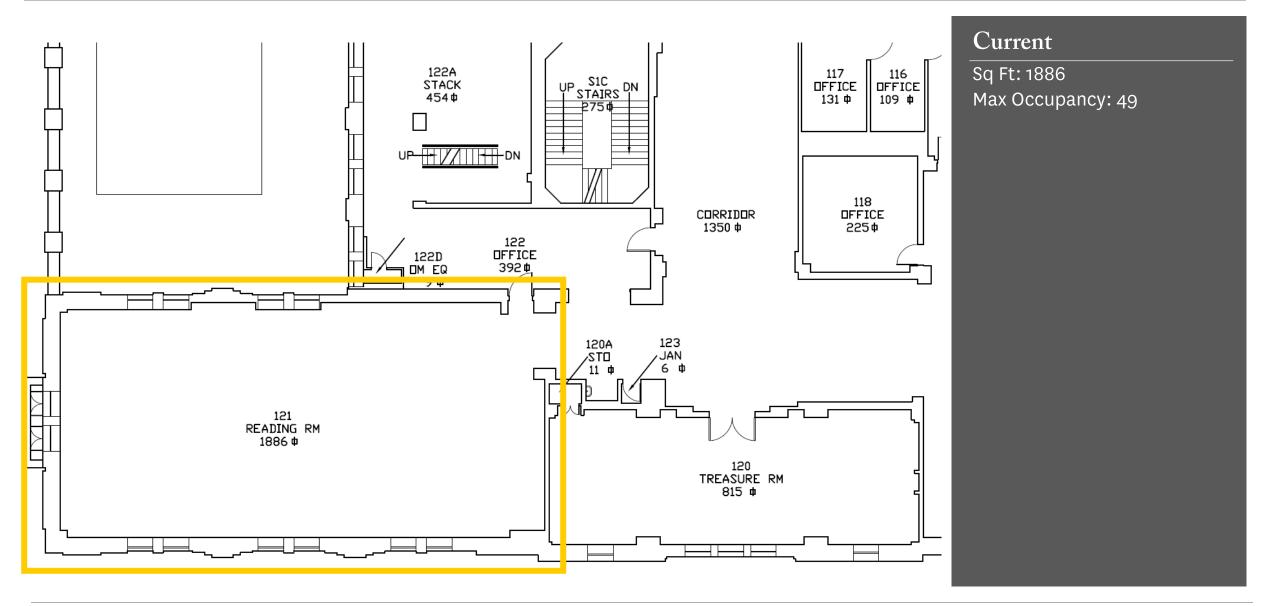
- -Current Room
- -Location of Second Egress
- -Historical & Fire Code Evaluation

Function

- -Faculty Events
- -Furniture layout scenarios







If a second means of egress were to be added, it would need to be added to the side of Room 121.



Historical Code Evaluation

Additional penetrations to the existing façade is not permitted.

A new fire escape may be added to the exterior of the building to provide a second exit.*

Fire Code Evaluation

An existing fire escape may be 'grandfathered in' and is considered an acceptable second means of egress.

Adding a new fire escape does not comply with current code.

Considering Library/Reading Room use and Assembly use.



	Frequency	Number of	Allowed	Not
	(Per Year)	Attendees	(up to 49)	Allowed
1. Provost's research council		8-14	X	
2. Academic Senate - full board	12	8-14	X	
3. Academic Senate - executive committee	52	8-14	X	
4. Provost's cabinet	26	10-14	X	
5. University Professors lunch	12	15-25	X	
6. Members of the National Academy Dinner	1	20	X	
7. OCAAA Meetings	12	20	X	
8. New Faculty Institute	16	20-25	X	
9. Provost's Council	12	20-35	X	
10. Academic Affairs Retreat	1	25	X	
11. UCAPT Mandatory Members Orientation (HSC)	1	25	X	
12. University Professors dinner	1	25	X	
13. Academic Affairs Committee of the BoT	4	25-30	X	
14. Deans of Faculty Meetings	12	30	X	
15. Deans of Faculty Retreat	1	30	X	
16. Graduate Deans Group Council Meetings	4	30	X	
17. UCAPT 4th Year and Above Faculty Workshop	1	30	X	
18. UCAPT 1st-3rd Year Tenure-Track Faculty Workshop	1	40	X	
19. UCAPT Mandatory Members Orientation (UPC)	1	40	X	
20. Mentoring Award Ceremony	12	25-60	X	
21. University Outstanding Teaching Assistant Awards Reception	1	40-50	X	
22. Department Chairs and Program Directors Annual Meeting	1	60		X
23. Happy Hour with the Provost	1	80		X
24. New Faculty Reception	1	80		X
25. Newly Promoted and Appointed Faculty Reception	1	60-80		X
26. Provost's Faculty Retirement Recognition Luncheon	1	80-100		X
			21	5

Allowed (up to 49) 21 / 26 Not Allowed (50+) 5 / 26





Primary Function:

Create a campus destination for faculty (and students) that celebrates USC faculty achievements and contributions to society.

Secondary Function: Host lectures and faculty events.

Tertiary Function:

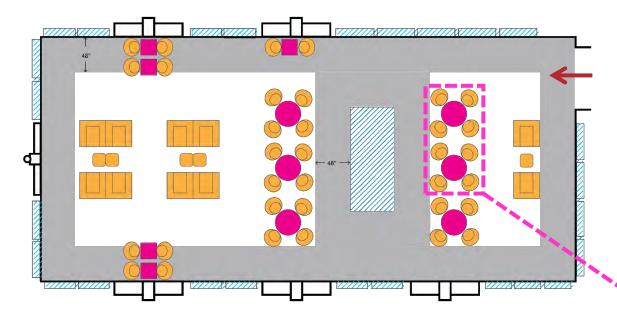
Maintain current use as a study room for students.



Lounge: 10

Stacking: 34

TOTAL SEATS: 44



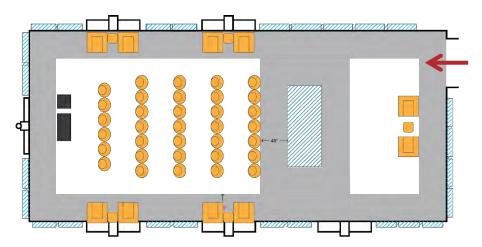
READING ROOM FURNITURE

DISPLAY

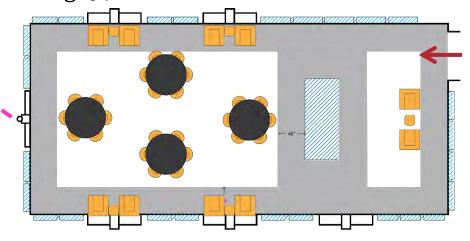
EVENT FURNITURE

REQUIRES STORAGE FOR EVENTS

Lecture: 44 Seats



Dining: 34 Seats

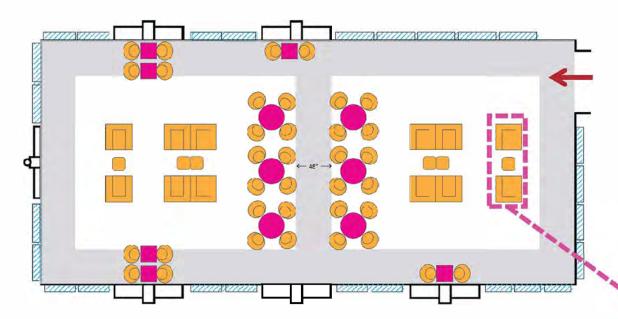




Lounge: 12

Stacking: 36

TOTAL SEATS: 48

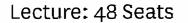


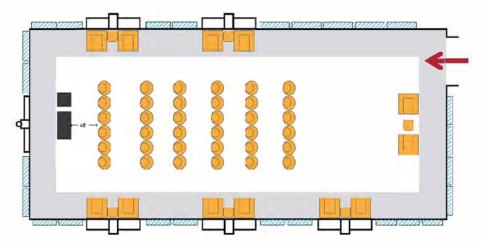
READING ROOM FURNITURE

DISPLAY

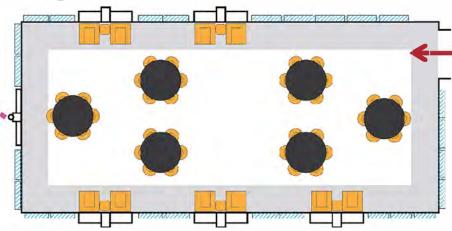
EVENT FURNITURE

REQUIRES STORAGE FOR EVENTS

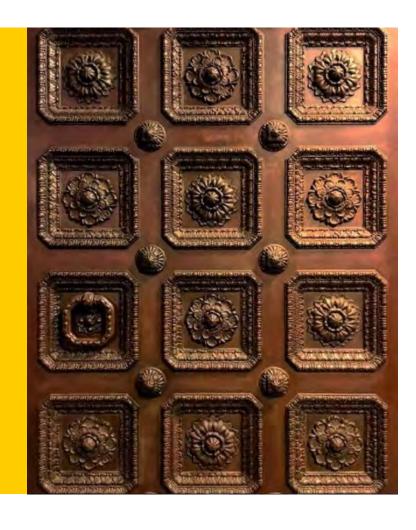




Dining: 36 Seats







Concept Design

Attract

Attract potential Faculty and Grad students to join USC.

A premier academic institution where they can be active contributors to what is taught, thought and practiced throughout the world.

Celebrate

Celebrate USC's public leadership and public service in diverse fields. Support USC's ongoing role in the development of Southern California, the nation and world.

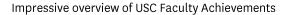
Inspire

Inspire the development of human beings and society as a whole through the cultivation and enrichment of the human mind and spirit through teaching, research, artistic creation, professional practice and public service.

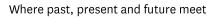


AUDIENCE	FUNCTION	FREQUENCY	EXPERIENCE	TAKE - AWAY
Prospective Faculty/Employees	Exhibit	One time Visit	Attract	Join
Prospective Students/Grad Students	Exhibit	One time Visit	Attract	Join
Alumni and Donors	Exhibit/Event	One time Visit	Celebrate	Support
Family and Friends	Exhibit	One time Visit	Celebrate	Support
Current Faculty	Exhibit/Reading Rm/Event	Multi-Visit	Inspire	Contribute
Current Students	Exhibit/Reading Rm	Multi-Visit	Inspire	Contribute
Alumni and Donors	Exhibit/Event	Multi-Visit	Celebrate	Support

Inserting clean and modern displays against the historic fabric of the Doheny Memorial Library's Periodical Room, we celebrate the rich and inspiring stories of USC Faculty that have contributed to the development of Southern California, the nation and the world.











Intimate interactive opportunities



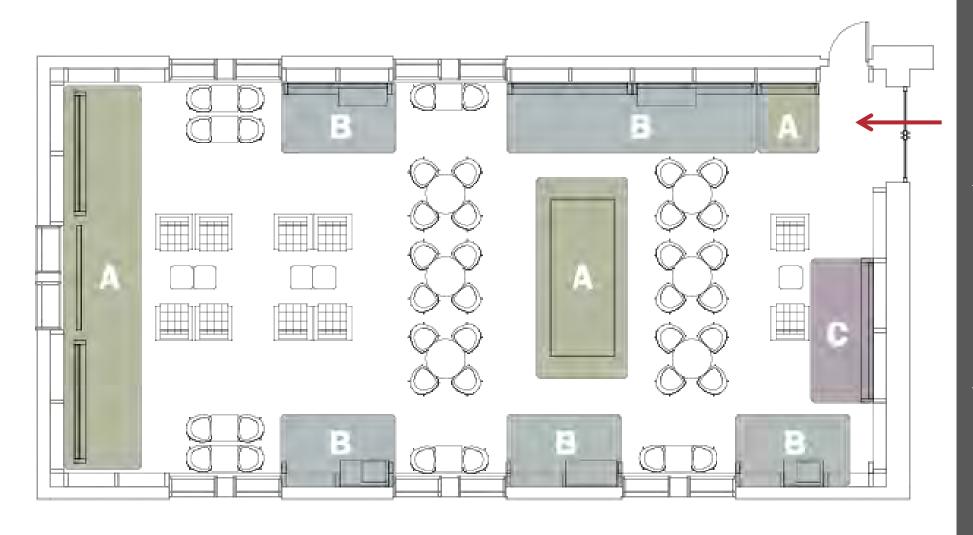
Dynamic, current content



Comfortable, light-filled daytime space





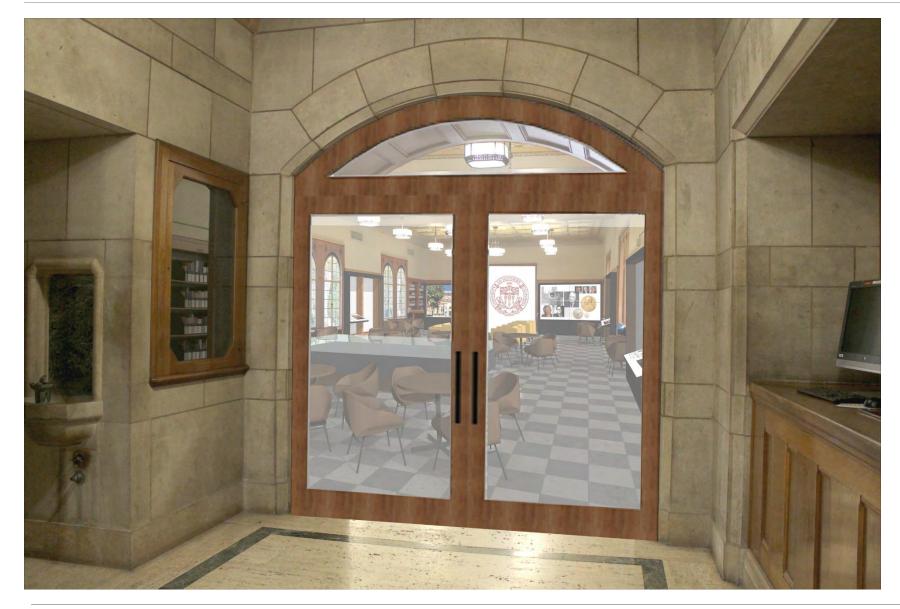


A. Introduction/Attract
Large scale video and
graphics that function as
an attract element and
provide an overview to the
space.

B. Thematic Displays
Display grouping centered around a single theme,
with cases and individual digital interactives as needed.

C. Rotating Gallery
A flexible display system
that allows for easily
updatable content.





Maintain access to vestibule functions: computer counter, water fountain, and storage.

Doors to fit within historical context and minimize and contain noise during events.

Existing Conditions





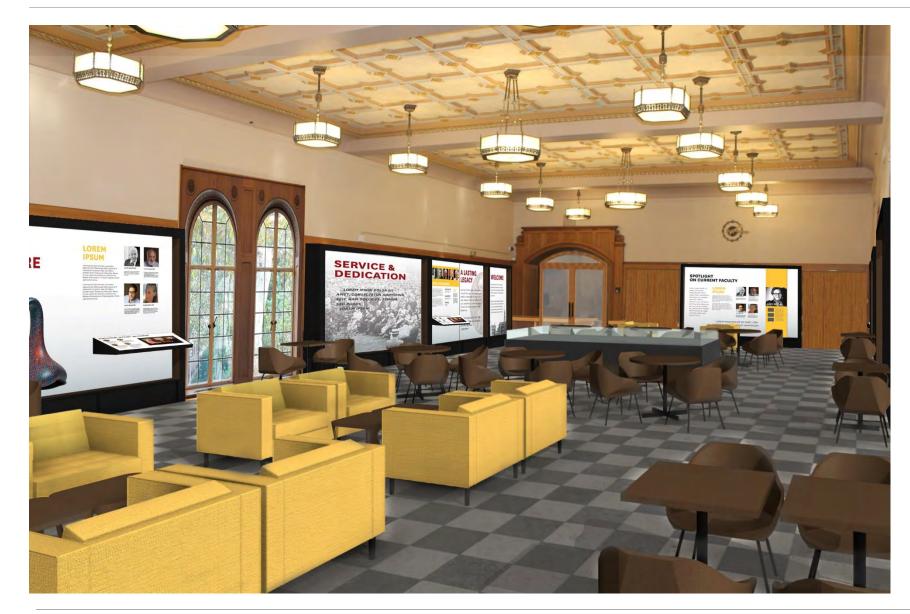


Maximize sight lines by creating large overview panels along west wall, visible from entry.

Provide a variety of displays that make use of existing periodical niches.

Incorporate a centralized display feature.





Maximize sight lines by creating large overview panels along west wall, visible from entry.

Provide a variety of displays that make use of existing periodical niches.

Incorporate a centralized display feature.



Lounge Seating and Occasional Table Options









Dentil Detail Angled Lines

Wood Back

Round

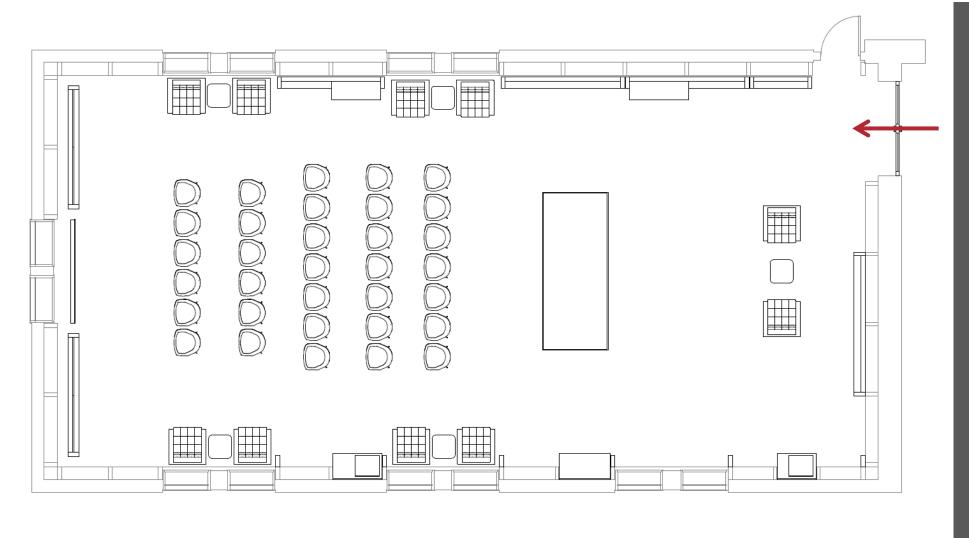






Tufted Cushions

Rectangular



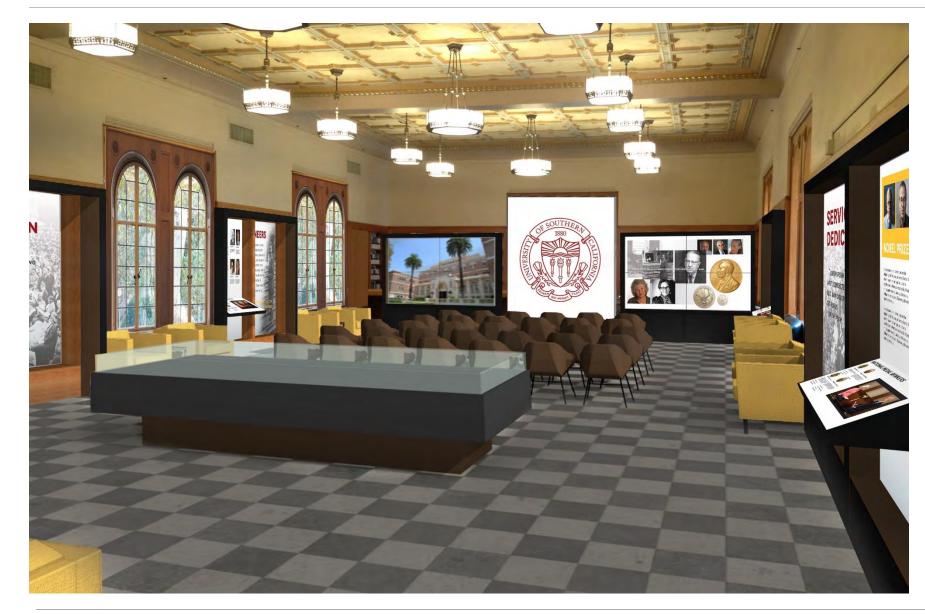
Maximize sight lines by creating large overview panels along west wall, visible from entry.

Provide a variety of displays that make use of existing periodical niches.

Incorporate a centralized display feature.

Reading room lounge furniture moves to perimeter to allow for various event settings.

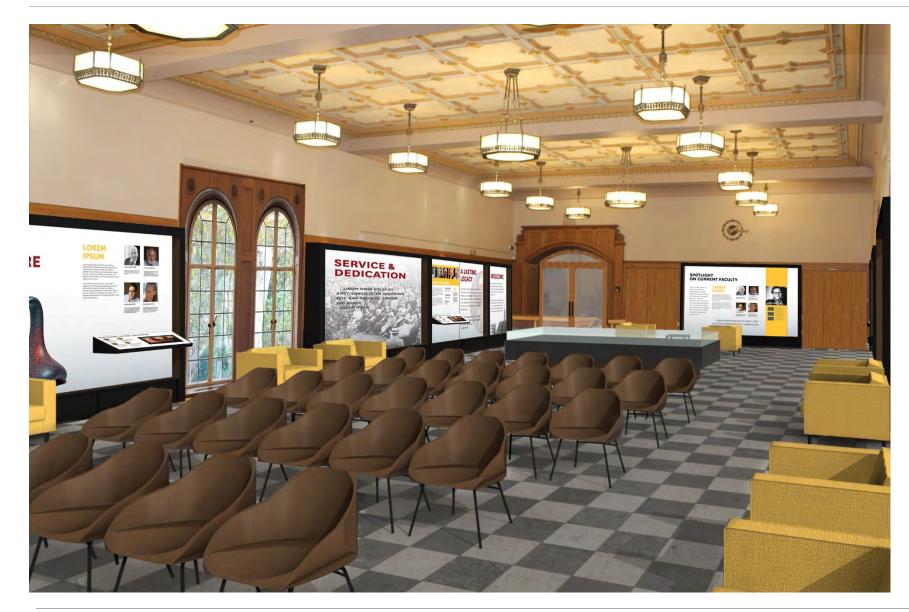




Utilize west wall displays for digital presentations during events.

Ability to move reading room furniture to perimeter of room for event functions.



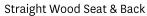


Utilize west wall displays for digital presentations during events.

Ability to move reading room furniture to perimeter of room for event functions.

Stacking Chair Options



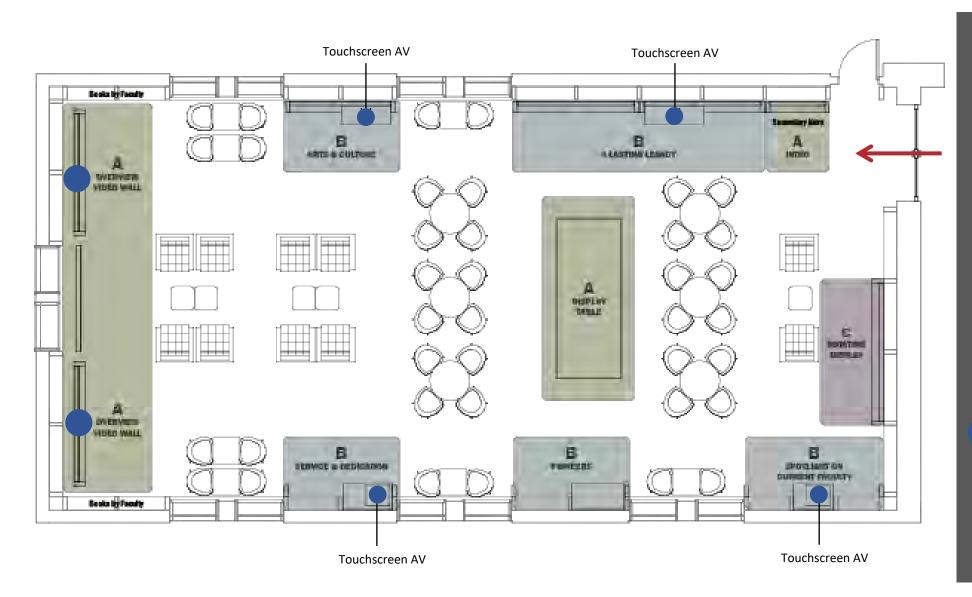




Curved Wood Seat & Back





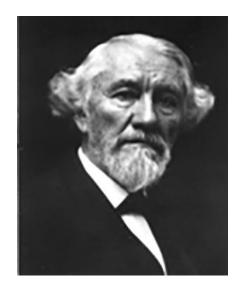


A. Introduction/Attract
B. Thematic Displays
C. Rotating Gallery

AV/Technology

- Multi-screen video wall.
- Standard individual AV touch screens or devices (like iPad) with headset for sound.











SERVICE & DEDICATION

Faculty members that have dedicated their careers to USC or have influenced the university in profound ways.

PHOTO: James Harmon Hoose, who initiated the teaching of six academic disciplines at USC: philosophy, pedagogy, sociology, history, economics and psychology.



Faculty members that have made a global impact through their research and innovations.

IMAGE: Nobel Prize Medallion, 2015 Angus Deaton (Economics) 2013 Arieh Warshel (Chemistry) 2000 James Heckman (Economics) 2000 Daniel McFadden (Economics) 1994 George Olah (Chemistry) 1969 Murray Gell-Mann (Physics)

PIONEERS

Faculty members with groundbreaking publications or discoveries.

PHOTO: Frances Lomas Feldman, whose study of money stress on families led to establishing the Consumer Credit Counselors.

FACULTY SPOTLIGHT

Current faculty with University or other distinctions.

PHOTO: MIDORI GOTO, Distinguished Professor, Jascha Heifetz Chair of



USC's faculty achievement in every aspect of the arts: music, cinema, fine arts, writing.

IMAGE: Work by Ken Price, who is known for both his ceramics and sculpture, seen in solo exhibitions and museum collections around the world.



A. Introduction

Large scale video or graphic that functions as an attract element and provides and overview to the space.







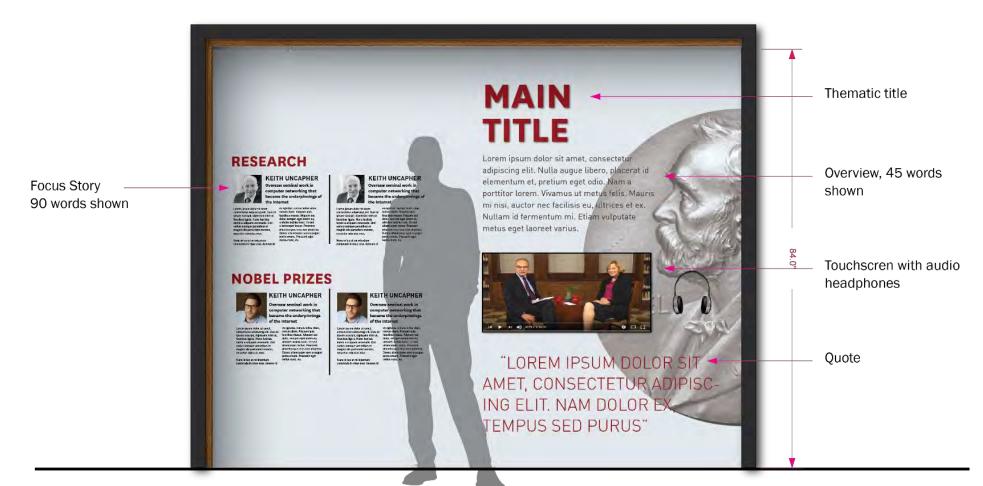






B. Thematic Displays & C. Rotating Display

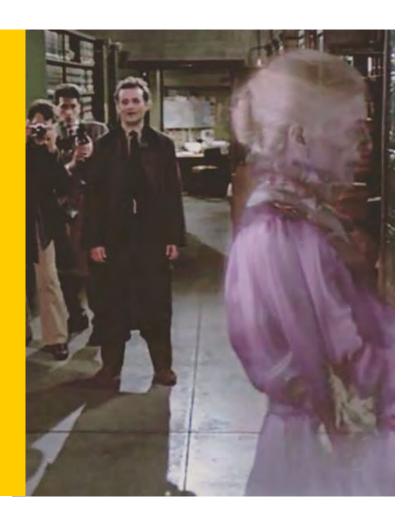
Display grouping centered around a single theme, with cases and digital interactives as needed.











Appendix



4. Appendix schematic design presentation #1 | 43

- Vision Session: Dot Exercise

- Feasibility Study: Character Defining Features Study

- Feasibility Study: Memorandum

Highly Desired (2+ green dots)























Desired (1+ green dot)























Not Desired (1+ red dot)





















No Votes (no dots)







































Doheny Memorial Library Room 121 Character-Defining Features Study

Prepared for:

Interior Architects, Inc. 515 Figueroa Street, Suite 2050 Los Angeles, CA 90071

Prepared by:



Pasadena, California

December 15, 2017

1. Introduction

At the request of Interior Architects, Inc., Architectural Resources Group (ARG) has prepared this Character-Defining Features Study for Doheny Memorial Library Room 121 (DML 121), located in Doheny Memorial Library (3550 Trousdale Parkway) on the University of Southern California's University Park Campus, Los Angeles. This report is intended to help guide the adaptive re-use of the room, originally the Periodicals Reading Room, into a venue for faculty recognition exhibits. It comprises a physical description of the room, including alterations; a summary of the room's historic development and significance; and an inventory of its character-defining features and spaces.

Constructed in 1932, Doheny Memorial Library was designed by the architectural firm of Cram and Ferguson with the architect Samuel E. Lunden designing the interiors and preparing the final working drawings. The Italian Romanesque Revival building is significant as an excellent example of its architectural style, and as an intact contributor to the 1919 USC Campus Master Plan by master architect John Parkinson. The building was individually designated as a Los Angeles Historic-Cultural Monument in 2013.

Preparation of this report involved the following ARG tasks related to research and analysis:

- Conducted a site visit on December 7, 2017, for the purposes of photographing the room, documenting existing conditions, and identifying character-defining features and spaces;
- Obtained and reviewed historical photographs, drawings, documentation related to the building's historic designation, and other applicable background materials;
- Comparatively analyzed current and historical photographs and drawings of the room to document any visible alterations that have been made; and
- Performed limited primary and secondary source research, as needed, to glean additional information about the property's development history and historical significance.

This report was prepared by ARG architectural historians Katie E. Horak, Principal, and Mary Ringhoff, Associate, both of whom meet the *Secretary of the Interior's Professional Qualification Standards*, 36 CFR Part 61, in the discipline of Architectural History.

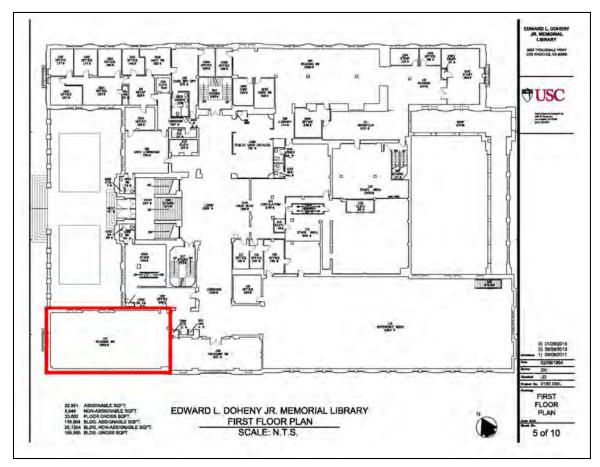
Doheny Memorial Library Room 121 Character-Defining Features Study ARCHITECTURAL RESOURCES GROUP

¹ Christine Lazzaretto and Judy Marks, Los Angeles Historic-Cultural Monument Application: Doheny Memorial Library, 2013.

2. Physical Description

2.1 Site and Setting

DML 121 is located in Doheny Memorial Library, in the center of USC's University Park campus. It sits at the southwest corner of the first (main) floor, and is accessed by walking south down a large hall from the main rotunda lobby; the hall terminates at a smaller east/west-running hall containing entrances to the Treasure Room (DML 120), the Los Angeles Times Reference Room (DML 119), and the Current Periodicals Reading Room (DML 121). All of these spaces largely retain their original interior finishes.



Doheny Memorial Library first floor plan; DML 121 is outlined in red.

2.2 DML 121 Interior

DML 121 is a single open room with consistent original finishes throughout the space. The floor is covered with linoleum in a marbled black and tan checkerboard pattern, with black rubber tile baseboards. Walls are smooth plaster above inset sycamore² wood bookcases with plaster backing; these continuous bookcases encircle the entire room (interrupted only by window and door openings) and comprise over half of the walls' surfaces. The bookcases are simple in style and have numerous peg holes to accommodate narrowly set wood shelving, though the current configuration uses only four movable wood shelves per case. Each bookcase has a hand-painted number and narrow brass plate at its top. Below most of the bookcases are continuous wood vent grilles; in a few places, there are simple wood panels instead. A bronze clock is affixed to the room's east wall above the bookcases. One bookcase on the south wall has been infilled, and wood-cased electrical outlets have been added to the bottom shelves of some bookcases. Metal vents have been added to the upper portion of the south wall.

The room contains five pairs of steel multi-light casement windows with arched openings and lead canes; three are in the south wall and two are in the north. Each pair is recessed within a rectangular wood surround with paneling, carved rosettes, reeded and paneled soffits, and paneled sills with inset bronze vent grilles. The paneled wood window surrounds continue below the sills and include diamond paneled details there. The surrounds are topped by ornamental plaster molding in a twisted rail pattern. The window openings and surrounds are set flush with the adjacent inset bookcases, and extend well above the bookcase tops.

The room's west wall contains two sets of steel multi-light French doors with lead canes and the same surrounds and arched openings as the windows. The doors open onto a concrete balconette with a concrete balustrade. The room's east wall contains an open, double-width entry with a wood segmental arch, echoing those in the hallway and main reading room to the east. The arch has wood paneling and a low marble base. Its interior face has a decorative wood surround with paneling, carved wood floral details, and flanking wood pilasters topped by decorative scrolled corbels of carved wood. The room's north wall contains a recessed, paneled wood entry with a simple wood door to an office; the door, which may be a replacement, contains a narrow vertical panel in which a glazed octagonal opening reading "AUTHORIZED PERSONNEL ONLY" is set.

The plaster ceiling is shallowly coffered, with large beams spanning the room from north to south and polychromatic ornamentation including twisted rail molding, diamond-shaped floral medallions, and gold painted detailing. Below the coffered ceiling, there is coving with a simple molded rail. Bronze pendant and chandelier light fixtures hang from the ceiling and feature octagonal frosted glass shades with bronze edging and details, including finials. Comparison with historic photos shows that the bottoms of the shades once had angled frosted glass panes with

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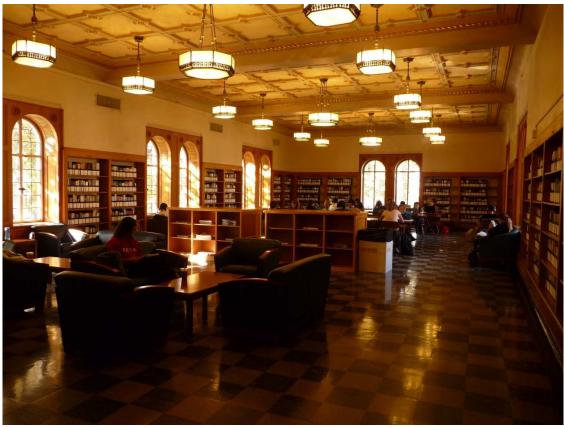
² Ruth Wallach, "Doheny Memorial Library: Main Floor," last updated 2015, http://www.publicartinla.com/USCArt/Doheny/HistTour/main_floor.html, accessed December 2017.

additional metal edging and finials; these have been removed and replaced with single corrugated pieces of frosted glass or plastic, giving the shades a flat bottom.

The room contains two movable book cases, long study tables with chairs, and low tables and upholstered seating. The chair type seen at the study tables appears in historic photos of the room, and is the same as that in the main reading room; the rest of the furniture appears not to be original to the room, though the study tables may have been original to the building.



DML 121, view to southeast



DML 121, view to northwest

2.4 Alterations

The following alterations to DML 121 were noted during ARG's site visit and, when possible, were verified by original and renovation drawings and other source materials. In the absence of building permits or other documentation, ARG was not able to determine exactly when these alterations occurred. Overall, the room has experienced very few alterations and appears very much as it did in 1932.

- One bookcase infilled with plaster; sycamore framing remains
- Bottom portion of ceiling light fixtures removed and replaced with corrugated glass or metal
- Interior door to office (north wall) may have been replaced
- Electrical outlets in wood box casing added at bottom shelves of some bookcases
- Metal vents installed in upper portion of south wall
- Modern security and fire sensor equipment affixed to north wall

3. Summary of Historic Significance

DML 121 is an original space in Doheny Memorial Library, which was built on the USC campus in 1932 using funding from the Doheny oil family. The Dohenys intended the new library to be a memorial to their son Edward L. "Ned" Doheny Jr., a USC graduate who died in 1929. In tandem with USC, they hired Boston architectural firm Cram and Ferguson to design the library, with Pasadena architect Samuel Lunden as designer of the interiors and creator of the final working drawings. Construction of the four-story building was completed in only 12 months.³

Doheny Memorial Library is an excellent example of the Italian Romanesque Revival architectural style, and retains most of its original exterior and interior features and finishes. It is also an intact contributor to the 1919 Campus Master Plan as designed by master architect John Parkinson. Implemented from the 1920s through the early 1930s, the Parkinson Plan utilized Beaux Arts planning concepts, represented USC's first prolific, unified building campaign, and provided the basis for the campus's overarching architectural character.⁴

Located at the southwest corner of the library's first floor, DML 121 was originally the Periodicals Room. Its inset sycamore bookcases served the room's original function by holding numerous narrow shelves for current periodicals, and its tall paired arched windows brought natural light in for students using the room. Additional light was provided by ornamental pendant and chandelier light fixtures suspended from the decorative plaster coffered ceiling. In many ways, the room's design echoes that of the majestic Main Reading Room (today the Los Angeles Times Reference Room), rendered on a smaller scale with more modest features. Both rooms feature linoleum checkerboard floors, custom wood inset casework, smooth plaster walls, paired arched windows, and coffered ceilings with ornamental light fixtures.

DML 121 has retained its same basic function as a reading room and document storage/access space over the years, housing government documents as well as current periodicals. Its historic features and finishes continue to convey its period of construction, its original design by Samuel Lunden, its relationship with the Main Reading Room directly to the east, and its association with larger patterns of architectural and educational development at USC.

³ USC Libraries, "Doheny Memorial Library History," https://libraries.usc.edu/locations/doheny-memorial-library-history, accessed December 2017.

⁴ Lazzaretto and Marks, HCM Nomination; Christine Lazzaretto, John LoCascio, and Molly Iker, National Register of Historic Places Nomination Form: University of Southern California Historic District, 2014, 46-49.

4. Character-Defining Features

Character-defining features are those physical elements of a resource that define its historic character and help to convey its significance. In instances of future change to a historic resource, character-defining features should be retained to the greatest extent possible in order to ensure that the resource continues to be able to physically represent its historical period.

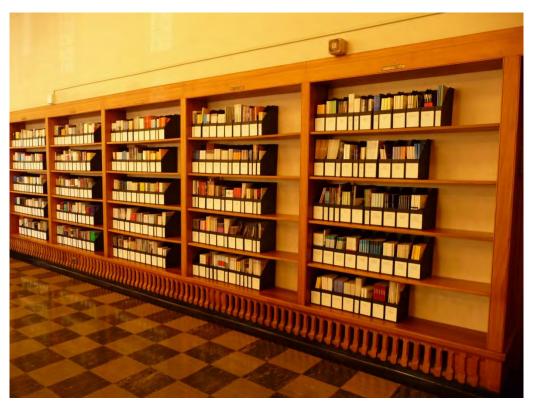
ARG developed the following inventory of character-defining features for DML 121 based on visual inspection of the room and evaluation of existing conditions, original drawings, and historical photographs.

4.1 Character-Defining Features

- Single open room with rectangular footprint
- Linoleum flooring in checkerboard pattern
- Smooth plaster walls
- Inset sycamore wood bookcases with hand-painted case numbers
- Wood vent grilles around base of walls, under bookcases
- Decorative wood window, door, and entry casework with paneling, reeded soffits, carved corbel and rosette details, and twisted rail plaster molding
- Paired arched window and French door openings
- Open double-width room entry with paneled wood segmental arch
- Steel multi-light casement windows with lead canes
- Steel multi-light French doors with lead canes
- Wood window sills with bronze vent grilles and wood paneling beneath
- Coved and coffered polychromatic plaster ceiling with simple molded rail, north/southspanning beams, diamond-shaped floral medallions, twisted rail molding, and gold painted detailing
- Octagonal bronze pendant and chandelier light fixtures with frosted glass shades and bronze details
- Bronze clock above bookcases on east wall



Linoleum floor in checkerboard pattern



Continuous inset sycamore wood bookcases and vent grilles



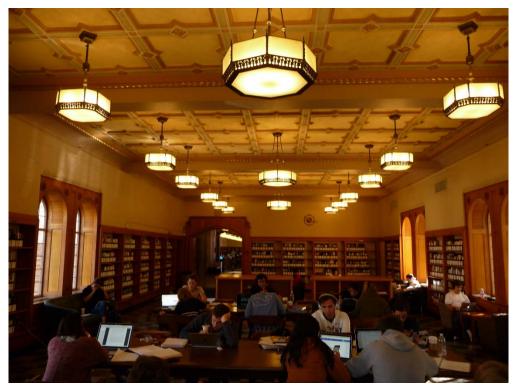
Typical bookcase painted number and brass nameplate



Smooth plaster walls above bookcases; segmental arched opening with decorative sycamore surround in east wall



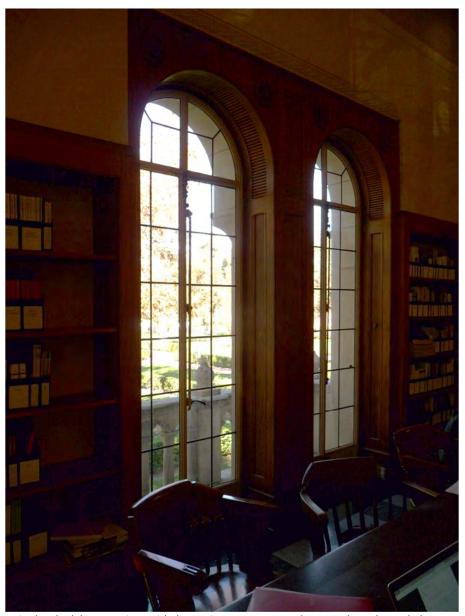
Bronze clock on east wall



Coffered ceiling with pendant and chandelier light fixtures



Paired arched window openings with decorative sycamore wood surround, steel casement windows



Paired arched door openings with decorative sycamore wood surround, steel French doors



Window sills with bronze grilles and wood paneling and grilles beneath



Coffered ceiling detail

5. Bibliography

Lazzaretto, Christine and Judy Marks. Los Angeles Historic-Cultural Monument Application: Doheny Memorial Library, 2013.

Lazzaretto, Christine, John LoCascio, and Molly Iker. National Register of Historic Places

Nomination Form: University of Southern California Historic District. Prepared by Historic Resources Group, 2014.

USC Library and Archives. Historic photographs, v.d.

USC Libraries. "Doheny Memorial Library History," 2017.

https://libraries.usc.edu/locations/doheny-memorial-library/doheny-memorial-library-history, accessed December 2017.

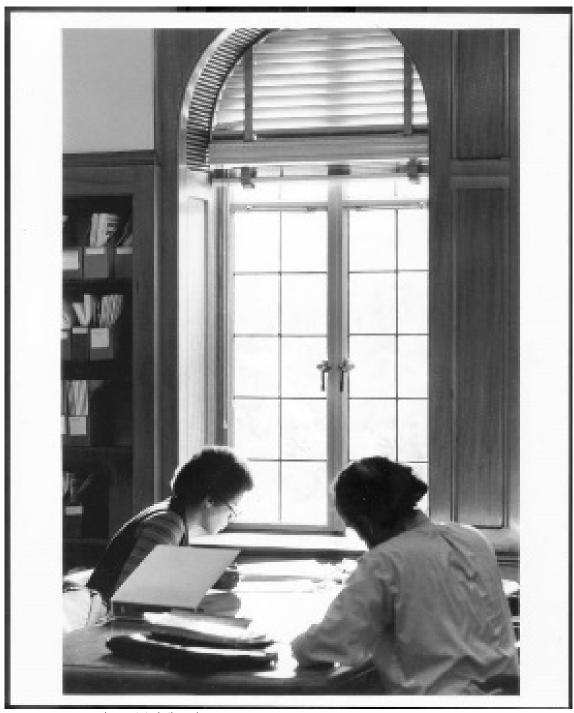
Wallach, Ruth. "Doheny Memorial Library: Main Floor," last updated 2015.

http://www.publicartinla.com/USCArt/Doheny/HistTour/main_floor.html, accessed December 2017.

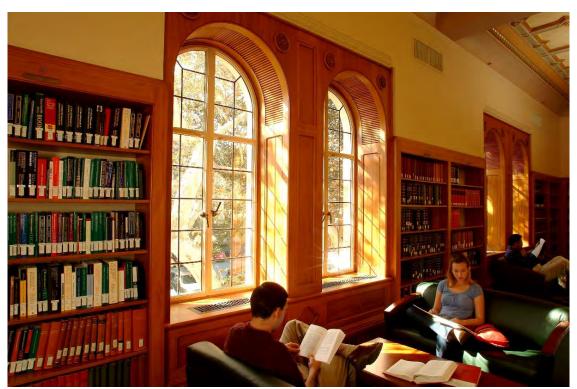
6. Historic Photographs and Drawings



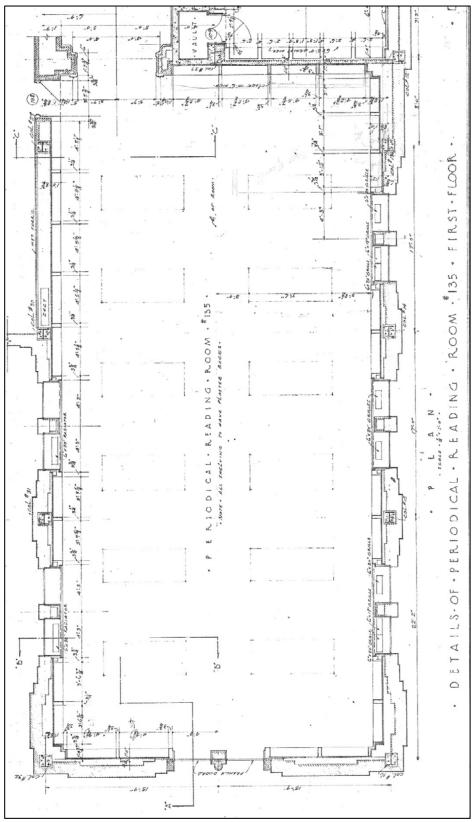
DML 121 (Periodicals Room), 1932 (courtesy USC Archives)



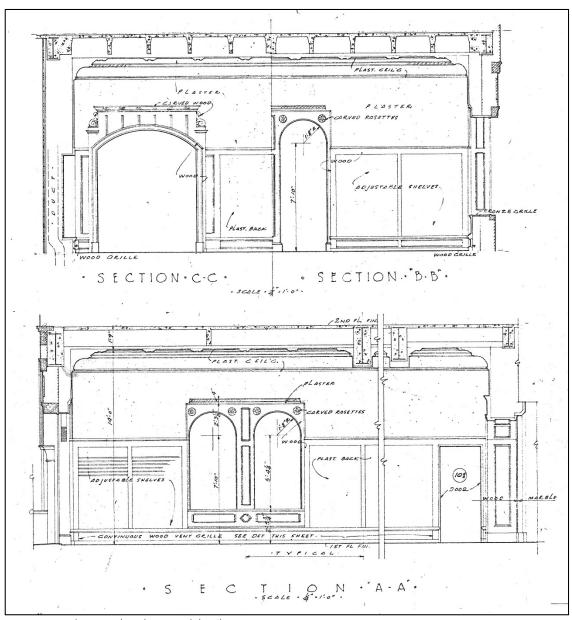
DML 121, ca. 1960s (USC Digital Library)



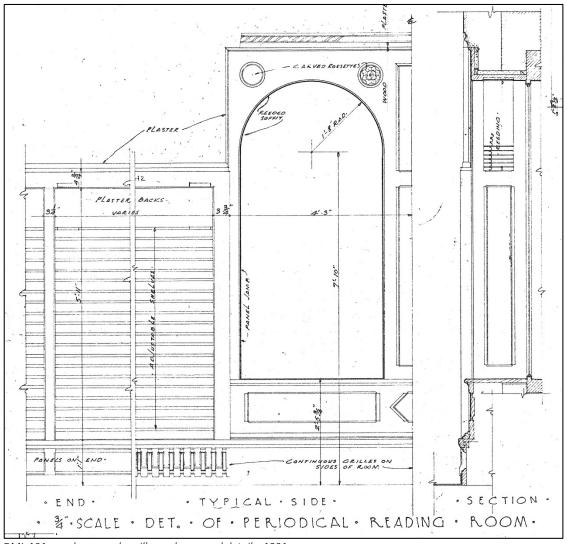
DML 121, 2007 (USC Archives)



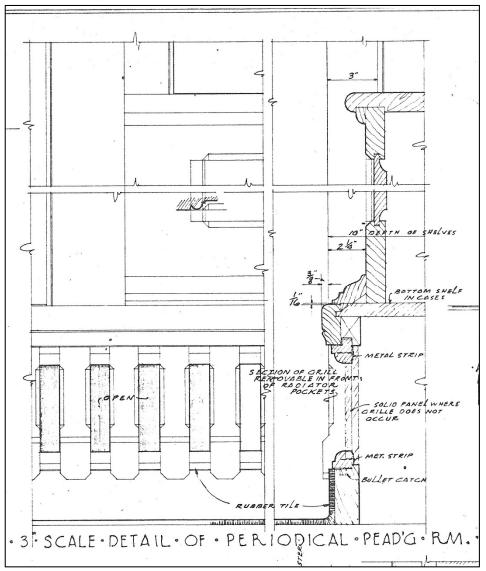
DML 121 plan with details, 1931.



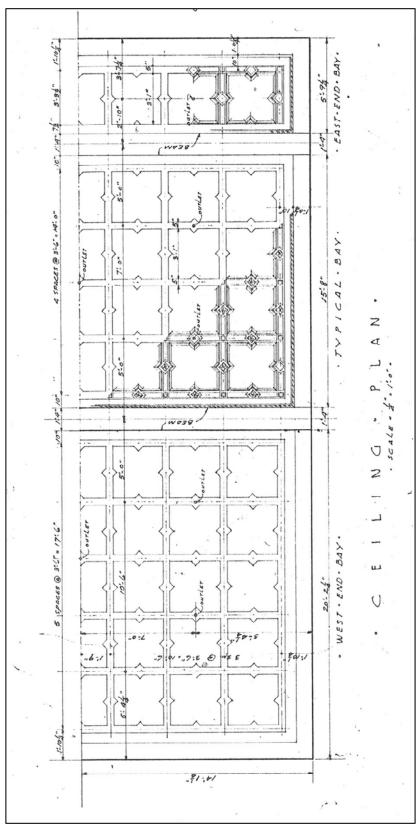
DML 121 wood casework and surround details, 1931.



DML 121 wood casework, grille, and surround details, 1931.



DML 121 wood grille details, 1931.



DML 121 ceiling plan and details, 1931.



Memorandum

To Ken Anderson, Interior Architects

k.anderson@interiorarchitects.com

Project: DML 121 – Faculty Recognition Exhibits Feasibility Study

 Project No.:
 17252

 Date:
 12/15/17

 Via:
 email

This memorandum has been prepared to provide information about the California Historic Building Code (CHBC) and the possibility of adding a secondary means of egress at Doheny Memorial Library, Room 121 (DML 121). In the event that the room's occupancy load requires a secondary means of egress, there may be opportunity to provide egress from an existing window opening at the south side of the room (and located at the south elevation of Doheny Memorial Library).

The following information is excerpted from the CHBC found in the California Code of Regulations, Title 24, Part 8. The CHBC supplants the Uniform Building Code and allows greater flexibility in the enforcement of code requirements for qualified historic buildings.

Doheny Memorial Library is a designated Historic-Cultural Monument (HCM) in the City of Los Angeles, and is therefore a qualified historic structure for the purposes of the CHBC.

The section of the CHBC that pertains to the addition of new fire escapes is as follows, with notes in italics regarding existing conditions of DML 121 as applicable:

Section 8-502.6

New fire escapes and fire escape ladders which comply with this section shall be acceptable as one of the required means of egress. New fire escapes and new fire escape ladders shall comply with the following:

1. Access from a corridor shall not be through an intervening room.

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- 2. All openings within 10 feet (3048 mm) shall be protected by three-fourths-hour fire assemblies. When located within a recess or vestibule, adjacent enclosure walls shall be of not less than one-hour fire-resistive construction
- 3. Egress from the building shall be by a clear opening having a minimum dimension of not less than 29 inches (737 mm). Such openings shall be openable from the inside without the use of a key or special knowledge or effort. The sill of an opening giving access shall not be more than 30 inches (737 mm) above the floor, step or landing of the building or balcony.
 - Note: according to original architectural drawings, window openings in DML are 29% inches from floor to sill and 40 inches wide. Need to confirm if there is a fixed center mullion between the casement sashes.
- 4. Fire escape stairways and balconies shall support the dead load plus a live load of not less than 100 pounds per square foot (4.79 kN/m2) and shall be provided with a top and intermediate handrail on each side. The pitch of the stairway shall not exceed 72 degrees with a minimum width of 18 inches (457 mm). Treads shall not be less than 4 inches (102 mm) in width, and the rise between treads shall not exceed 10 inches (254 mm). All stair and balcony railings shall support a horizontal force of not less than 50 pounds per lineal foot (729.5 N/m2) of railing.
- 5. Balconies shall not be less than 44 inches (1118 mm) in width with no floor opening other than the stairway opening greater than 5/8 inch (15.9 mm) in width. Stairway openings in such balconies shall not be less than 22 inches by 44 inches (559 by 1118 mm). The balustrade of each balcony shall not be less than 36 inches (914 mm) high with not more than 9 inches (287 mm) between balusters.
- 6. Fire escapes shall extend to the roof or provide an approved gooseneck ladder between the top floor landing and the roof when serving buildings four or more stories in height having roofs with less than 4 units vertical in 12 units horizontal (33.3 percent slope). Fire escape ladders shall be designed and connected to the building to withstand a horizontal force of 100 pounds (445 N) placed anywhere on the rung. All ladders shall be at least 15 inches (381 mm) wide, located within 12 inches (305 mm) of the building. Ladder rungs shall be 3/4 inch (19.1 mm) in diameter and shall be located 12 inches (305 mm) on center. Openings for roof access ladders through cornices and similar projections shall have minimum dimensions of 30 inches by 33 inches (762 by 838 mm). The length of fire escapes and exit ladder devices shall be limited to that approved by the building official based on products listed by a recognized testing laboratory.

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- 7. The lowest balcony shall not be more than 18 feet (5486 mm) from the ground. Fire escapes shall extend to the ground or be provided with counterbalanced stairs reaching to the ground
- 8. Fire escapes shall not take the place of stairways required by the codes under which the building was constructed.
- 9. Fire escapes shall be kept clear and unobstructed at all times and in good working order.