

UNIVERSITY OF MARYLAND – BALTIMORE
HEALTH SCIENCES FACILITY III

SENIOR THESIS PRESENTATION

KENNETH M. MOORE
LIGHTING / ELECTRICAL
THESIS ADVISOR | SHAWN GOOD



PROJECT OVERVIEW

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)

"The Health Sciences Facility III further strengthens our footprint in west Baltimore and, as a result, our economic impact on the city and the state. We're privileged to be able to help revitalize our critically important Baltimore neighborhoods and the state of Maryland as a whole, and at the same time, enable biomedical research and education that has the potential to save lives."

Jay A. Perman, MD
President, University of Maryland

- HIGHLY ADVANCED RESEARCH FACILITY
- HOUSES RESEARCH GROUPS FOR SCHOOLS OF MEDICINE, PHARMACY, AND DENTISTRY
- ARCHITECT
HELLMUTH, OBATA, KASSABAUM (HOK)
- CONSTRUCTION MANAGER
BARTON MALOW COMPANY
- OWNED BY UMB OFFICE OF FACILITIES MANAGEMENT

SOUTH FAÇADE



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)

NORTH FAÇADE



SOUTH FAÇADE



- PROJECT SIZE
430,000 GSF
- CONSTRUCTION TIMELINE
JULY 2013 – SEPTEMBER 2017
- PROJECT CONSTRUCTION COST
\$ 216,000,000.00
- PROJECT DELIVERY
CM AT RISK

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



WEST ELEVATION

- 13 STORIES
- MECHANICAL MEZZANINE + PENTHOUSE
- 7 STORY ATRIUM + 3 MAIN TOWERS
- WET LAB + DRY LAB
- GREEN ROOF



EAST ELEVATION

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)

PROJECT LOCATION

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

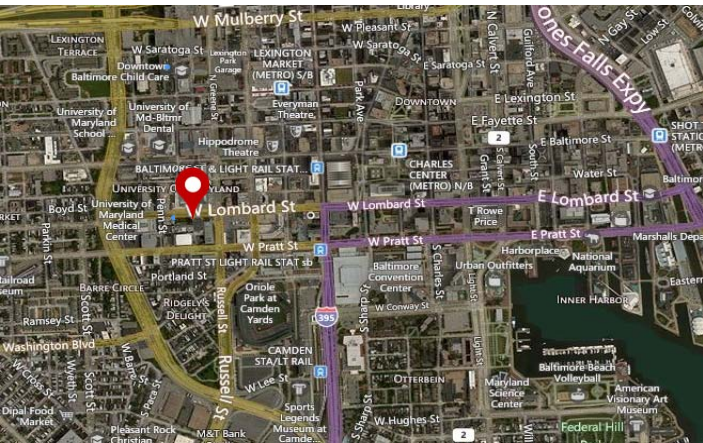
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

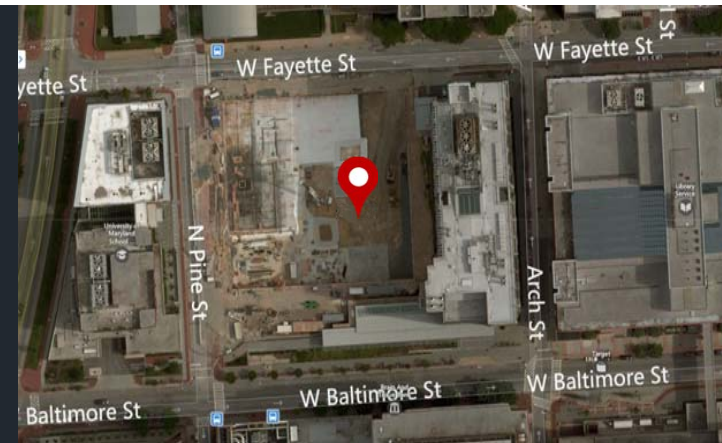
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



666 W. BALTIMORE ST.

- CITY OF BALTIMORE
- SEVERAL BLOCKS FROM INNER HARBOR
- CENTRAL LOCATION IN UNIVERSITY CAMPUS



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

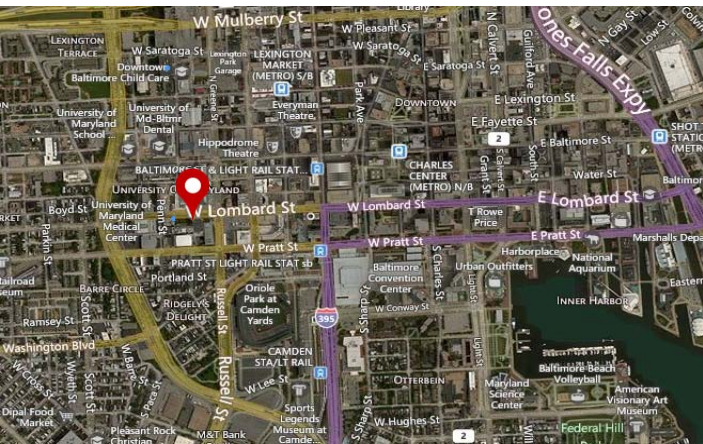
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

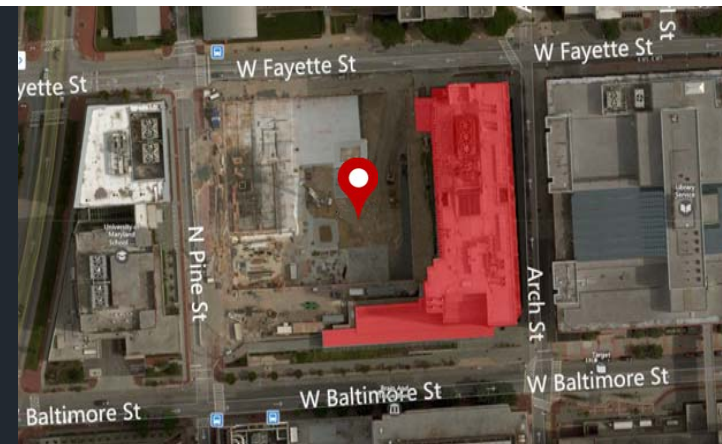
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



666 W. BALTIMORE ST.

- SCHOOL OF DENTISTRY



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

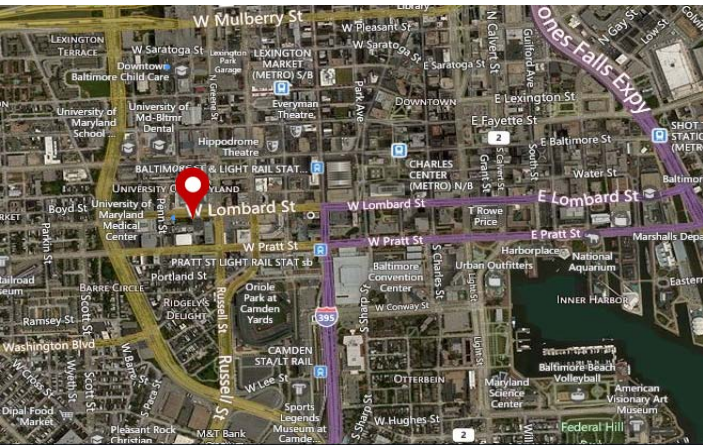
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

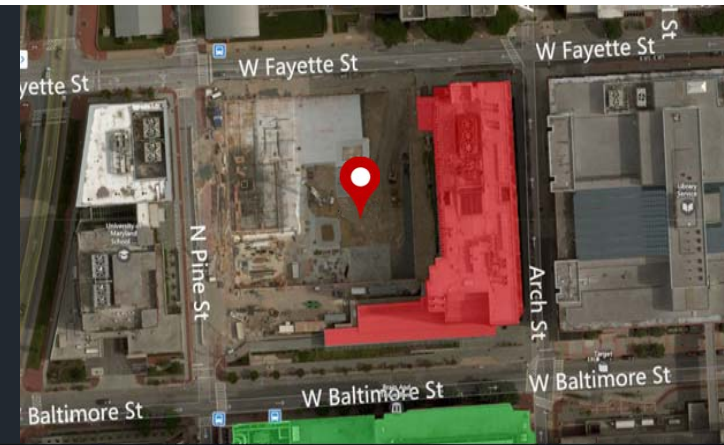
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



666 W. BALTIMORE ST.

- SCHOOL OF DENTISTRY
- SCHOOL OF MEDICINE



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

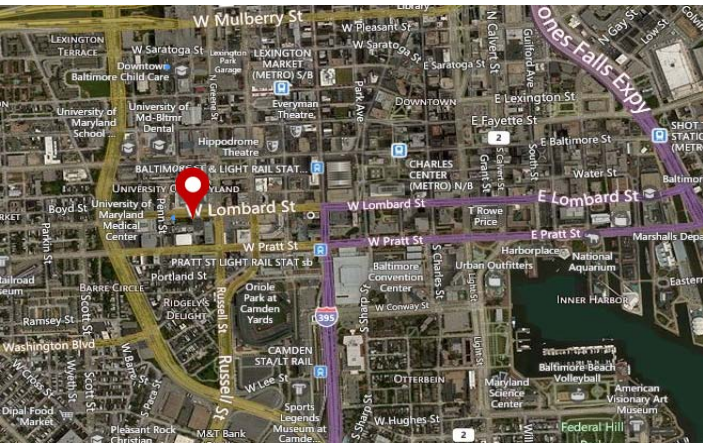
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

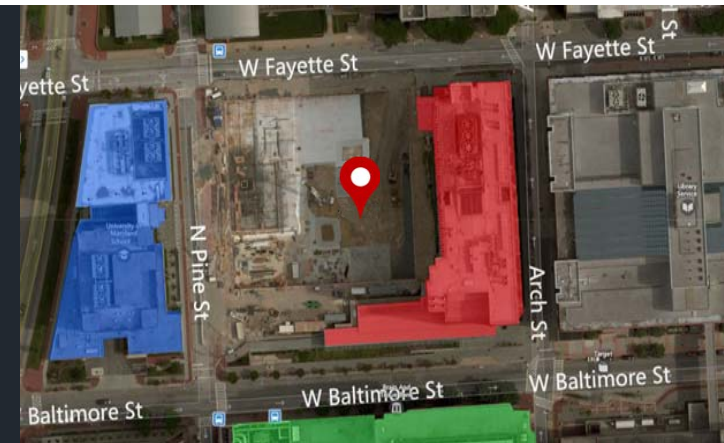
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



666 W. BALTIMORE ST.

- SCHOOL OF DENTISTRY
- SCHOOL OF MEDICINE
- SCHOOL OF PHARMACY



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)

DESIGN CONCEPT

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

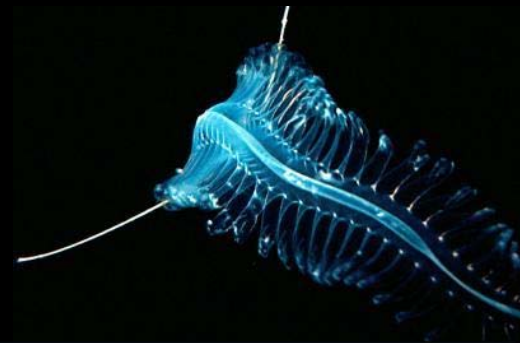
[REPORT SUMMARY](#)





BIOLUMINESCENCE

- PRODUCTION AND EMISSION OF LIGHT BY A LIVING ORGANISM
- GREEK: *BIOS* MEANING "LIVING"
- LATIN: *LUMEN* MEANING "LIGHT"



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)

ELEVATOR LOBBY

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

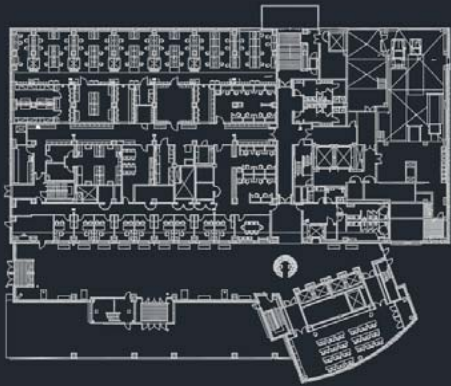
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



ELEVATOR LOBBY

- EFFECTIVE CENTER OF PEDESTRIAN ACTIVITY
- ACCESSED VIA MAIN ATRIUM
- 4 PEDESTRIAN ELEVATORS + STAFF ELEVATOR
- CENTRAL INFORMATION DESK
- CONNECTS TO MEETING ROOM SPACE

DESIGN CRITERIA

- HIGH PEDESTRIAN ACTIVITY

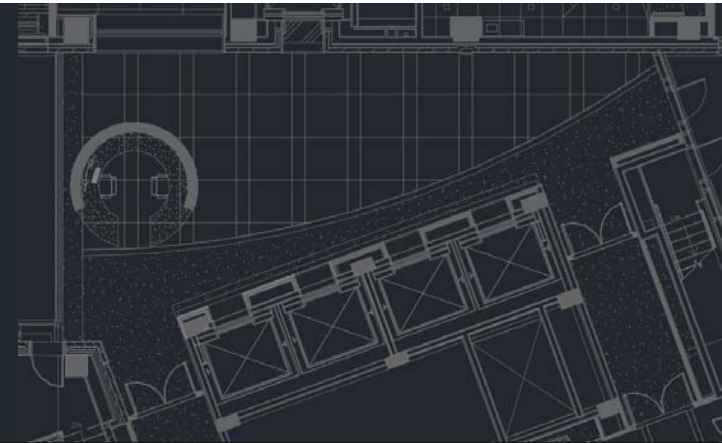
Circulation, Elevator Lobbies	Horizontal (fc) Targets	Vertical (fc) Targets	Avg:Min
Day	10	3	4:1
Night	5	2	4:1
H @floor; V @ 5' AFF.			

Reception Lobbies	Horizontal (fc) Targets	Vertical (fc) Targets	Avg:Min
Desk Top	15	5	4:1
H @ 3'6" AFF; V @ 5' AFF			

Common Space Types	LPD (W/ft²)
General Lobby Space	0.90



DESIGN CONSIDERATIONS



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

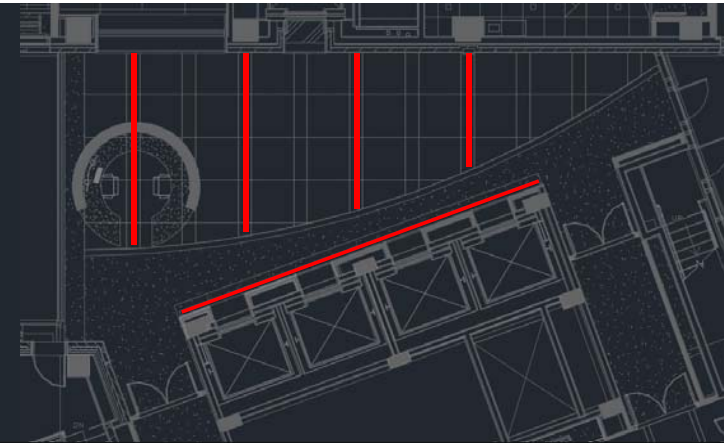
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



DESIGN CONSIDERATIONS

- MECHANICAL SUPPLY VENTS



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

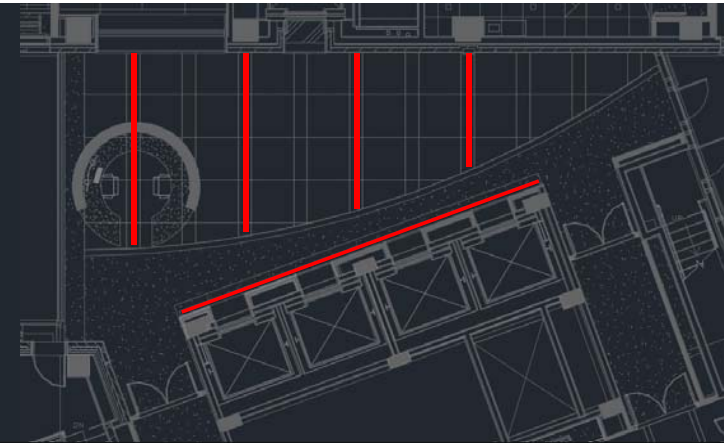
[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



LUMINAIRE SUMMARY



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

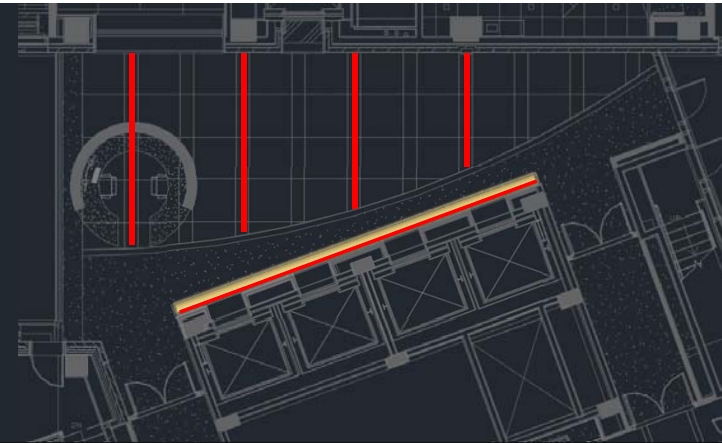
[REPORT SUMMARY](#)



LUMINAIRE SUMMARY



RECESSED FLUORESCENT GRAZE DOWNLIGHT



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



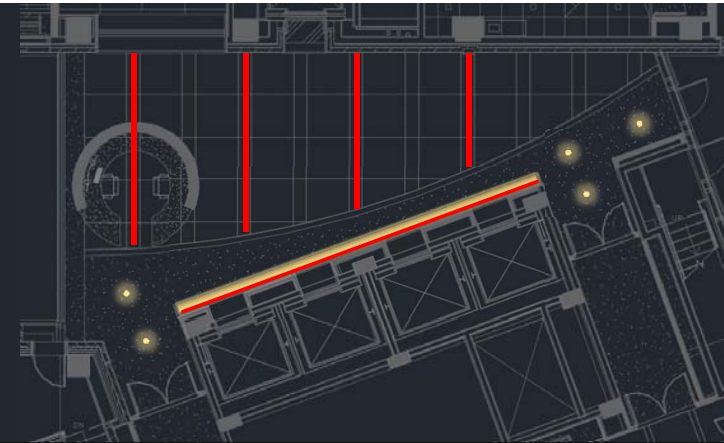
LUMINAIRE SUMMARY



RECESSED FLUORESCENT GRAZE DOWNLIGHT



RECESSED LED DOWNLIGHT – 13' 6" MH



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



LUMINAIRE SUMMARY



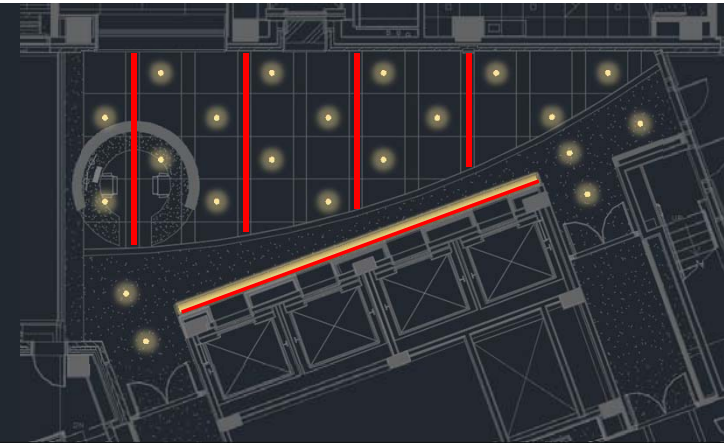
RECESSED FLUORESCENT GRAZE DOWNLIGHT



RECESSED LED DOWNLIGHT – 13' 6" MH



RECESSED LED DOWNLIGHT – 13' 2" MH



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)





[REPORT BREADTHS](#)

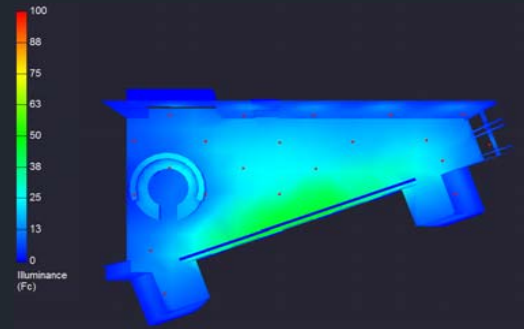
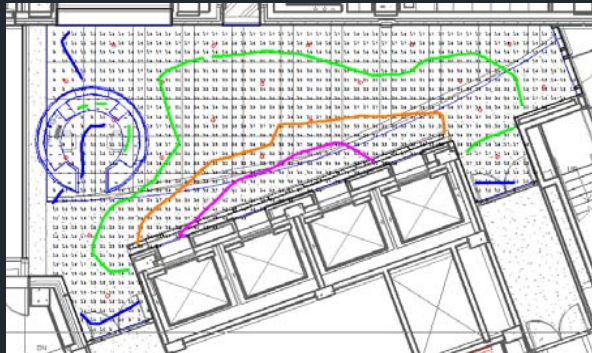
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



CALCULATION SUMMARY

- 10 
- 20 
- 30 
- 40 



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

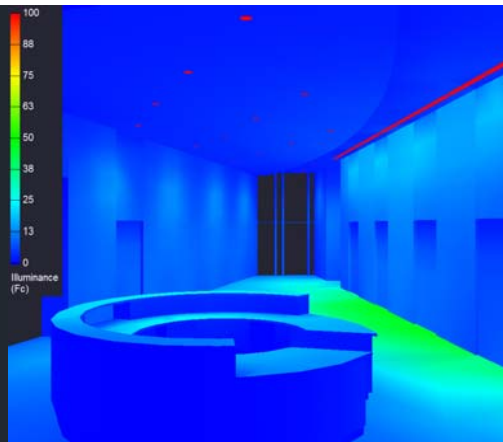
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



DESIGN SUMMARY

Lighting Criterion	Recommended Value	Achieved Value	Criteria Met
LPD Area Summary	< 0.9 W/ft ²	0.843 W/ft ²	Yes
Average Target Illuminance	≥ 10 fc	22.3 fc	Yes
Desk Surface Illuminance	15 fc	16.8 fc	Yes

PROJECT OVERVIEW

PROJECT LOCATION

DESIGN CONCEPT

ELEVATOR LOBBY

NANOMEDICINE WORKSTATION

MEETING ROOM

REPORT BREADTHS

ELECTRICAL DEPTH

REPORT SUMMARY



DESIGN SUMMARY

Lighting Criterion	Recommended Value	Achieved Value	Criteria Met
LPD Area Summary	< 0.9 W/ft ²	0.843 W/ft ²	Yes
Average Target Illuminance	≥ 10 fc	22.3 fc	Yes
Desk Surface Illuminance	15 fc	16.8 fc	Yes

PROJECT OVERVIEW

PROJECT LOCATION

DESIGN CONCEPT

ELEVATOR LOBBY

NANOMEDICINE WORKSTATION

MEETING ROOM

REPORT BREADTHS

ELECTRICAL DEPTH

REPORT SUMMARY

NANOMEDICINE WORKSTATION

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

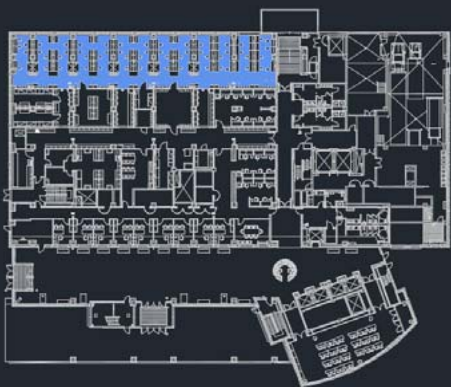
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



NANOMEDICINE WORKSTATION

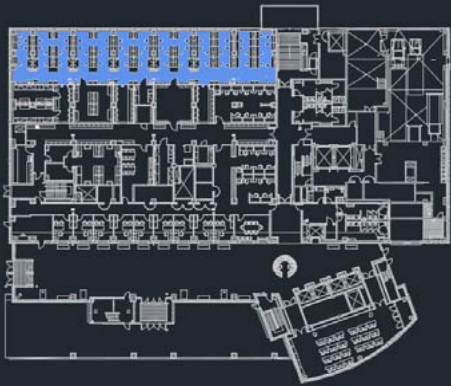
- RESEARCH AND DEVELOPMENT LAB
- PRIMARILY CASEWORK, SINKS, SHELVING UNITS
- MOVABLE BENCH SECTIONS WITH SHELVING
- 10 VENTILATION FUME HOODS

DESIGN CRITERIA

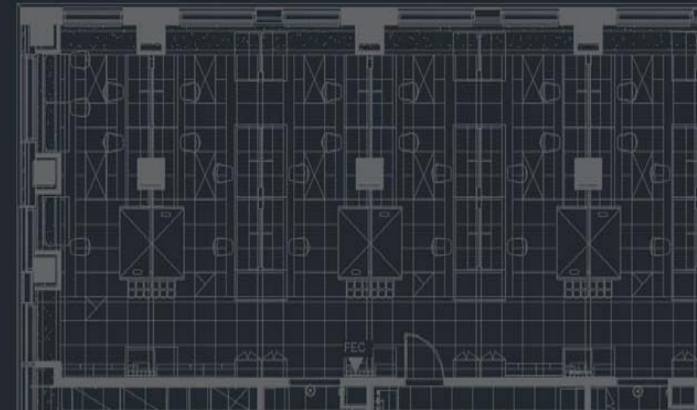
- LAB SPACE

Classrooms: Science Labs	Horizontal (fc) Targets	Vertical (fc) Targets	Avg:Min
Bench	50	30	1.5:1
H @ 3' ; V @ 4' 6" AFF.			

Common Space Types	LPD (W/ft ²)
Workshop	1.59



DESIGN CONSIDERATIONS



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

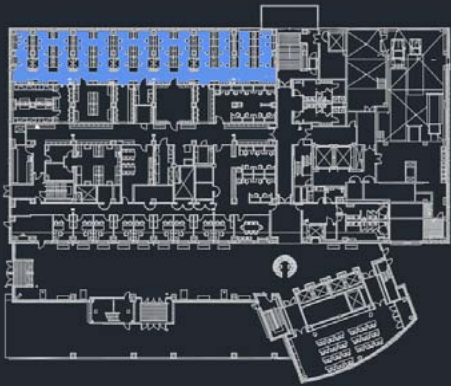
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

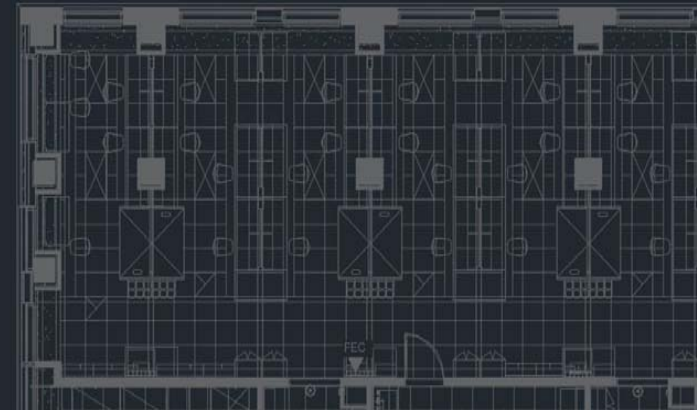
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



DESIGN CONSIDERATIONS

- PROVIDE TARGET ILLUMINANCE RECOMMENDED FOR SCIENCE LABS



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

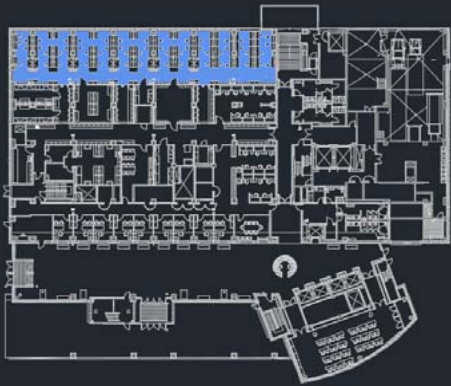
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



DESIGN CONSIDERATIONS

- PROVIDE TARGET ILLUMINANCE RECOMMENDED FOR SCIENCE LABS
- WORKSTATION BENCHES ARE **PRIORITY**



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

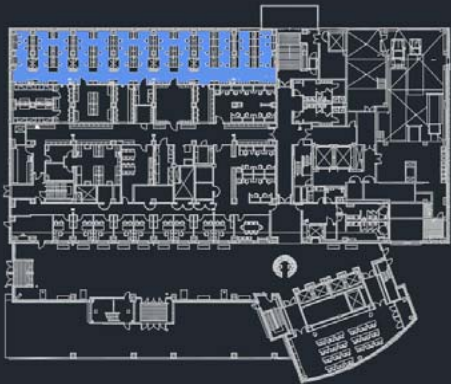
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

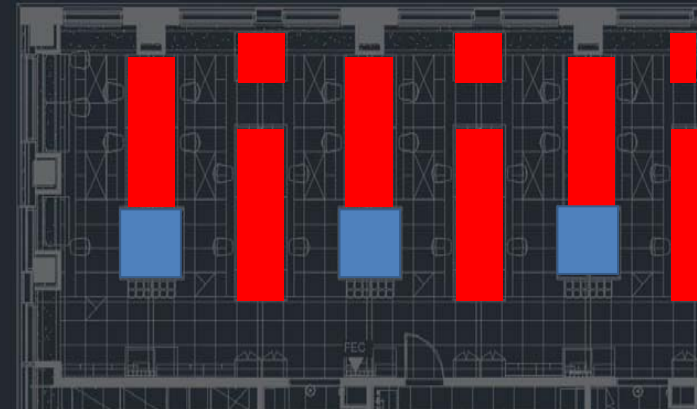
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



DESIGN CONSIDERATIONS

- PROVIDE TARGET ILLUMINANCE RECOMMENDED FOR SCIENCE LABS
- WORKSTATION BENCHES ARE **PRIORITY**
- AVOID SHELVING, CASEWORK, AND **FUME HOODS**



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

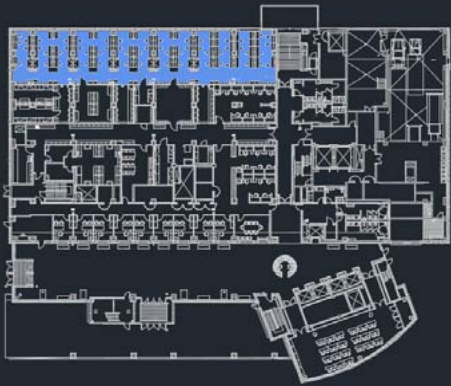
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

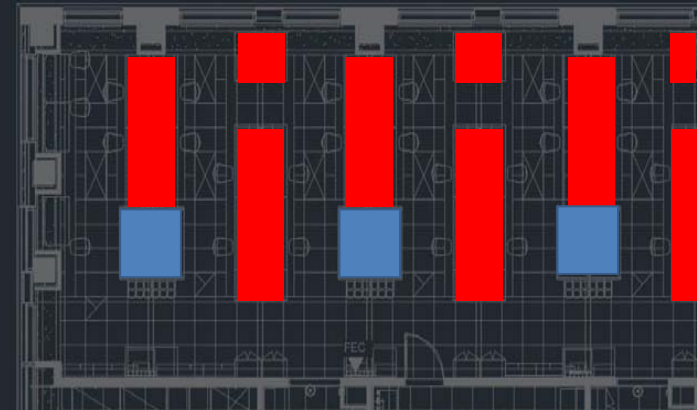
[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



LUMINAIRE SUMMARY



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

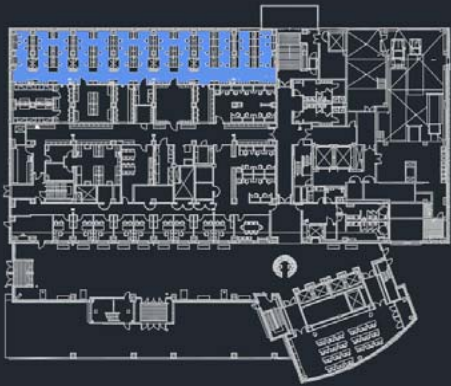
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

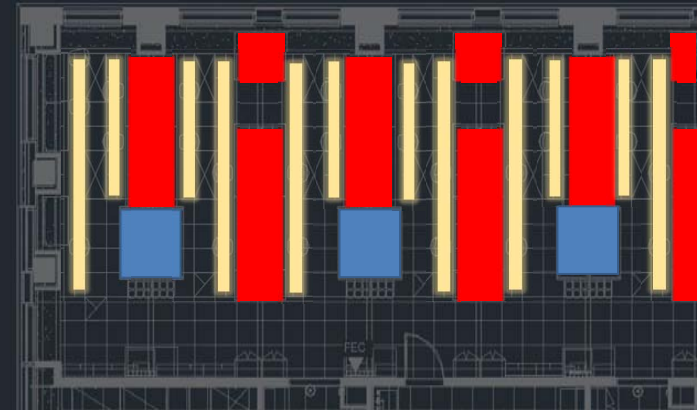
[REPORT SUMMARY](#)



LUMINAIRE SUMMARY



RECESSED 1 x 4 LINEAR FLUORESCENT DOWNLIGHT



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

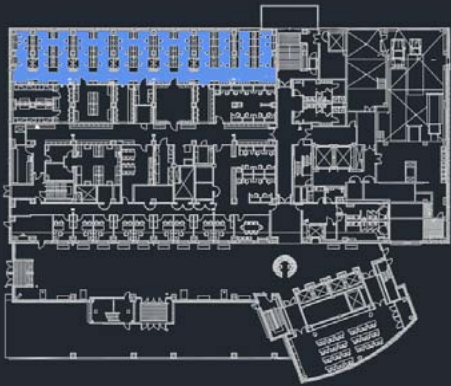
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



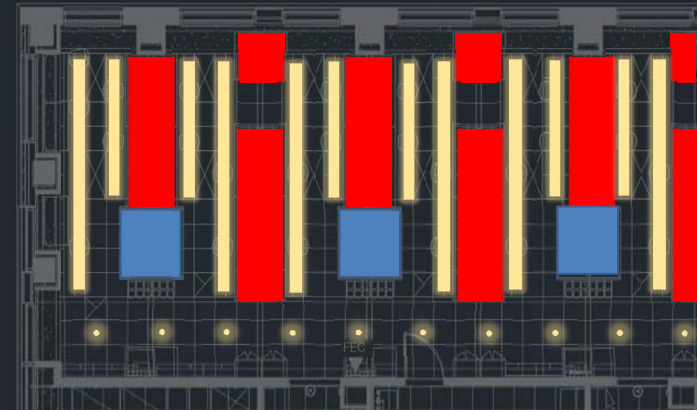
LUMINAIRE SUMMARY



RECESSED 1 x 4 LINEAR FLUORESCENT DOWNLIGHT



RECESSED LED DOWNLIGHT



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

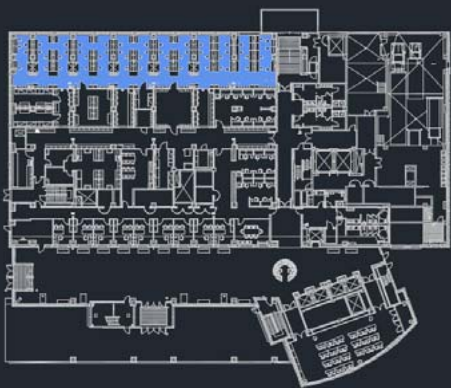
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)



[REPORT BREADTHS](#)

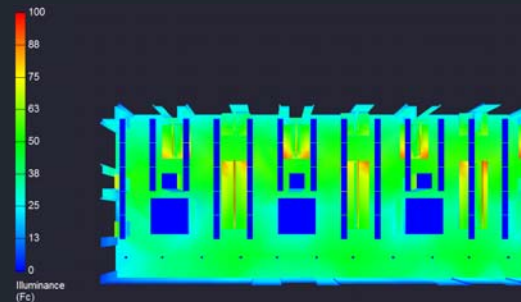
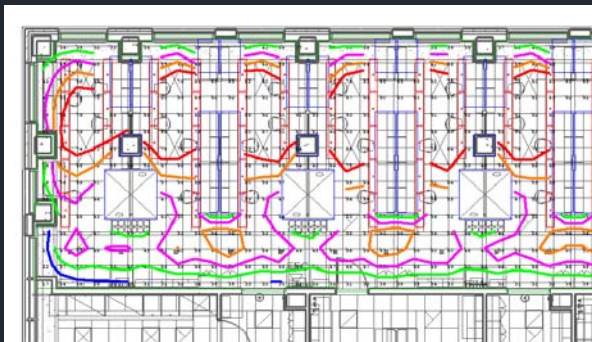
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



CALCULATION SUMMARY

- 30 
- 40 
- 50 
- 60 
- 70 



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

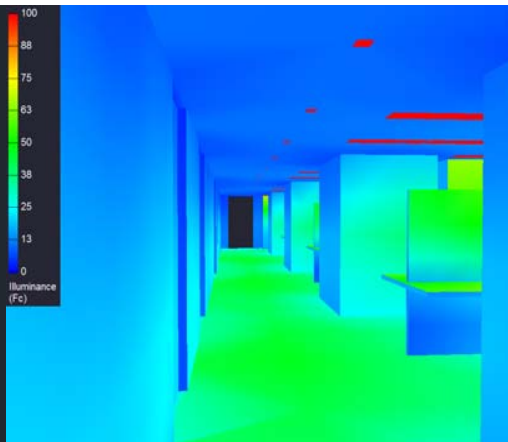
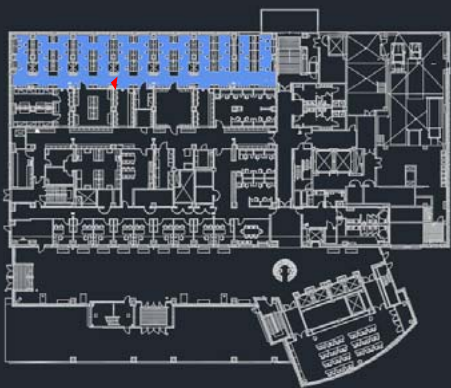
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

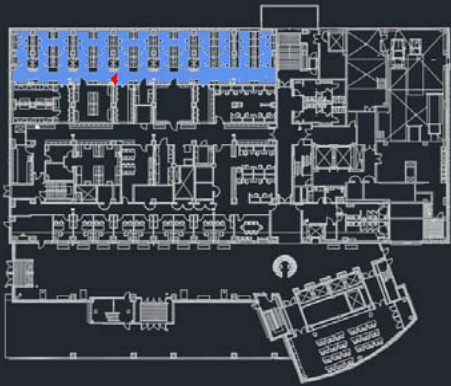
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



DESIGN SUMMARY

Lighting Criterion	Recommended Value	Achieved Value	Criteria Met
LPD Area Summary	< 1.59 W/ft ²	0.973 W/ft ²	Yes
Average Target Illuminance	≥ 50 fc	62.8 fc	Yes



DESIGN SUMMARY

Lighting Criterion	Recommended Value	Achieved Value	Criteria Met
LPD Area Summary	< 1.59 W/ft ²	0.973 W/ft ²	Yes
Average Target Illuminance	≥ 50 fc	62.8 fc	Yes

PROJECT OVERVIEW

PROJECT LOCATION

DESIGN CONCEPT

ELEVATOR LOBBY

NANOMEDICINE WORKSTATION

MEETING ROOM

REPORT BREADTHS

ELECTRICAL DEPTH

REPORT SUMMARY

MEETING ROOM

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

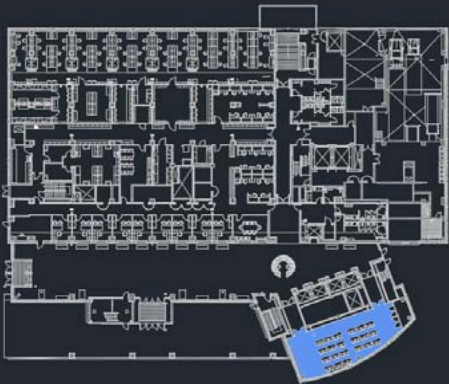
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



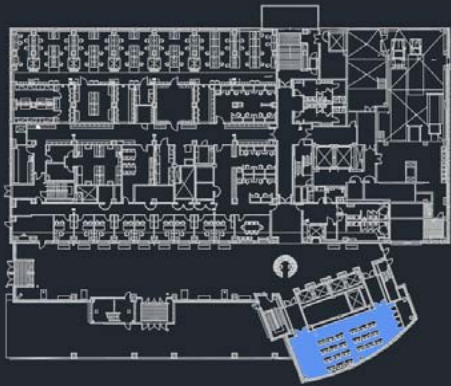
MEETING ROOM

- MAIN CONFERENCE ROOM
- PRESENTATION AND LECTURE SPACE
- ADJUSTABLE FURNITURE TO MEET SPACE REQUIREMENTS

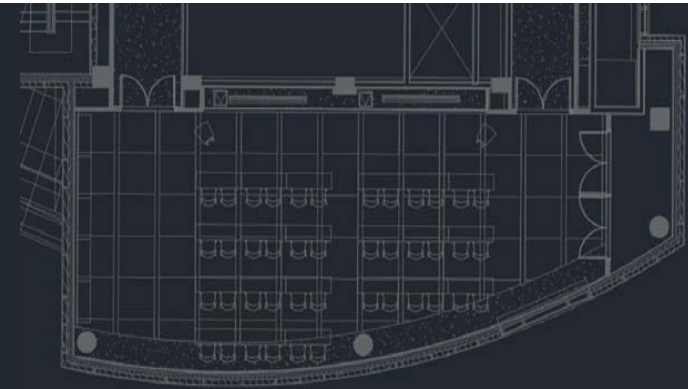
DESIGN CRITERIA

Conference: Meeting	Horizontal (fc) Targets	Vertical (fc) Targets	Avg:Min
Discourse	30	10	1.5:1
H @ 2' 6" ; V @ presentation board height.			

Common Space Types	LPD (W/ft ²)
Conference/Meeting	1.23



DESIGN CONSIDERATIONS



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

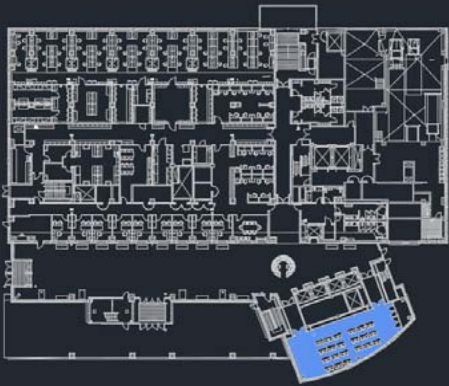
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

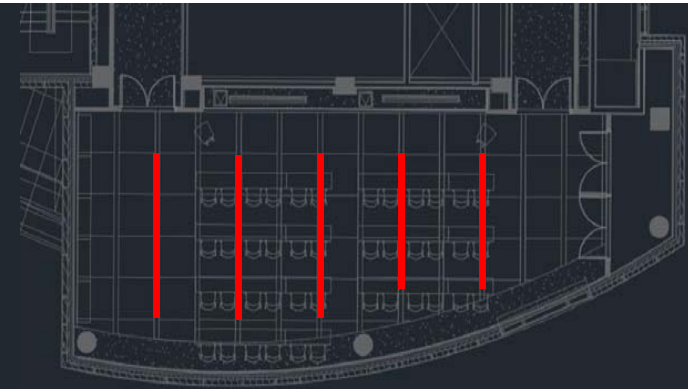
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



DESIGN CONSIDERATIONS

- MECHANICAL SUPPLY VENTS



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

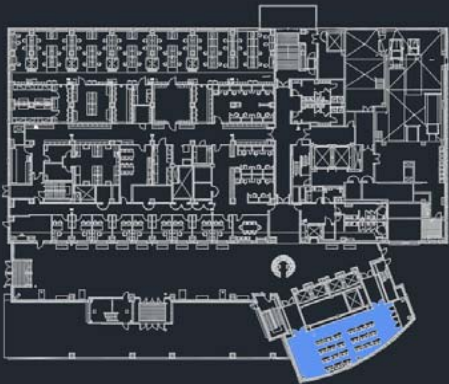
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

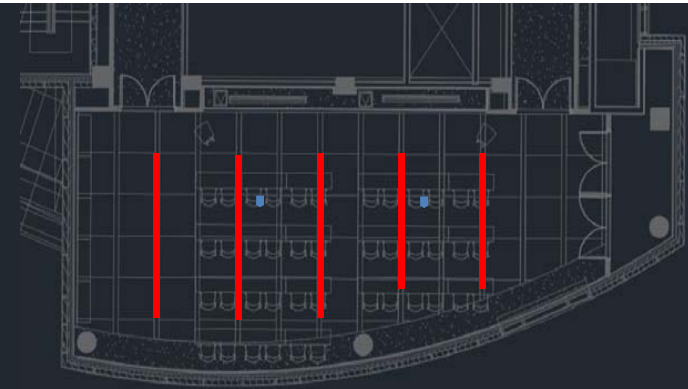
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



DESIGN CONSIDERATIONS

- MECHANICAL SUPPLY VENTS
- PROJECTOR SYSTEMS



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

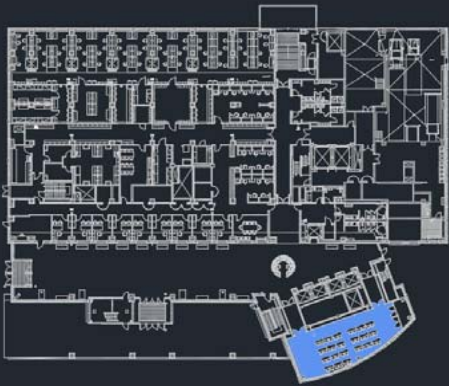
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

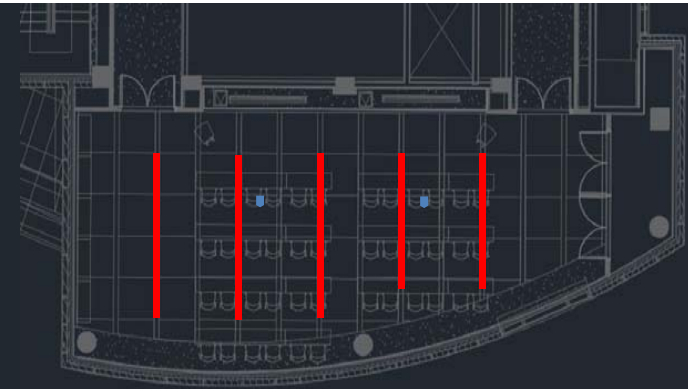
[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



LUMINAIRE SUMMARY



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

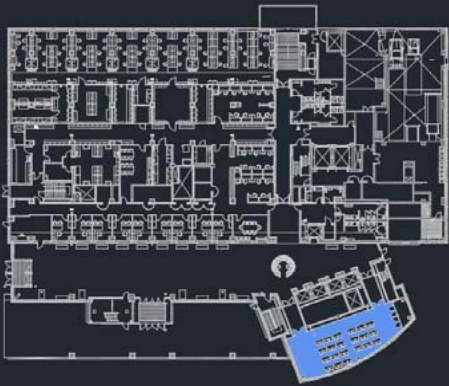
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

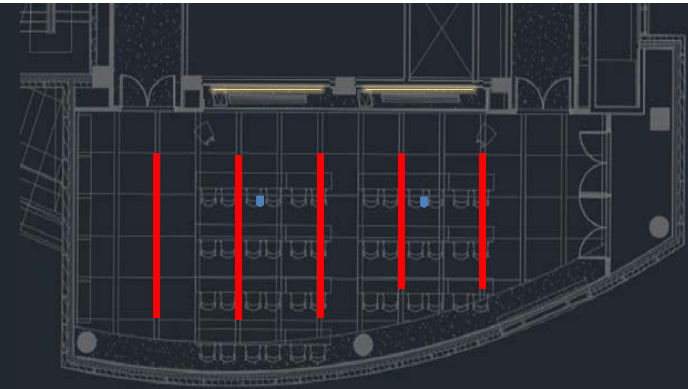
[REPORT SUMMARY](#)



LUMINAIRE SUMMARY



RECESSED LED SLOT LUMINAIRE



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

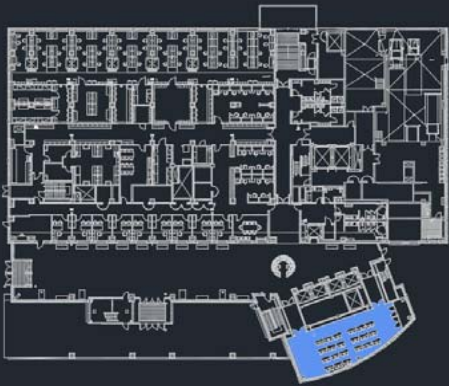
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



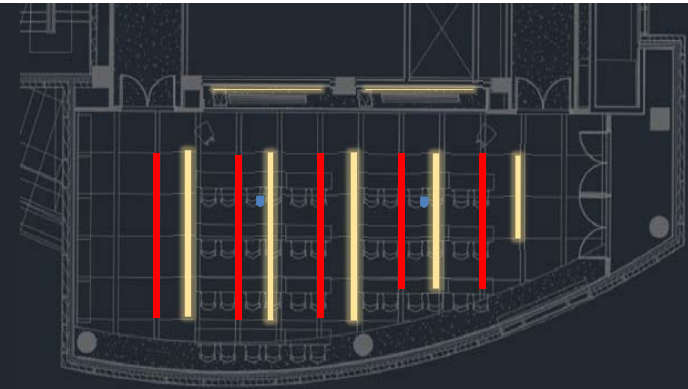
LUMINAIRE SUMMARY



RECESSED LED SLOT LUMINAIRE



RECESSED LED LINEAR DOWNLIGHT



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

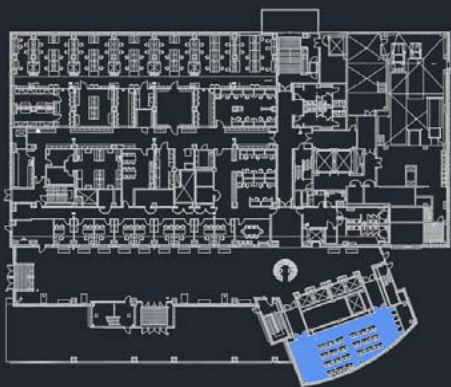
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



LUMINAIRE SUMMARY



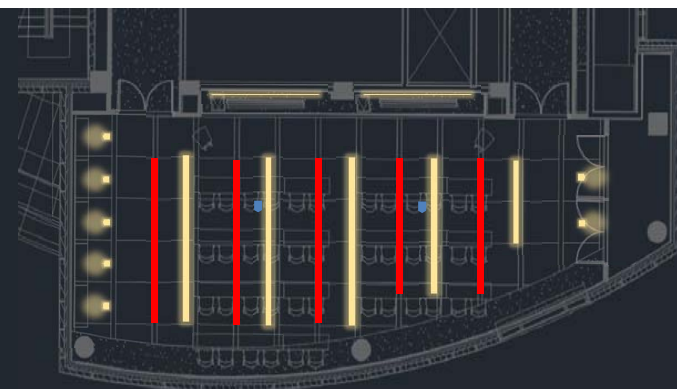
RECESSED LED SLOT LUMINAIRE



RECESSED LED LINEAR DOWNLIGHT



RECESSED LED WALL WASHERS



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

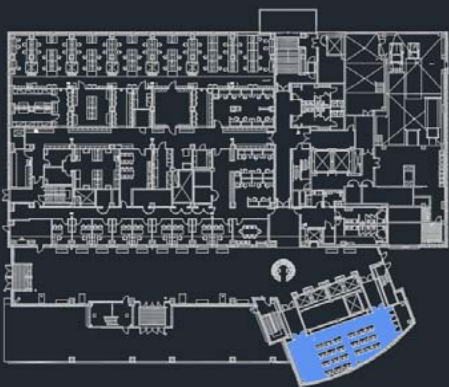
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)



[REPORT BREADTHS](#)

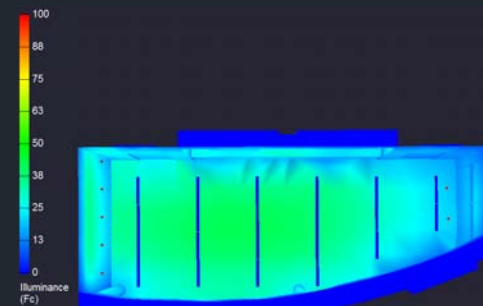
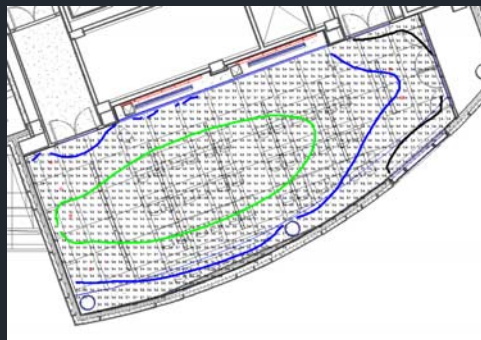
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



CALCULATION SUMMARY

- 20 
- 30 
- 40 



PROJECT OVERVIEW

PROJECT LOCATION

DESIGN CONCEPT

ELEVATOR LOBBY

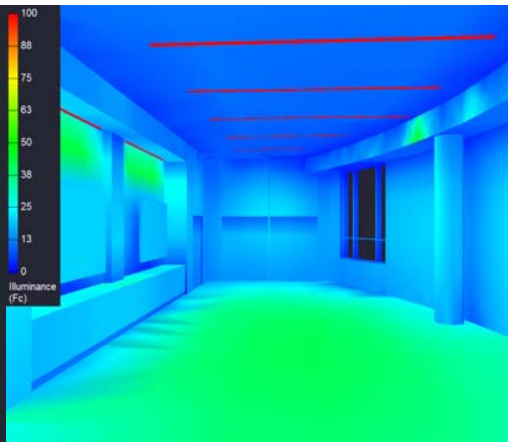
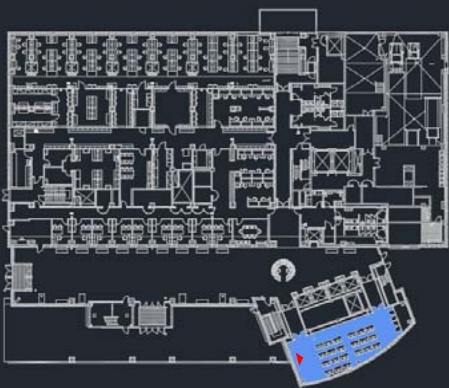
NANOMEDICINE WORKSTATION

MEETING ROOM

REPORT BREADTHS

ELECTRICAL DEPTH

REPORT SUMMARY



DESIGN SUMMARY

Lighting Criterion	Recommended Value	Achieved Value	Criteria Met
LPD Area Summary	< 1.23 W/ft ²	0.685 W/ft ²	Yes
Average Target Illuminance	≥ 30 fc	34.9 fc	Yes

PROJECT OVERVIEW

PROJECT LOCATION

DESIGN CONCEPT

ELEVATOR LOBBY

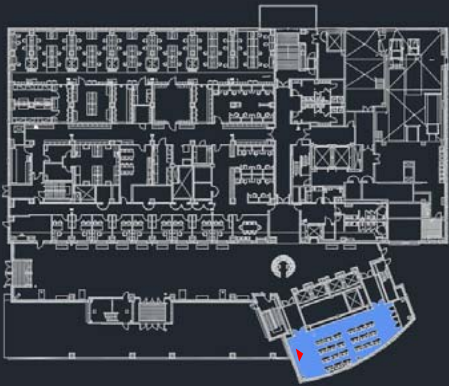
NANOMEDICINE WORKSTATION

MEETING ROOM

REPORT BREADTHS

ELECTRICAL DEPTH

REPORT SUMMARY



DESIGN SUMMARY

Lighting Criterion	Recommended Value	Achieved Value	Criteria Met
LPD Area Summary	< 1.23 W/ft ²	0.685 W/ft ²	Yes
Average Target Illuminance	≥ 30 fc	34.9 fc	Yes

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)

REPORT BREADTHS

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)

- FAÇADE BREADTH STUDY
RAIN SCREEN ADDED TO EXTERIOR
- STRUCTURAL BREADTH STUDY
RAIN SCREEN LOAD SUMMARY

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)

ELECTRICAL DEPTH

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

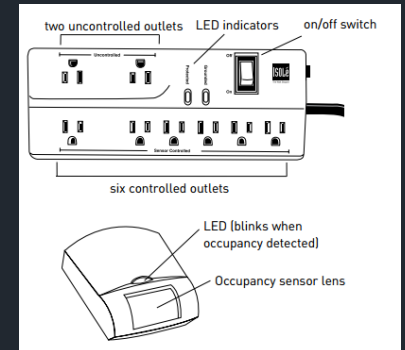
[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



ENERGY SAVINGS

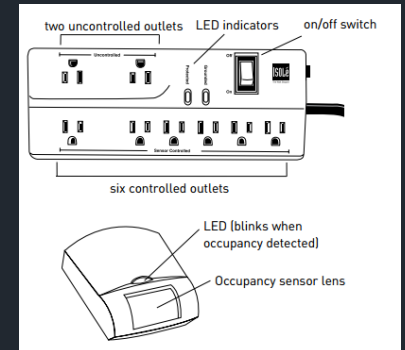
- WATTSTOPPER Isolé IDP-3050 Power Strip with Personal Sensor IDP-3050-A, DI-110
- CONTROLS DESKTOP EQUIPMENT
- SAVES ENERGY WITH PERSONAL OCCUPANCY SENSOR
- CONSISTS OF 8 OUTLET STRIP (6 CONTROLLED BY OCUPANCY)
- EQUIPPED WITH SURGE PROTECTION





ENERGY SAVINGS

- USED PRIMARILY IN OFFICE SPACE
- 8 FLOORS OFFICE SPACE
- TOTAL SUPPLY RATE OF THE BUILDING = 15.458 C/KWH
- INITIAL STUDY SHOWS NEW SUPPLY RATE = 13.912 C/KWH
- SAVING ROUGHLY 10%



REPORT SUMMARY

[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

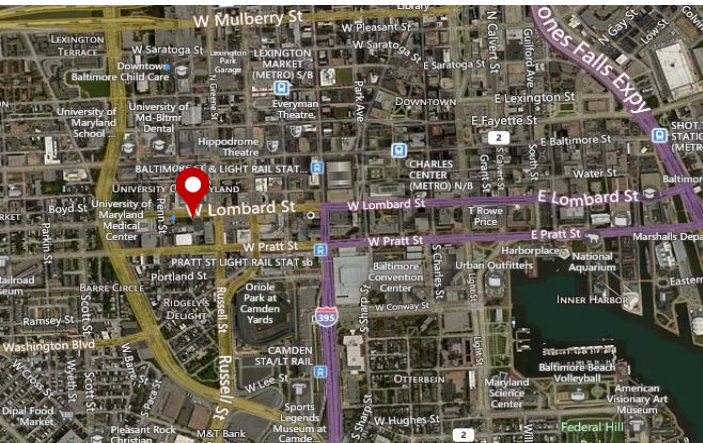
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



- HIGHLY ADVANCED RESEARCH FACILITY
- HOUSES RESEARCH GROUPS FOR SCHOOLS OF MEDICINE, PHARMACY, AND DENTISTRY
- SHARE NANOMEDICINE CENTER
- CENTRAL CAMPUS LOCATION
- HEART OF BALTIMORE
- EXPECTED COMPLETION DATE – SEPTEMBER 2017



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

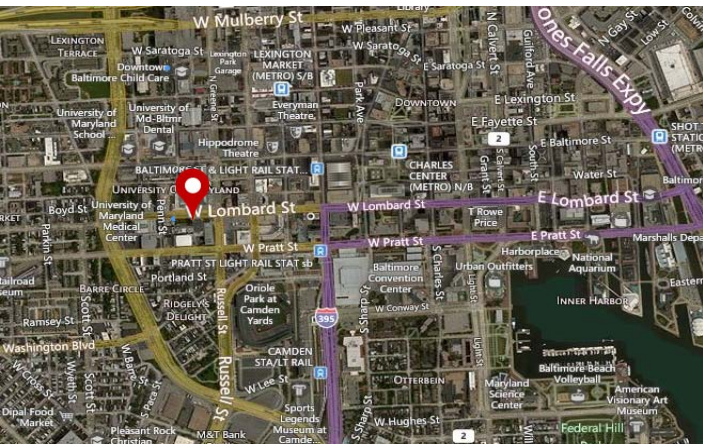
[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)



▪ ELEVATOR LOBBY

Lighting Criterion	Recommended Value	Achieved Value	Criteria Met
LPD Area Summary	< 0.9 W/ft ²	0.843 W/ft ²	Yes
Average Target Illuminance	≥ 10 fc	22.3 fc	Yes
Desk Surface Illuminance	15 fc	16.8 fc	Yes

▪ WORKSTATION

Lighting Criterion	Recommended Value	Achieved Value	Criteria Met
LPD Area Summary	< 1.59 W/ft ²	0.973 W/ft ²	Yes
Average Target Illuminance	≥ 50 fc	62.8 fc	Yes

▪ MEETING ROOM

Lighting Criterion	Recommended Value	Achieved Value	Criteria Met
LPD Area Summary	< 1.23 W/ft ²	0.685 W/ft ²	Yes
Average Target Illuminance	≥ 30 fc	34.9 fc	Yes



[PROJECT OVERVIEW](#)

[PROJECT LOCATION](#)

[DESIGN CONCEPT](#)

[ELEVATOR LOBBY](#)

[NANOMEDICINE WORKSTATION](#)

[MEETING ROOM](#)

[REPORT BREADTHS](#)

[ELECTRICAL DEPTH](#)

[REPORT SUMMARY](#)

THANK YOU

- Dilaura, D. L., Houser, K. W., Mistrick R. G., Steffy G. R. (2011). The Lighting Handbook (10th ed.). New York, NY: Illuminating Engineering Society.
- ASHRAE Standard 90.1 – Energy Standard for Buildings Except Low-Rise Residential Buildings. 2010th ed. ASHRAE. Print.
- <http://www.hok.com/design/type/science-technology/university-of-maryland-baltimore-health-sciences-facility-iii/>
- http://www.wattstopper.com/products/sensors/plug-load-controls/idp-3050.aspx#.VS4_EU3wvGh