

Total (Not including Support Slides) - 45

- Title/Introduction (1)
- Buildings Statistics (2)
 - o Statistics
 - o Location
- Project Scope (1)
- Lighting Depth (23)
 - o Concept (1)
 - o Site
 - Design Criteria (1)
 - Design Development (10)
 - Evaluation (2)
 - o Light Court
 - Design Criteria (1)
 - Design Development (6)
 - Evaluation (2)
 - o Lower Lobby – Quickly shown (1)
- Daylighting Breadth (1)
 - o Introduce current office and desire to add daylighting, first need to redesign structure
- Structural Breadth (4)
 - o Current Design, Section through the building
 - o Gallery Roof Monitors
 - o Proposed Design
 - o Images of Proposed Office
- Daylighting Breadth (4)
 - o Proposed Wells, efficiency calculations
 - o SunOptics Skylight, Skycalc to assess wells
 - o Daysim Analysis
 - o Adjusted kWh from Daysim into Skycalc
- Electrical Depth (6)
 - o Current PV Array
 - o Rhino Model
 - o PV Array Layout
 - o SAM Analysis
- Conclusion (1)
- Acknowledgments (1)
- Questions? (1)
- Support (8-ish)
 - o Light Court tile section
 - o Misc.
 - o References



FINAL THESIS
PRESENTATION

THE BARNES FOUNDATION

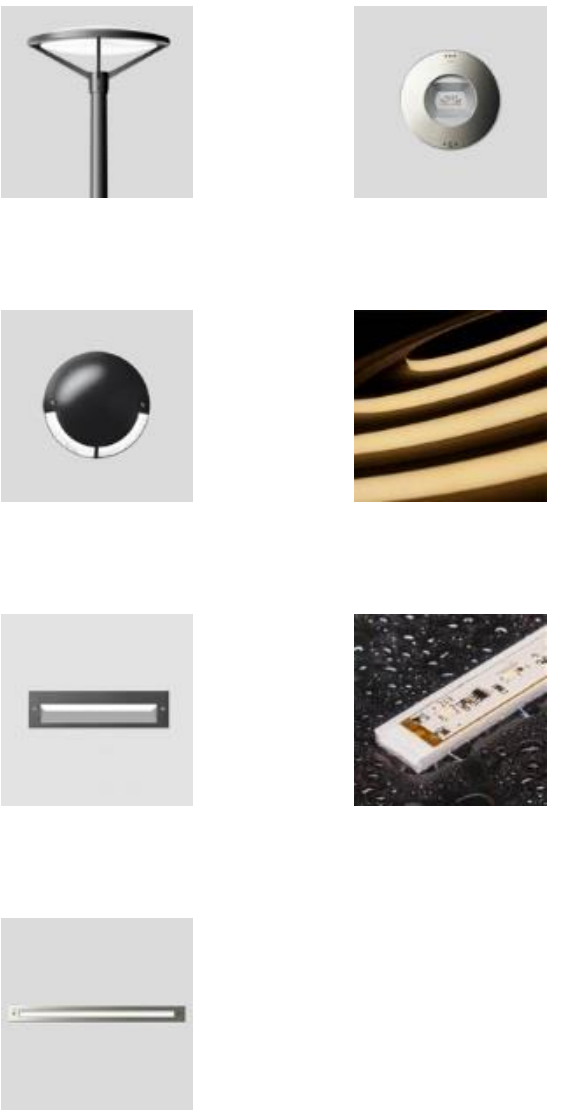
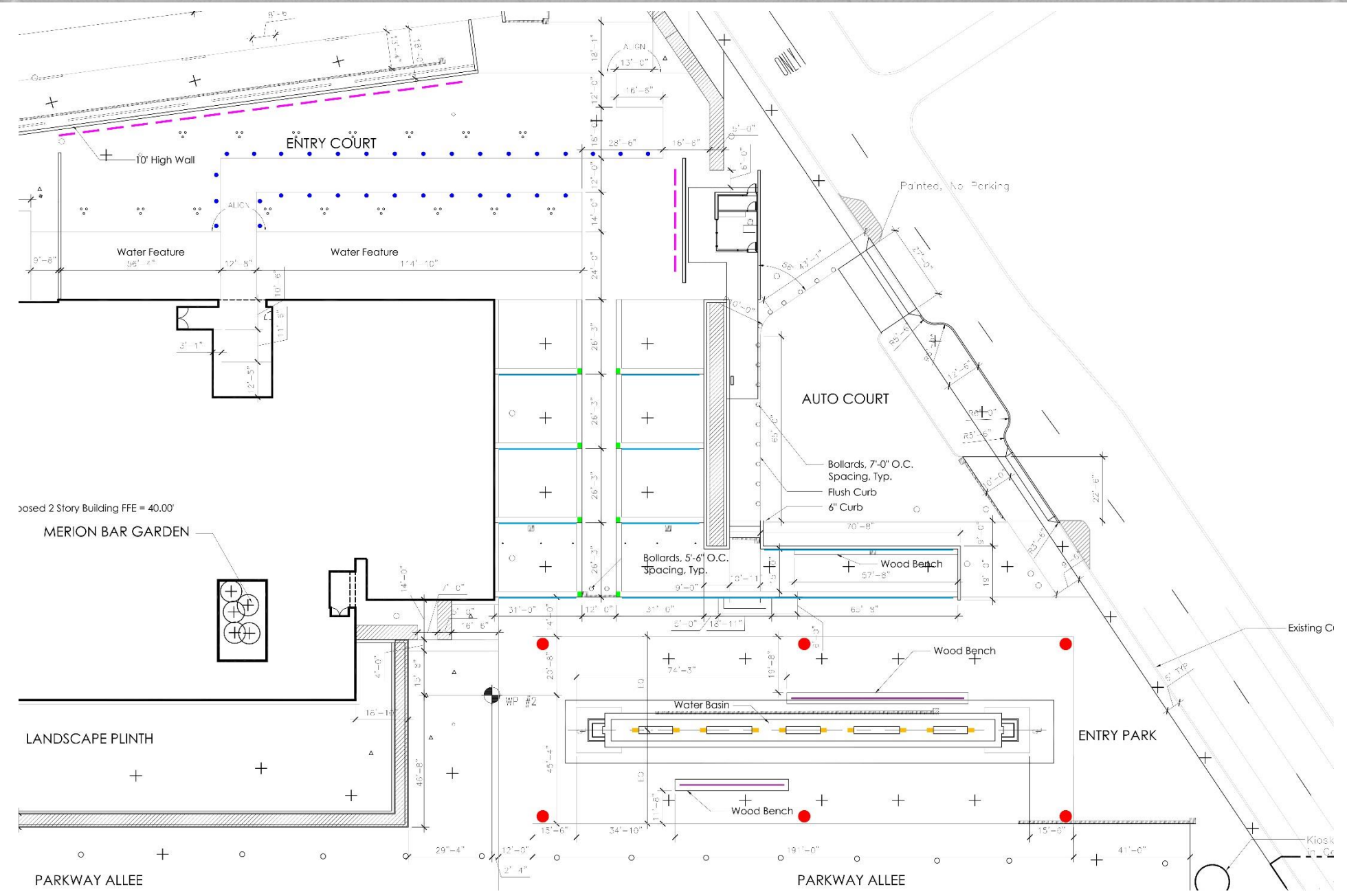
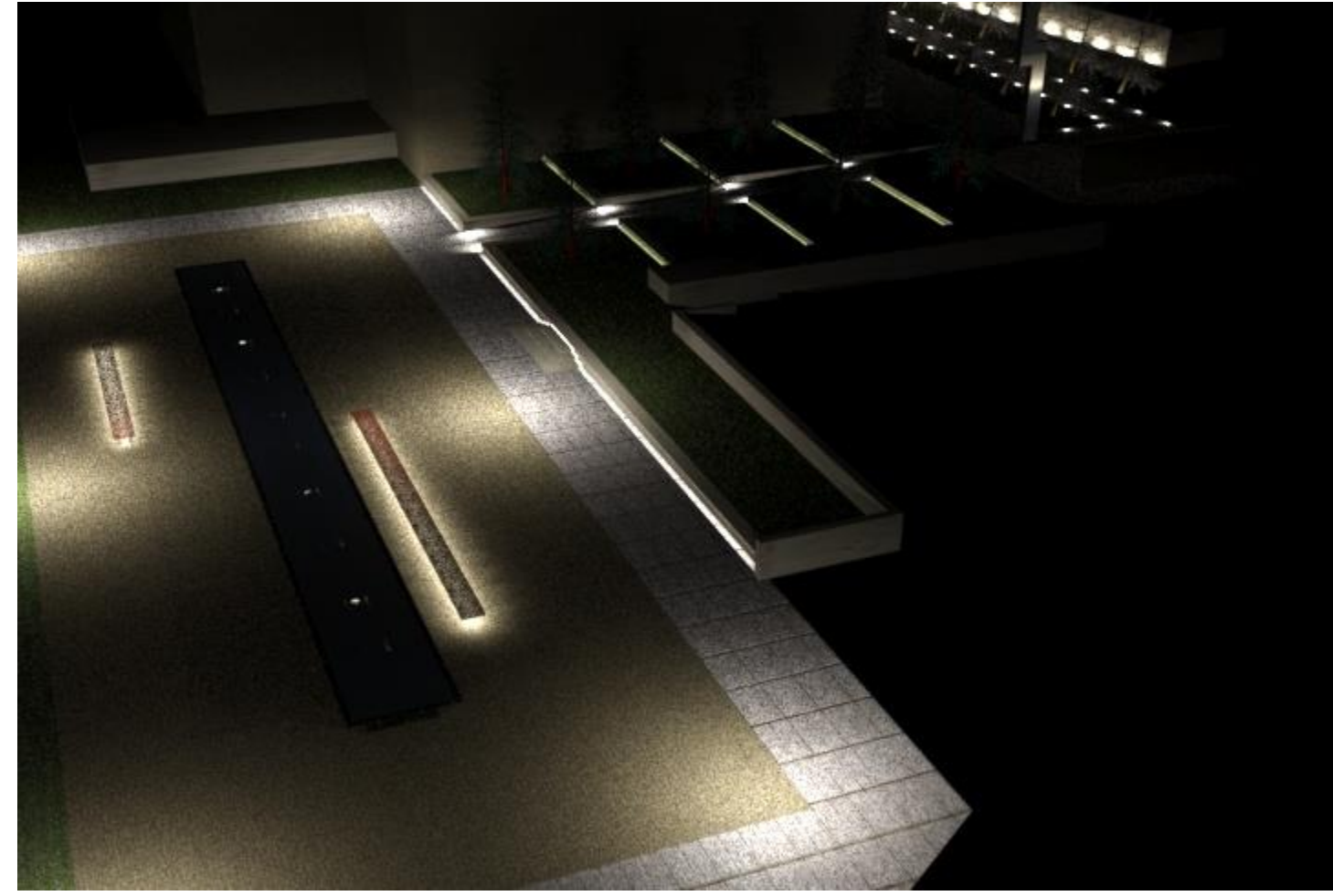
2025 BENJAMIN FRANKLIN PARKWAY
PHILADELPHIA, PA 19130

JOSEPH BRENNER
LIGHTING | ELECTRICAL
4 | 15 | 2015

BUILDING
PROJECT
LIGHTING

- SITE
- LIGHT COURT
- LOWER LOBBY
- STRUCTURAL
- DAYLIGHTING
- ELECTRICAL
- CONCLUSION
- CREDITS

THE BARNES FOUNDATION



Space	Eh (fc)	
	Criteria	Calculated
Plazas	0.4	0.35
Ramps	0.6	0.64

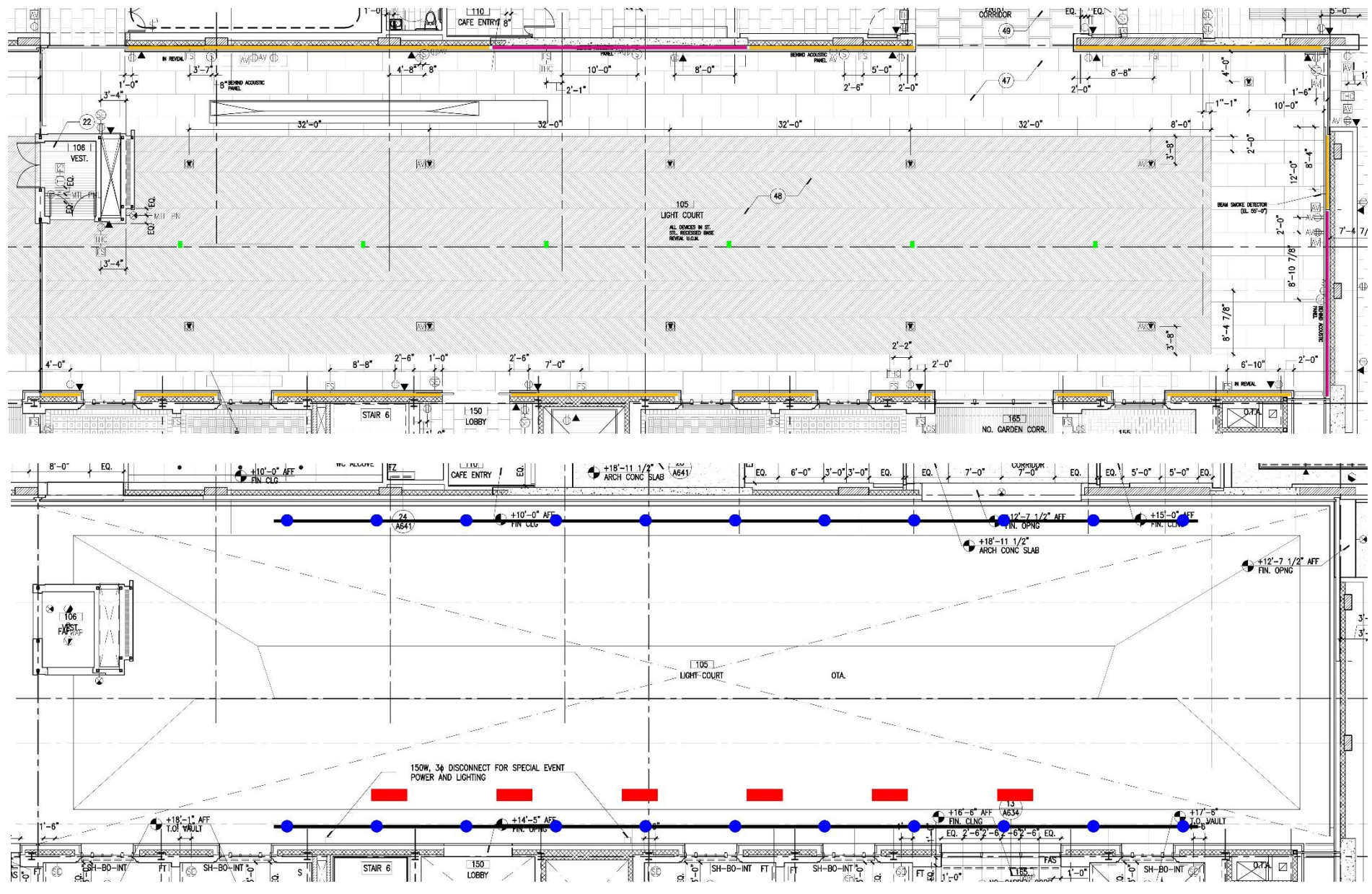
Type	Watt	Quantity	Total Watts
XFC	26 W	6	156 W
XFD	6.7 W	35	234.5 W
XFE	7.5 W	8	60 W
XFF	13.2 W	24	316.8 W
XFG	5 W	10	50 W
XFH	2.35 W/ft	380	893 W
XFI	1.46 W/ft	93	135.78 W
Total Watts (W)			1846.08
Area (ft ²)			42233
Measured LPD (W/ft ²)			0.053
ASHRAE 90.1 LPD (W/ft ²)			0.2

BUILDING PROJECT LIGHTING

SITE LIGHT COURT LOWER LOBBY

STRUCTURAL DAYLIGHTING ELECTRICAL CONCLUSION CREDITS

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Space	Eh (fc)	
	Criteria	Calculated
Daytime (Clear Sky)	10	40
Daytime (Overcast) *	10	35
Nighttime	5	4.66

Type	Watt	Quantity	Total Watts
FA	125 W	6	750 W
FB	29.5 W	6	177 W
FD	37 W	22	814 W
FE	1.46 W/ft	732	1068.72 W
FF	1.83 W/ft	51	93.33 W
Total Watts (W)			2903.05
Area (ft ²)			7707
Measured LPD (W/ft ²)			0.332
ASHRAE 90.1 LPD (W/ft ²)			1.65

BUILDING
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THE BARNES FOUNDATION

