

An aerial photograph of the Belmont Public Library and its surroundings. The library building is a large, multi-story structure with a prominent central tower. It is surrounded by a large parking lot filled with cars. To the left of the library is a large, open field. To the right is a dense forest. A road runs along the bottom of the image, with several cars parked along the side. The text "Belmont Public Library" is overlaid in white, bold, sans-serif font, centered horizontally and partially overlapping the library building and the parking lot.

Belmont Public Library

LBC Meeting #9 April 23, 2019

Oudens Ello Architecture

An aerial photograph of a campus, likely a university or government building. The image shows a large, multi-story building with a complex roofline, surrounded by extensive parking lots filled with cars. A wide road with multiple lanes runs diagonally across the middle of the image. The background is filled with dense green trees. The entire image is overlaid with a semi-transparent dark grey filter.

Design Update



Option 2.0

- 2 Stories
- 39,415 GSF
- 43-feet High
- 42 Parking Stalls
- 10,000 SF PV Array



Option 2.5

- 3 Stories
- 41,941 GSF
- 48-feet High
- 43 Parking Stalls
- 7,200 SF PV Array



4/9/19 - Preliminary Concepts



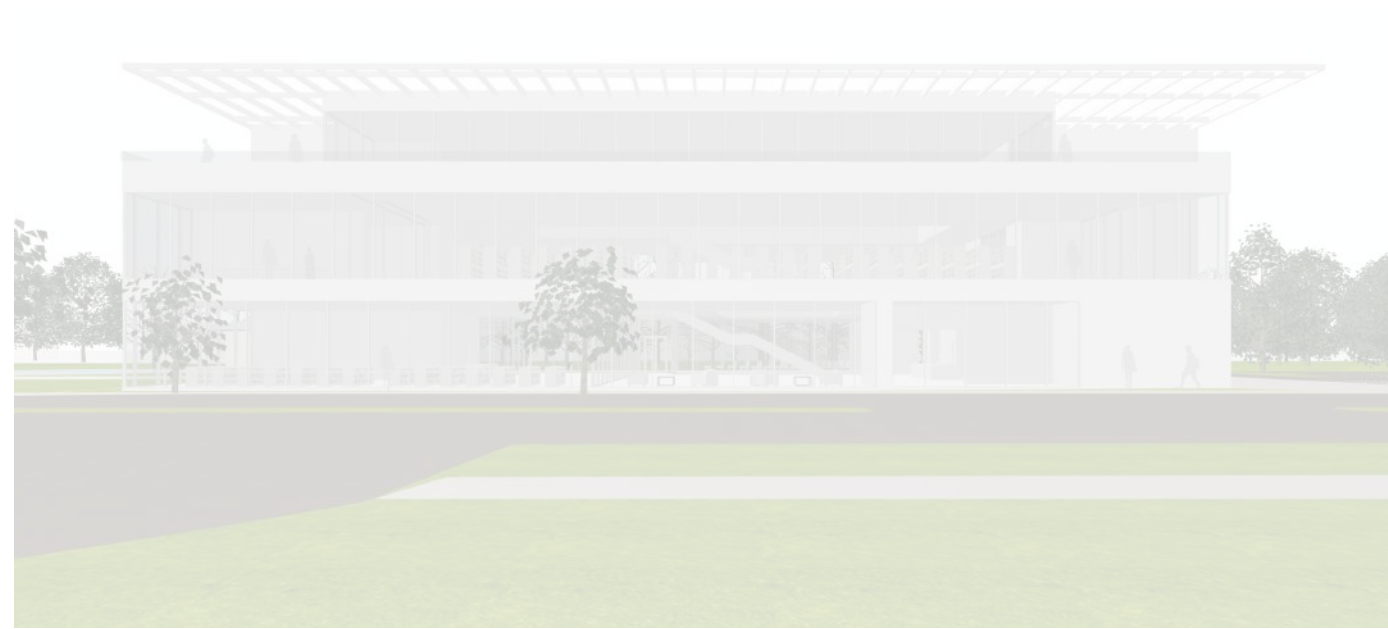
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4/9/19 - Preliminary Concepts

Option 2.0 Refinements

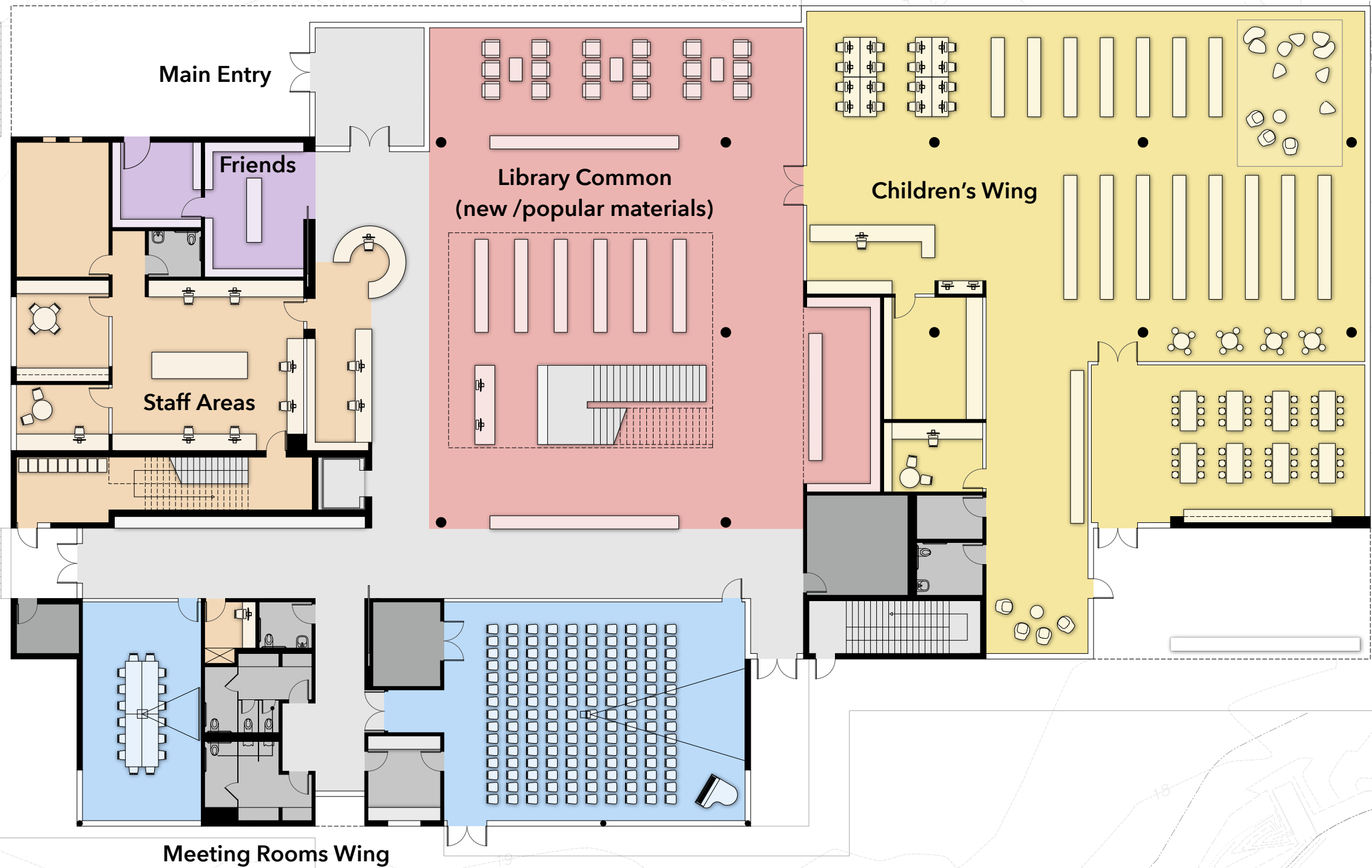
An architectural rendering of a modern, rectangular building with a prominent grid-like roof structure and large glass facades. The building is situated in a landscape featuring a forested hill in the background, a small stream or path winding through the middle ground, and a paved area with some trees in the foreground. The entire scene is overlaid with a semi-transparent dark blue filter, and the title "Option 2.0 Refinements" is centered in white text.

Concord Avenue



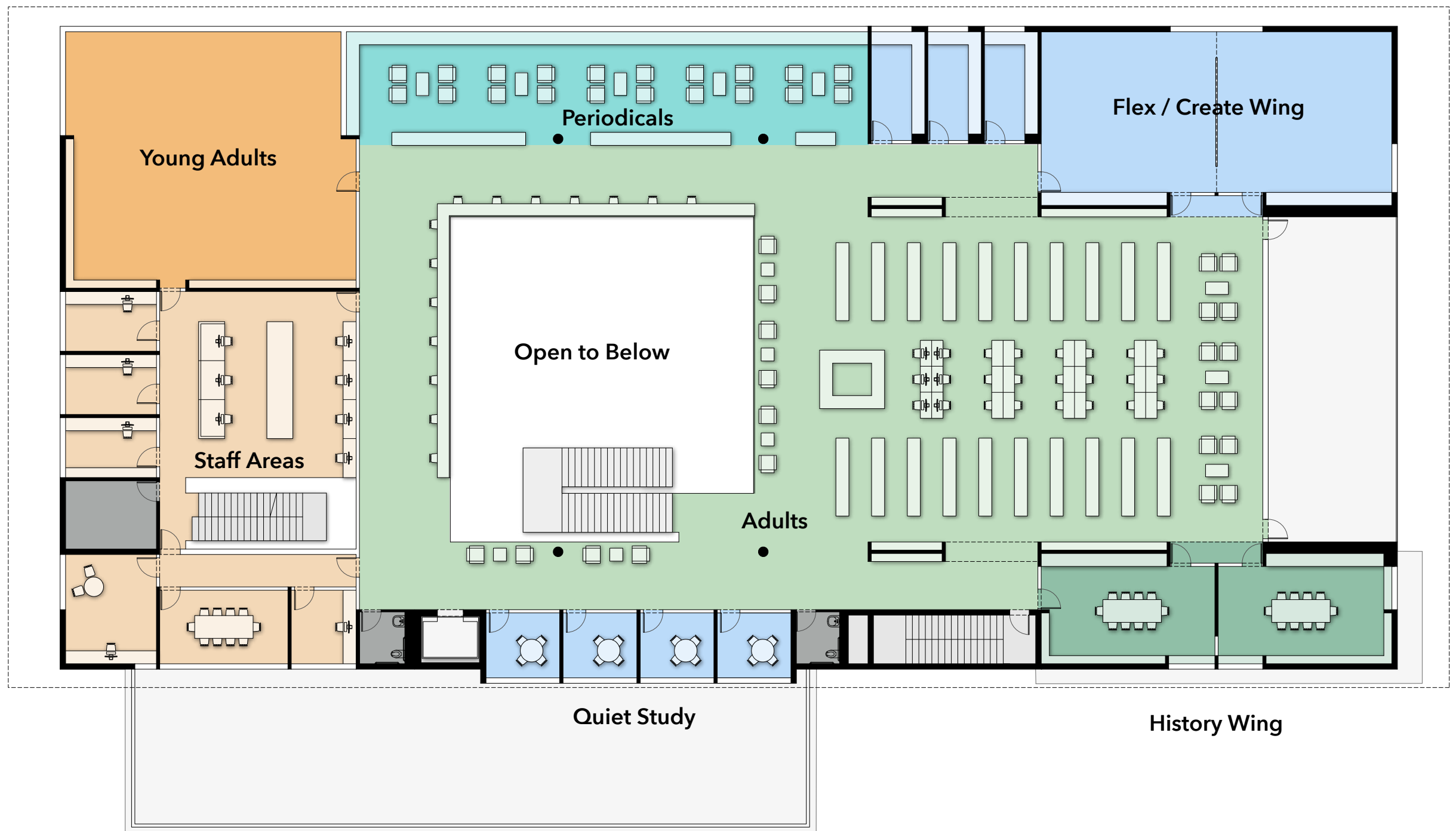
4/9/19 Option 2.0 - First Floor Plan

Concord Avenue



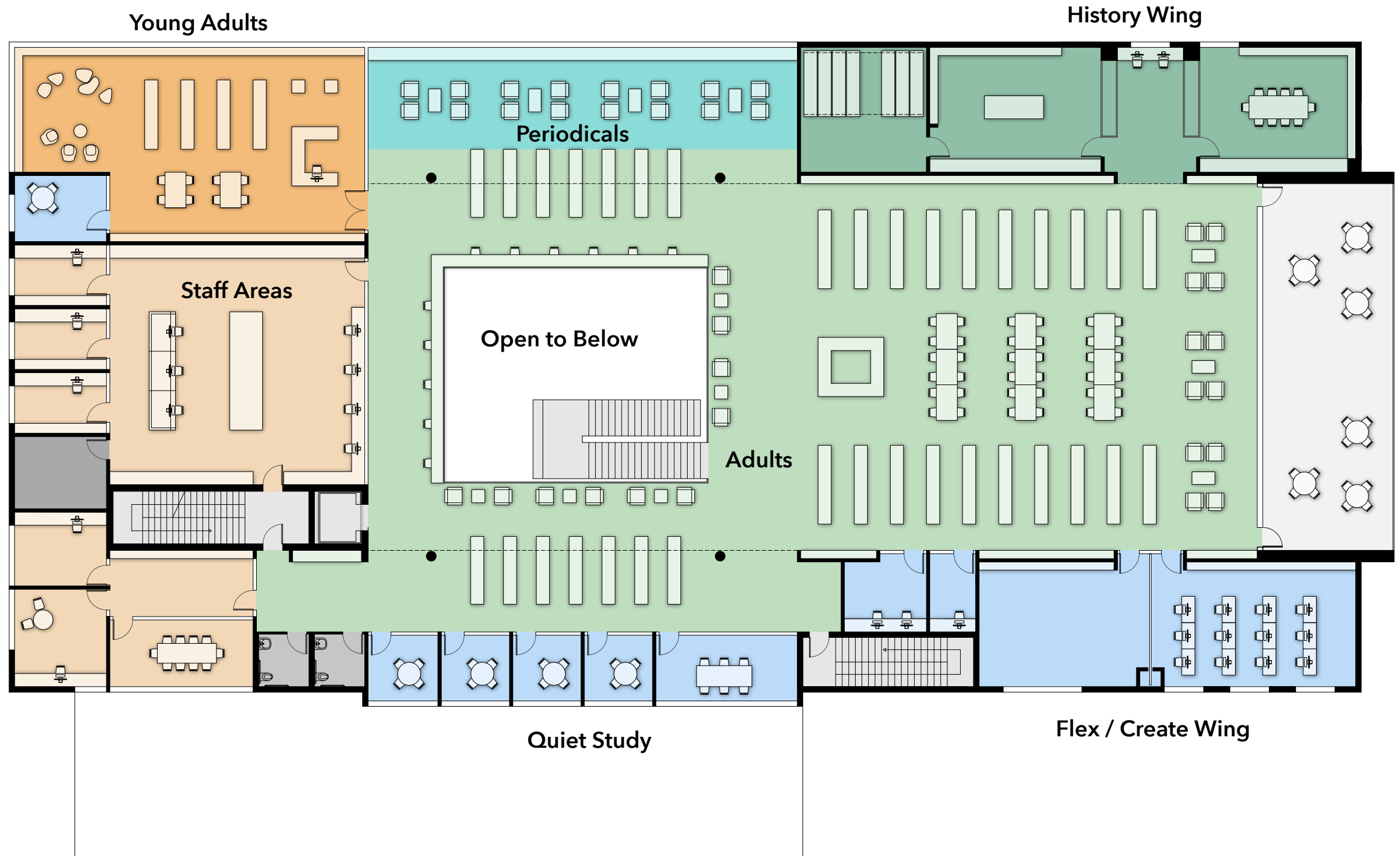
4/23/19 Option 2.0 - First Floor Plan

Concord Avenue

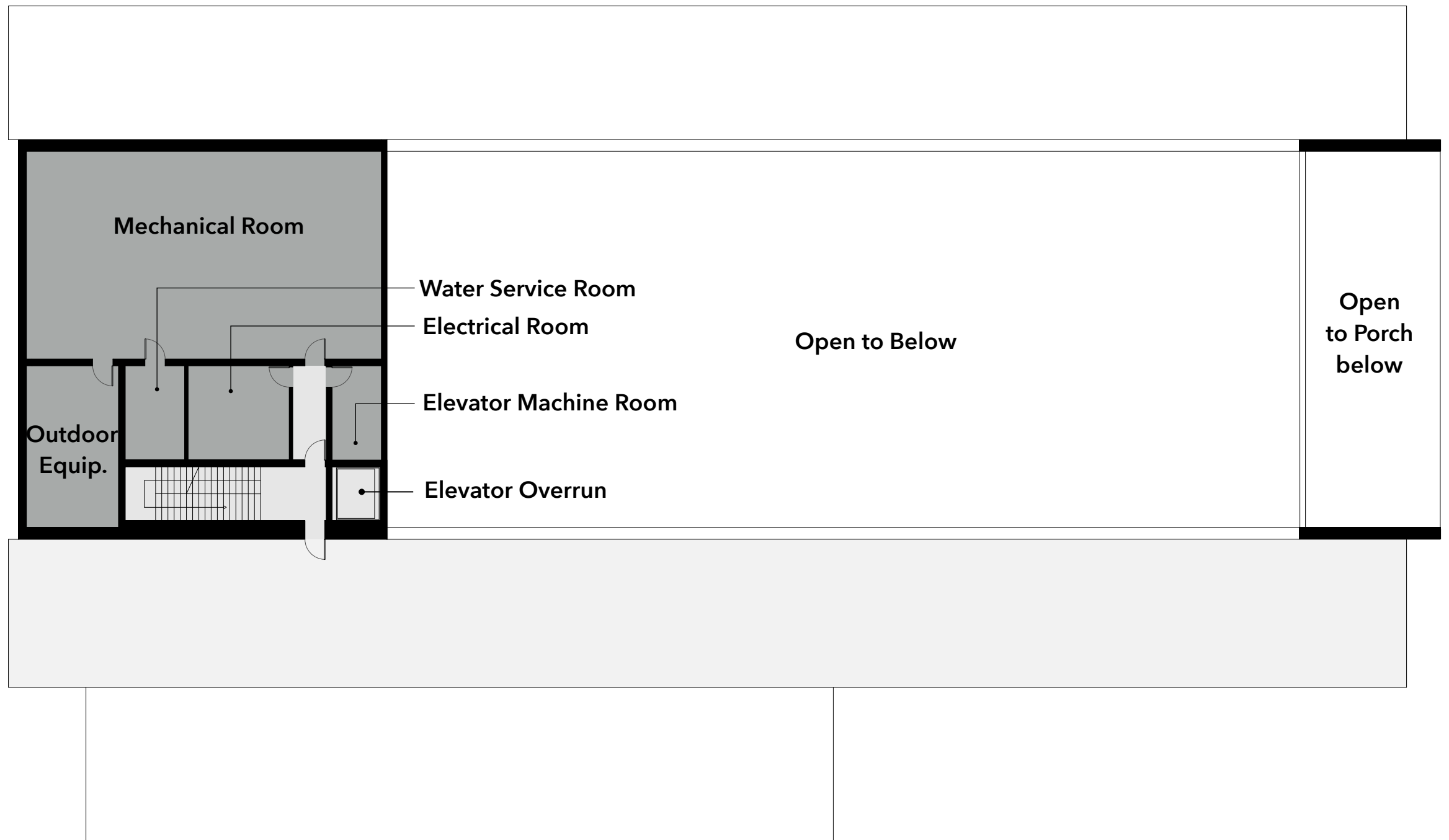


4/9/19 Option 2.0 - Second Floor Plan

Concord Avenue



Option 2.0 - Second Floor Plan



Option 2.0 & 2.1- Mechanical Penthouse Plan



4/23/19 Option 2.0 - First Floor Plan



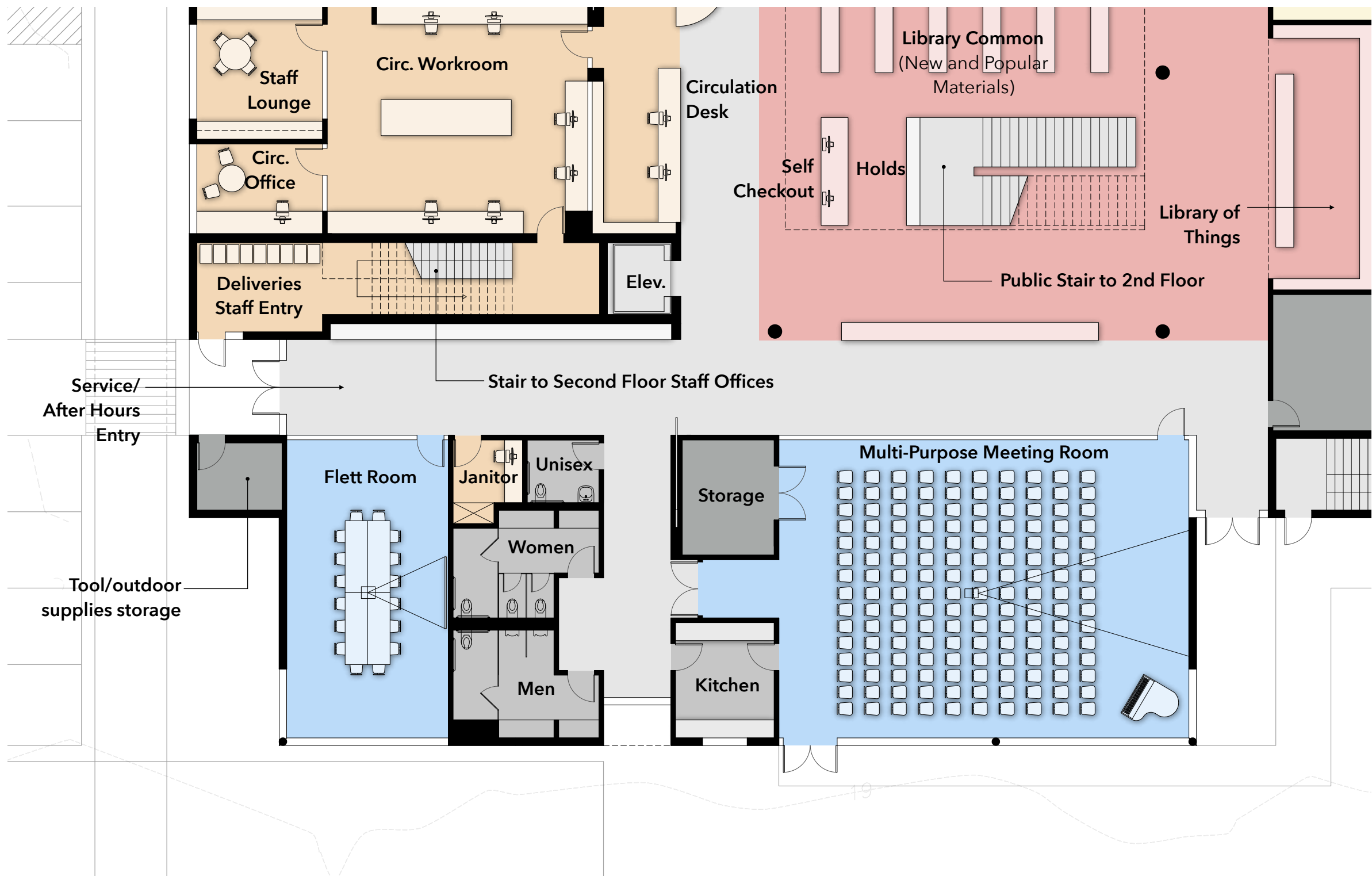
4/23/19 Option 2.1 - First Floor Plan



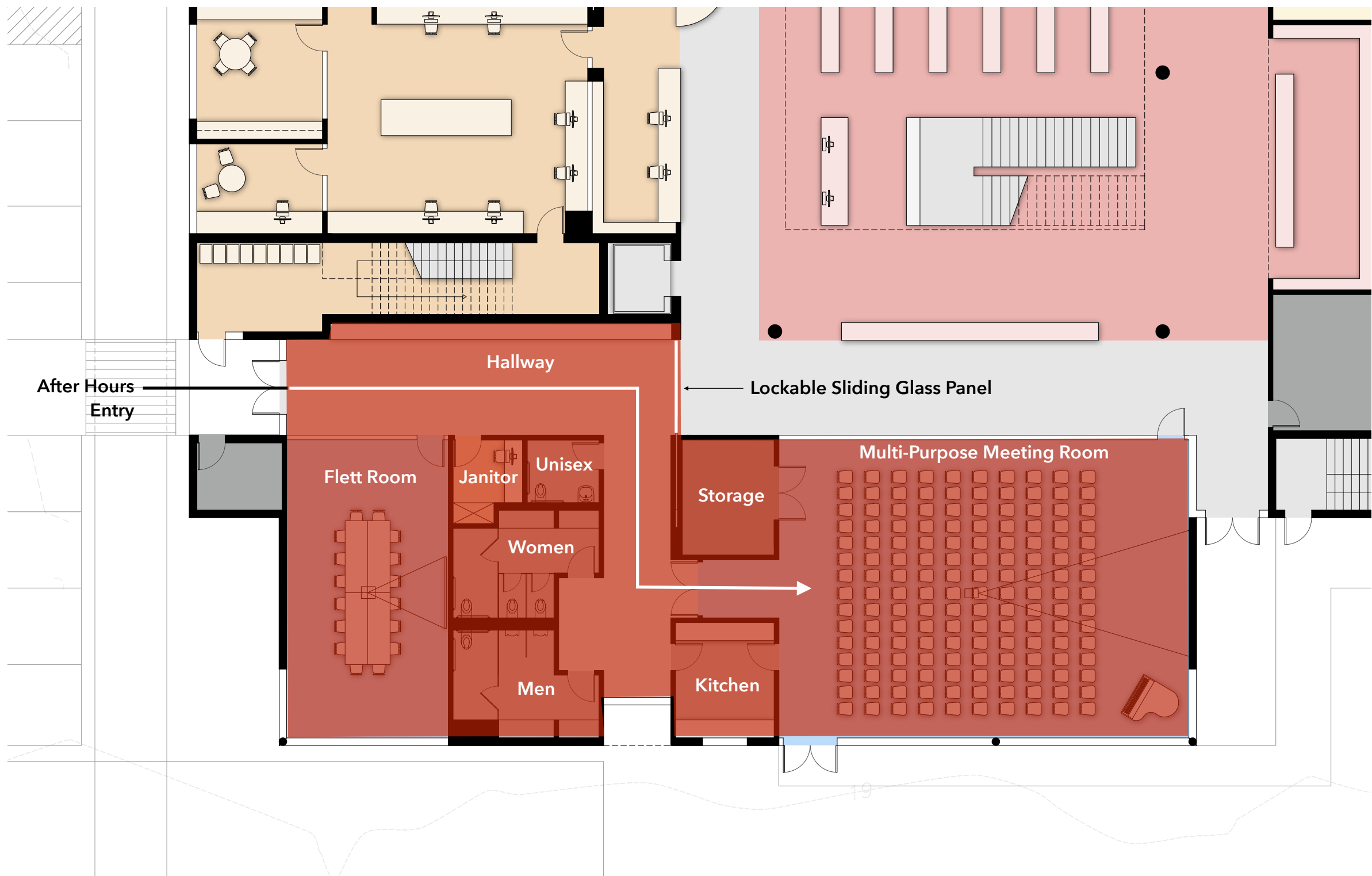
Option 2.0 - Library Common View



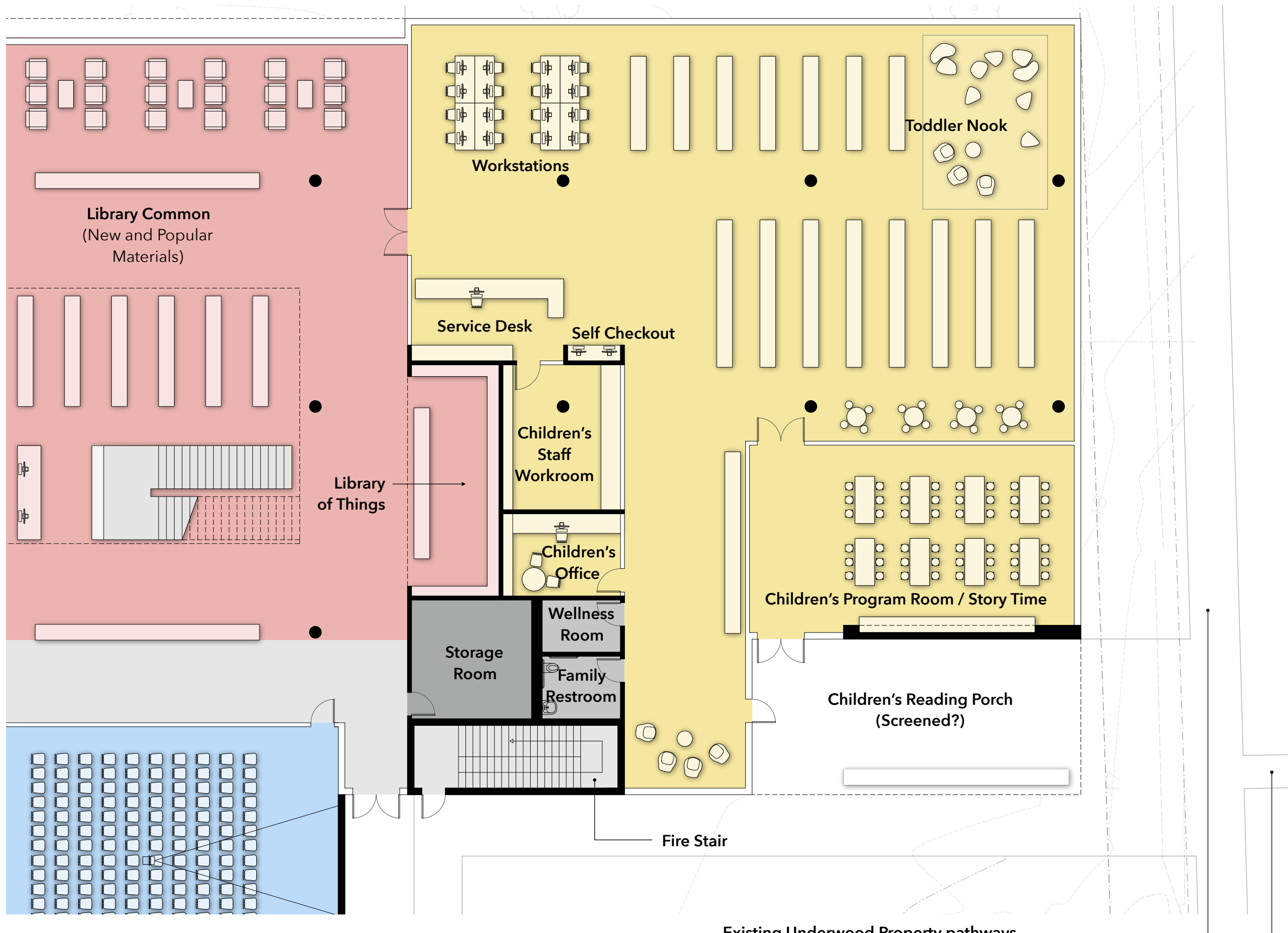
Option 2.1 - Library Common View



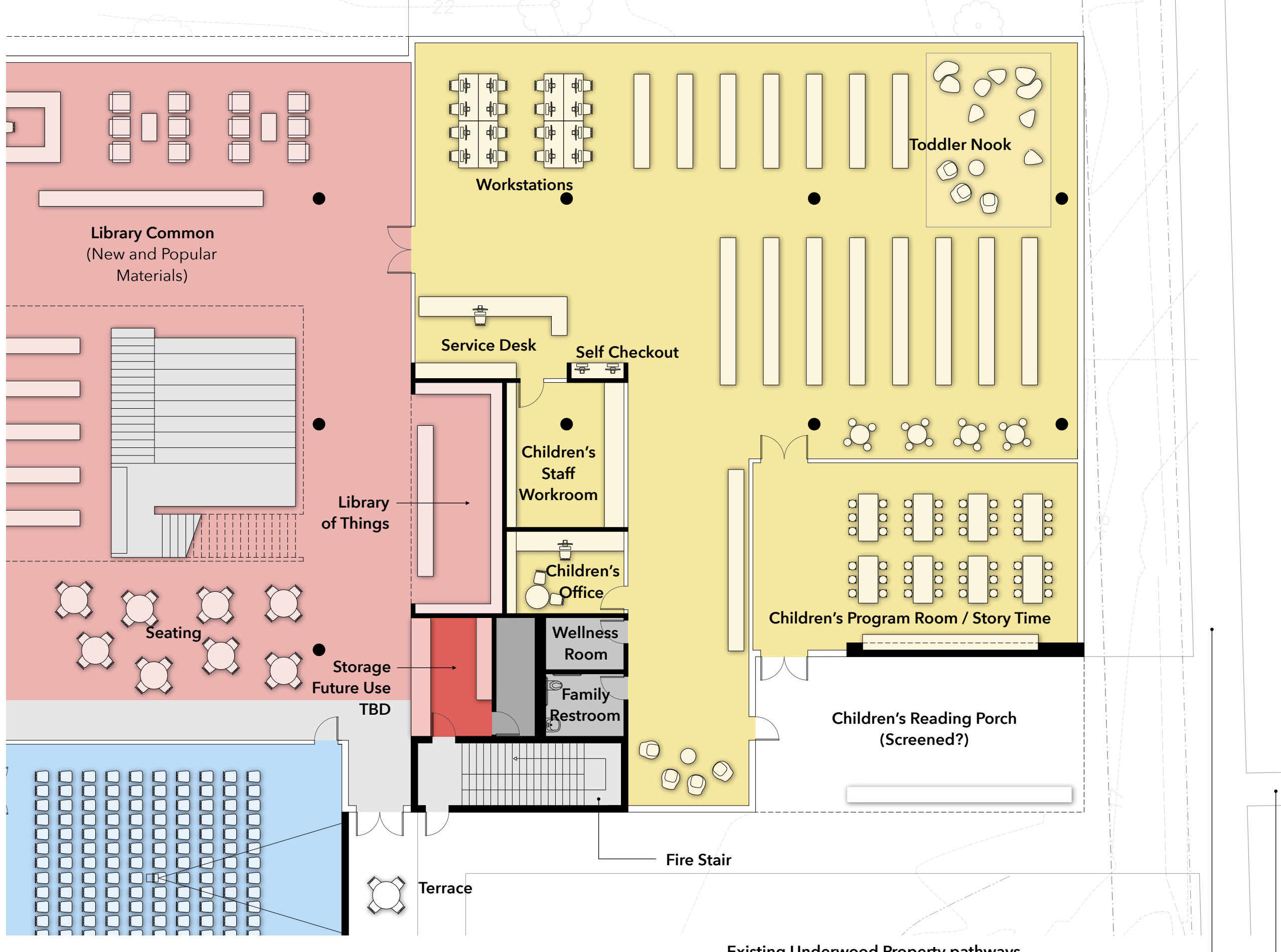
4/23/19 Option 2.0 - First Floor Plan



4/23/19 Option 2.0 - After Hours Access



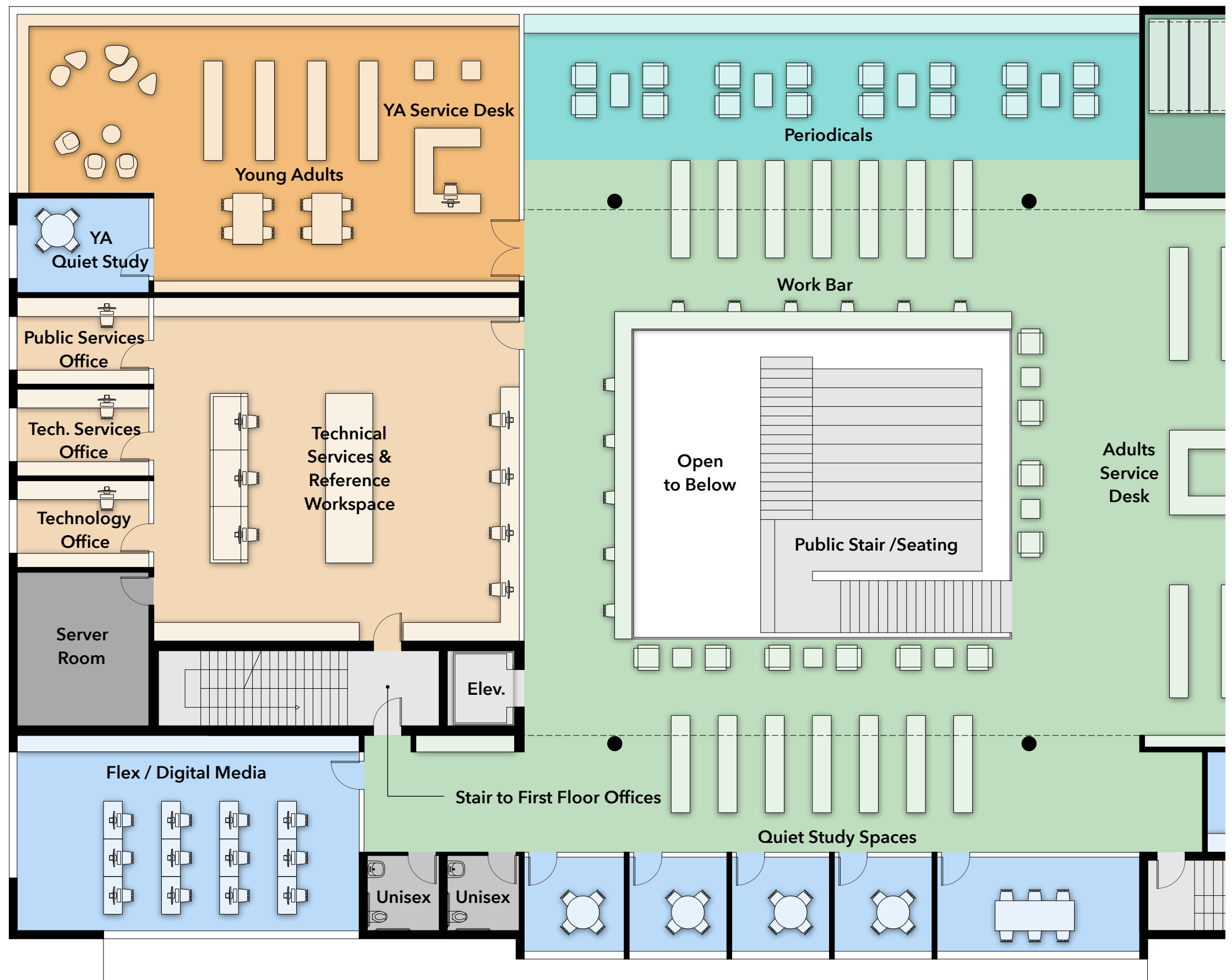
4/23/19 Option 2.0 - First Floor Plan



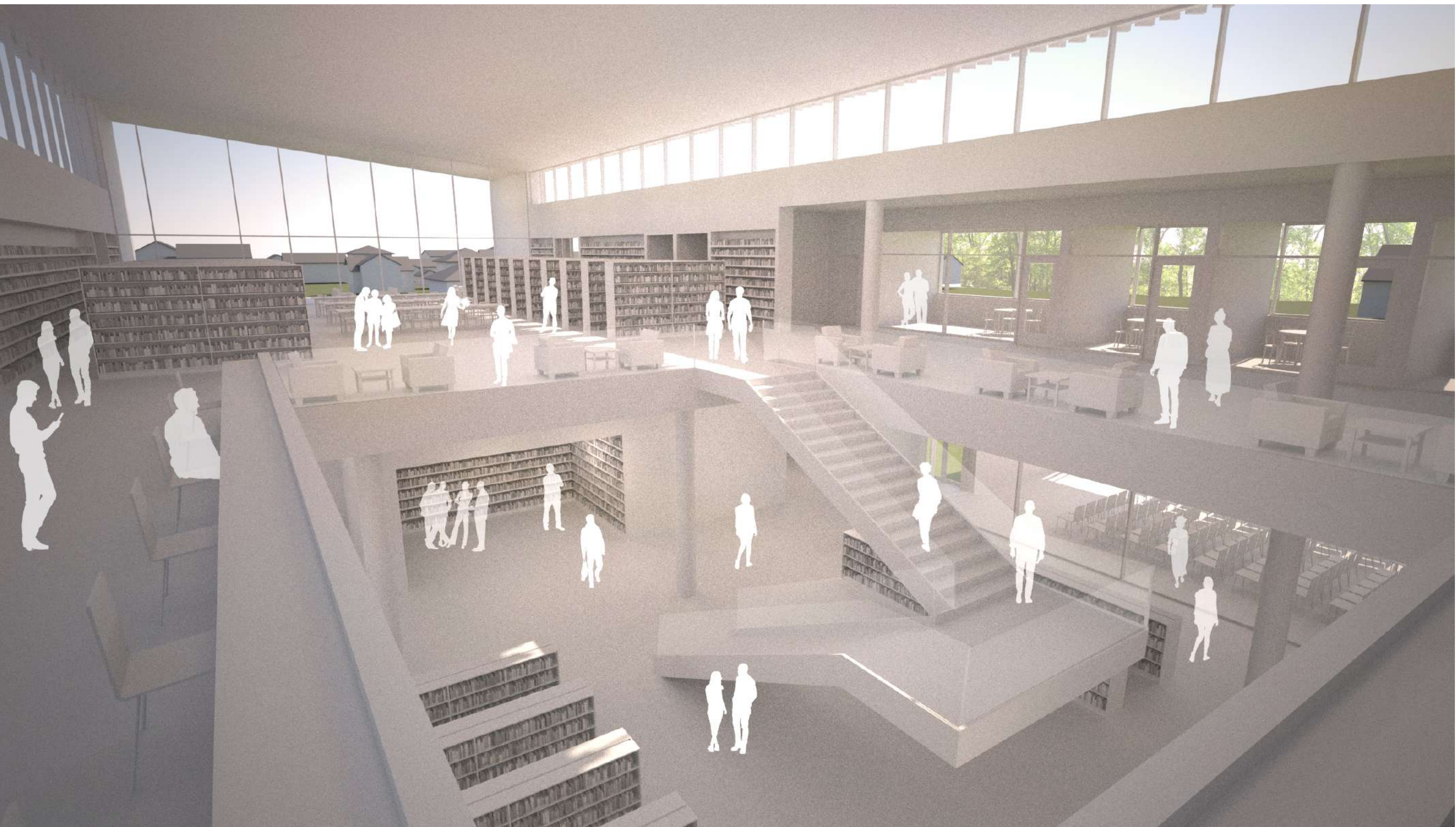
4/23/19 Option 2.1 - First Floor Plan



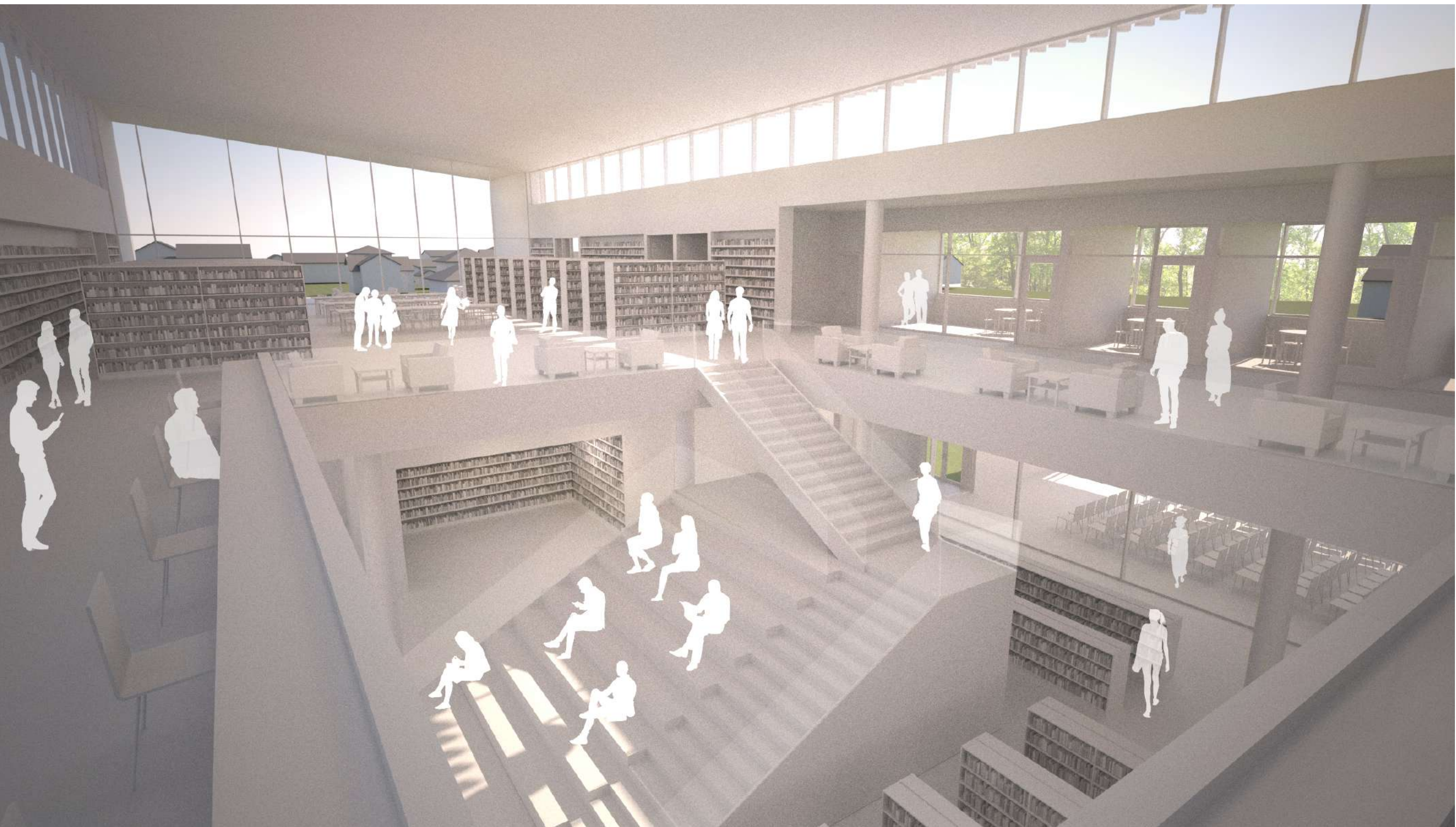
Option 2.0 - Second Floor Plan



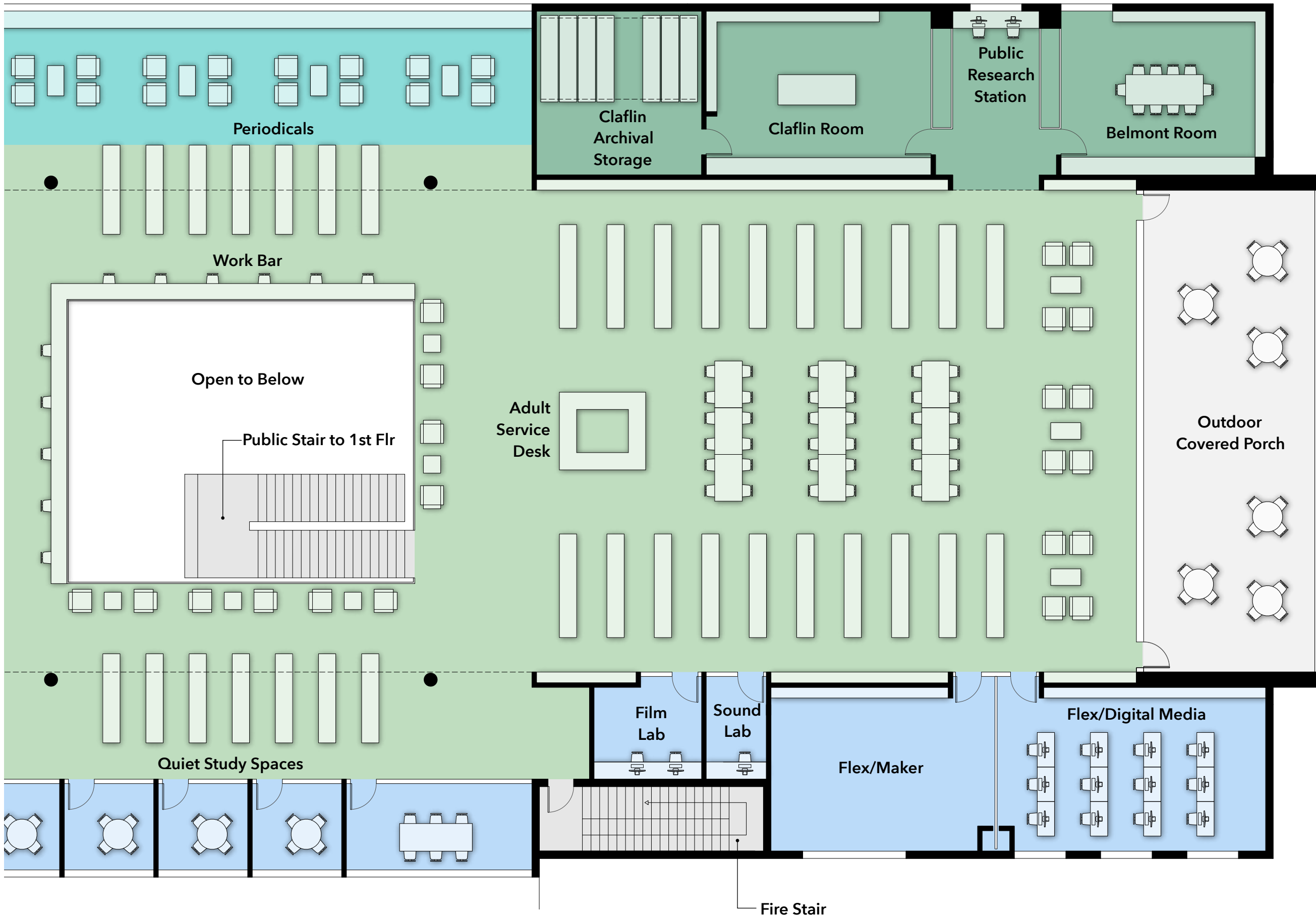
Option 2.1 - Second Floor Plan



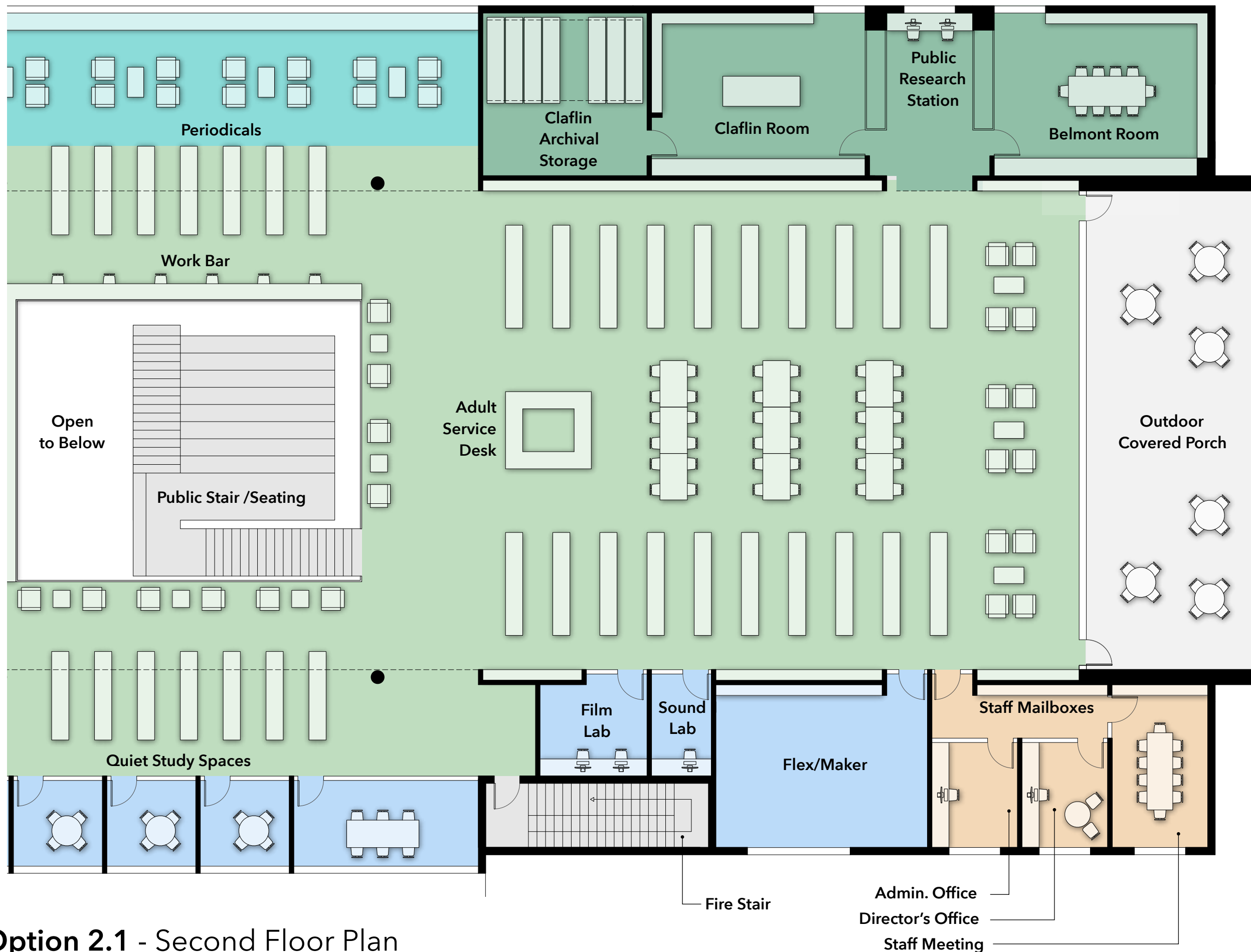
Option 2.0 - Balcony View



Option 2.1 - Balcony View



Option 2.0 - Second Floor Plan



Option 2.1 - Second Floor Plan



Option 2.0 & 2.1 - View towards Outdoor Covered Porch



Option 2.0 & 2.1- Aerial View Along Concord Avenue



Option 2.0 & 2.1- Aerial View Along Concord Avenue



Option 2.0 - Concord Avenue Facade



Option 2.1 - Concord Avenue Facade



Option 2.0 & 2.1 - Concord Avenue Facade



Option 2.0 & 2.1 - Longitudinal Section Looking south



Option 2.0 & 2.1 - Longitudinal Section Looking south



Option 2.0 & 2.1 - View from Underwood Park

Belmont Public Library

Building Program Summary

AREA COMPARISON	Existing Area	Program 2018	Option 2.0	Option 2.1	Notes:
CIRCULATION & STAFF AREAS	3,324 SF	3,725 SF	4,624 SF	4,540 SF	
POPULAR MATERIALS	500 SF	2,100 SF	5,028 SF	4,550 SF	<i>includes library of things, alt option includes café</i>
MEETING ROOMS	1,637 SF	2,400 SF	2,893 SF	2,893 SF	
FLEX / MAKER SPACE		975 SF	1,310 SF	1,356 SF	<i>includes maker, digital media lab, and film/editing/recording labs</i>
ADULT COLLECTIONS & INFO SERVICES	9,200 SF	10,630 SF	7,974 SF	7,974 SF	
LOCAL HISTORY	740 SF	1,155 SF	1,504 SF	1,506 SF	<i>includes hallway in history suite</i>
PERIODICALS		825 SF	852 SF	852 SF	
FRIENDS		600 SF	514 SF	488 SF	
YOUNG ADULT / TEEN	700 SF	1,400 SF	1,425 SF	1,425 SF	
CHILDREN'S DEPARTMENT	2,870 SF	6,650 SF	7,808 SF	7,808 SF	
CUSTODIAL & STORAGE	1,760 SF	725 SF	642 SF	486 SF	
SUPPORT (WC)			640 SF	640 SF	
MECHANICAL			2,062 SF	2,062 SF	
Total Program Area	20,731 SF	31,060 SF	37,276 SF	36,580 SF	
Non Assigned	8,919 SF	13,311 *SF	5,296 SF	5,992 SF	
Gross Building Area	29,650 SF	44,371 SF	42,572 SF	42,572 SF	

* (42% - Assumes 70% Net to Gross Efficiency)



Option 2.0 & 2.1

- 2 Stories
- 42,000 GSF
- 48-foot High
- 42 Parking Stalls
- 10,000 SF PV Array

An aerial photograph of a school campus, overlaid with a semi-transparent dark grey filter. The image shows a large, multi-story school building with a complex roofline, surrounded by extensive parking lots filled with cars. A multi-lane road runs diagonally across the middle of the frame. In the background, there are dense trees and another building with a curved roof. The overall scene is captured from a high angle, providing a comprehensive view of the campus layout.

NZE Study Update

Summary - VRF vs GSHP options							
Scenario	Site EUI	Site Energy Use (kWh)	Site Energy Cost (\$)	Energy Cost Savings (\$)	Source Energy (MBTU)	GHG Emissions (MTCO2e)	Notes
2B - VRF (Cooling 11.6 EER; heating 3.5 COP)	23	269,334	\$42,285		2,573	70.46	Option B includes passive house envelope, 40% reduction in lighting, etc. VRF efficiency - 10% better than ASHRAE 90.1-2016
3B - GSHP (Cooling 20 EER; heating 4 COP)	22	252,980	\$39,718	\$2,568	2,417	66.18	Option B includes passive house envelope, 40% reduction in lighting, etc. GSHP efficiency based on industry standard
Additional Cost of GSHP due to wells							
62 tons cooling ~ 18 wells							
Cost per well	\$10,000						
Total Additional Cost	\$180,000						
Simple Payback	70 years						
Size of Well field required 6X3 @25 foot spacing	6,250 SF						
To get to net zero							
Scenario	Total PV Energy required (kWh)	Installed Capacity (kWp)	Approx. Installed PV SF	PV Cost per Watt	Installed PV Cost	Total Cost to get to Net Zero	Notes
2B - VRF (Cooling 11.6 EER; heating 3.5 COP)	269,334	215	21,547	\$3	\$646,401	\$646,401	No additional well cost, less cooling and heating efficiency
3B - GSHP (Cooling 20 EER; heating 4 COP)	252,980	202	20,238	\$3	\$607,152	\$787,152	Additional well cost, increased heating and cooling efficiency



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