

for the need

mel walker
spring 2022 thesis
advisor: ganapathy mahalingam
north dakota state university



abstract

Poverty and homelessness are at a staggering high right now in Minneapolis. While architecture is often used for grand, beautiful works, it can not only help those truly in need, but it should.

Solutions like low-income and public housing often have a negative connotation, mostly due to infamous failures of large, bare, and underfunded concrete monoliths. However, another common failing of public housing is that it simply is only one part of a solution to a larger problem, and cannot take on every aspect of the issue.

Giving our most at-risk and in need populations solely a roof to live under is not enough. Architecture can do more than that - to not only give them a place to live, but also thrive.

Architecture for the Need joins public housing along with other essentials such as a library, a school, a soup kitchen, childcare, open rooms for renting, and four distinct courtyards. Using affordable materials such as precast concrete panels for a clean, simple design, putting first the ideas of light and life, this thesis strives to create a place that brings people together in a community and lifts them up.

background

public housing

Public housing is a government assisted program run by a housing agency that provides rental housing to low-income households, or households that are below 80% of the median income. Tenants in public housing, as a general rule, pay about 30% of their income for rent including utilities.

area statistics

Persons in poverty: 19.1%
Adults without homes: 12,895
Youth (18-24) without homes: 2,429
Children without homes: 5,913
Waiting household placements: 8,237

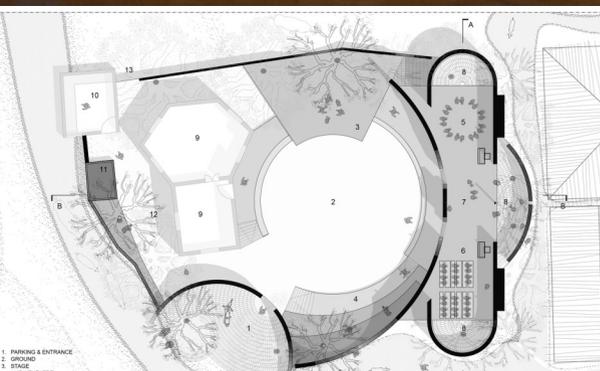
community cohesion

A cohesive community is just that; cohesive. It binds together with similar goals. The community must have a similar belonging, there must be respect and communication with its diverse and disparate parts, and there must be relationships that are both strong and positive.

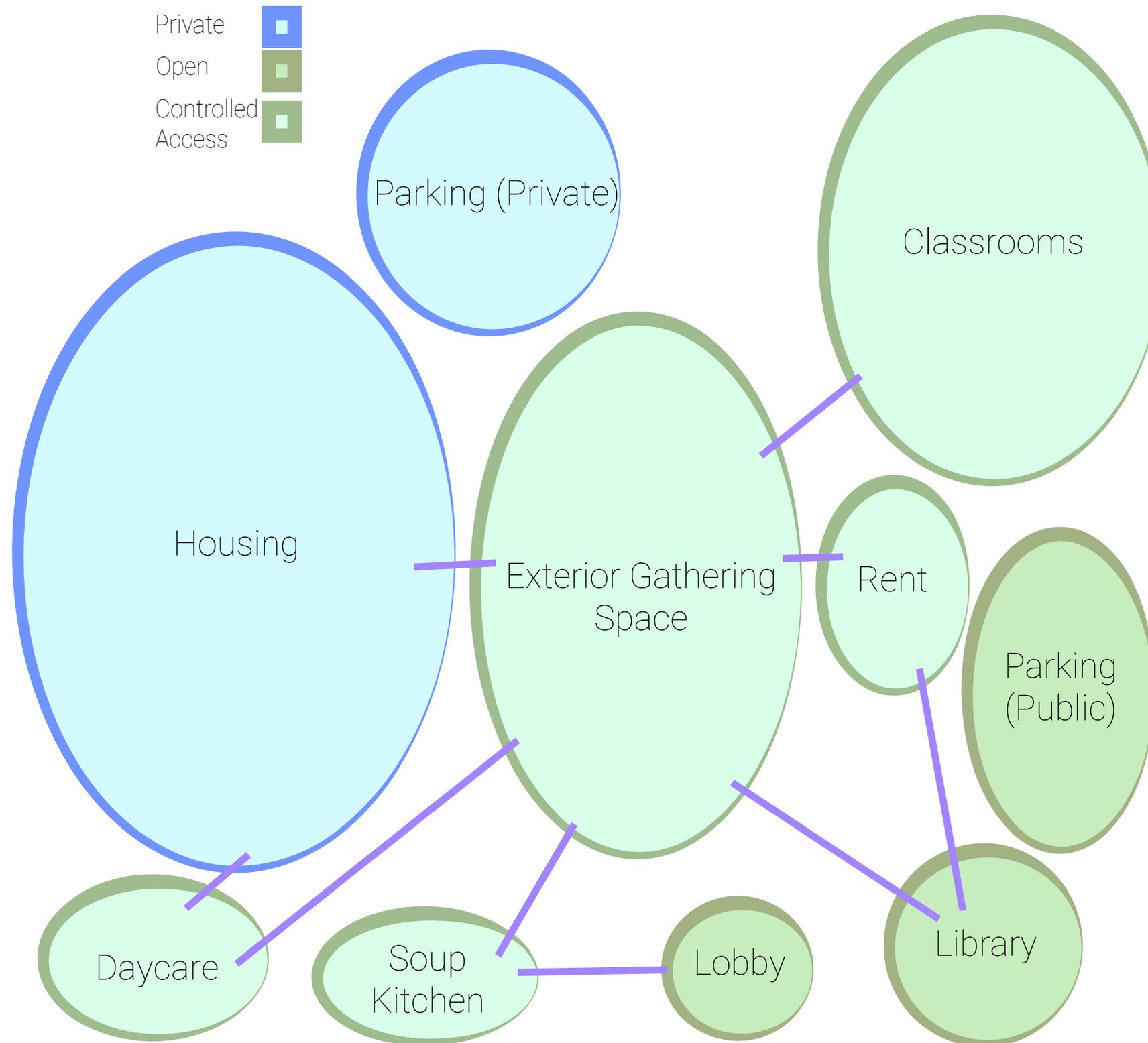
BRILL AND ASSOCIATES, litigation

“The vulnerability to crime of many public housing projects, particularly large projects, does not stem just from design and equipment deficiencies . . . The problem of security in public housing also stems from the weak social structure of the residents, the absence of supporting groups, and a lack of interpersonal trust – all factors that inhibit people from protecting and helping each other (1975:47).”





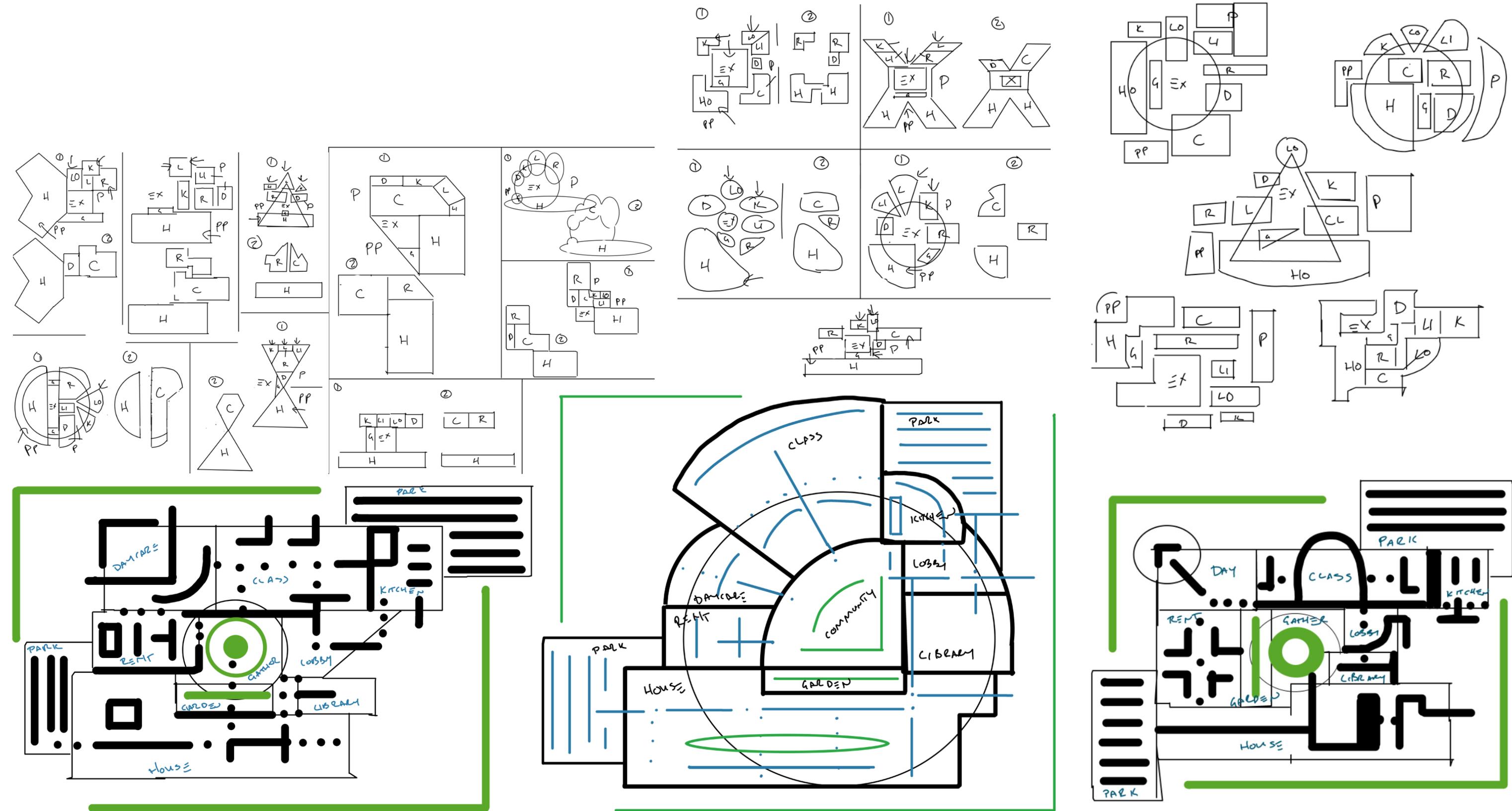
program



light and life



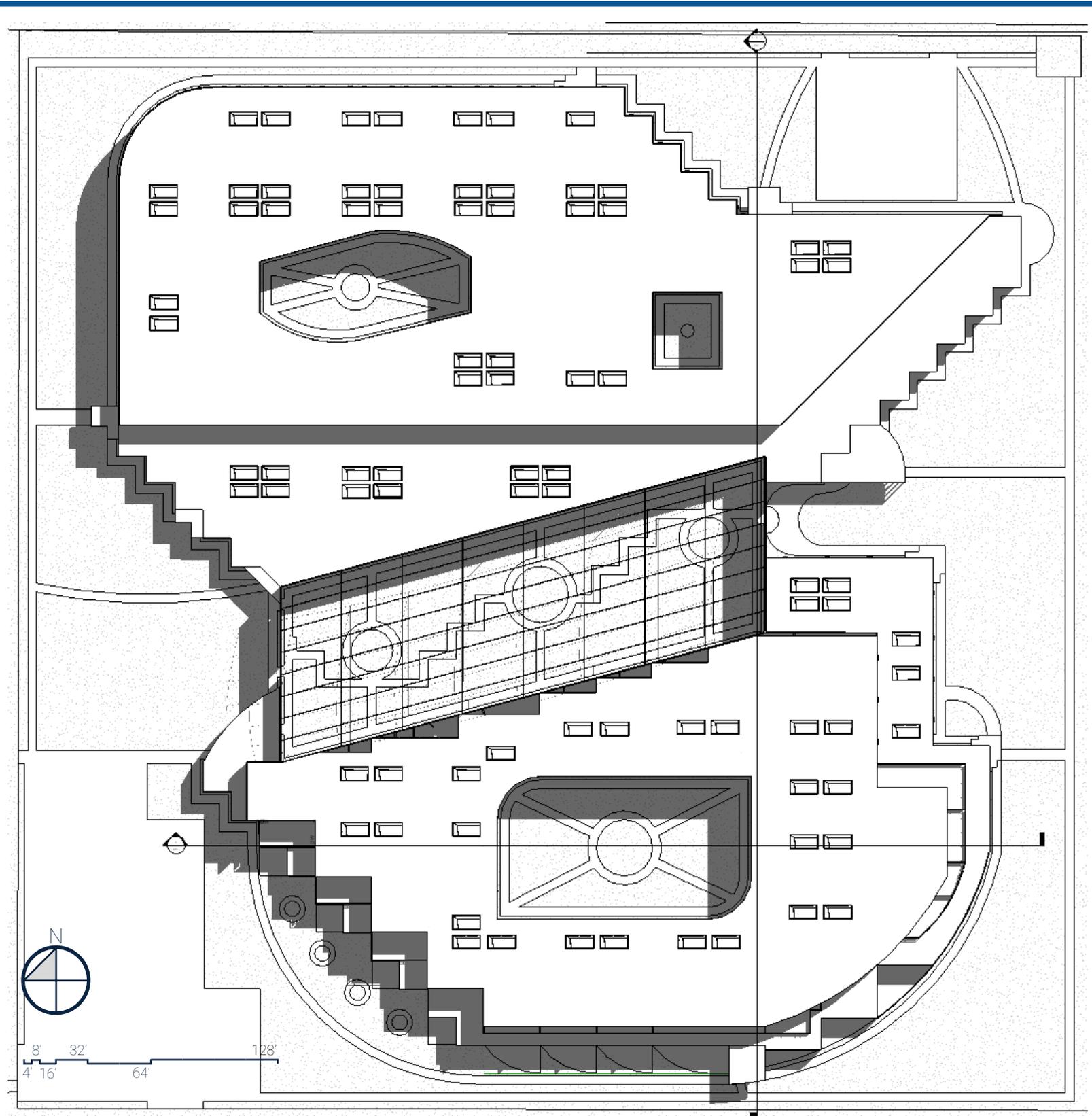
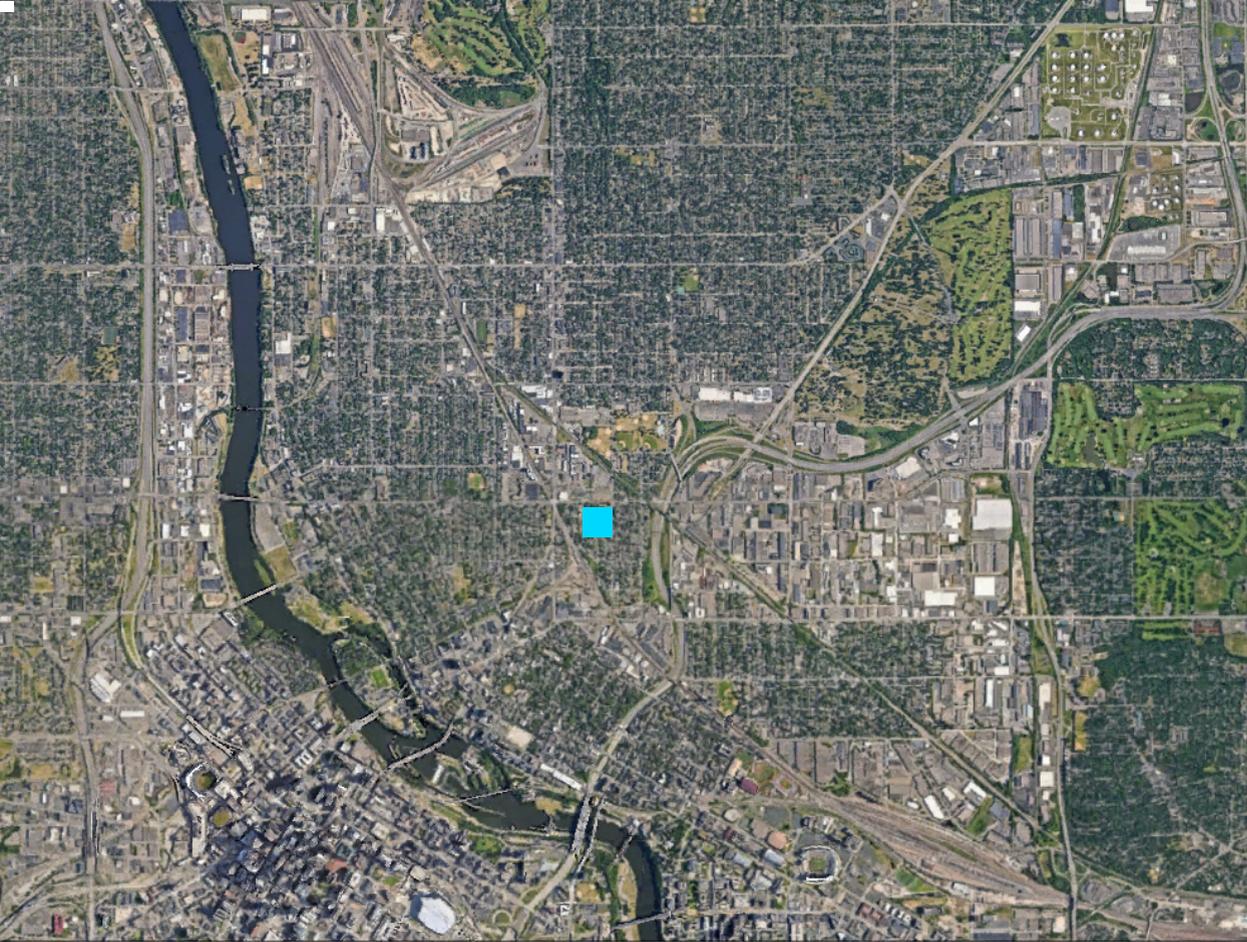
spatial ideation



material palette



site





southwestern housing units

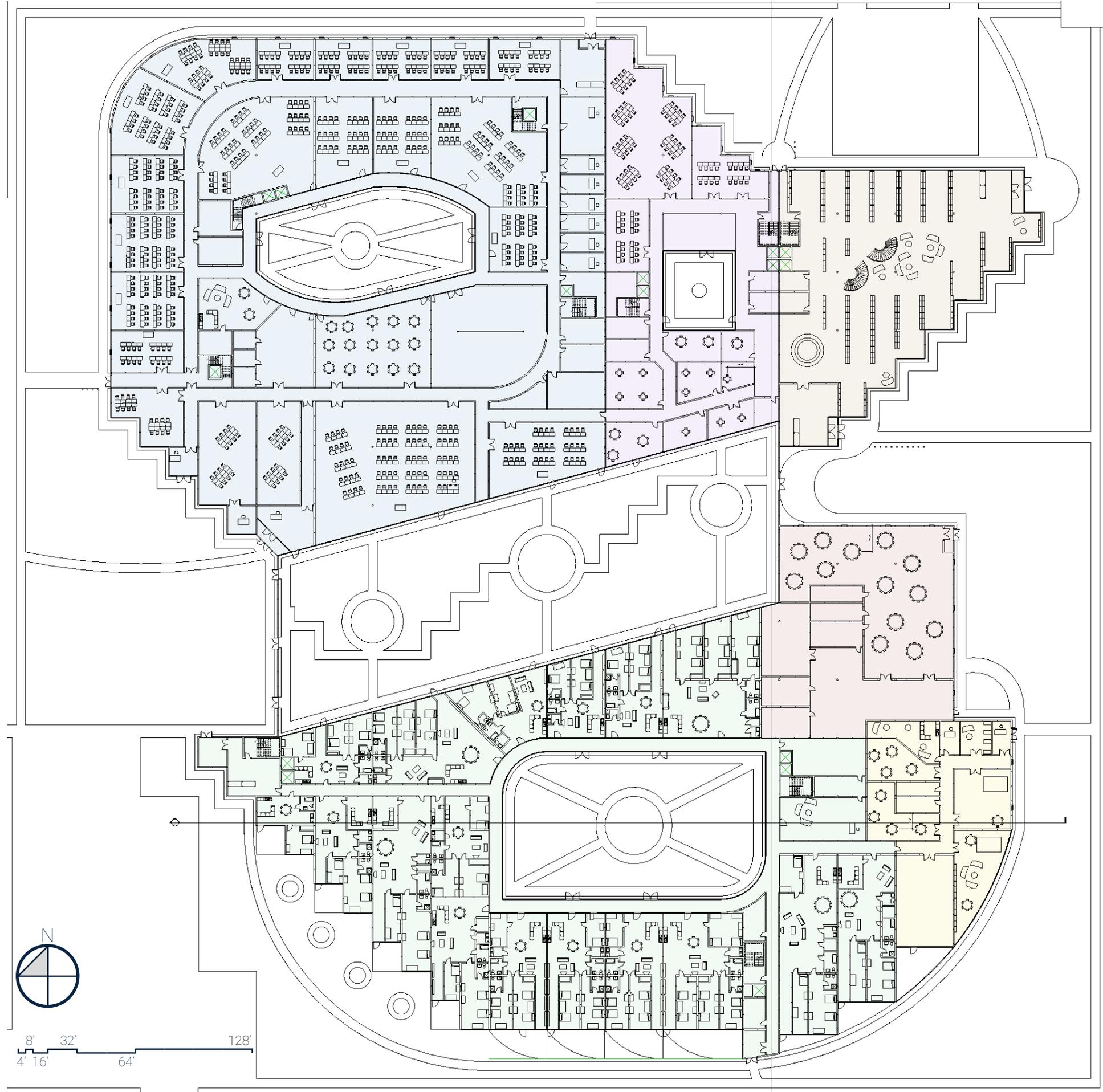


main courtyard



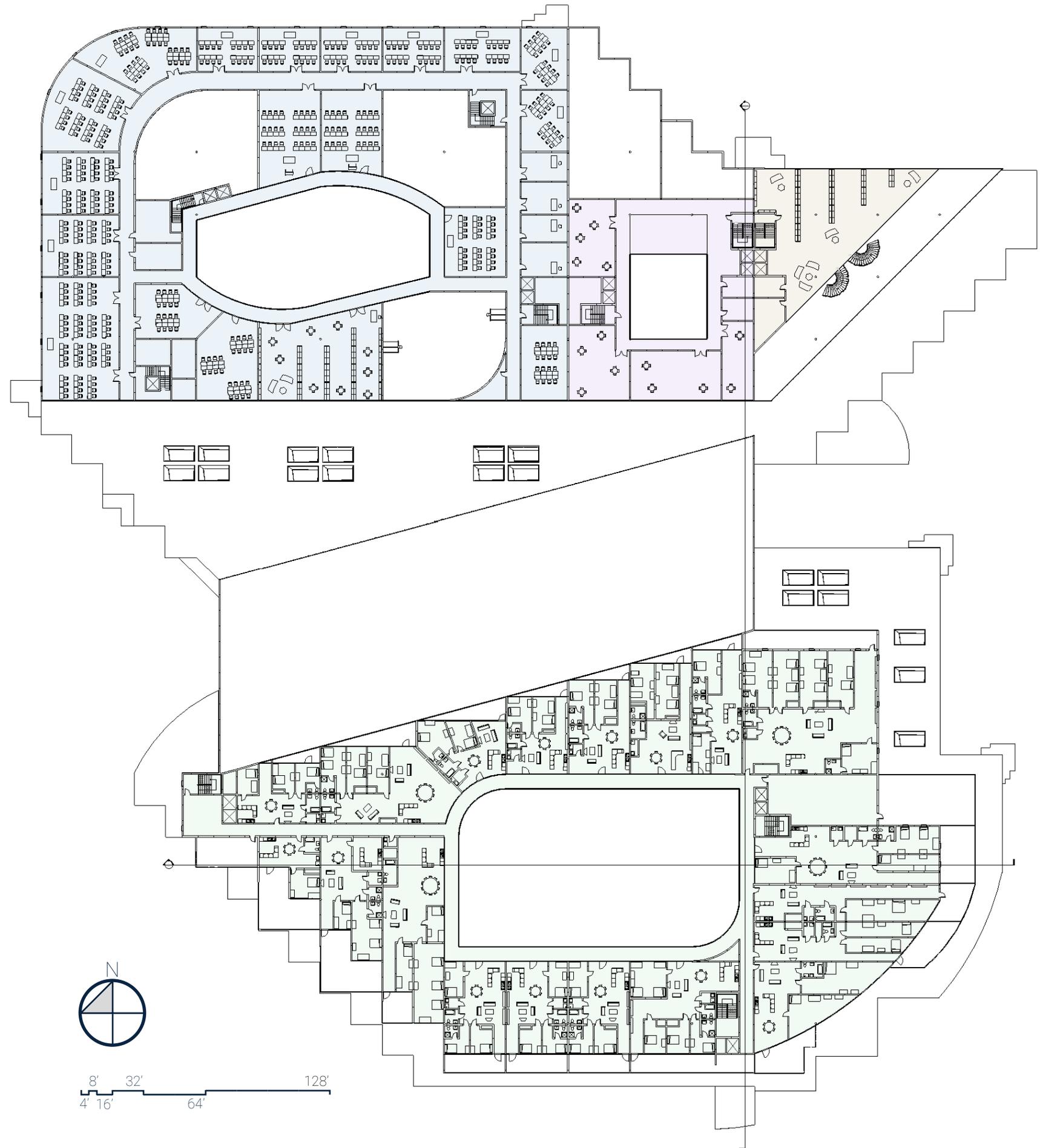
first floor

-  Housing
-  Daycare
-  Soup Kitchen
-  Library
-  Rentable
-  School

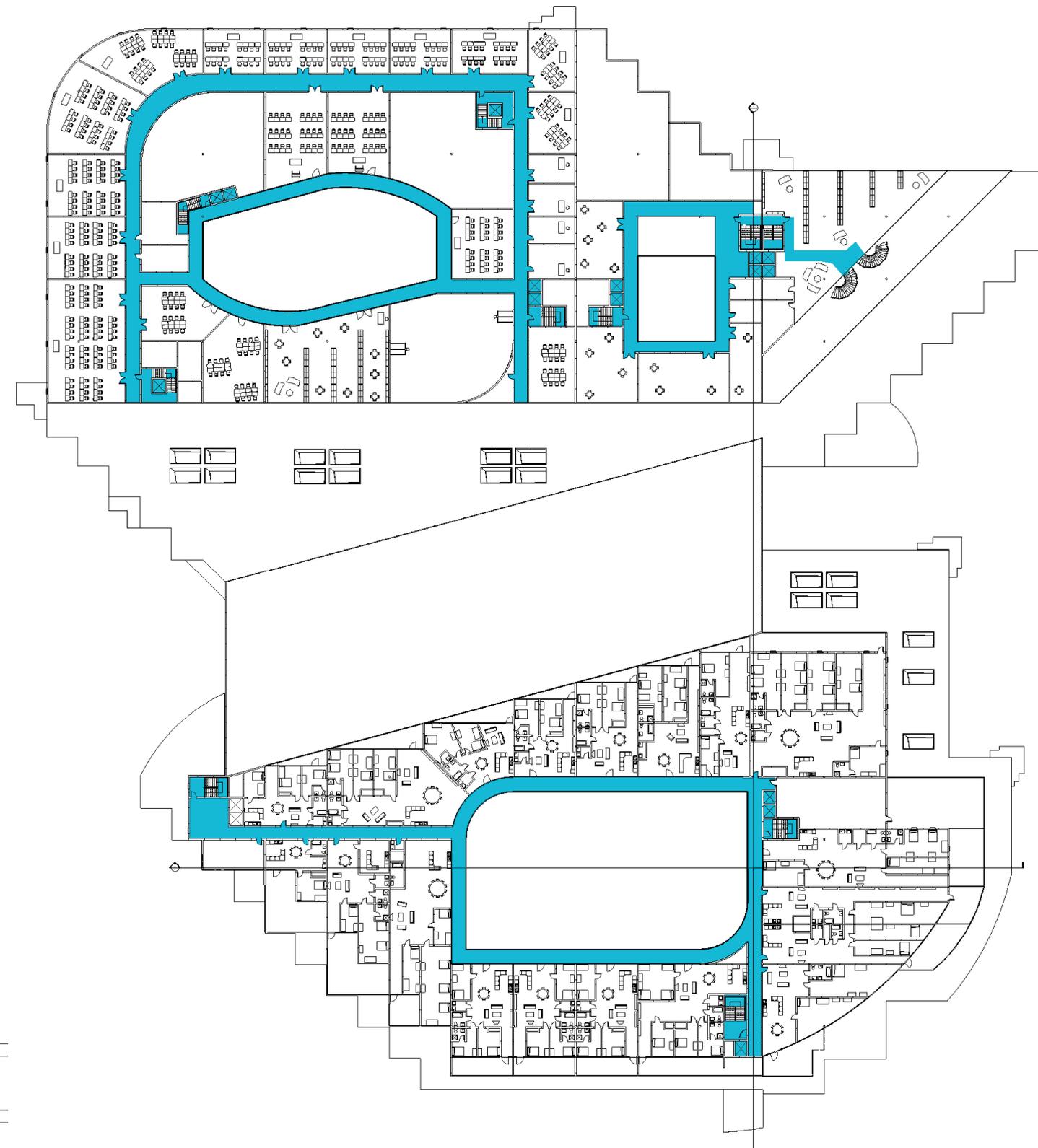
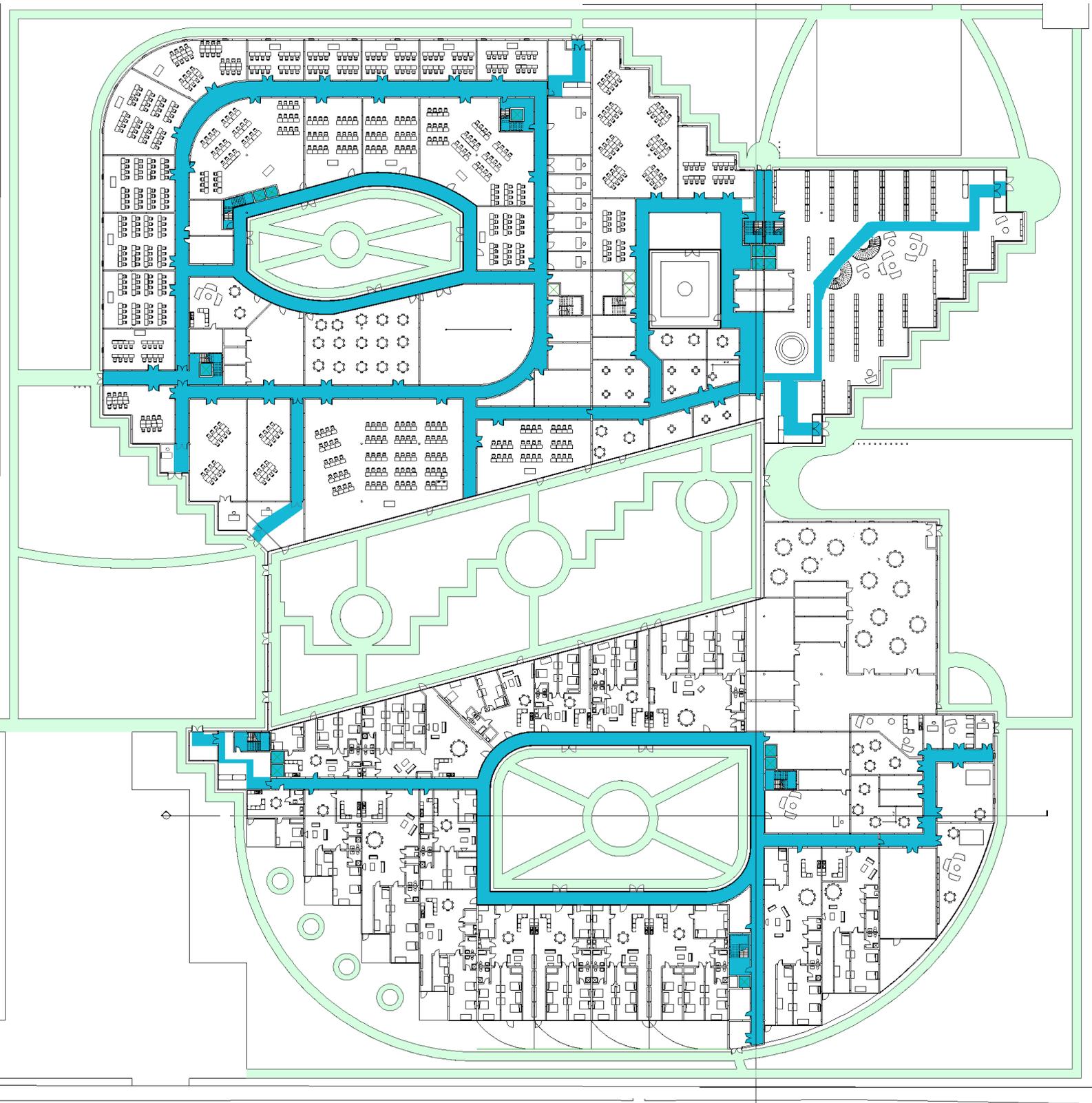


second floor

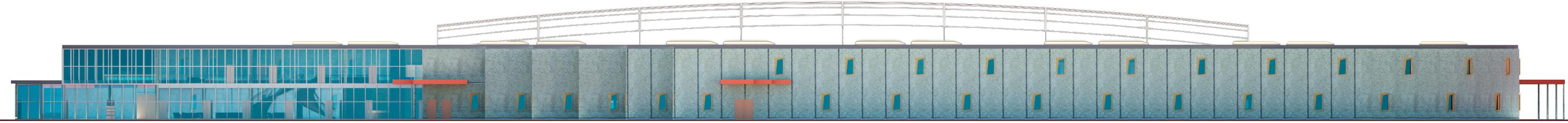
-  Housing
-  Library
-  Rentable
-  School



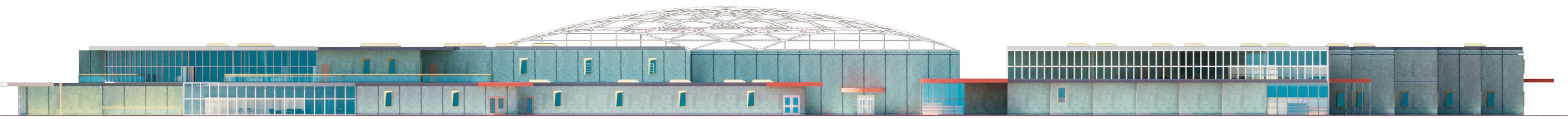
circulation



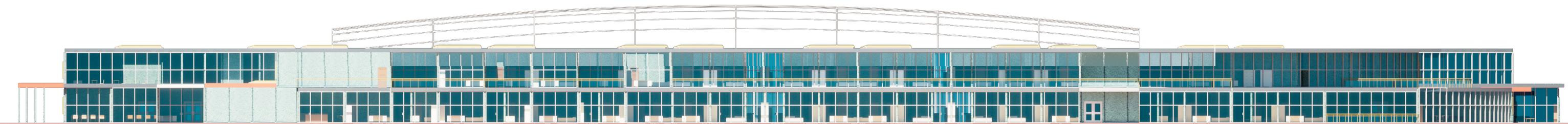
elevations



north



east



south



west

east-west section



north-south section



rough financials

Model: Apartment, 1-3 Story with Stucco on Concrete Block / Steel Joists



Small edits had to be made regarding the material prices, as well as doubling the square footage, but the estimate is close.

\$5,548,557.23	NATIONAL AVERAGE	2
Building Cost	Location	Stories (Ea.)
\$134.02	41,400	12.00
Cost per S.F.	Floor Area	Story Height

Model: School, High, 2-3 Story with Decorative Concrete Block / Steel Frame



The material prices were closer to accuracy here, if perhaps a little high.

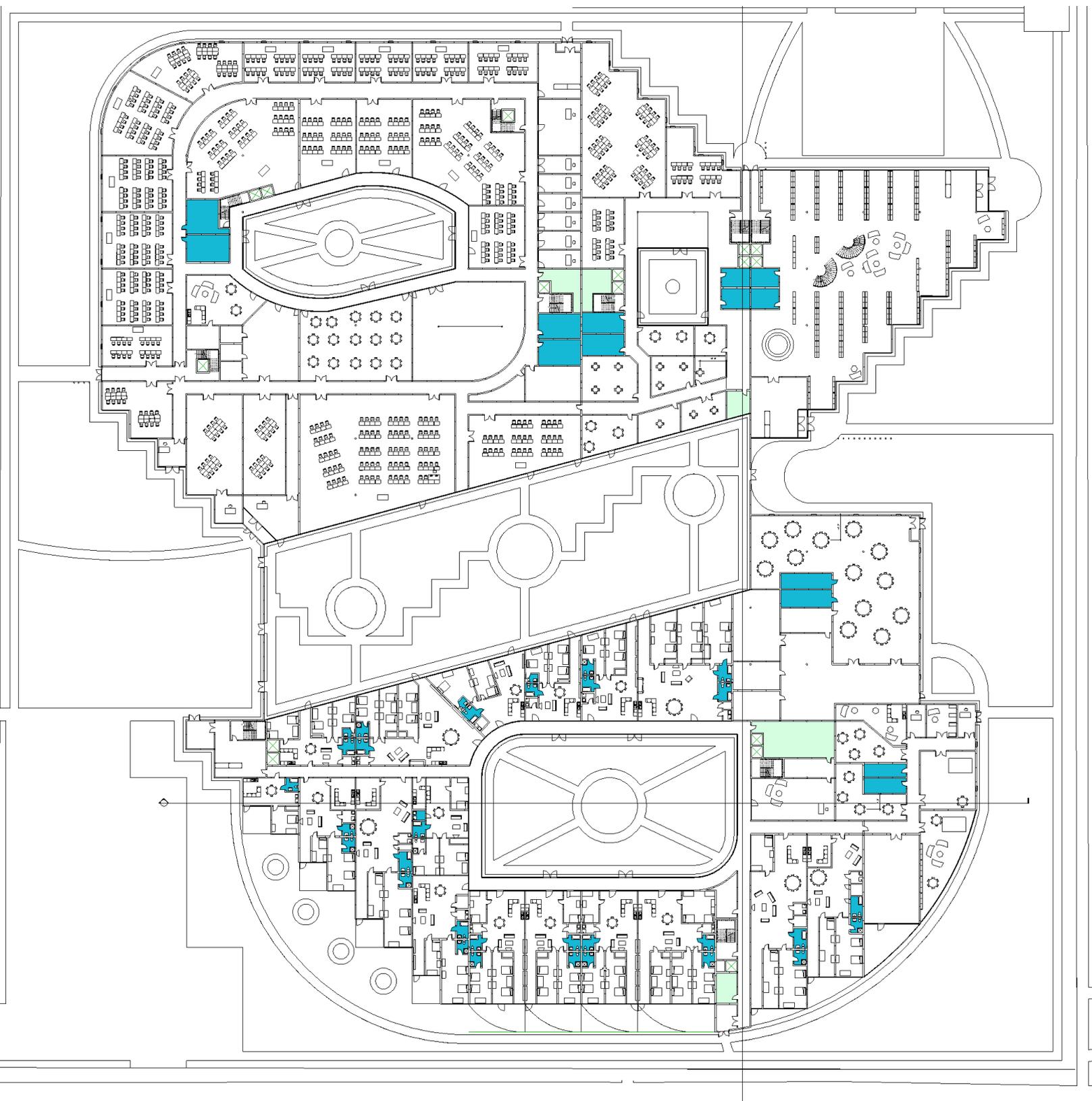
\$17,391,313.88	NATIONAL AVERAGE	2
Building Cost	Location	Stories (Ea.)
\$127.39	136,520	12.00
Cost per S.F.	Floor Area	Story Height

All data calculated using RS Means Square Footage Estimator, bolstered by their cost data. All labor is union.

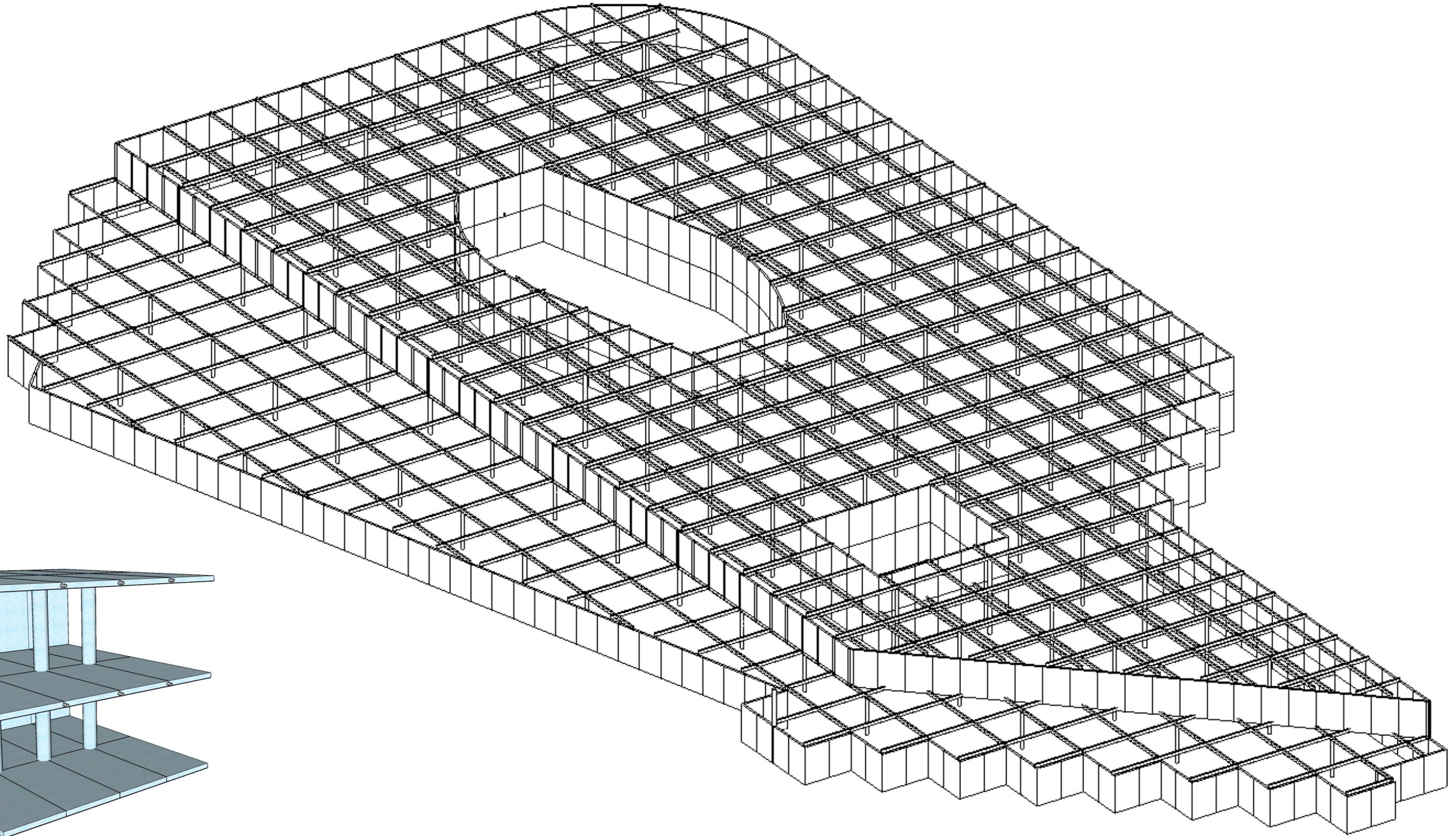
	Cost per S.F.	Floor Area	Total
Housing	\$134.02	96,972	\$12,996,187
Public	\$127.39	136,520	\$17,391,313

Total Cost of Build: \$30,387,500

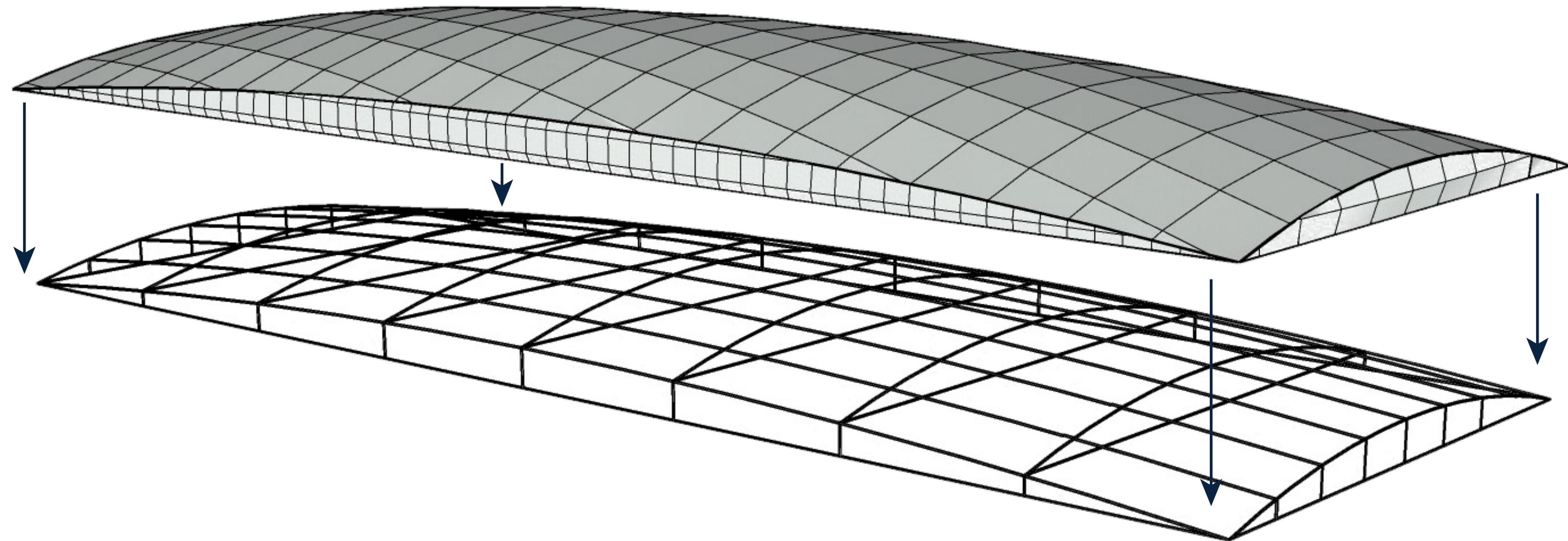
mechanical and plumbing



structure



canvas roof and aluminum frame















thank you