

# FULLER MIDDLE SCHOOL FEASIBILITY STUDY

January 22, 2018

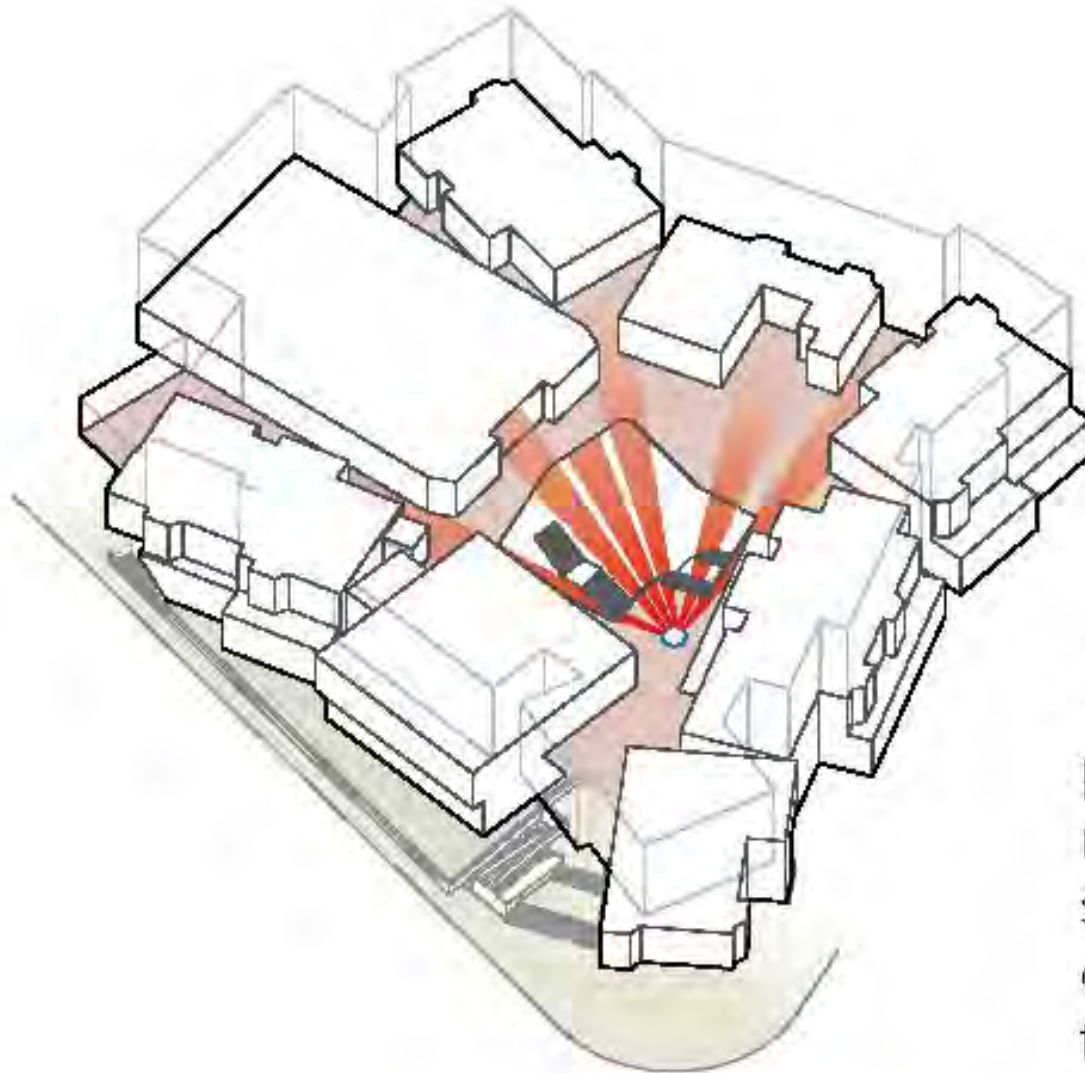
Fuller School Building Committee



# Dearborn School Tour Update

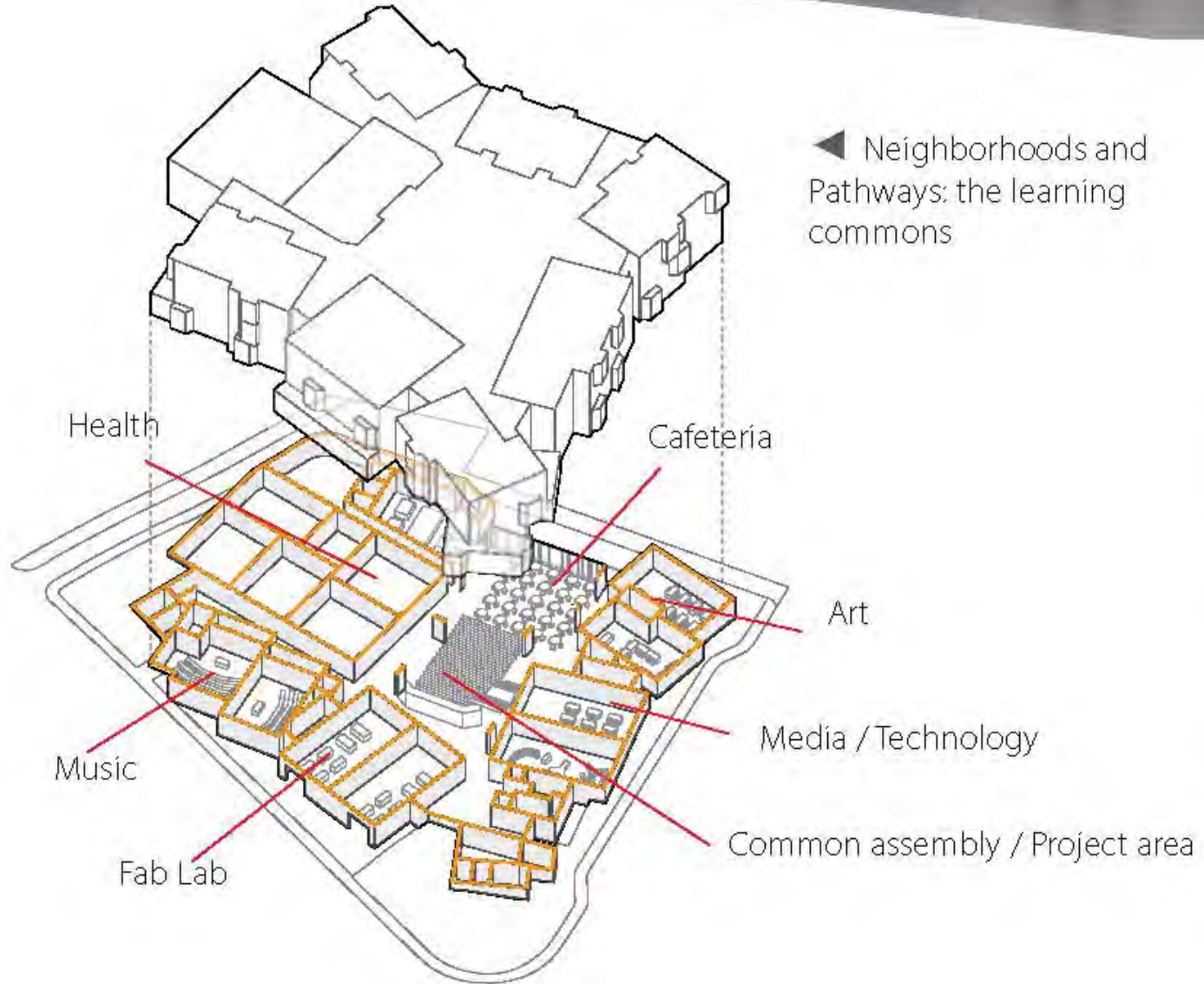


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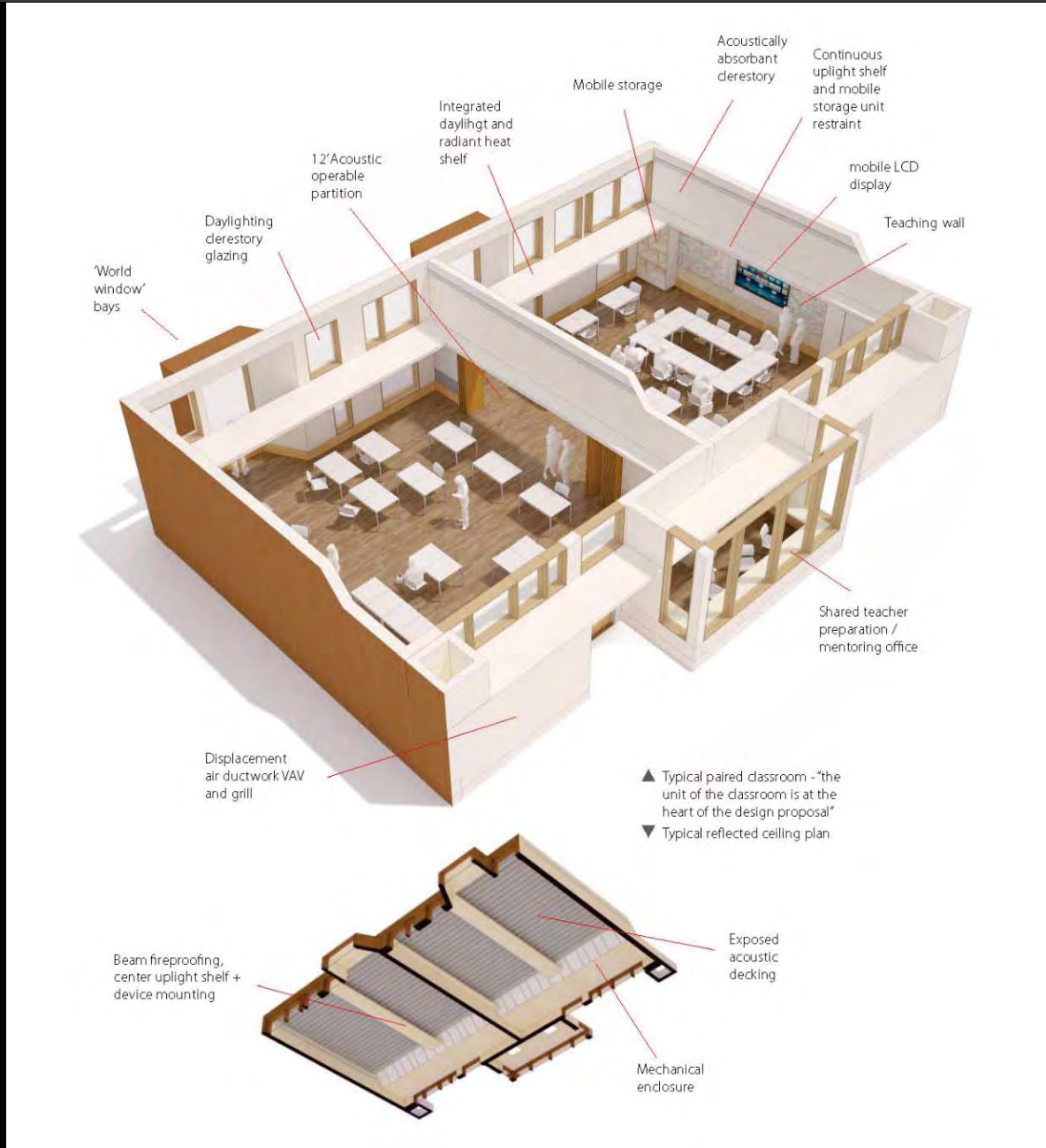
◀ The open center plan allows for radiating security sightlines to all corners of the floorplate

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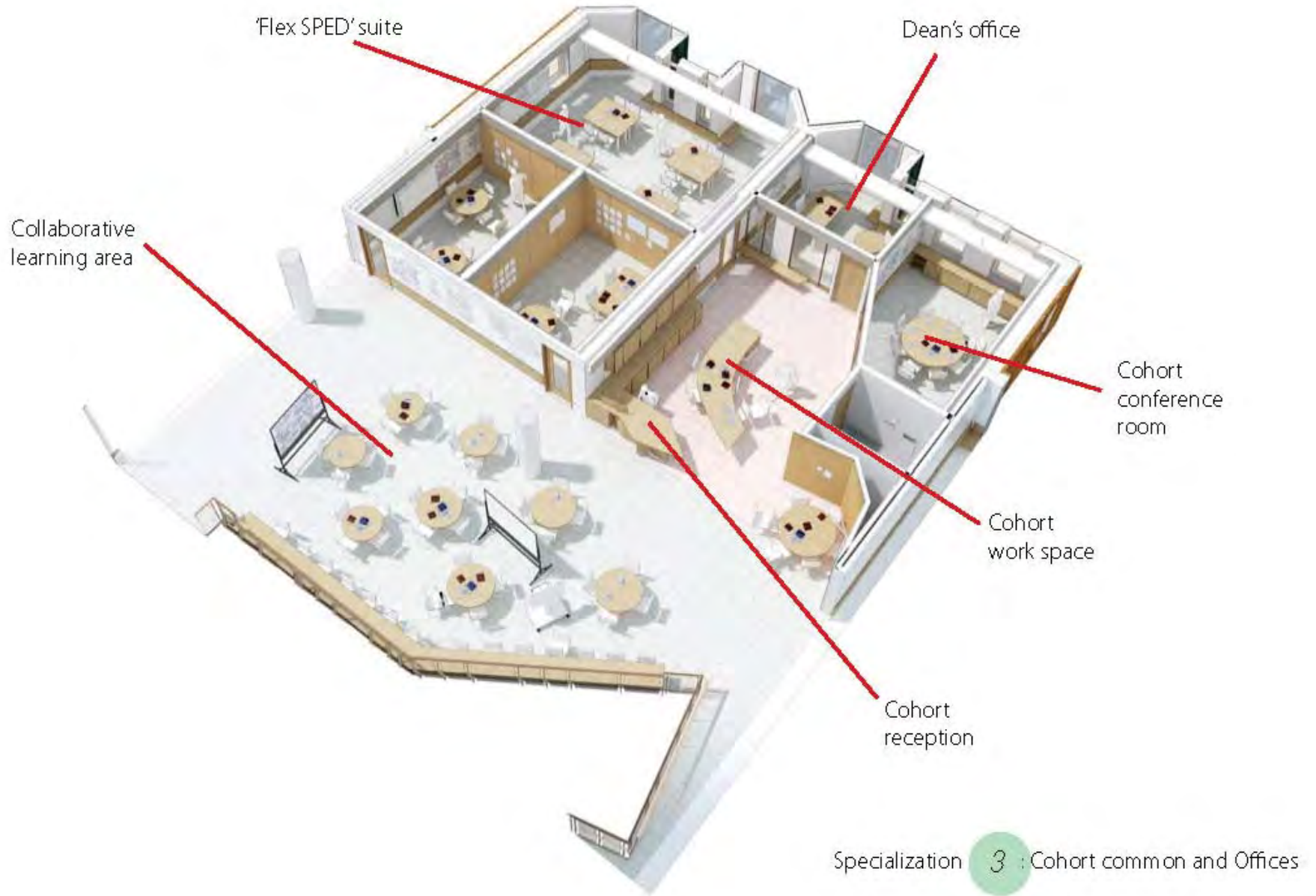
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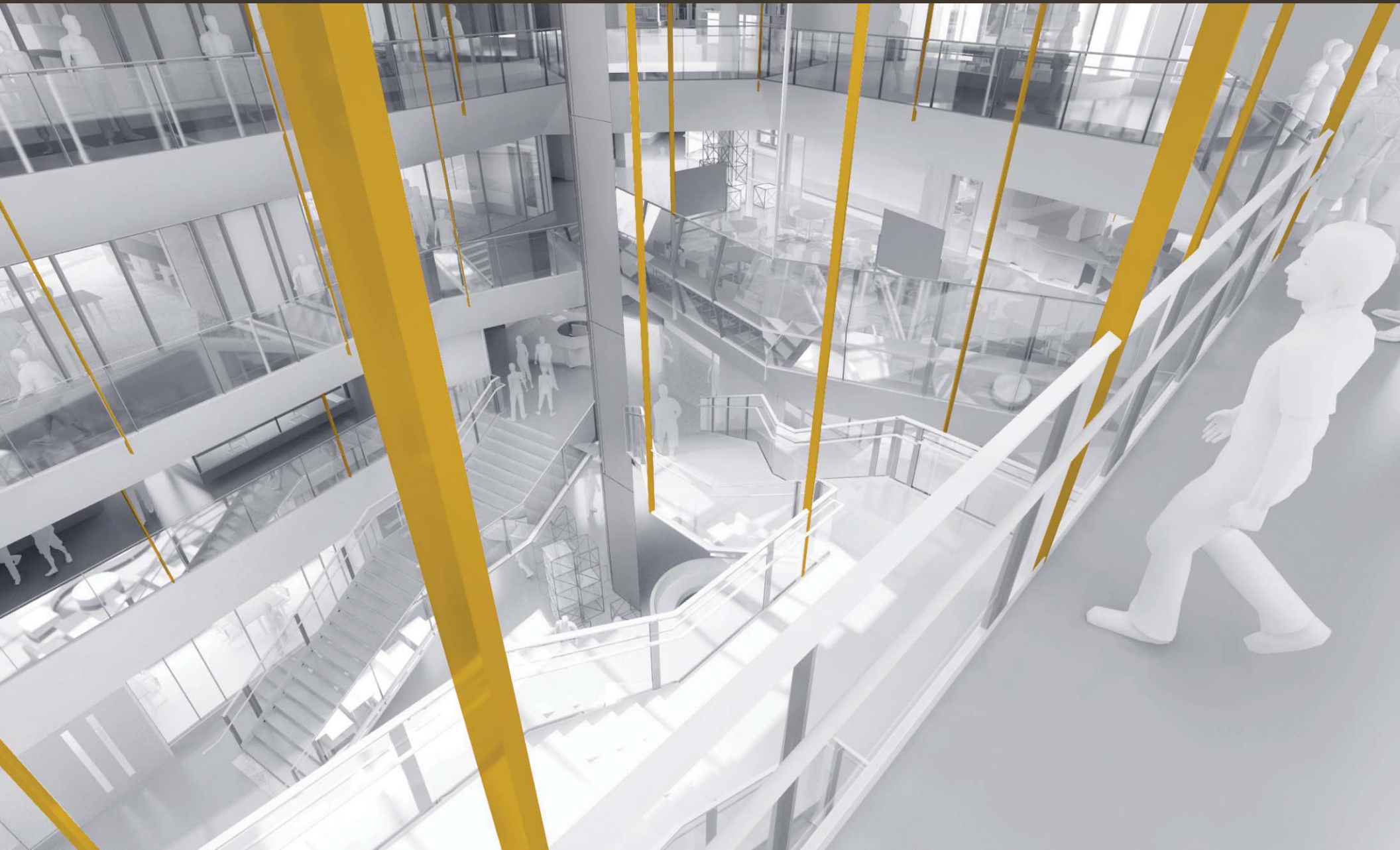


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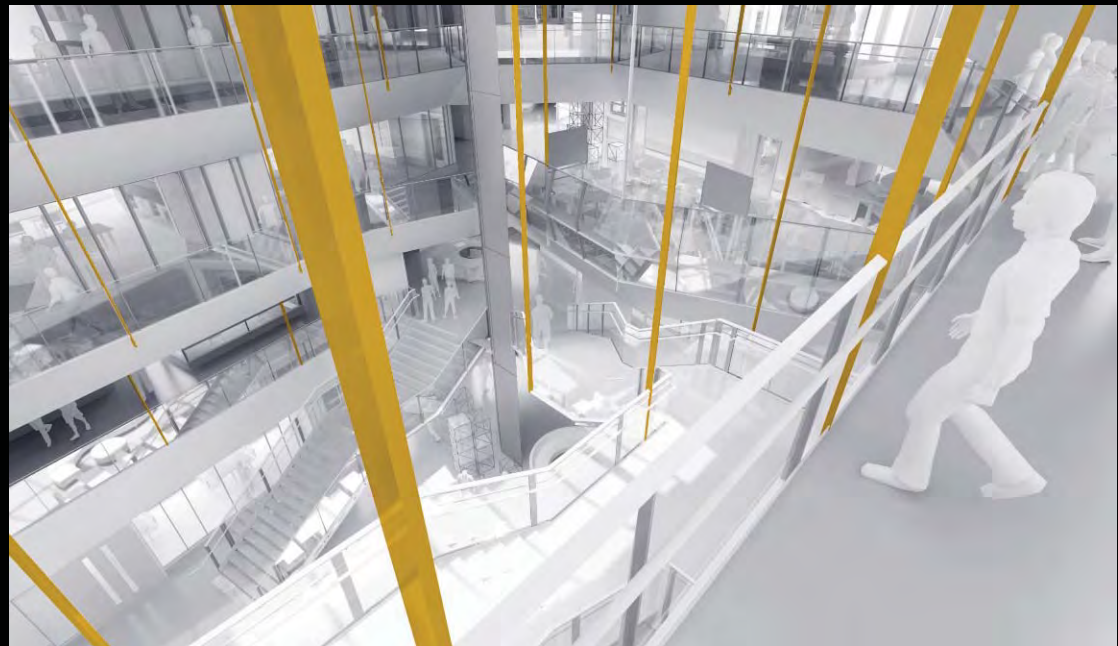
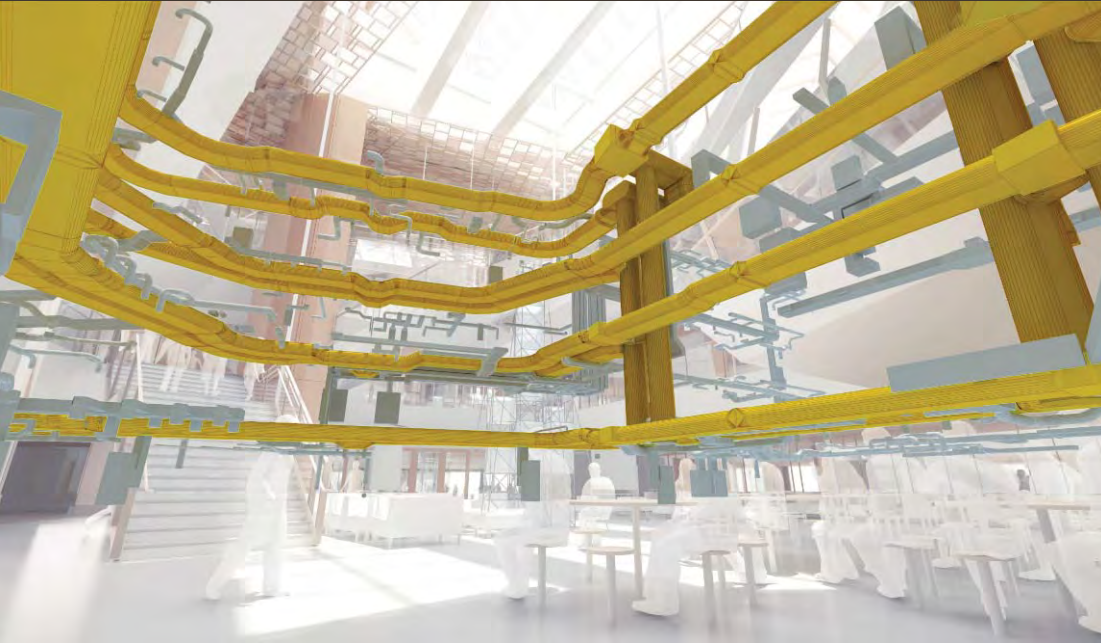


▲ Visible learning: shared teachers' offices

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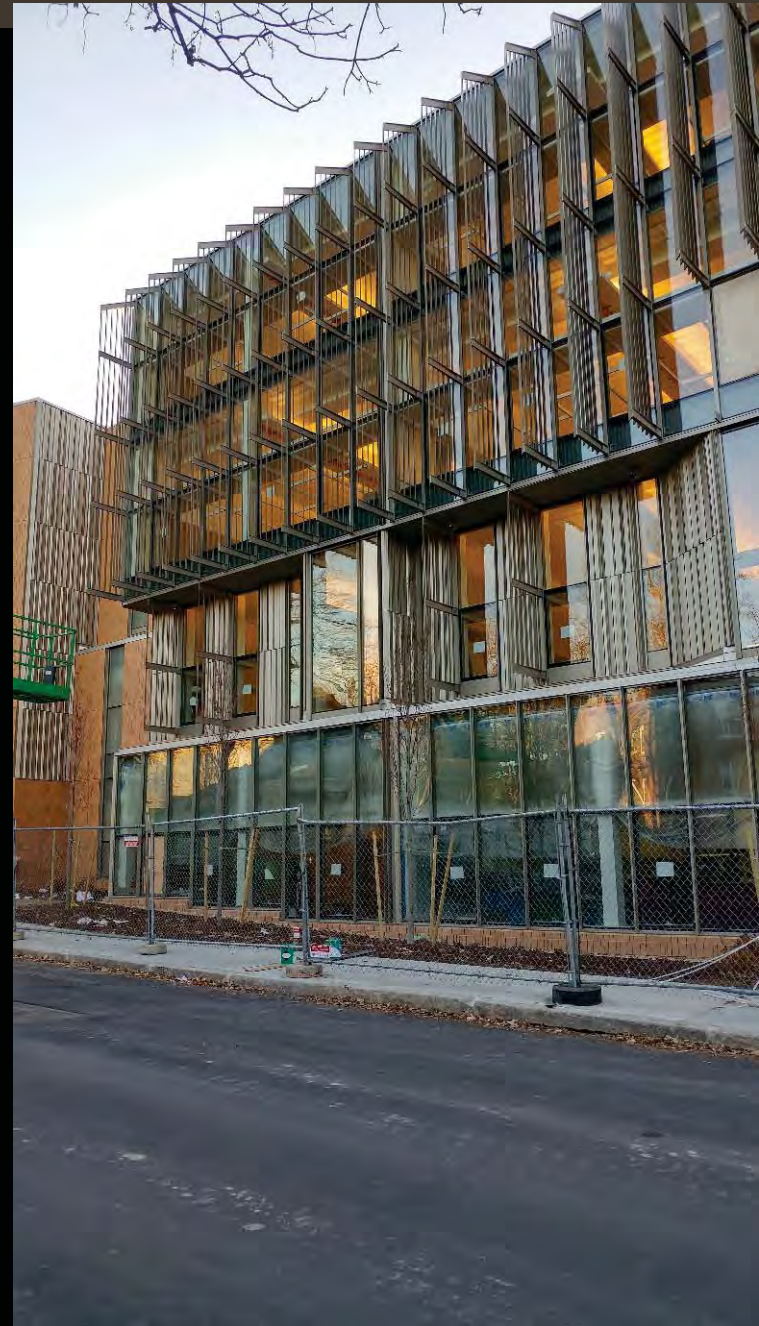
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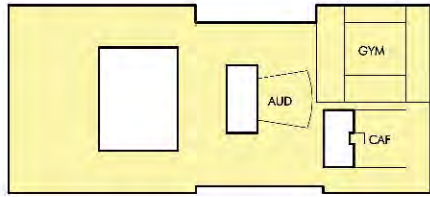
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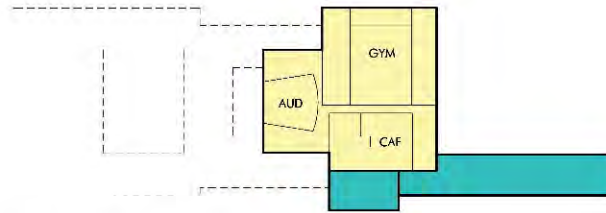


# Preferred Schematic Report Selected Options Recap



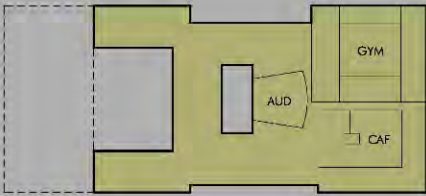
## OPTION 0.0 - EXISTING

0.0 'Repair Existing': Minimum required repairs and code upgrades to the existing structure



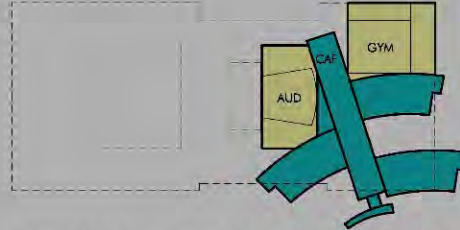
## OPTION A - ADD/RENO

A 'Addition/Renovation': Retention and Upgrade of existing auditorium, gymnasium/locker and cafeteria areas. Conversion of existing cafeteria to multi-use dining and learning. Addition of new attached two story classroom and administration wing at front and east of existing cafeteria. Swing space required.



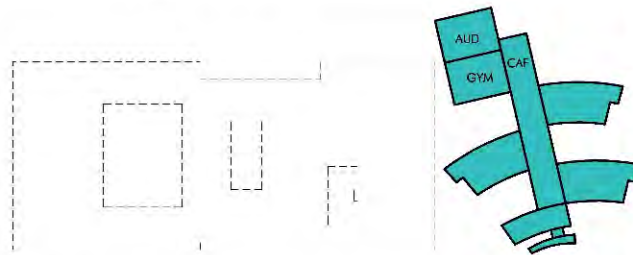
## OPTION 0.1 - ADD/RENOVATION

0.1 'Addition/Renovation': Partial demolition of surplus floor areas and complete gut renovation and reconstruction of remaining areas to meet code and to address, as best as possible, the educational program. The later includes conversion of the existing cafeteria into a multi-use dining and learning space. Swing space required.



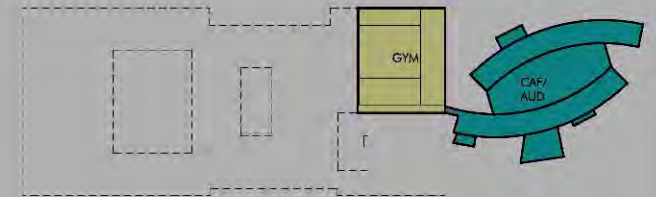
## OPTION B.1 - TREE BRANCHES ADD/RENO

B.1 'Tree Branches Addition/Renovation': Retention and renovation of existing auditorium and gymnasium/locker room. Remaining scope to be attached new two story construction with central learning commons/cafe/teria spine and branching academic wings and courtyards. Swing space required.



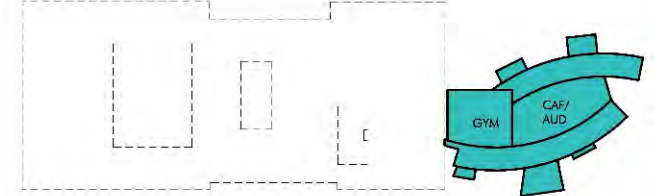
## OPTION B.2 - TREE BRANCHES

B.2 'Tree Branches New Construction': New two story construction with central learning commons/cafe/teria spine, new replacement sloped-floor auditorium and branching academic wings and courtyards. New construction located in existing parking. No swing space required.



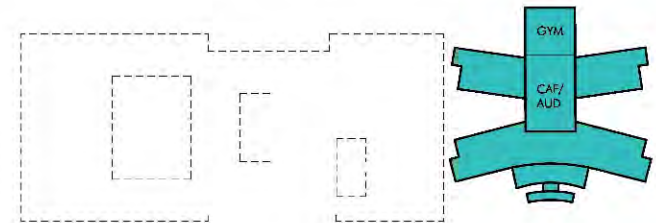
## OPTION C.1 - FOLDED HANDS ADD/RENO

C.1 'Folded Hands Addition/Renovation': Retention and renovation of existing gymnasium/locker room only. Remaining scope to be attached new three story split level entry construction with stepped convertible commons/auditorium/cafe/teria and balcony-accessed classrooms. Occupied phased construction required.



## OPTION C.2 - FOLDED HANDS

C.2 'Folded Hands New Construction': New three story split level entry construction with stepped convertible commons/auditorium/cafe/teria and balcony-accessed classrooms. New construction located in existing parking. No swing space or occupied construction required.



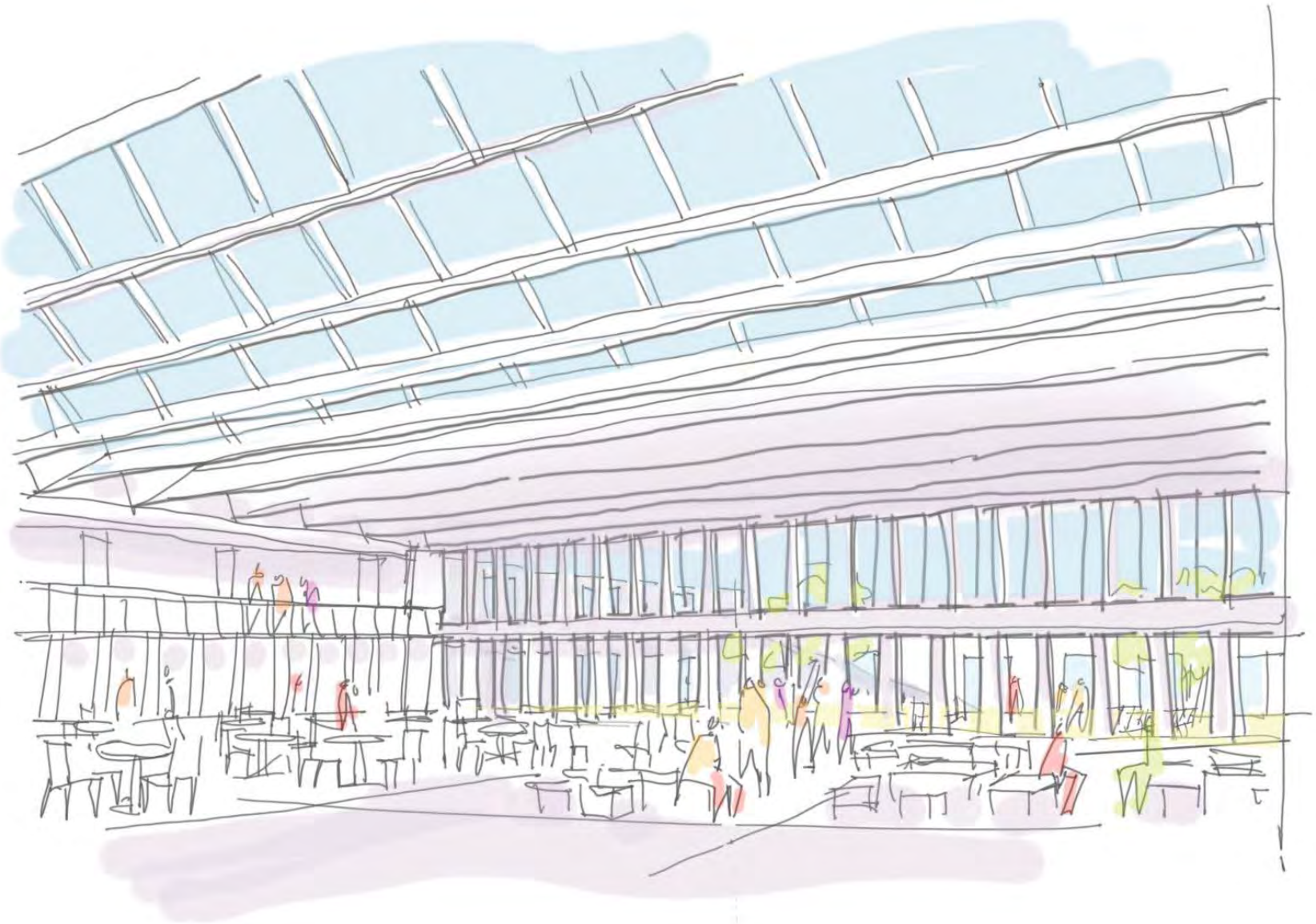
## OPTION D - BUTTERFLY

D 'Butterfly': New two story construction with classroom wings radiating off stepped convertible commons/auditorium/cafe/teria/gymnasium. New construction located in existing parking. No swing space or occupied construction required.

# Pre-Concept A - 'Add/Reno': Exterior Sketch Concept



# Pre-Concepts A - 'Add/Reno': Interior Sketch Concept



# Pre-Concepts B - 'Tree Branches': Exterior Sketch Concept



# Pre-Concepts B - 'Tree Branches': Interior Sketch Concept

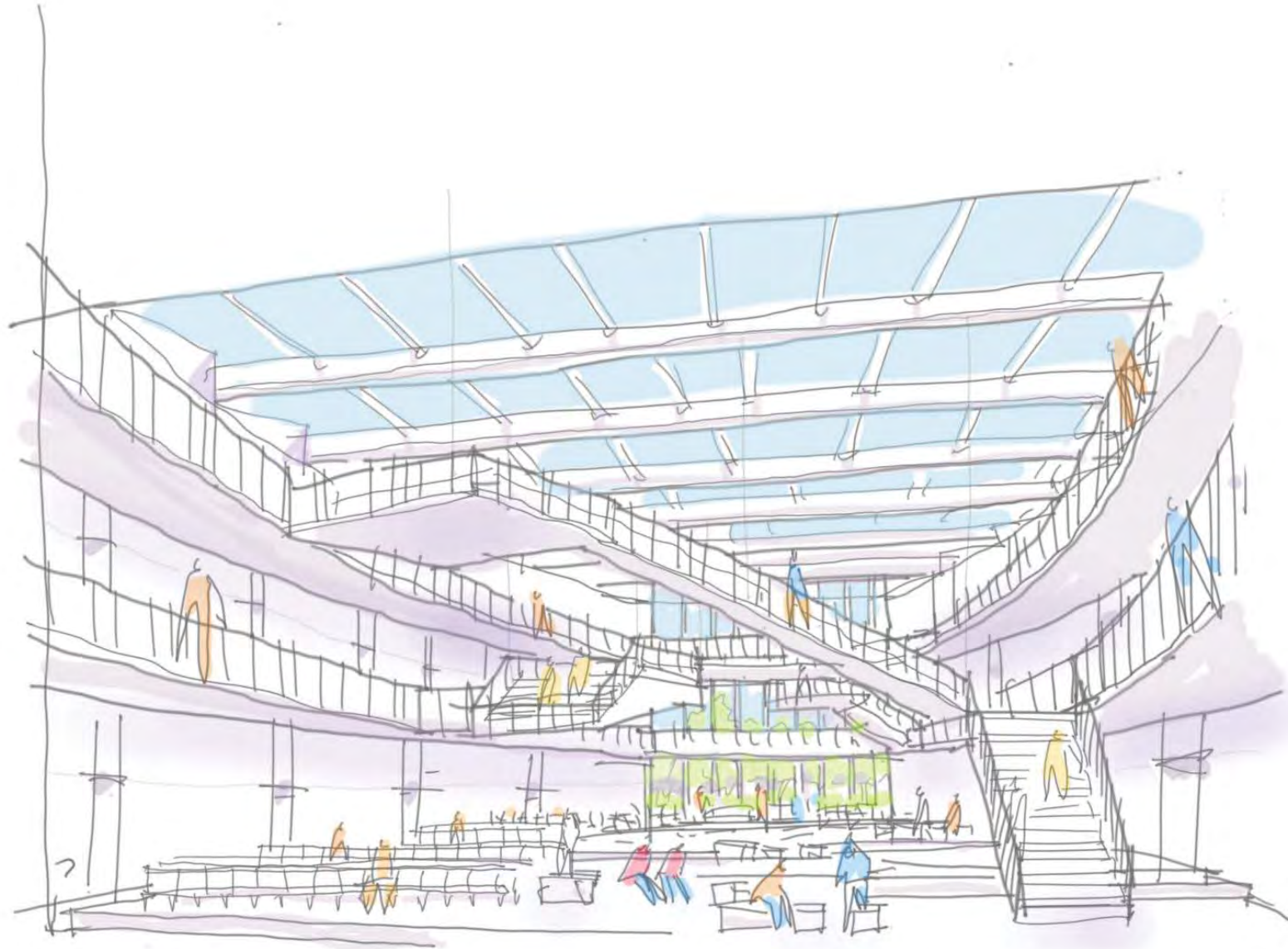


# Pre-Concepts C - 'Folded Hands': Exterior Sketch Concept





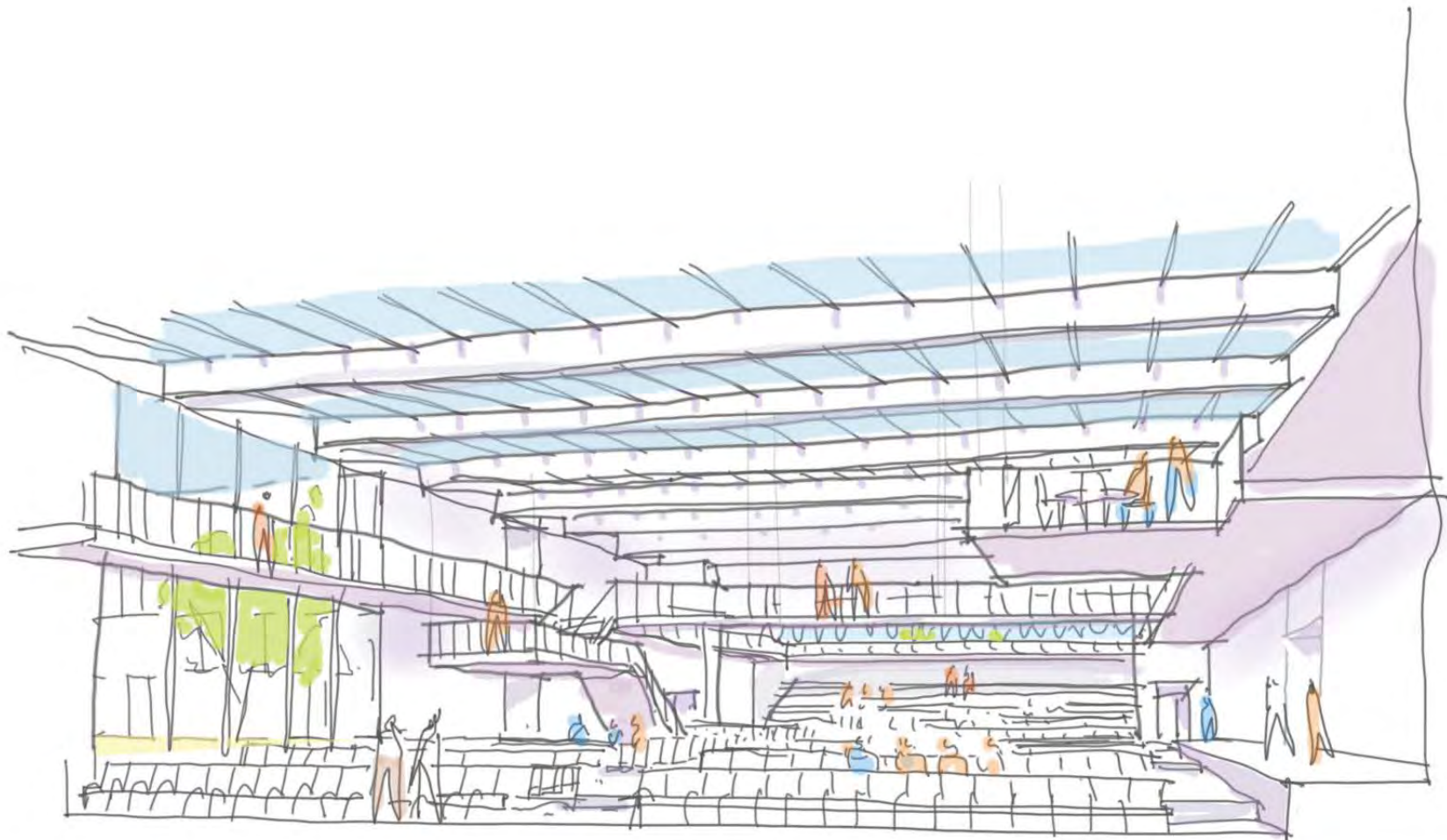
# Pre-Concepts C - 'Folded Hands': Interior Sketch Concept



# Pre-Concept D - 'Butterfly': Exterior Sketch Concept



# Pre-Concept D - 'Butterfly': Interior Sketch Concept



# Pre-Concept A - 'Add/Reno.': Progress Plan Diagram Model 'Screenshot'

Includes renovated auditorium and gyms



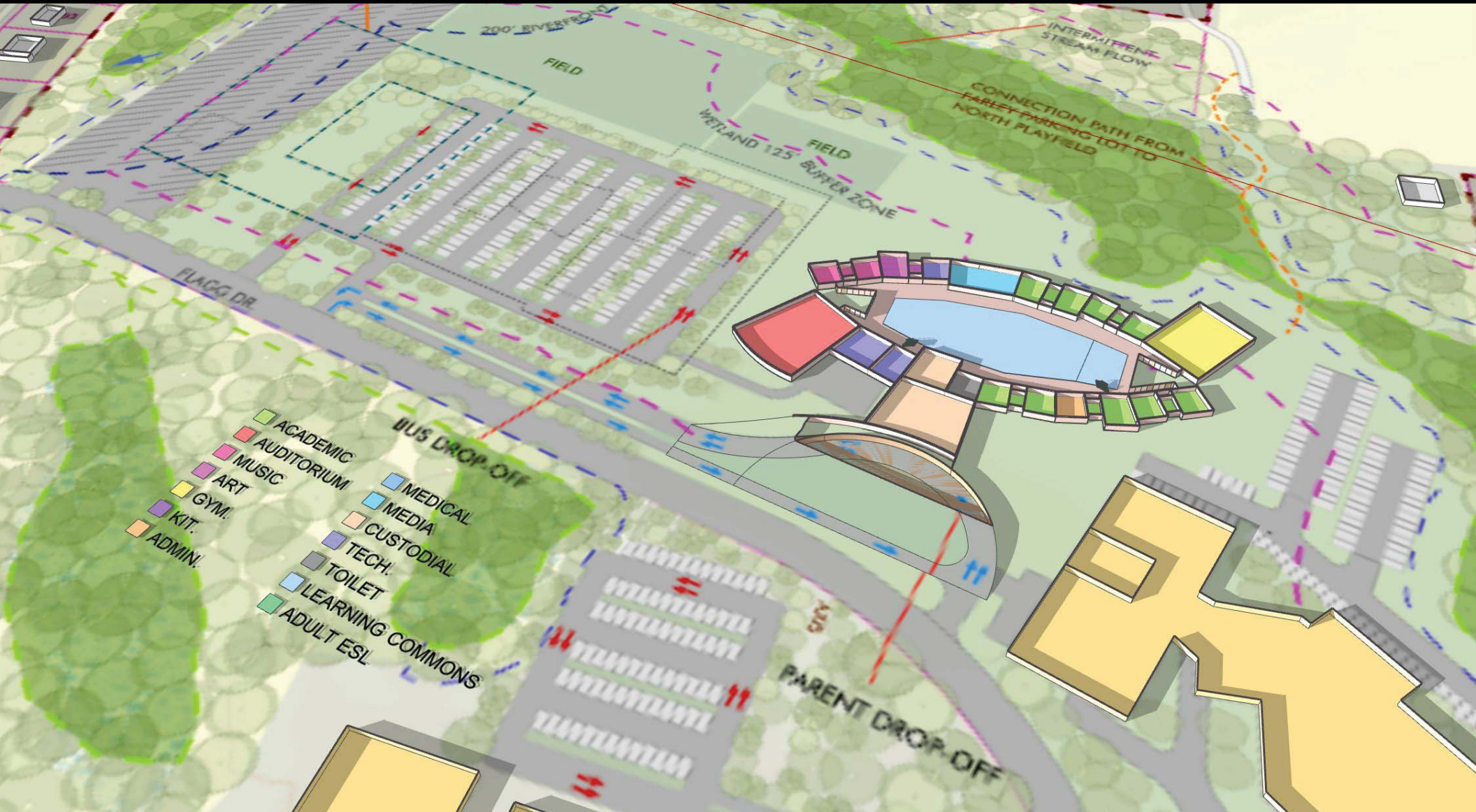
# Pre-Concept B - 'Tree Branch': Progress Plan Diagram Model 'Screenshot'

Includes new auditorium and MSBA standard gym



# Pre-Concept C - 'Folded Hands': Progress Plan Diagram Model 'Screenshot'

Revised to include new auditorium and MSBA standard gym



# Pre-Concept D - 'Butterfly': Progress Plan Diagram Model 'Screenshot'

Revised to include new auditorium and MSBA standard gym



## What is Net Zero?

Off the Grid – produces all its own energy. A zero net energy building is one that generates electricity ONSITE, using clean renewable resources, in a quantity equal to or greater than the total amount of energy consumed.

## How is Net Zero Accomplished?

Rather than creating heat through fossil fuels (no gas fired boilers), heat is moved on site with electric heat pumps using photovoltaic or wind generated electricity. Typically, this requires the use of geothermal wells in the northeast. This strategy is combined with increased building efficiency, including insulation, heat transfer of air exhaust, and fine tuning (commissioning) of mechanical and plumbing systems.



## What is Carbon Neutral?

Very similar to Net Zero, but buys some approved offsets to balance energy consumption. A carbon offset is a reduction in emissions in one location in order to compensate for an emission made elsewhere.

## What is LEED?

Leadership in Energy and Environmental Design (LEED) is a rating system devised by the United States Green Building Council (USGBC) to evaluate the environmental performance of a building.

## What are LEED certification levels?

There are a combined total of 110 potential LEED points to be achieved in the categories of building location, site development, water use, energy consumption, building materials, and indoor environment. The certification levels are as follows:

- Certified                      40 - 49 Points – Comparatively minimal costs
- Silver                            50 - 59 Points – May be more expensive
- Gold                              60 - 79 Points – Likely significant costs
- Platinum                        80-110 Points – Significant costs

The MSBA requires their schools to be “Certified” and exceed the level of energy efficiency required in the new Mass Energy Code by 10%. To qualify for additional reimbursement, the project must exceed the new Energy Code by 25%. This requires the building to have very efficient insulation, heat transfer of air exhaust, and fine-tuned (commissioned) mechanical and plumbing systems.

## Timeline for Decision

- April 2018 – SBC Vote on Preferred Design Alternative
- May / June 2018 – JLA to develop and document Schematic Design in sufficient detail for Energy Analysis
- July 2018 – Initiate SBC decision-making process. JLA to provide Energy Analysis of alternative MEP systems including lifecycle energy costs, maintenance costs, lifecycle savings and duration in years for capital cost payback. This analysis to include ballpark costs for Net Zero geothermal / photovoltaic system  
  
JLA to provide ballpark capital cost analysis of upgrading LEED certification level to Silver, Gold, or Platinum
- August 2018 - SBC Vote on Schematic Design Scope and Budget, including MEP systems and LEED category.