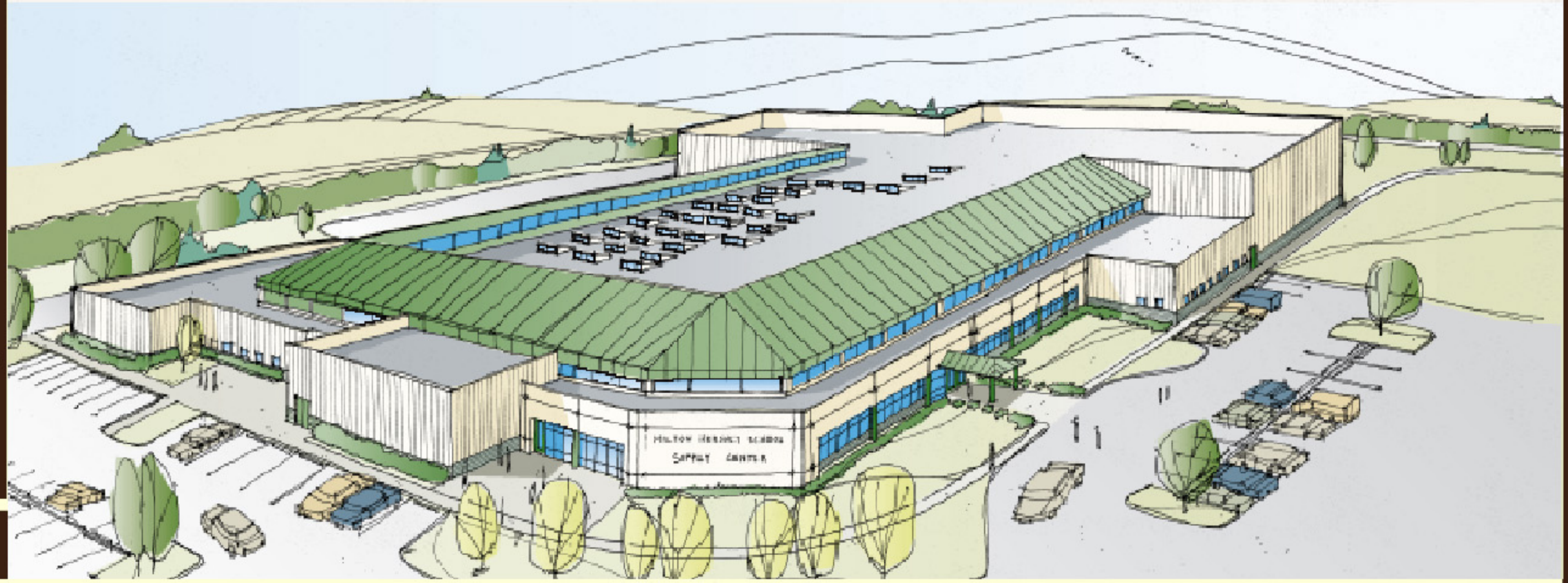


MILTON HERSHEY SCHOOL

FOUNDED 1909



EXISTING CONDITIONS

Owner
 - The Milton Hershey School
Location
 - Hershey, PA
Project Size
 - 110,000 sq ft
Total Cost
 - \$23,500,000
Design-Bid-Build Contract
 Under Construction

The Supply Center
 - General Office and Conference Rooms
 - Kitchen and Bakery
 - Clothing Store
 - Alterations Seamstress
 - Mail Distribution Center
 - General Building Storage

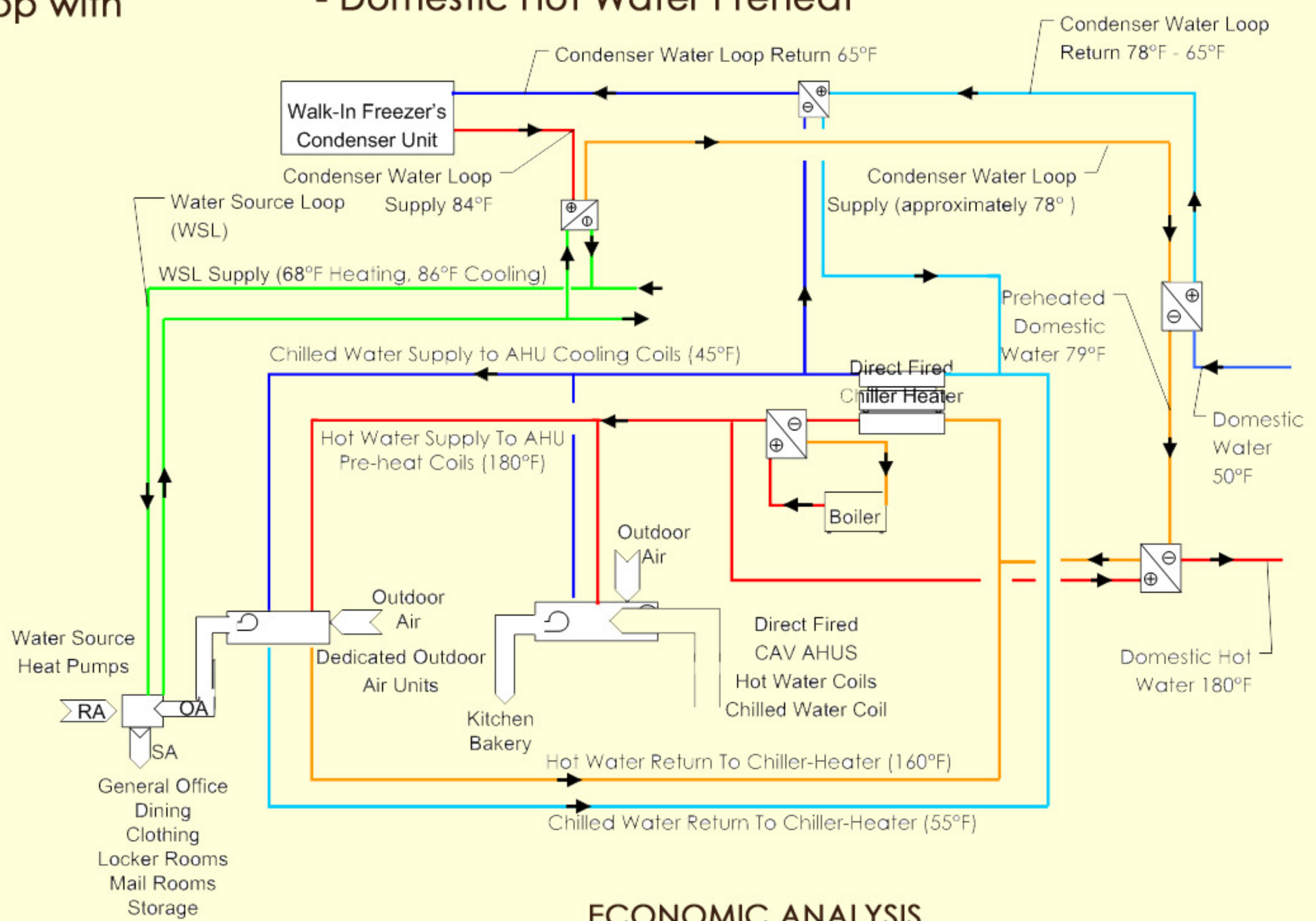
Existing Mechanical Systems
AIR SIDE
 - 14 Total Air Handling Units
 - 10 VAV Units - General Office Space
 - 4 CAV Units - 100% OA Make-Up Units
 - Housed in Elevated Mezzanine Floor
Water Side
 - (2) 270 Ton Water Cooled Centrifugal Chillers - 45 degree Chilled Water
 - (3) Natural Gas Fired Steam Boilers
Walk-In-Freezer Condenser Water Loop
 - Rejected Heat From Condenser Met Directly by Chilled Water

MECHANICAL SYSTEM REDESIGN

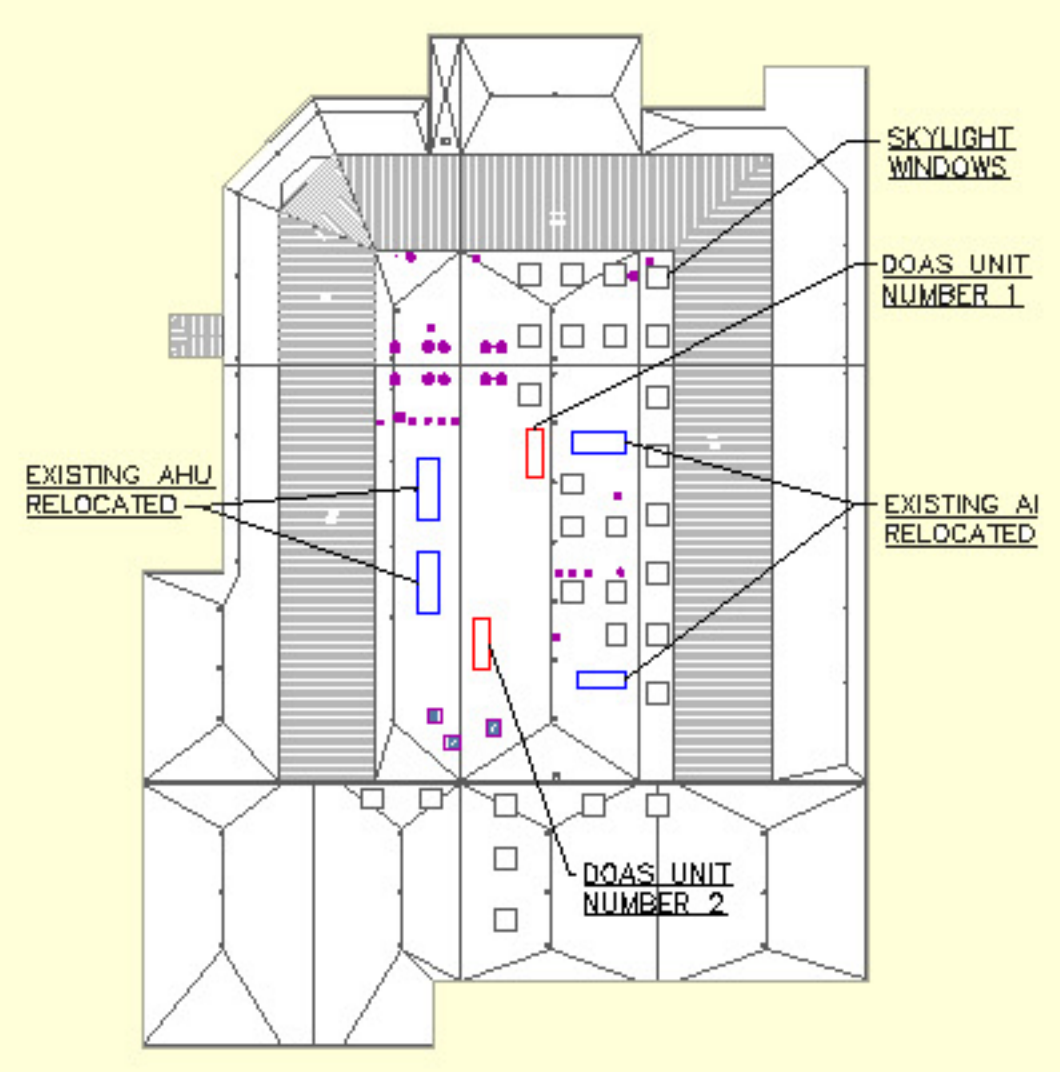
Dedicated Outdoor Air Systems
 - Replace 10 VAV AHUs with 2 DOAS Units
 - Saves in First and Operating Costs
 - Water Source Heat Pumps
 - Parallel Cooling System
 - Integration of Water Source Loop with Condenser Water Loop

Walk-In-Freezer Condenser Water Loop Heat Recovery
 - 1282 MBH of Possible Heat Recovery
 - 84 degree Leaving Water Temperature
 - 65 degree Operating Temperature
 - Water Source Loop Winter Time Heat Addition Source
 - Domestic Hot Water Preheat

Direct Fired Absorption Chiller-Heater
 - Single Effect LiBr Absorption Cycle
 - Heat Exchanger in High Temperature Generator
 - Simultaneous Cooling and Hot Water Production
 - (2) 240 Cooling Ton Chiller-Heaters Selected
 - Meets Cooling Load, HVAC Heating, and Domestic Hot Water Heating
 - Redundancy for Continuous Condenser Water Loop Heat Rejection



RELOCATION OF AHUs TO ROOF
 - Eliminates Need for Mezzanine Floor
 - Requires Structural Adjustments



ECONOMIC ANALYSIS

	Existing System	Redesigned System
Cooling Cost	\$67,577	N/A
HVAC Heating Cost	\$23,016	N/A
Hot Water Heating Cost	\$58,371	N/A
Combined Heating and Cooling Cost	N/A	\$117,370
Air System Fan Cost	\$21,303	\$12,318
Pump Cost	\$29,274	\$20,480
Cooling Tower Cost	\$9,920	\$16,440
Total Operating Cost	\$209,461	\$166,608
Mechanical First Cost	\$622,840	\$682,885
Mezzanine Floor Cost	\$154,458	N/A
Total First Cost	\$777,298	\$683,173
20 Year Life Cycle Cost	\$3,043,808	\$2,512,748

Redesign Saves:
 Energy
 Initial Cost
 Operating Cost

Redesign is \$530,000 Less Over 20 Years
 Redesign Integrates Multiple Building Systems
 Redesign is Beneficial for MHS New Supply Center