

CASE STUDY

AQUATICS FACILITY



MARCRRAFT
CUSTOM HVAC SYSTEMS

MARCRRAFT TRU-CUSTOM HVAC SYSTEM PROVIDES PERFECT FIT IN TIGHT SQUEEZE

CUSTOMER:..... High School
LOCATION:..... New York
CUSTOM HVAC SYSTEM SIZE:..... 38,000 CFM
WHY CUSTOM?..... ENERGY RECOVERY, DEHUMIDIFICATION, SOUND ATTENUATION AND PRODUCT LONGEVITY.

SEMI-CUSTOM VS. MARCRRAFT TRU-CUSTOM

The original semi-custom air handler for the new Olympic sized pool at the High School needed to be replaced. With a previous HVAC product life of less than 20 years, the customer knew they wanted their new HVAC system to have a longer lifespan. The original HVAC system was built into the space at the time of the overall facility construction. The new HVAC system would have to be custom designed for the original space in the new project.

In addition, the customer requested the HVAC system utilize energy recovery to save on utility costs while bringing in fresh, dry outside air into the aquatics facility. By doing this, the humidity would be reduced in the pool space and energy would be saved by pre-heating the incoming outside air with the outgoing humid exhaust air. Also, the pool air was fresh with no noticeable pool odors. There was no danger of frost down to -20° F outside air with the inclusion of a heat pipe.

The strong synchronized swimming program at the school was also concerned with the noise in the space from the previous HVAC system and wanted to make sure the new system would operate quietly. They requested a sound criteria of <NC35 in the pool area. All of these requirements could not be met with a standard HVAC system. The school needed a system designed from scratch that exceeded their requirements, that's when they called MarCraft.

MARCRRAFT TRU-CUSTOM SOLUTION

The High School learned about MarCraft Custom HVAC Systems as a result of a satisfied customer nearby who had recently installed a MarCraft Custom HVAC System with energy recovery for dehumidification as well as unique sizing due to the retrofit nature of the project

for their aquatics facility and was extremely satisfied with the results. Sections of the MarCraft HVAC System for this nearby customer had to fit through a standard double door.

Upon the positive referral, competitive price, extensive product capabilities and greater efficiency on utility costs, the school engaged MarCraft to build a custom HVAC system that would exceed their expectations, be more energy efficient and provide greater longevity than the previous system. The engineering firm requested assistance from the internal MarCraft engineers based on the complexity of the unit fitting in a tight space and other project requirements.

RESULTS

The High School's Superintendent of Buildings and Grounds is extremely satisfied with the MarCraft Custom HVAC System. During installation the system fit perfectly in the tight space as it came in four separate sections. After installation the system performed as promised. As a matter of fact, the joke around the aquatics facility now is the only sound you hear in the space is that of the pool skimmers. With a product lifespan of nearly 50 years, the MarCraft Custom HVAC System will keep decades of swimmers comfortable and the school district happy for years to come. MarCraft met all of the design criteria and delivered a first class custom HVAC system.



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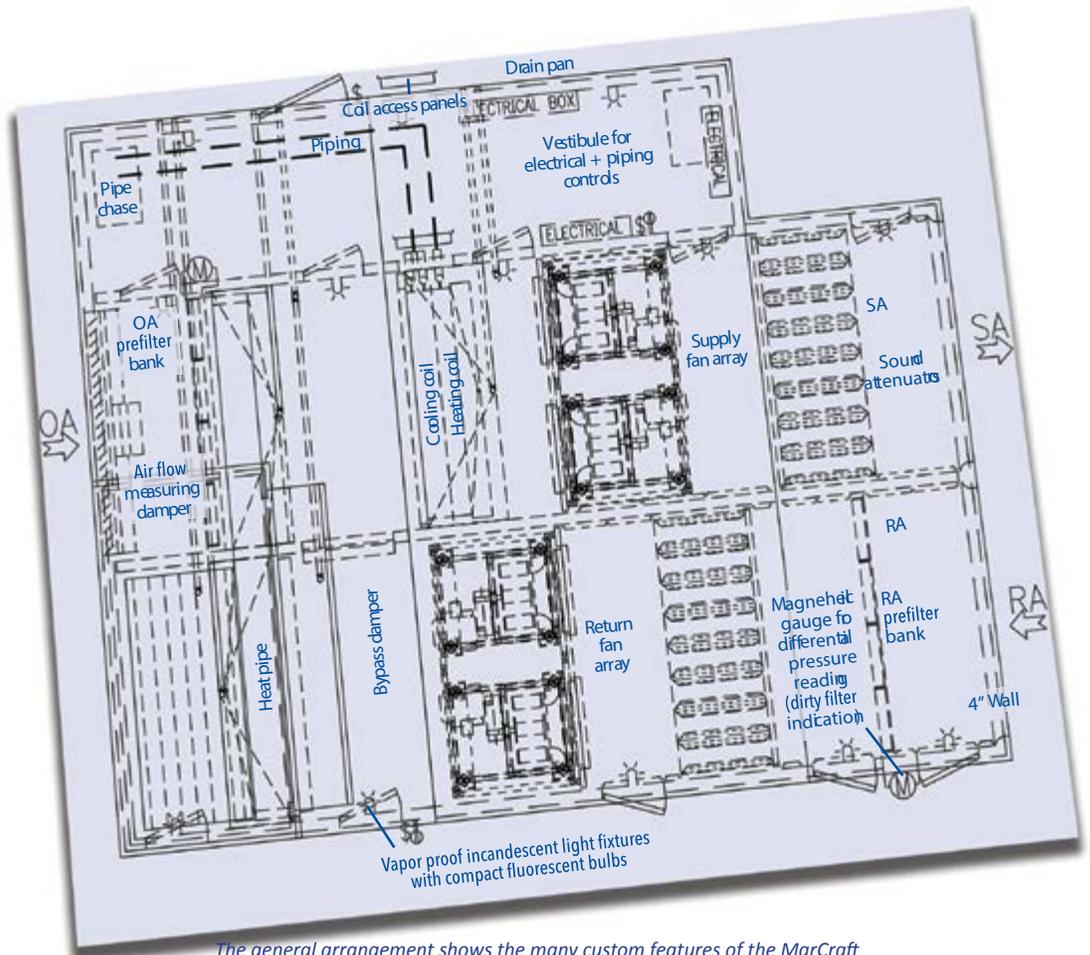
MARCRRAFT'S TRU-CUSTOM HVAC SYSTEM INCLUDED:

CONSTRUCTION

- All aluminum construction with the exception of 316 stainless steel interior for coils and heat pipe sections, structural steel base
- Interior designed as fully washdown capable for cleaning (.040 aluminum walls with minimal fasteners exposed)
- The reverse panel construction with a closed cell polyurethane virtually eliminated any possibility of pool air getting inside the outdoor unit and condensing
- 38,000 CFM supply and 38,000 CFM exhaust
- 4" thick walls
- Perforated wall panels upstream or downstream of the fans
- 4" doors with materials matching casing per location. Dual sealing gaskets, dual pane thermal windows
- Roof curb provided

COMPONENTS

- Hot water heating & chilled water cooling coils w/316 stainless steel casing and ElectroFin coating for corrosion prevention. Coils on 316 stainless steel slide racks for easy removal and 316 stainless steel drain pans
- The heat pipe is all aluminum with Heresite coating
- Packless sound attenuators and elbow silencers constructed from 304 stainless steel for unit and down-stream duct work to achieve specified sound criteria
- Full service vestibule with heat
- Full factory piping with pumps installed in vestibule
- Installation of electrical equipment in factory
- Airflow measuring station
- Heat pipe bypass recirculation dampers
- 4" 30% pre-filters in stainless steel filter frames
- Energy recovery heat pipe to utilize the moist humid air leaving the space to heat the incoming dry outside air in upstate New York. Up to 100 gallons of water/moisture per hour is removed from the pool air during a major swim event and drained. No moisture is evident on a full height window wall during mid-winter operation
- Multiple 12 blade plenum fans contribute to the overall AHU's quiet operation as well as to the overall reliability



The general arrangement shows the many custom features of the MarCraft Custom HVAC System for the High School.



Marcraft Custom HVAC Systems are Manufactured in the USA



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