

Florida

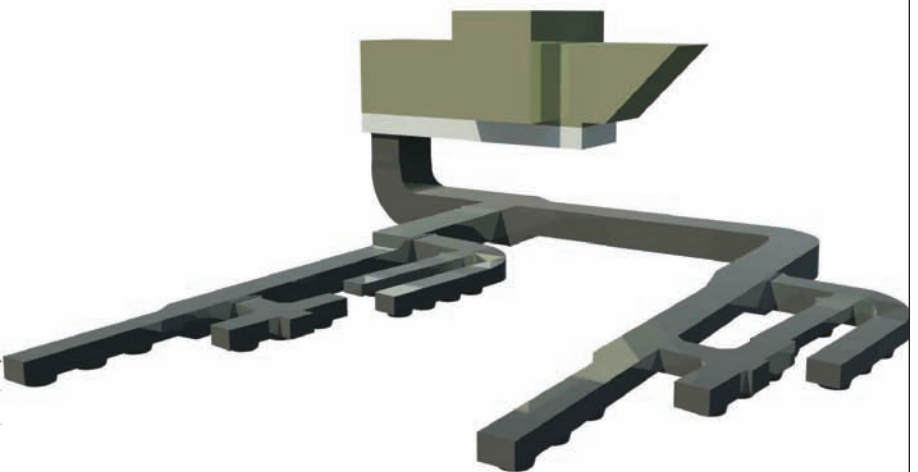
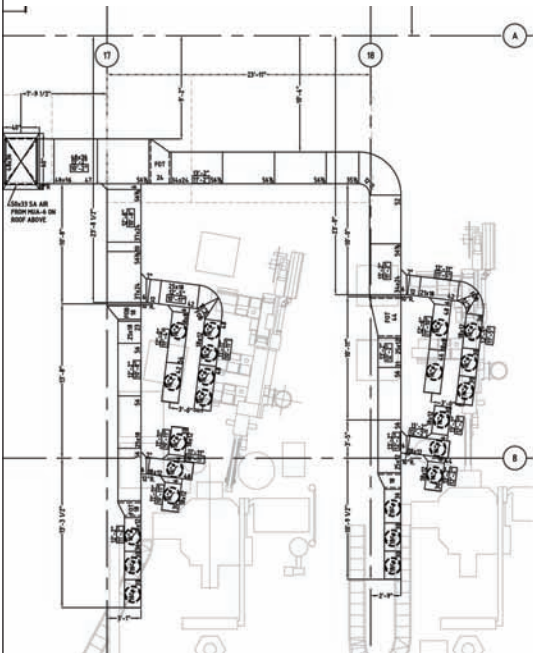
SMACNA Inc.

Quarterly Edition - October 2012

Volume 47

TECH/SPEC NEWS

JOHNSON CONTROLS BATTERY GROUP, INC. PLANT COOLING AND EXHAUST SYSTEM IMPROVEMENTS



MUA-6 PARTIAL PLAN

SHEET METAL DETAILING: CADVANTAGE DRAFTING SERVICE, INC.,
ST. PETERSBURG, FLORIDA

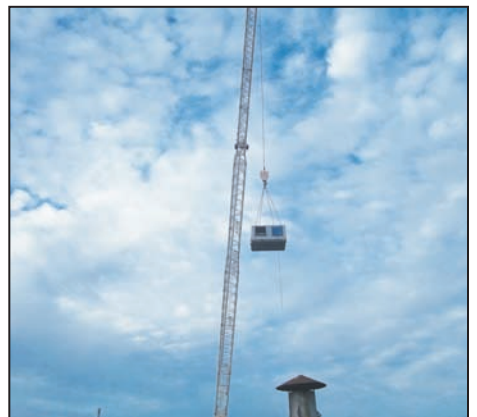
**JOHNSON CONTROLS BATTERY GROUP, INC.
PLANT COOLING AND EXHAUST SYSTEM IMPROVEMENTS**



Existing roof conditions prior to upgrade



800 Ton Crane with 500 foot boom



MUA removal

Felipe Arango, Sheet Metal Detailer for Cadvantage Drafting Service, Inc. working on the Johnson Controls Battery Plant Project.

Engineer: TRC Engineering, Brookfield, Wisconsin

General/Mechanical Contractor: Johnson Controls Mechanical Division

Sheet Metal Contractor: McDonald Air and Sheet Metal, Inc.,

Orlando, Florida

Project Manager: Bob Grumblatt

Job Site General Foreman: Dave Laietta

Sheet Metal Detailing: Cadvantage Drafting Service, Inc.,

St. Petersburg, Florida

This project performed by McDonald Air and Sheet Metal, Inc. required the sheet metal contractor to install an HVAC upgrade to the plant owned by Johnson Controls Battery Group, Inc. located in Tampa, Florida. The scope of this project included replacing 7 make-up air units with gas-fired

heaters and cooling coils; adding 9 air handling units for cooling; adding 2 exhaust fans and a new cooling OX-1 unit to the ball mill (smelter). The purpose of the HVAC upgrade was to lower temperature and reduce humidity. Duct sizing was designed for minimal air

JOHNSON CONTROLS BATTERY GROUP, INC. PLANT COOLING AND EXHAUST SYSTEM IMPROVEMENTS



Equipment removal prior to new installation



Relocated duct to facilitate installation of new AHU equipment and supports



New duct installed with minimal impact on plant production

velocity in order to facilitate reduced dust disturbance.

A particular challenge of this project required work to be performed in a plant that is fully operational seven days a week with three shifts. Shut down in areas that are in production required advance planning. McDonald Air and Sheet Metal's crews worked nights and weekend shifts to keep interruption of the plant's production to a minimum.

Personal Protective Equipment (PPE) measures included pre-lead testing with respirator fitting and a follow-up lead test. Crews wore uniforms and were required to shower before leaving. The plant has over 200 employees with minimal exposure to lead showing that the in-house plan is effective in protection of on-site employees.

Removal of existing roof-top systems and installation of new air units required the use of an 800 ton crane with a 500 foot boom.

All duct on this project is made of Paint-Grip and painted on-site prior to installation. Paint-Grip duct is produced from galvanized steel that is phosphatized (submerged in a phosphate bath), sometimes referred to as bonderized, at the mill. The process provides enhanced paint adhesion and improved corrosion resistance to the painted steel. Pre-assembled, pre-cleaned duct was shipped to the job-site from Orlando with Les Jones, Plant Manager for McDonald Air, handling this effort.

Bob Grumblatt, McDonald's Project Manager stated, "The coordination of duct runs in the plant was critical due to existing mechanical, electrical and plumbing systems. Contract drawings are typically schematic in nature. McDonald must field verify and locate all ductwork."

McDonald Air and Sheet Metal contracted the fabrication/installation HVAC drawings to Cadvantage Drafting Service.

Cadvantage utilizes custom 3D AutoCAD©-based software that is crucial to today's BIM (building information modeling) environment. While this upgrade to an existing building did not utilize BIM protocol, development of HVAC drawings in 3D provides visualization of routing of ductwork. Field-gathered measurements were used to build 3D models of each system to insure accuracy.

Drawings were then taken to the job-site, checked for any additional conflicts and returned to Cadvantage for correction. Final drawings were produced and issued for fabrication and installation.

"Corrections made prior to fabrication kept waste of time and material to a minimum while retrofitting a working plant. We would like to thank McDonald for the opportunity to provide drawings for this interesting project," stated Dan Sinclair, President.

**PATRICK AIR FORCE BASE COMBAT WEAPONS TRAINING FACILITY
(INDOOR SHOOTING RANGE), MERRITT ISLAND, FL**



Exhaust duct at trap down range

Architect: STOA Architects, Pensacola, FL
Engineer: Premier Engineering Group, LLC, Pensacola, FL
General Contractor: Harkins Development Corp., Sanford, FL
Mechanical Contractor: S. I. Goldman, Longwood, FL
Sheet Metal Contractor: McDonald Air and Sheet Metal, Inc., Orlando, FL

The Combat Weapons Training Facility is a 30,000 square foot building with a 100 meter fully contained indoor shooting range. The 45th Security Forces Squadron Combat Arms section provides small arms training for all base support organizations, as well as all other units at Patrick. This facility was built at the cost of \$8.5 million to replace an outdoor range that was in use at Patrick Air Force Base for about 50 years.

The scope of the project for McDonald Air and Sheet Metal, Inc. Of Orlando, Florida was to ventilate the indoor firing range to protect



Exhaust Fans outside

**PATRICK AIR FORCE BASE COMBAT WEAPONS TRAINING FACILITY
(INDOOR SHOOTING RANGE), MERRITT ISLAND, FL**



Supply Air Radial Diffuser at firing line



At firing line looking down range



shooters and the environment from harmful contaminants from lead and from gun powder. This required the fabrication and installation of 3,600 lbs. of galvanized sheet metal ductwork and 8,500 lbs. of stainless steel ductwork. All range supply air and exhaust air ductwork was fabricated from 304 stainless steel.

This job was unusual because it uses 100% outside air (no cooling). The ventilation is accomplished with five Cook centrifugal filtered supply fans each fan at 14,400 cfm and two Cook SWSI return exhaust fans each at 36,600 CFM. The facility consists of a 12 point, 100 meter fully contained firing range, training classrooms, weapons maintenance room, ammunition storage area, weapons vault, and administration area.

McDonald Air and Sheet Metal, Inc. commends the job foremen, Chris Williamson and Mike Kacer, for a job well done.



Control room at firing line

FLORIDA SMACNA, INC. MEMBER FIRMS

In the sheet metal and air conditioning business, nobody knows excellence quite the way SMACNA Contractors do. After all, they wrote the book on it. Why take a chance on doing business with anyone who offers less.

All Southern Fabricators, Inc.

5010 126th Avenue N.
Clearwater, FL 33760
727-573-4846
Manuel Santana, Jr.

Lapin Sheet Metal Company

3825 Gardenia Avenue
Orlando, FL 32839
407-423-9897
Ronald J. Lapin

R. Neth & Son, Inc.

360 E. Landstreet Road
Orlando, FL 32824
407-855-9096
Brad Supplies

Bohnert Sheet Metal

2225 NW 76th Street
Miami, FL 33147
305-696-6851
William H. Marvel, Jr. (Skip)

McDonald Air and Sheet Metal, Inc.

2730 Eunice Avenue
Orlando, FL 32808
407-295-0220
Ralph Carver

Ray's Metal Works, Inc.

P.O. Box 700
Alachua, FL 32616
386-462-1415
Ray Burnsed, Sr.

BSA Sheet Metal

2530 Ali Baba Avenue
Opa Locka, FL 33054
305-681-3771
John Rudisill

Magnum Sheet Metal, Inc.

7470 NW 68th Street
Miami, FL 33166
305-885-5656
William H. Murphy, Sr.

Sheet Metal Experts, Inc.

8986 N.W. 105th Way
Medley, FL 33178
305-805-2019
William F. Medlin

CADVANTAGE Drafting Service, Inc.

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727-321-2072
Dan Sinclair

MetalFab, Inc.

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San Antonio, FL 33576-1184
352-588-9901
Wally Ruda

South Florida Sheet Metal

5264 NW 163rd St.
Miami, FL 33014
305-430-0075
Harold Woods

Dodec Inc.

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Hialeah, FL 33018
305-826-4022
Trevor Pantry

Moffitt Mechanical, LLC

1351 13th Avenue South, Suite 130
Jacksonville Beach, FL 32250
904-241-9944
John Moffitt

United Sheet Metal Company/ Applegate

1141 NW 31st Avenue
Pompano Beach, FL 33069
954-773-2910
Rich Applegate

Ferber Sheet Metal Works, Inc.

4121 Evergreen Avenue
Jacksonville, FL 32206
904-356-3042
George Ferber

Omega Test and Balance

126 Wisteria Avenue
Fort Pierce, FL 34982
772-216-7632
Hugh Grimes

Vickers Metal Works, Inc.

6701 Edgewater Commerce Pkwy.
Orlando, FL 32810
407-297-7546
Tim Vickers

OTHER CONTRIBUTORS TO THE FLORIDA SHEET METAL INDUSTRY

Colbert Air Conditioning
Crown Corr Erection
D&J Sheet Metal
Hanan Mechanical
FCR Mechanical Contractors

Irvine Mechanical
MFH Sheet Metal Fabricators, Corp.
SDB Engineers and Constructors, Inc.
Southeast Duct Specialists
Quality Metal Works, Inc.

System Tech Services
Tabco, LLC
TankServe, Inc.
Triple M Roofing Corp.
Veritab Environmental

SMACNA BOARD APPROVES NEW STANDARDS AND REVISIONS OF PREVIOUS STANDARDS

At its meeting in July, SMACNA's Board of Directors approved the following projects for several of its task forces:

Round Industrial Duct Construction Task Force. This task force will be responsible for developing the necessary budget, testing procedures, and schedule revisions to the second edition of SMACNA's "Round Industrial Duct Construction Standards." This revision would maintain the manual as an ANSI Accredited Standard.

Pre-Insulated Duct Construction Standard Task Force. This task force will be assigned to research the various product manufacturers for developing a budget, testing, and schedule to create a Pre-Insulated Duct Construction Standard.

HVAC Duct Construction Standards Task Force. Revision of the "HVAC – Duct Construction Standard–Metal and Flexible" would ensure that the standard is maintained in the model building codes as the basis for duct construction/installation for the HVAC&R industry.

Florida

SMACNA

Inc.

SMACNA'S CONSTRUCTION STANDARDS

- Accepted Industry Practices for Sheet Metal Lagging.
- Architectural Sheet Metal Inspection Guide.
- Architectural Sheet Metal Manual, 6th edition 2003
- Fire Smoke and Radiation Damper Installation Guide for HVAC Systems.
- Guide for Steel Stack Construction.
- Guidelines for Roof Mounted Outdoor Air-Conditioner Installations.
- HVAC Duct Systems Inspection Guide.
- Kitchen Ventilation Systems & Food Service Equipment Fabrication & Installation Guidelines.
- Residential Sheet Metal Guidelines.
- Seismic Restraint Manual: Guidelines for Mechanical Systems.
- Sheet Metal Welding Guide.
- Standard Practice in Sheet Metal Work.

SMACNA'S DESIGN GUIDES

- Duct System Calculator - Imperial + Metric
- Ducted Electric Heat Guide for Air Handling Systems.
- Guidelines for Change Orders
- HVAC Systems - Duct Designs.

SMACNA'S DUCT STANDARDS

- Accepted Industry Practice for Industrial Duct Construction.
- Fibrous Glass Duct Construction Standards.
- HVAC Air Duct Leakage Test Manual.
- HVAC Duct Construction Standards - Metal and Flexible.
- Rectangular Industrial Duct Construction Standards.
- Residential Comfort System Installation Standards Manual.
- Round Industrial Duct Construction Standards.
- Round Industrial Duct Construction Standards (RIDCS) Software Version 2.0.

- Thermoplastic Duct (PVC) Construction Manual.
- Thermoset FRP Duct Construction Manual.

SMACNA'S ENVIRONMENTAL PUBLICATIONS

- Building Systems Analysis and Retrofit Manual.
- Energy Systems Analysis and Management.
- HVAC Sound & Vibration Manual
- HVAC Systems - Applications.
- HVAC Systems - Commissioning Manual.
- HVAC Systems - Testing, Adjusting & Balancing.
- IAQ Guidelines for Occupied Buildings Under Construction.
- Indoor Air Quality - A Systems Approach.
- TAB Procedural Guide.

Florida

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