

Integrated Engineering Services



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■ ARCHITECTURAL DESIGN

New Aruba Customs Building

1) The Core Building is designed to take advantage of the available elements in the location; ■ Sunlight, and evasion of solar heat gain ■ Sea breezes, in a form of stack ventilation created by the shell ■ Field Viewing, taking advantage of the direct view of the ocean and desert like landscape of its surroundings.

2) The Shell Structure have two objectives; climate control and aesthetics of the core building. The concept is developed from a sea WAVE, acting as a protective shell of separation between the hostile climate and the main building.



PMEC N.V. Design for the New Aruba Customs Building was a winning design project in 2016 between 16 Architectural & Engineering firms. The proposed building and infrastructure are sustainable in design characteristics & in accordance with LEED STANDARDS.

MOVEMENT
BUILDING CLIMATIC BEHAVIOR
ACCORDING TO THE WEATHER

CONSTANT CHANGE UN FAÇADE BY
SHADOWS – LIGHT – PERSPECTIVE

FLEXIBILITY
OPEN SPACES
MULTIFACETED AREAS GIVEN BY THE
USER

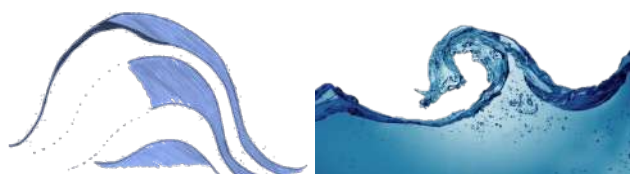
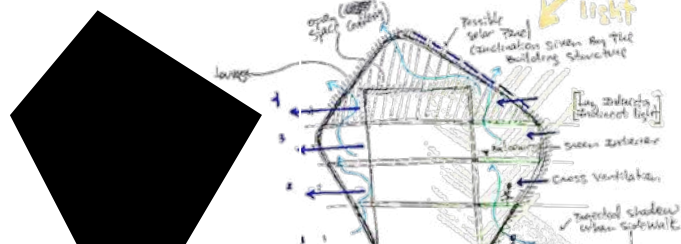
PROGRESSION
RESILIENT DESIGN

EXPANSION
DESIGNED TO GROW

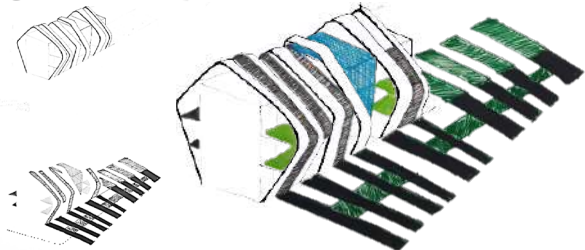
PROTECTION
BIOCLIMATIC BEHAVIOR

EVOLUTION
MODERN TECHNIQUES, USER
IDENTIFICATION, BUILT TO LAST

AHEAD
ADAPT TO NEW TECHNOLOGIES AND
USERS



ORGANIC SHELL



BUILDING CONCEPT ADAPTATION

The main building structure acts as the core, the central part. protected by an outside skeleton. Resulting in a halls that create and gap between the actual building and the direct outside climate.

These halls form a viewing balcony, breeze gateways and game of shadows and light, making the facade and the building "move" in coordination with the solstice.



WAVE CONCEPT SHELL DEVELOPMENT



■ URBAN PLANNING

REVITALIZATION



SAN NICOLAS



BEFORE

One of the main problems that affect these streets is the urban deterioration at the level of public space.

The government of Aruba proposed to bring a concept to revitalize the Promenade area by making a sequence towards the Main Street with the same concept.

An analysis was made by trying to deal with the issues related to urban image, urban morphology, environment, infrastructure, population, and current legal aspects; in this way create a concept that links and supports the community residing in the sector. As part of the concept was to bring historical and significant elements of the site in urban furniture such as benches and lighting.



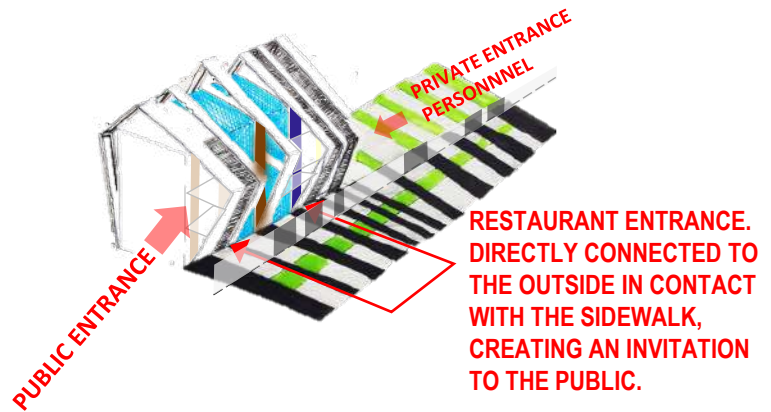
AFTER

LANDSCAPE DESIGN

BUILDING CONCEPT ADAPTATION

GEOMETRIC LAYOUT

Forming of the building shell exterior by a vertices, creating a more adaptable, economic and fast building technique.



LANDSCAPE AND SIDE PATTERN WALK DESIGN

Landscaping: The landscape is intended to bring out the natural flora of Aruba, looking to enhance the arid characteristics. The landscape design for the customs building consists of a selection of species adapted to semi-arid tropical climate of Aruba, low maintenance and representative of the area and surroundings.

Paver: Light gray pavers are proposed for the parking area and drive-way for less heat absorption.



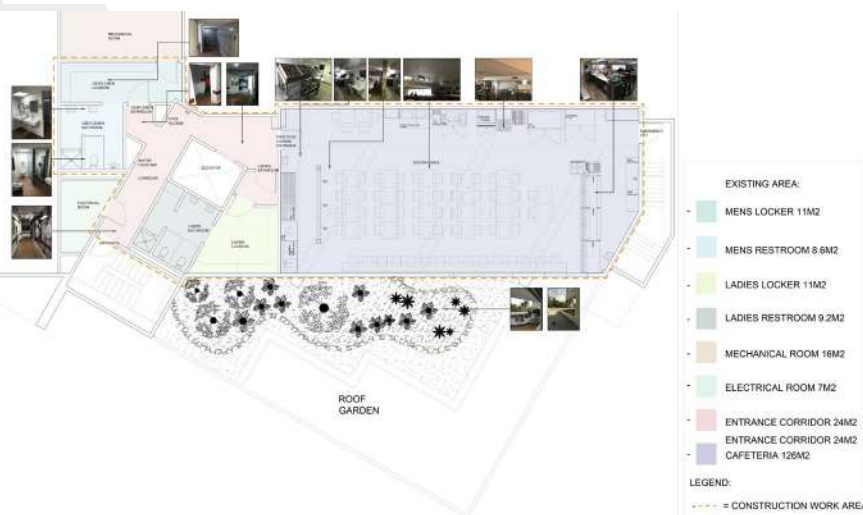
CITGO MANCAMP:

Our Landscape Architect was responsible for the designing of the landscape design for the CITGO Man camp housing Facility.

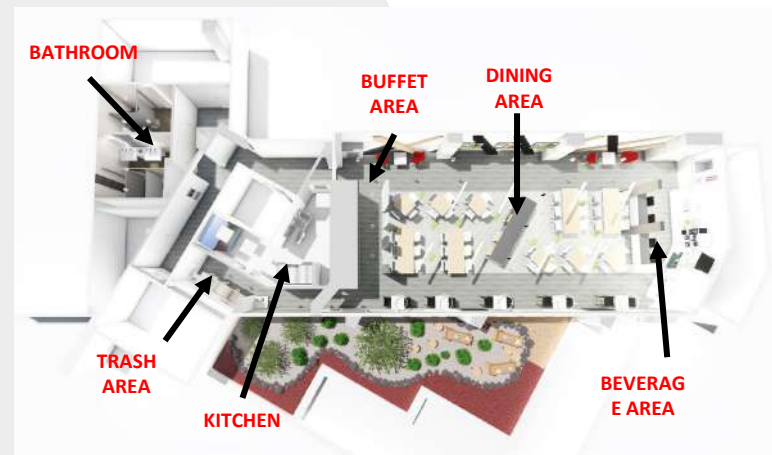


■ INTERIOR DESIGN

ARUBA MARRIOTT RESORT™ EMPLOYEE CAFETERIA – DINING AREA



3D RENDERS



MARRIOTT RESORT ARUBA IS CURRENTLY HEAVILY INVESTING IN ENHANCEMENT OF ITS CURRENT FACILITY LIKEWISE FOR THEIR OWN EMPLOYEES WORK FACILITIES. ONE OF MANY INTERIOR AND ENHANCEMENT PROJECTS IS THE EMPLOYEE CAFETERIA. WITH PMEC N.V. MULTI DISCIPLINARY ENGINEERING STAFF MAKES PROJECTS EASIER AND FASTER.

■ INTERIOR DESIGN



AAA –AIRPORT VIP ROOM:

The VIP room of the Aruba Airport needed an urgent facelift. Besides numerous projects in the airport. PMEC N.V. Architect and interior design department was assign with this task to enhance the VIP room. All the bidding RFQ tender documents, specifications and drawings was prepared by PMEC N.V. for the bidding process. This enhancement project has been successful executed in year 2015.

■ RESTAURATION

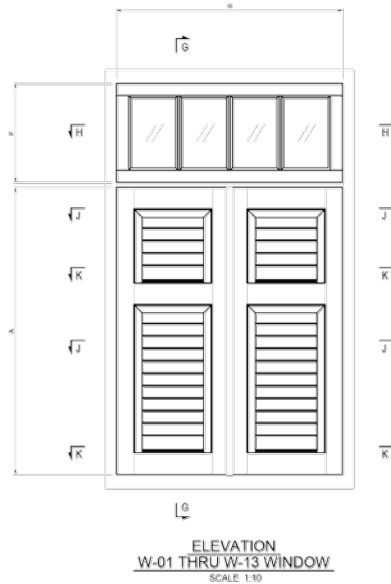
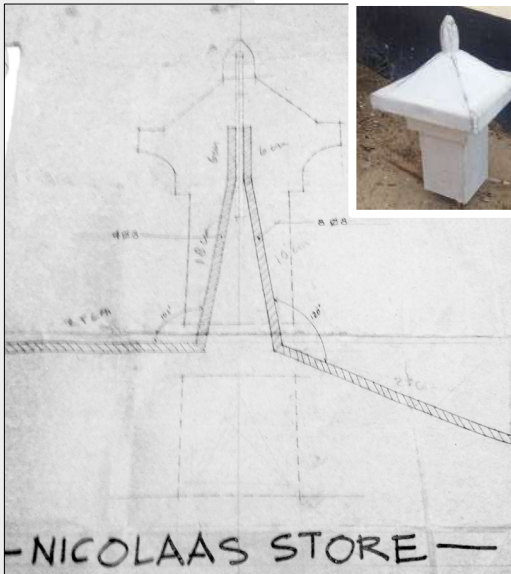
BEFORE



NICOLAAS STORE



Nicolaas store is a protected Heritage building that has been built in the year 1934. This former family business home will need to be restore to host a community museum.



AFTER



PMEC N.V. has won the conceptual design bid competition and was awarded the project to prepare the final design for its new destination. PMEC N.V. was responsible to prepare RFQ tender documents, bidding process, the project management of the execution & Project Close-out. The restoration execution of the project has been successful completed in 2015 on budget.

RESTAURATION/RENOVATION/REFURBISHMENT

BEFORE



MFA
San Nicolas

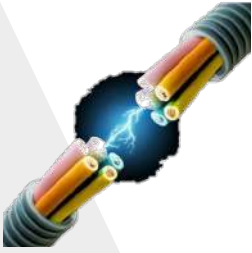
MFA San Nicolas is multi-functional accommodation building that will be located at St Maarten Street no. 7. San Nicolas. The 50-year-old existing government building will be renovated, expanded and converted into the new multifunctional accommodation building. PMEC N.V. was awarded to prepare the design, RFQ tender documents, specification and drawings for the bidding process. PMEC N.V. due to a competition between Architect firms was awarded for one of five MFA projects in Aruba.



AFTER

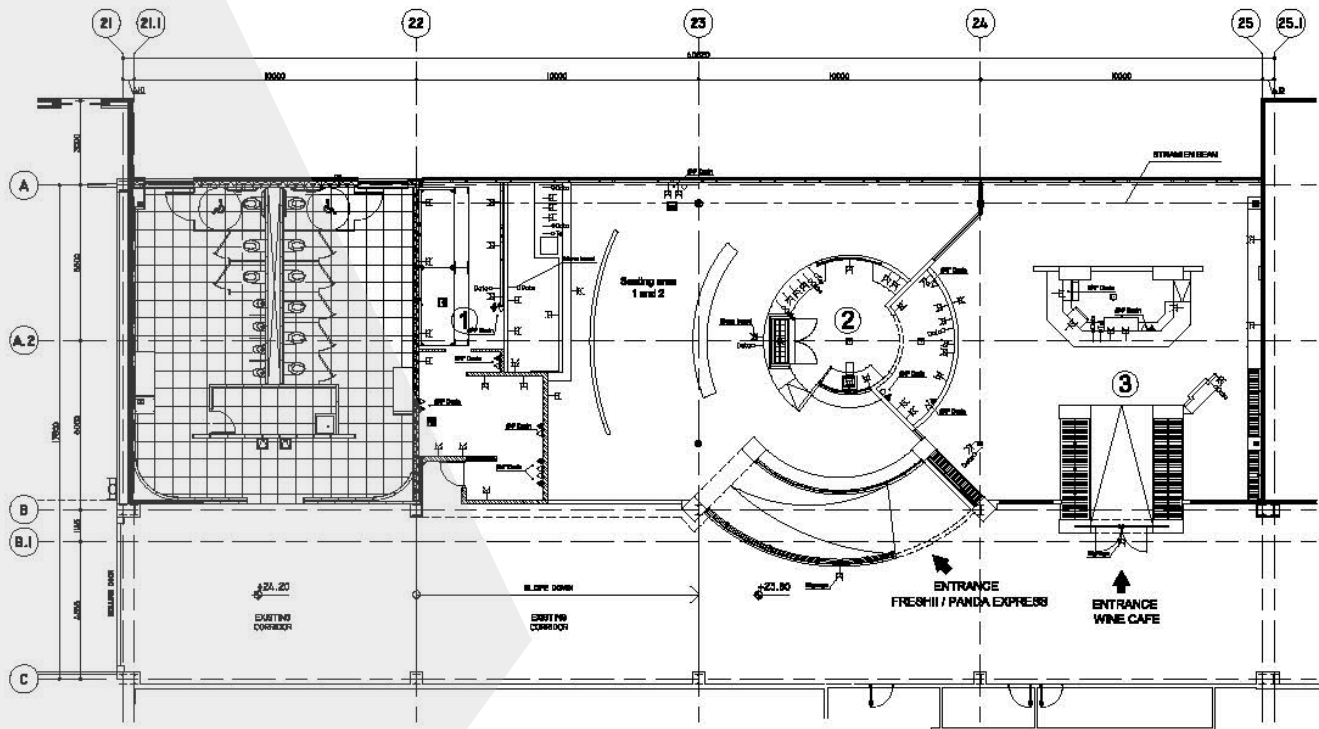


■ ELECTRICAL DESIGN & LIGHTING DESIGN

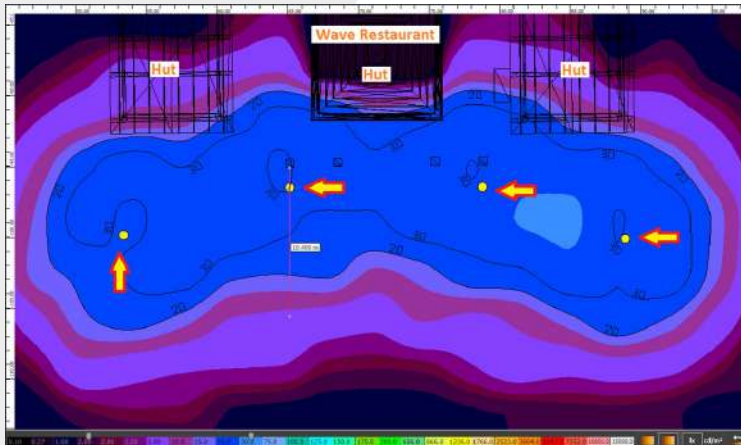


Our firm offers a wide range of electrical engineering, design and consultation services. Our electrical design consultants are experts in the industry and bring dedicated and professional expertise to the industry, our partnerships and our projects.

We are also capable of multiple kinds of delivery methods ranging from traditional design-bid-build, design assist, design-build, integrated project delivery and construction-manager-at-risk (CMAR). Our staff of electrical engineers, electrical design consultants, and electricians give us the versatility to move in any direction and make us one of the top electrical engineering firms in Aruba.



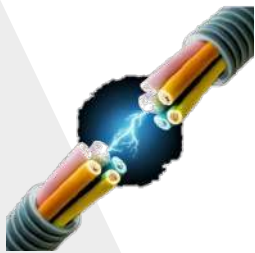
ELECTRICAL OUTLET/PLUMBING PLAN
(PRELIMINARY)



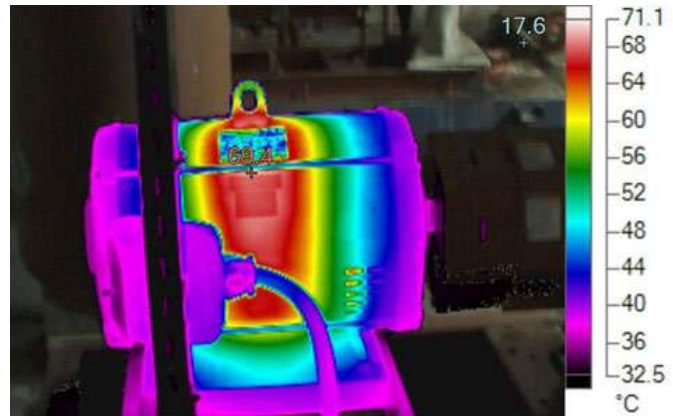
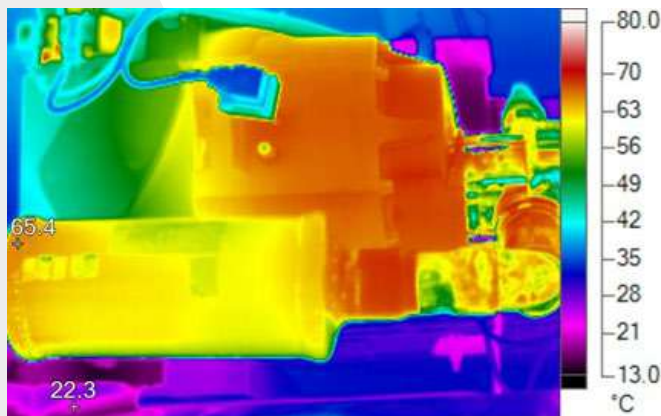
SUMMARY ADDITIONAL SERVICES PROVIDED

- Power Distribution Design
- Illumination/Lighting Design
- Low Voltage/Controls
- Sustainable Design
- Industrial/Process
- Building Information Modeling (BIM)
- Construction Phase Services and Site Management
- Compliance with Local and International Energy Efficiency Codes
- Corrective and Preventive Maintenance Assessment and Technical Support

■ THERMAL SCANNING & POWER ANALYZING,



Thermal Imaging is essential to keep your commercial business running smoothly. There are many benefits to this process. These are applicable to a number of buildings, mechanical and electrical applications. Here at PMEC we are experts at commercial electrical solutions. In PMEC we have CERTIFIED Thermography certified professionals up to LEVEL II in order to offer a good foundation of knowledge to use the THERMO IMAGING Equipment to their fullest potential and avoid taking incorrect measurements.

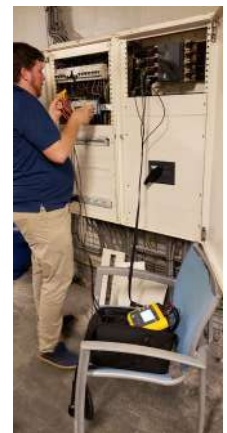


THERMAL SCANNING/SURVEYS

Applications of Thermal Imaging: Electrical, Mechanical, Process and Building / Facility. Thermal imaging is the fastest and safest method of early problem detection on electrical, mechanical and process equipment, as well as the building envelope. Electrical Thermo Imaging applications. Our vast experienced qualified Thermographer Level II certified professionals analyze issues detected during the survey and deliver professional reports with recommendations given on the illustrated thermal & normal visible images, which simplifies areas for the required maintenance.

POWER QUALITY ANALYZING

Analyzing the power quality problems and mitigation at the end user and/or equipment's caused by the cos phi and/or harmonic distortion while providing the recommendation & solution at professional level through data collected from the power logger.



SUMMARY ADDITIONAL SERVICES PROVIDED

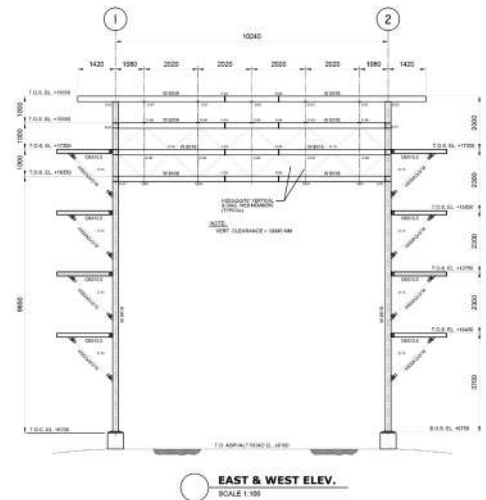
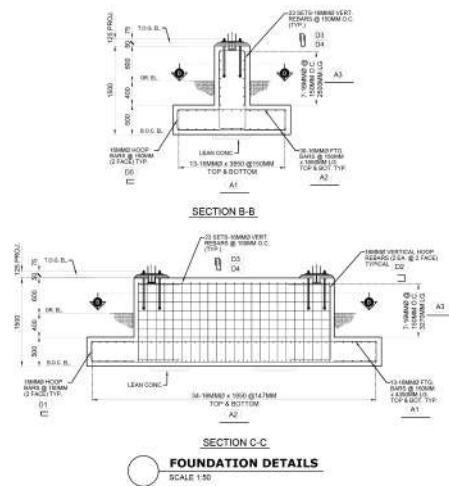
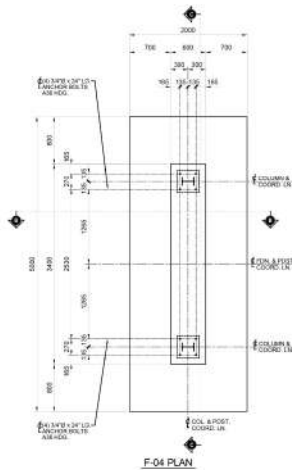
- Identification of Abnormal Components
- Determine Loading Condition of Equipment
- Power Distribution Assessment
- Energy Audits
- Energy Savings Before and After Comparisons.
- Power Factor Correction Analysis
- Analyzing Loads to Assist in Design Of Upgrades
- Building Information Modeling (BIM)
- Identifying Intermittent Faults and Transients
- Analyzing Destructive Harmonic Currents
- Independent Energy Usage Audit Services with Documented Power Consumption Measurements.

■ STRUCTURAL, DETAIL & CIVIL ENGINEERING

STRUCTURAL ENGINEERING

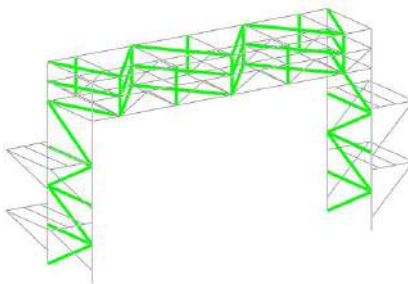
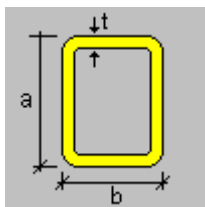


For a new Wartsila Recipe Plant at WEB ARUBA N.V. PMEC N.V. was hired to design and prepare all the structural calculations for this project. The project consist of 3 new large Pipe Bridges, pipe racks supports, expansion of the existing pumphouse, underground concrete trenches for electrical conduits, extensions of existing pipe bridges and crossover platforms.



Section information

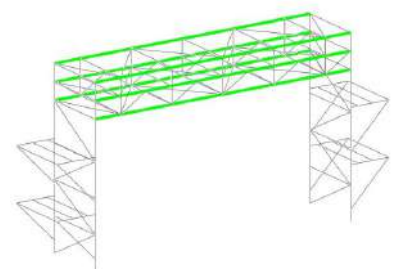
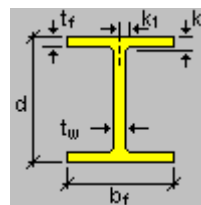
Section name: HSS_SQR 2X2X3_16 (US)
Dimensions



$a = 5.080$ [cm] Height
 $b = 5.080$ [cm] Width
 $T = 0.442$ [cm] Thickness

Section information Largueros.

Section name: W 5X16 (US)
Dimensions



$bf = 12.700$ [cm] Width
 $d = 12.725$ [cm] Depth
 $k = 1.676$ [cm] Distance k



HVAC SYSTEM ASSESSMENT SERVICES

Our assessment methodology focuses on the primary functions of HVAC systems namely thermal comfort and indoor air quality. Standards for acceptable indoor air quality have been developed by ASHRAE to establish minimum requirements for optimal health and comfort in buildings. Our goal is to help you meet business objectives by ensuring all equipment is operating properly and efficiently.

All our assessment and recommendations are based upon site observation and measurements performed, referencing accepted industry practices and our professional experience.



Logging Form

Start Time	5/30/2015 2:40:14 PM
Stop Time	5/30/2015 2:49:29 PM
Elapsed Time	0:09:15
Interval	0:00:05
Total Readings	113
Session Name	Logged Session 4

	Max Time	Max	Average	Min
Temperature	5/30/2015 2:40:54 PM	29.1 °C	22.7 °C	20.4 °C
Wet Bulb	5/30/2015 2:40:56 PM	24.3 °C	19.0 °C	18.8 °C
Dew Point	5/30/2015 2:40:58 PM	23.2 °C	17.2 °C	14.9 °C
%RH	5/30/2015 2:40:29 PM	82.3 %	71.1 %	64.0 %
CO	5/30/2015 2:40:18 PM	1 ppm	0 ppm	0 ppm
CO2	5/30/2015 2:43:04 PM	593 ppm	523 ppm	438 ppm

Meter ID: FLUKE 075 1F 25693005

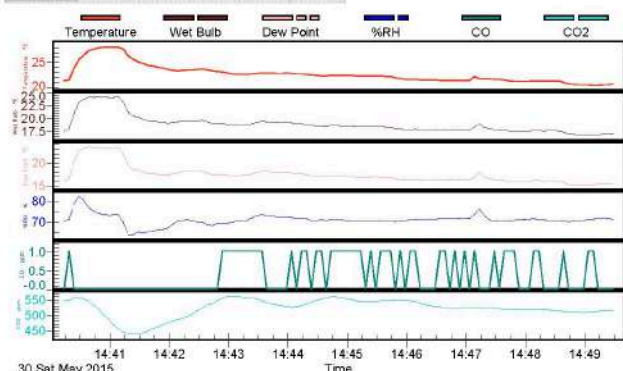
Keywords: HVAC HVAC Assessment

Form Saved Time: 6/3/2015 2:31:53 PM

Upload Time: 6/3/2015 10:24:32 AM

Test Purpose:

Ambient Temperature and Thermal scan measurements for construction assessment in the NON-US Infiltration Area.

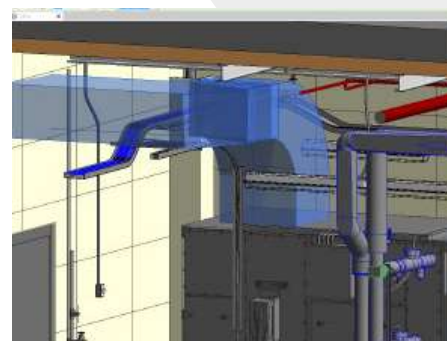
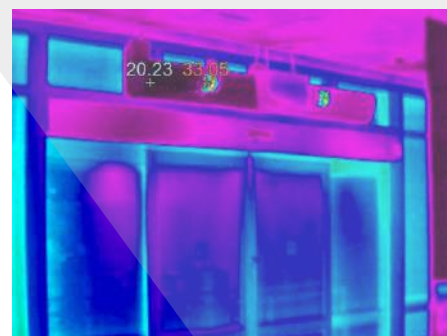


Comments
The average environmental (space) temperature in the NON-US Infiltration Area is 22.7 °C (Min: 20.4 °C), which is below the average outdoor temperature dew point of 23.8 °C (Max: 24.3 °C). Therefore when outdoor air infiltrates into the NON-US Infiltration Area, the outdoor air will condense when in contact with the colder surface area of the supply register. Condensation is also observed on the outside surfaces of the supply registers. Condensation on these surface areas are mostly due to the infiltration of outdoor air. Substantial outdoor air infiltrates through the automatic floor door into the NON-US Infiltration Area and openings in the ceiling.

	Temperature	Wet Bulb	Dew Point	%RH	CO	CO2	Timestamp
1	21.3 °C	17.8 °C	15.7 °C	70.7 %	0 ppm	547 ppm	5/30/2015 2:40:14 PM
2	21.5 °C	18.0 °C	16.2 °C	71.3 %	1 ppm	549 ppm	5/30/2015 2:40:19 PM
3	22.8 °C	21.0 °C	19.8 °C	78.7 %	0 ppm	556 ppm	5/30/2015 2:40:24 PM
4	26.6 °C	23.3 °C	22.4 °C	82.3 %	0 ppm	550 ppm	5/30/2015 2:40:39 PM
5	26.5 °C	23.8 °C	22.9 °C	80.6 %	0 ppm	557 ppm	5/30/2015 2:40:53 PM
6	27.4 °C	24.3 °C	23.2 °C	77.8 %	0 ppm	547 ppm	5/30/2015 2:40:59 PM
7	27.7 °C	24.2 °C	22.9 °C	75.4 %	0 ppm	552 ppm	5/30/2015 2:41:04 PM
8	26.0 °C	24.3 °C	23.0 °C	74.7 %	0 ppm	521 ppm	5/30/2015 2:40:49 PM
9	26.1 °C	24.3 °C	23.0 °C	73.7 %	0 ppm	503 ppm	5/30/2015 2:40:54 PM
10	26.1 °C	24.6 °C	23.5 °C	73.4 %	0 ppm	488 ppm	5/30/2015 2:40:59 PM
11	26.1 °C	24.7 °C	23.6 °C	73.5 %	0 ppm	488 ppm	5/30/2015 2:41:04 PM
12	26.1 °C	24.8 °C	23.6 °C	73.5 %	0 ppm	457 ppm	5/30/2015 2:41:09 PM
13	27.1 °C	25.3 °C	24.0 °C	69.7 %	0 ppm	446 ppm	5/30/2015 2:41:14 PM
14	26.3 °C	21.3 °C	18.1 °C	64.1 %	0 ppm	440 ppm	5/30/2015 2:41:19 PM

SUMMARY OF SERVICES PROVIDED

- Chilled Water Plant Condition Assessment
- Building Management System & Control
- Water Treatment System
- Water System Quality Assessment
- Indoor Air Quality Assessment
- Chiller Replacement & Upgrade Assessment
- Equipment Life Expectancy
- Chiller Plant Overall Efficiency
- Chiller Plant Overall O&M Cost
- Single Point of Failure Analysis
- Life Cycle Cost Analysis
- Hybrid Energy Systems
- Building Information Modeling (BIM)
- 3D Scanning Survey for As-built BIM Modeling
- Electrical System Load Requirements Review
- Construction Phase Services and Site Management



■ MEP ENGINEERING SERVICES



Sustainable and energy-efficient buildings require intelligent mechanical, electrical and plumbing solutions. Our engineers are committed to creating high performance systems, offering clients efficient operations and technological innovation.

Our focus is on providing the optimum solutions and best value outcome for every client and we deliver that through the extensive use of our in-house project teams with dedicated design leaders to ensure that a construction or renovation project maximizes performance, minimizes cost, and provides long-term value.

SUMMARY OF SERVICES PROVIDED

- In-house MEP engineering design and consultancy services
- Heating, Ventilation & Air Conditioning
- Fire Suppression System (**NFPA Certified**)
- Onsite Power Generation Requirements and Distribution
- Illumination/Lighting Design
- Low Voltage/Controls
- Chilled Water System
- Indoor Air Quality
- Water Storage & Distribution Systems
- Quality Management System and Procedures
- Sanitary Sewer, Waste & Ventilation
- Building Control Systems
- Sustainable Design
- Industrial/Process
- Building Information Modeling (BIM)
- Building Condition Assessments
- Construction Phase Services and Site Management
- Compliance with local and international energy efficiency codes



■ INSPECTION & Non-Destructive Testing (NDT)

We provide industrial Inspection and NDT services throughout the Caribbean Region., Our highly trained, accredited and experienced personnel will efficiently deliver on-site testing and flaw detection inspection using the latest technology .

Non-Destructive Testing (NDT) is an essential service for asset reliability, integrity and management of capital assets lifecycle. Upon completion of any Inspection or NDT test, we will issue a detailed test report in compliance with relevant industry applied standard or as specified by the client.



ASNT Level III / AWS CWI

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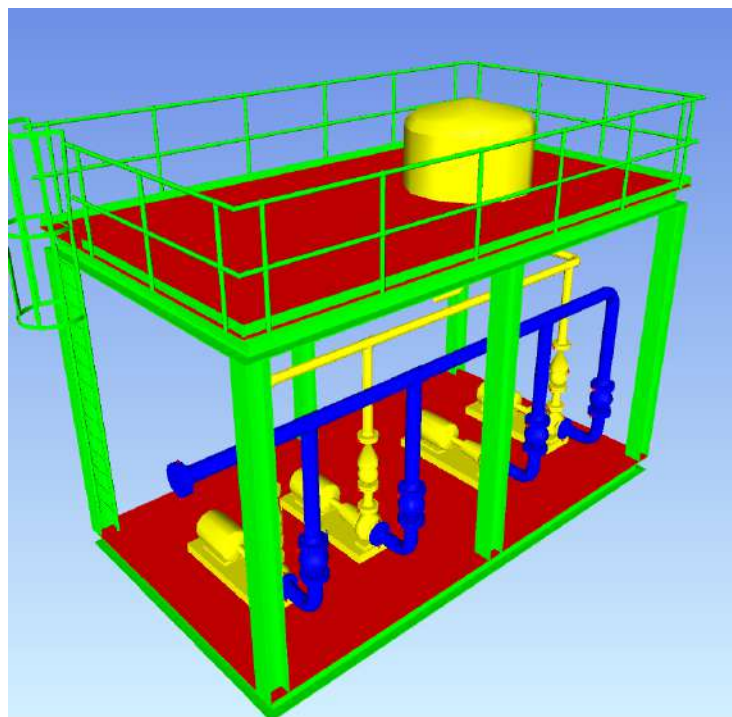
SUMMARY OF SERVICES PROVIDED

- **THIRD PARTY INSPECTIONS**
Welding – API – Mechanical – Painting & Coatings – Civil –Electrical – Instrumentation.
- **ADVANCED NDT**
Ultrasonic Shear Wave Testing (UTSW) – Phased Array Ultrasonic Testing (PAUT).
- **CONVENTIONAL NDT**
Ultrasonic Testing (UT) – Liquid Penetrant Testing (PT) – Magnetic Particle Testing (MT) – Visual Testing Examination (VT).
- **WELDER QUALIFICATION**
Develop Welding Procedures – Qualify Welding Procedures – Assess and Qualify Welders.
- **BORESCOPE VIDEO EXAMINATION**
Tanks – Accumulators – Pipe Systems – Wind-Turbine Gears – Turbines – Compressors – Coolers – Heat Exchangers
- **THERMAL IMAGING EXAMINATION**
Preventive Maintenance – Building Thermal Optimization – Electrical Installation Inspections – Mechanical Assemblies Inspections

■ OFFSHORE SERVICE



PMEC can provide skilled, well-educated, well-trained and experienced technicians to handle even the most complex mechanical and electrical works at your offshore installation, regardless of its location. PMEC specializes in Brownfield modification of Oil and Gas platforms and FPSO. Our team of highly experienced Surveyors, Designers and Engineers specialize in Piping, Structural, Process and Mechanical design and engineering solutions within the Brownfield sector for offshore topsides, drilling and onshore projects.



SUMMARY OF SERVICES PROVIDED

- Feasibility Studies & Technical Support
- Site survey / reporting
- 3d Scanning
- Multi disciplinary Engineering Basic and detail
- Fire Suppression System
- Skid design
- Hang on modules design
- Deck extensions designs
- Operation & Maintenance Services



INDUSTRIAL CHIMNEY SERVICE



PMEC with his strategic alliance partner ICM has been provided Inspection and repair service to the Aruba Refinery for over 15 years already.

- With over 35 years of experience, ICM is Canada's largest and most experienced industrial chimney maintenance repair and inspection company.
- Strong focus on health & safety.
- Ability to provide traditional steeplejack services.
- Ability to provide modern services including industrial rope access and drone inspections.

INSPECTION SERVICES:

- Steel, Concrete, Brick and Flare Stack Inspections
- Non Destructive Evaluation
- Live Stack "Hot" Camera Inspections
- Remote Camera Inspections Drone & 3D Scan inspections
- Liner / Stack Interior Inspections
- Annular Space Inspections
- Exterior Inspections

REPAIR & MAINTENANCE SERVICES:

- Concrete restoration
- Brickwork rebuilds and repairs
- Dismantling, partial or complete
- Design, fabrication and installation of venturi cones and liners
- Bypass stacks
- Access platform design, fabrication and installation
- Concrete crack and spall repairs
- Cladding and insulation

- Welding repairs of steel liners, ducting, rain caps, etc.
- Steel stack design and installation
- Extension of existing steel stacks
- Tuned mass dampers design and installation
- Protective coating applications
- Cap and hood replacement
- Surface preparation methods for contained paint/contaminate removal
- Refractory lining installations and repairs (shotcrete gun method)
- Flare Stack tips, molecular seals and ignition systems replaced or repaired
- Large concrete column repair
- Guy wire maintenance and replacement, lubrication and repairs, and tension verification and adjustment
- lightning protection system inspection, repair and replacement service

Marine Terminal Painting & Steelwork Repairs



Refractory Application



Exterior Inspection



Large Repair on Concrete Stack



**Before
After**



Recip Stacks Painting & Steelwork Repairs

Major Concrete Repairs



Refractory Repair: Before

Refractory Repair: After



600' Concrete Stack: Repair & Inspection

ICM Inc. Copyright 2020 www.indchimney.com

■ AS-BUILT 3D MODELING SERVICES

We can provide high accuracy 3D laser scanning services to obtain a high level of detail of objects. Our team utilizes the latest technology and software to efficiently capture and process data from your asset.



• Summary of Services Provided services:

- 2D Deliverables - Plans, Sections, Elevations, Topographic Survey
- 3D Models – Delivered in Auto Cad (DWG, DGN) or Rivet (BIM) Format.
- 3D Topographic Surveys.
- CAD 3D Architecture and MEP Modeling.
- 3D MEP Modeling of Mechanical Rooms.
- 3D BIM Modeling (Building Information Modeling).
- 3D Revit Architecture and MEP modeling.
- 3D Interior Modeling.
- Heritage Building 3D Modeling



CLIENTS



GOBIERNO DI ARUBA



Aruba Tourism
Authority



SERLIMAR



ARUBA PORTS AUTHORITY NV
GRANJESTAD + BARCADERA



UTILITIES ARUBA NV



WEB

WATER- EN
ENERGIEBEDRIJF
ARUBA N.V.

Digicel
aruba

aggreko



AUA

AEROPUERTO INTERNACIONAL REINA BEATRIX



BONAIRE INTERNATIONAL AIRPORT



air navigation services aruba



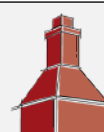
Princess Juliana
International Airport

SOGA

Stichting Onroerende Aruba



fondo desarrollo aruba



Monumentsfund
ARUBA



BAHIA PRINCIPE
HOTELS & RESORTS



GRUPO
PIÑERO



RENAISSANCE®
HOTELS



RdA
REFINERIA di ARUBA N.V.



Grupo Calesa

HACIENDA LA ESTRELLA



BOPEC



Hill International

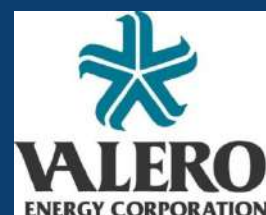


Arendal

EJECUCIÓN CONFIABLE



Tropical
Bottling Company



VALERO
ENERGY CORPORATION



VALERO



CITGO



NuStar
Energy LP



REFINERIA DI KORSOU



Project Management and Engineering Consultancy N.V.

Architectural design
Landscape Design
Interior Design
Structural Engineering
Project Management
Civil Engineering
Infrastructure
Mechanical Engineering
Electrical Engineering
HVAC
Inspection Testing
Offshore services

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