DATA CENTER DESIGN: CONSTRUCTION CONSIDERATIONS

April 29-30, 2019
DoubleTree by Hilton Hotel Crystal City
Arlington VA

“This data center design and construction class covered many topics in a short period of time, that were insightful and compelling. The speaker was an expert in the subject matter.”

Protection and Integration Project Engineer Manager, RAI

RELATED EVENT:
DATA CENTER ENERGY: OPPORTUNITIES FOR EFFICIENCY

April 30-May 1, 2019 | Arlington, VA

EUCI is authorized by IACET to offer 1.0 CEUs for this event
OVERVIEW

It is said that the growth of the Data Center Industry is currently larger than the Industrial Revolution of 1760 to 1840. This may be an exaggerated claim, but one thing is clear – technology is spreading into all areas of life. The result is enormous growth in the infrastructure that supports the requirements.

This course will cover overall considerations for site selections, engineering designs for the electrical and mechanical infrastructures for critical support, latency, power usage effectiveness (PUE), cost of electricity.

Data Center Design Construction Considerations serves as a basic introduction to current and next level of engineering design for data centers, so anyone can successfully build a data center.

LEARNING OUTCOMES

- Discuss uptime understanding - Tier management and reliability
- Review the basic approach to infrastructure design, including electrical and mechanical
- Gain the basics of electrical service for data center facilities
- Discuss temporary power for construction
- Assess medium or high voltage considerations
- Review considerations for higher PUE designs...
- Identify modular design considerations
- Review rack level designs
- Assess on-site power generation and grid level engineering considerations
- Review utility rebate incentives for “green energy”

WHO SHOULD ATTEND

- Mechanical and Electrical Engineers
- Operations and Maintenance Managers: those who manage daily operations and maintenance
- Estimators
- Owners & Facility Managers
- Real Estate Salesmen
- Installers for Electrical or Mechanical Systems
- Modular Equipment Builders

“Data Center for Dummies. This was excellent to get a basic set of knowledge.”

President, S. B. Ballard Construction Co.

“This course gave me a good basis to move forward with confidence in the future when working on data centers.”

Project Manager, S.B. Ballard Construction Co.
AGENDA

MONDAY, APRIL 29, 2019

8:00 – 8:30 am  Registration and Continental Breakfast

8:30 – 10:00 am  Overview of Data Center Design
• Basic Understanding of Developing and Facility (Core & Shell Design)
• Different Data Center Terminology
• Why do You Want to Build a Data Center?
  o Economic Reasons
  o Locations
  o State Incentive Programs
• Understanding the Basics of Construction Costs: Core & Shell vs. Infrastructure
  o Basics of Building Designs and Infrastructure Types
• Best Options for Contract Considerations
  o Options for Increased Production and Reduced Cost

10:00 – 10:30 am  Networking Break

10:30 am – 12:45 pm  Understanding the Basics of Infrastructure Design
• Uptime Institute: Basic Tier Level Requirements
  o Site Selection
  o Electrical Infrastructure Design
  o Mechanical Systems; Types Currently Utilized & Options
  o High Voltage Requirements
  o Temporary Power for Construction

12:45 – 1:45pm  Group Luncheon

1:45 – 3:00 pm  Continuing the Basic Design Criteria and Higher PUE Considerations
• Questions from This Morning’s Basic Introductions
• Considerations for Day-Two Design
• Higher PUE Considerations
• Revising our Response to Failure to Negate the Blame Cycles and Biases
• Creating Personal Accountability

3:30 – 5:00 pm  Modular Deployment
• Complete Modular Deployment of a Data Center
• Infrastructure Considerations: Electrical and Mechanical

5:00 pm  End of Day One

“Great course for an overview of data centers.”
Engineer, Precision Construction

“Really informal conference that offered a ton of information regarding the current state of data centers and the direction that they are going towards in the future.”
Systems Engineer Tech II, Walmart East Data Center
# AGENDA

**TUESDAY, APRIL 30, 2019**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 – 8:30 am</td>
<td>Continental Breakfast</td>
</tr>
<tr>
<td>8:30 – 10:00 am</td>
<td><strong>Re-Cap of Items Covered on Day One</strong></td>
</tr>
<tr>
<td></td>
<td>• Electrical Questions and Answers</td>
</tr>
<tr>
<td></td>
<td>• Mechanical Questions and Answers</td>
</tr>
<tr>
<td></td>
<td>• PUE &amp; Marketing Approach</td>
</tr>
<tr>
<td>10:00 – 10:15 am</td>
<td>Morning Break</td>
</tr>
<tr>
<td>10:15 – 11:45 am</td>
<td><strong>21st Century Data Center Design Considerations</strong></td>
</tr>
<tr>
<td></td>
<td>• On-Site Power Generation and Grid Level Considerations</td>
</tr>
<tr>
<td></td>
<td>• Alternate Energy Consideration</td>
</tr>
<tr>
<td>11:45 am – 12:30 pm</td>
<td>Q &amp; A and Learning Outcome Review</td>
</tr>
<tr>
<td>12:30 pm</td>
<td>Course Concludes</td>
</tr>
</tbody>
</table>

---

## COURSE INSTRUCTOR

**Dennis Cronin**  
**CEO, Resilient Solutions, LLC**

Dr. Cronin is the CEO of Resilient Solutions, LLC a Mission Critical Consultancy firm founded in 2003 that is focused on data center Management, Operations, Marketing, Forensics and Research. Previously, Dr. Cronin has also held the positions as Technical Managing Director for the Research Foundation at Binghamton University, COO of Steel ORCA and 20 years handling back office operations for multiple Wall Street firms.

Currently, his efforts are spotlighting data center efficiency research, data center education, application of 400V direct current power distribution, integration of renewable resources.

Dr. Cronin is a founder of 7x24 Exchange, serves as a Columnist and Advisor for Mission Critical Magazine, is a Subject Matter Expert in developing a Mission Critical academic degree program, is the creator of the “Containerized and Modular Data Center” discussion group on LinkedIn and sits on the Boards of several Mission Critical Industry groups.

For over 30 years Dr. Cronin has been a leader in the operational aspects of technology in both Enterprise and Colocation operations. The greater part of his career has been with large fortune 500 financial and retail organizations.

Dr. Cronin is a graduate of Villanova where he earned a BS in Accounting and holds a Doctorate of Mission Critical Operations from AATC University.
REQUIREMENTS FOR SUCCESSFUL COMPLETION

Participants must sign in/out each day and be in attendance for the entirety of the course to be eligible for continuing education credit.

INSTRUCTIONAL METHODS

PowerPoint and open discussions will be used in this event.

EVENT LOCATION

A room block has been reserved at the DoubleTree by Hilton Hotel Crystal City, 300 Army Navy Dr, Arlington, VA 22202, for the nights of April 28-30, 2019. Room rates are US $189 plus applicable tax. Call 1-703-416-4100 for reservations and mention the EUCI event to get the group rate. The cutoff date to receive the group rate is April 9, 2019 but as there are a limited number of rooms available at this rate, the room block may close sooner. Please make your reservations early.

REGISTER 3, SEND THE 4TH FREE

Any organization wishing to send multiple attendees to this conference may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.

IACET CREDITS

EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

EUCI is authorized by IACET to offer 1.0 CEUs for this course.
A room block has been reserved at the DoubleTree by Hilton Hotel Crystal City, 300 Army Navy Dr, Arlington, VA 22202, for the nights of April 28-30, 2019. Room rates are US $189 plus applicable tax. Call 1-703-416-4100 for reservations and mention the EUCI event to get the group rate. The cutoff date to receive the group rate is April 9, 2019 but as there are a limited number of rooms available at this rate, the room block may close sooner. Please make your reservations early.

**BOTH COURSES: DATA CENTER DESIGN: CONSTRUCTION CONSIDERATIONS AND DATA CENTER ENERGY: OPPORTUNITIES FOR EFFICIENCY COURSES**

APRIL 29 - MAY 1, 2019: US $2595
EARLY BIRD on or before April 12, 2019: US $2395

**DATA CENTER DESIGN: CONSTRUCTION CONSIDERATIONS COURSE**

APRIL 29-30, 2019: US $1495
EARLY BIRD on or before April 12, 2019: US $1295

How did you hear about this event? (direct e-mail, colleague, speaker(s), etc.)

Print Name ____________________________  Job Title ____________________________

Company ____________________________

What name do you prefer on your name badge?

Address ____________________________

City ____________________________  State/Province ____________________________  Zip/Postal Code ____________________________  Country ____________________________

Phone ____________________________  Email ____________________________

List any dietary or accessibility needs here

**CREDIT CARD INFORMATION**

Name on Card ____________________________  Billing Address ____________________________

Account Number ____________________________  Billing City ____________________________  Billing State ____________________________

Exp. Date ____________________________

Security Code (last 3 digits on the back of Visa and MC or 4 digits on front of AmEx) ____________________________  Billing Zip Code/Postal Code ____________________________

OR Enclosed is a check for $ ____________________________ to cover ____________________________ registrations.

Substitutions & Cancellations
Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before March 29, 2019 in order to be refunded and will be subject to a US $195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of course cancellation, EUCI’s liability is limited to refund of the event registration fee only.

For more information regarding administrative policies, such as complaints and refunds, please contact our offices at 303-770-8800.

EUCI reserves the right to alter this program without prior notice.