



## **Intelligent Buildings Council (IBC)**

Chair: Brian Ensign (Superior Essex Communications)

Vice-Chair: Harsha Chandrashekar (Honeywell International Inc)

Vice-Chair: Robert Lane (Robert H. Lane and Associates Inc.)

Vice-Chair: Bob Allan (The Siemon Company)

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[www.caba.org](http://www.caba.org)

# 1. Agenda

Greg Walker (CABA)

1. Agenda
2. Call to Order, Welcome, Introductions, about IBC
3. Administrative
4. White Paper Sub-Committee Update
5. “Digital Electricity in Intelligent Buildings” (30 min)  
Stephen Eaves (VoltServer)
6. Research Update
7. New Business  
“Paradigm Shift Impact on Commercial Buildings in a Post-Pandemic Market”  
James Carlini (Carlini & Associates)
8. Adjournment



## 2. Call to Order, Welcome, Introductions, About the IBC

### Brian Ensign (Superior Essex Communications)



**IBC Chair**  
**Brian Ensign**  
Vice President,  
Marketing  
Superior Essex  
Communications



**IBC Vice-Chair**  
**Harsha Chandrashekar**  
Product Approvals &  
Regulatory Leader  
Honeywell International  
Inc



**IBC Vice-Chair**  
**Robert Lane**  
President & Managing  
Partner  
Robert H. Lane and  
Associates Inc.



**IBC Vice-Chair**  
**Bob Allan**  
Global Business  
Development Manager,  
Intelligent Buildings  
The Siemon Company



The CABA Intelligent Buildings Council works to strengthen the large building automation industry through innovative technology-driven research projects. The Council was established in 2001 by CABA to specifically review opportunities, take strategic action and monitor initiatives that relate to integrated systems and automation in the large building sector. The Council's projects promote the next generation of intelligent building technologies and incorporates a holistic approach that optimizes building performance and savings.

[www.caba.org/ibc](http://www.caba.org/ibc)

# 3. Administrative

Brian Ensign (Superior Essex Communications)

3.1 Motion to approve past IBC Minutes (Feb 17): [www.caba.org/ibc](http://www.caba.org/ibc)



# 5. Keynote

Bob Allan (The Siemon Company)

“Digital Electricity in Intelligent Buildings” (30 min)



**Stephen Eaves**  
CEO  
VoltServer



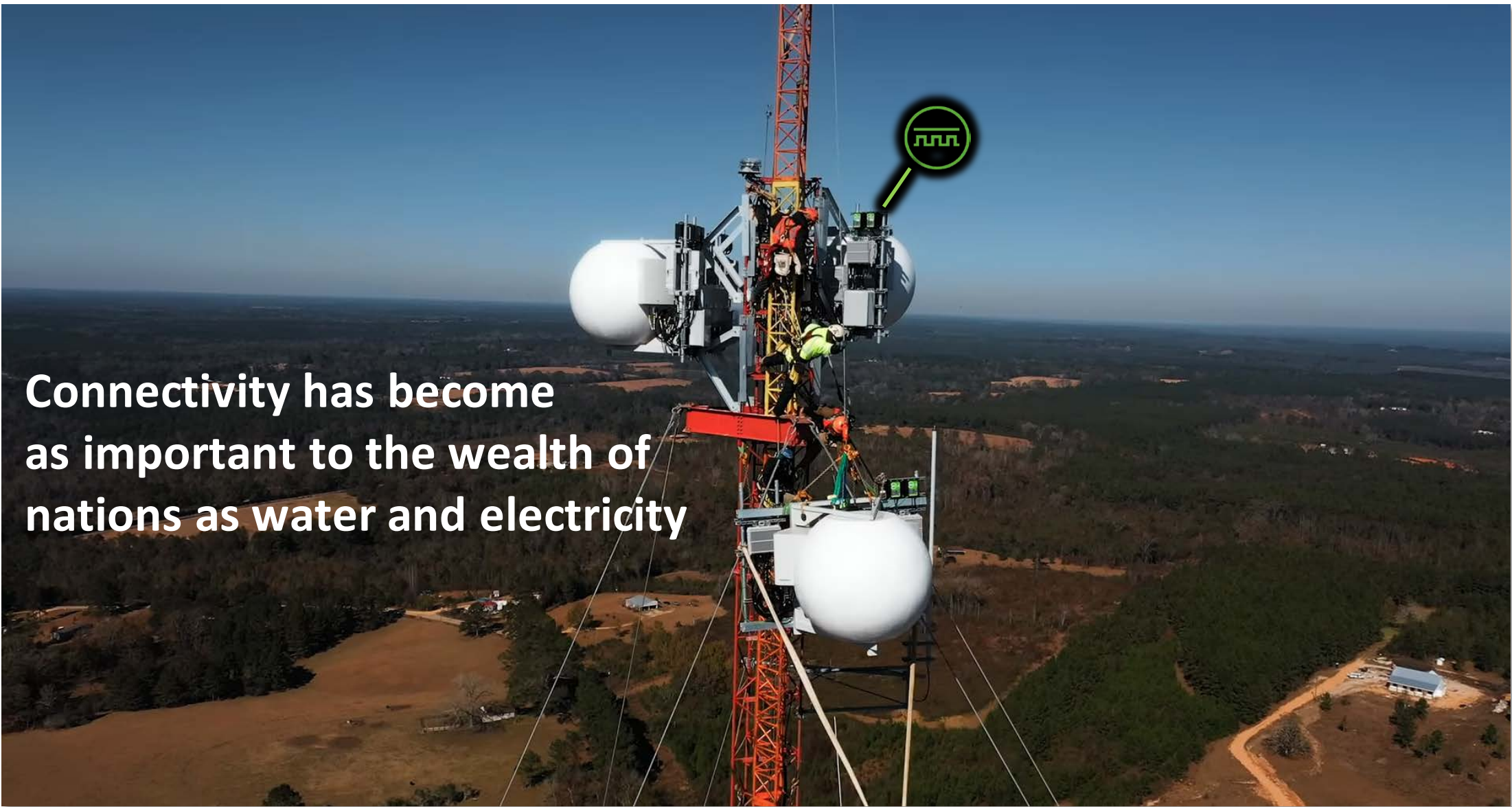


# Digital Electricity™ in Intelligent Buildings

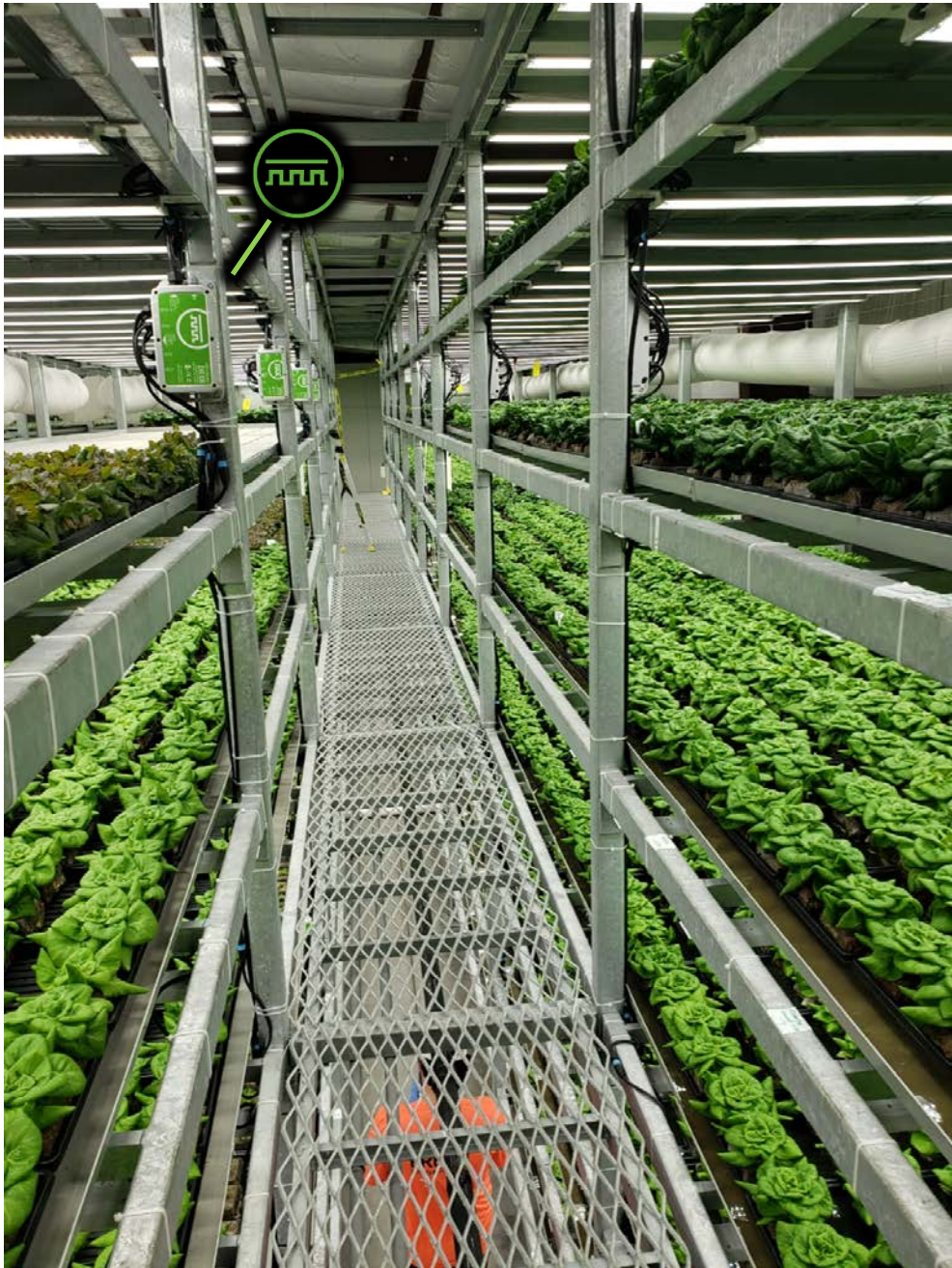
**Steve Eaves, CEO**  
VoltServer Inc

stephen.eaves@voltserver.com  
401.474.4616





**Connectivity has become  
as important to the wealth of  
nations as water and electricity**



**Population growth and clean food awareness will soon disrupt traditional methods of food production**

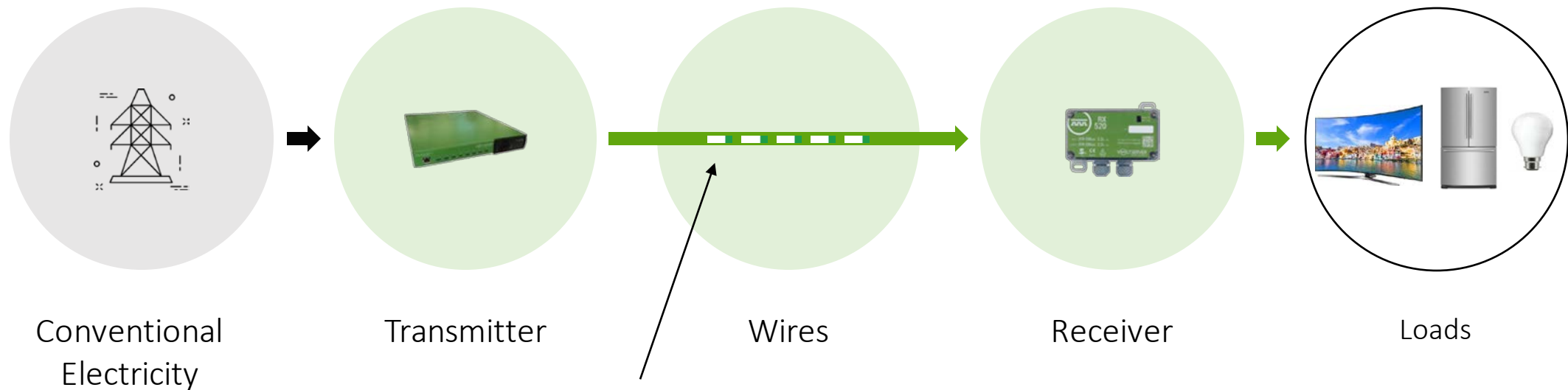




**Buildings, new and old, are being reimagined with sustainability as a key requirement**



# Digital Electricity™ (DE) is high power electricity and data over communication cable








Energy Packet

Energy: 1.1ms

Data: 0.4ms

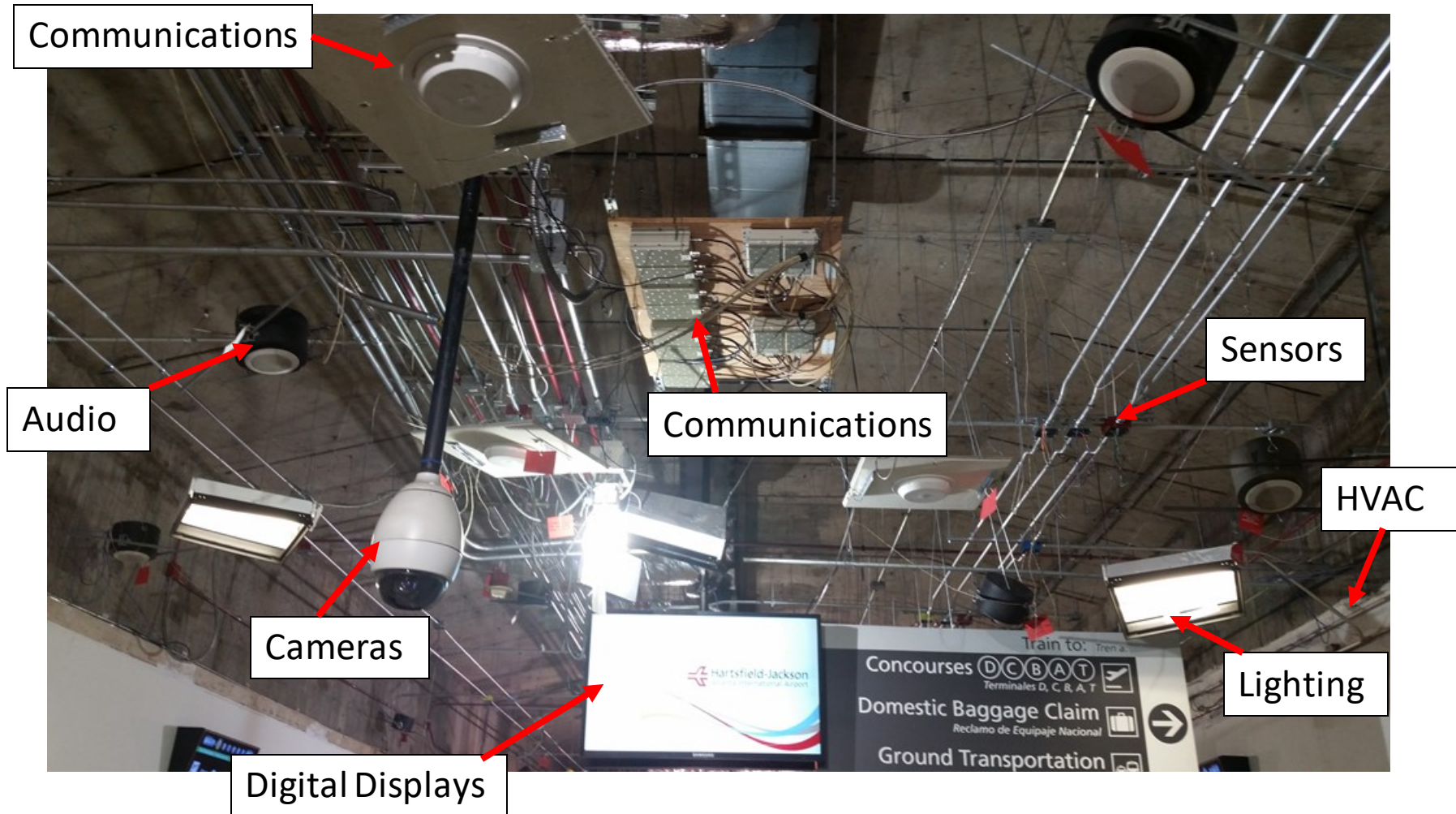
Discrete “packets” of electricity and data, each checked for safe transfer from transmitter to receiver. 500 safety checks per second. Safe to touch, fire safe.

# Electrical Hazards and Mitigation

HAZARD	YEAR	ANALOG AC/DC		DIGITAL ELECTRICITY
High Current	1960	Circuit Breaker		✓
Ground Fault	1971	GFCI/RCD		✓
Arc Fault	1999	X AFCI		✓
Resistive	—	X		✓
Touch	—	X		✓

X Fire risk only partially addressed by AFCI, insulation typically carbonized before activation

# Buildings need Digital Convergence - DE helps solve it



# Where is DE most useful?

- Where control and analytics are important
- Where the resilience of power is important
- In larger venues where distribution runs are hundreds of feet
- Where there are DC or renewable power sources

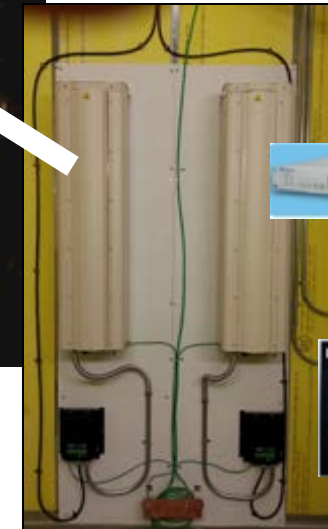
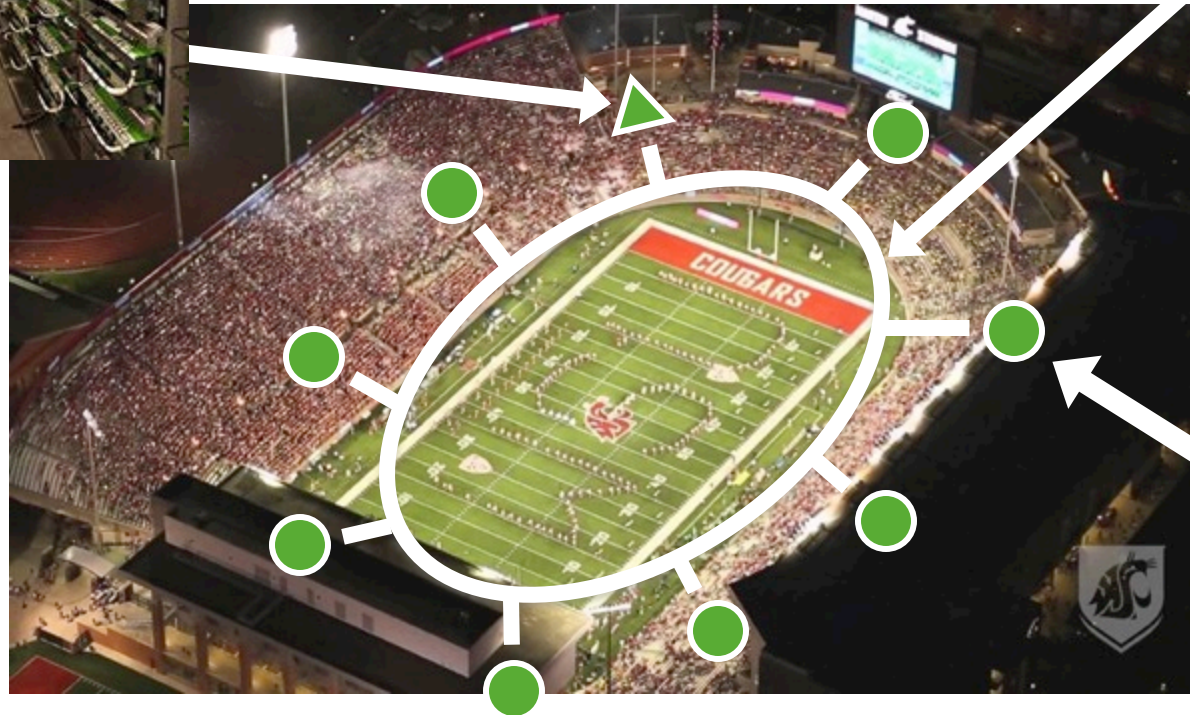
# Connected Stadium/Arena



DE Transmitters at central location



DE cables in cable tray



5G

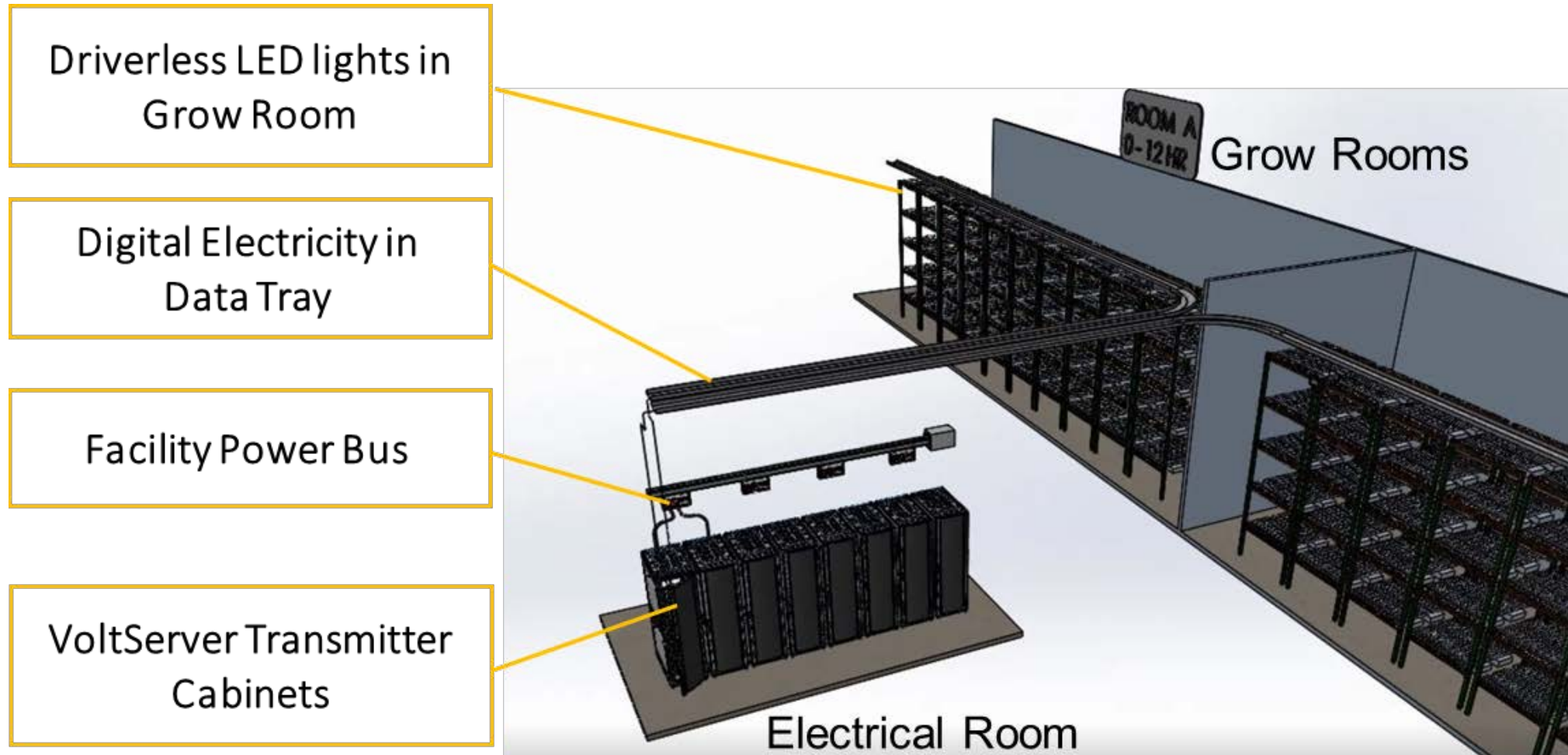


WiFi

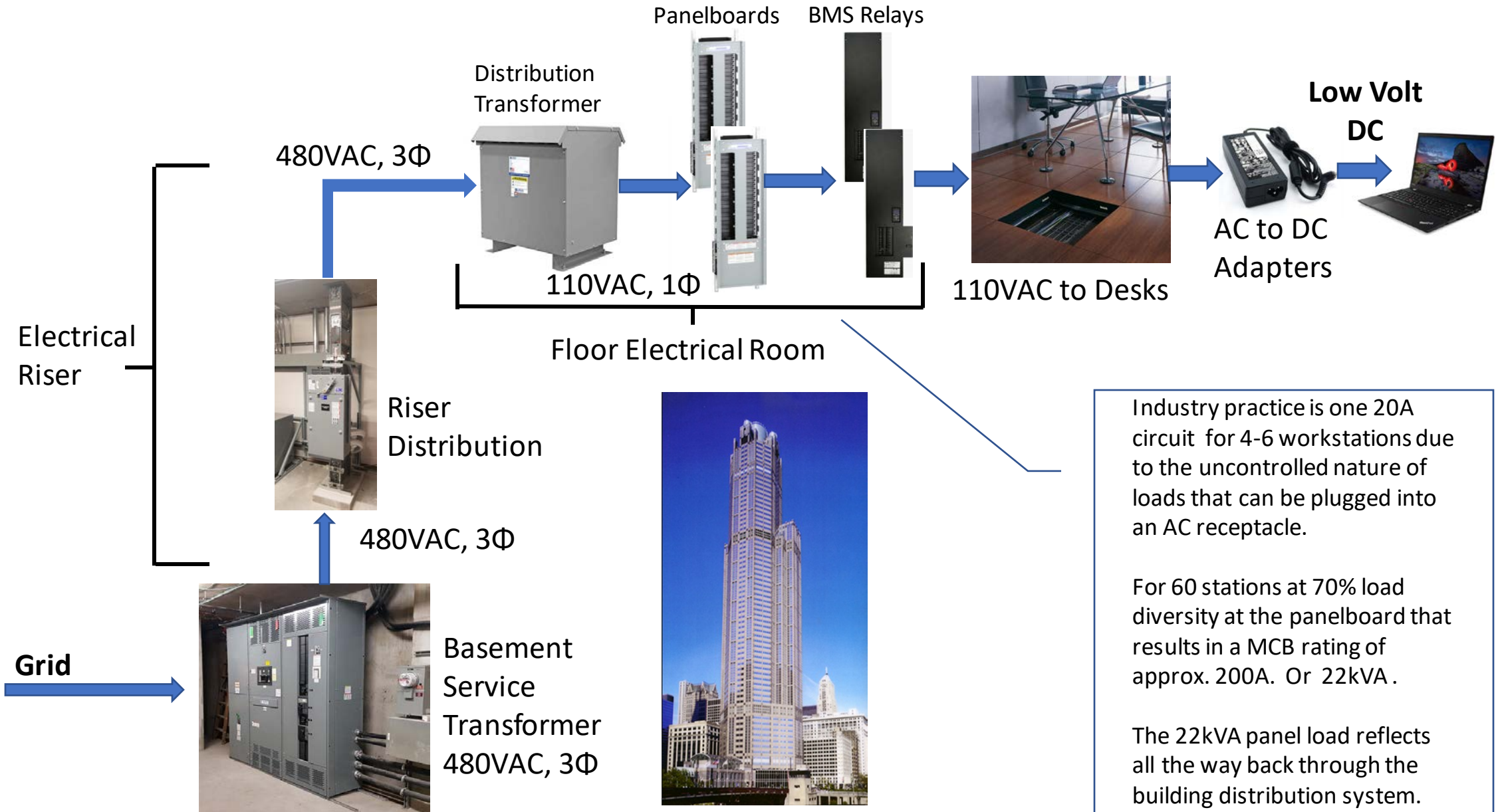


IPTV

# Indoor Agriculture



# Powering Workstations in a High rise - AC



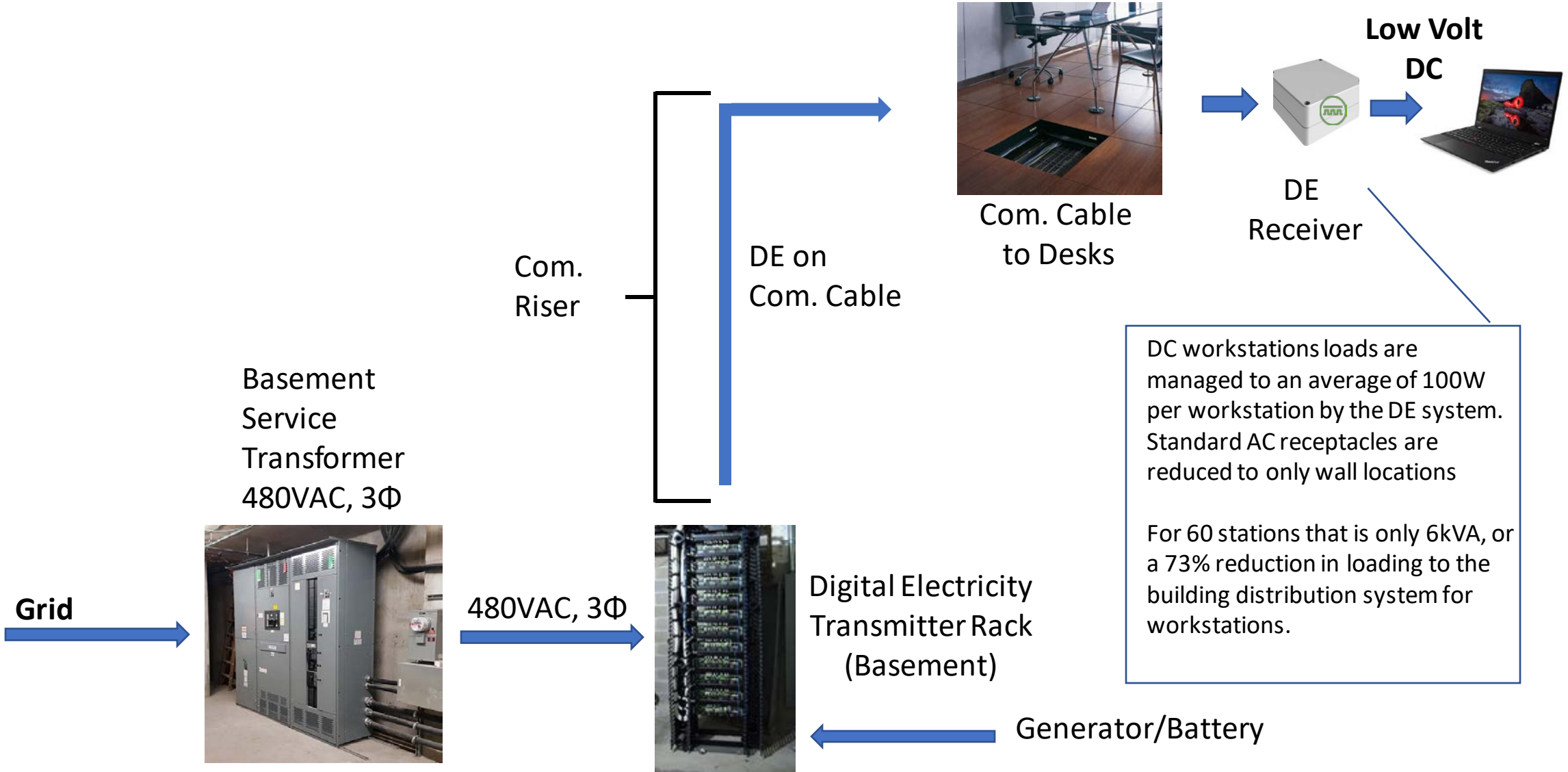
Industry practice is one 20A circuit for 4-6 workstations due to the uncontrolled nature of loads that can be plugged into an AC receptacle.

For 60 stations at 70% load diversity at the panelboard that results in a MCB rating of approx. 200A. Or 22kVA.

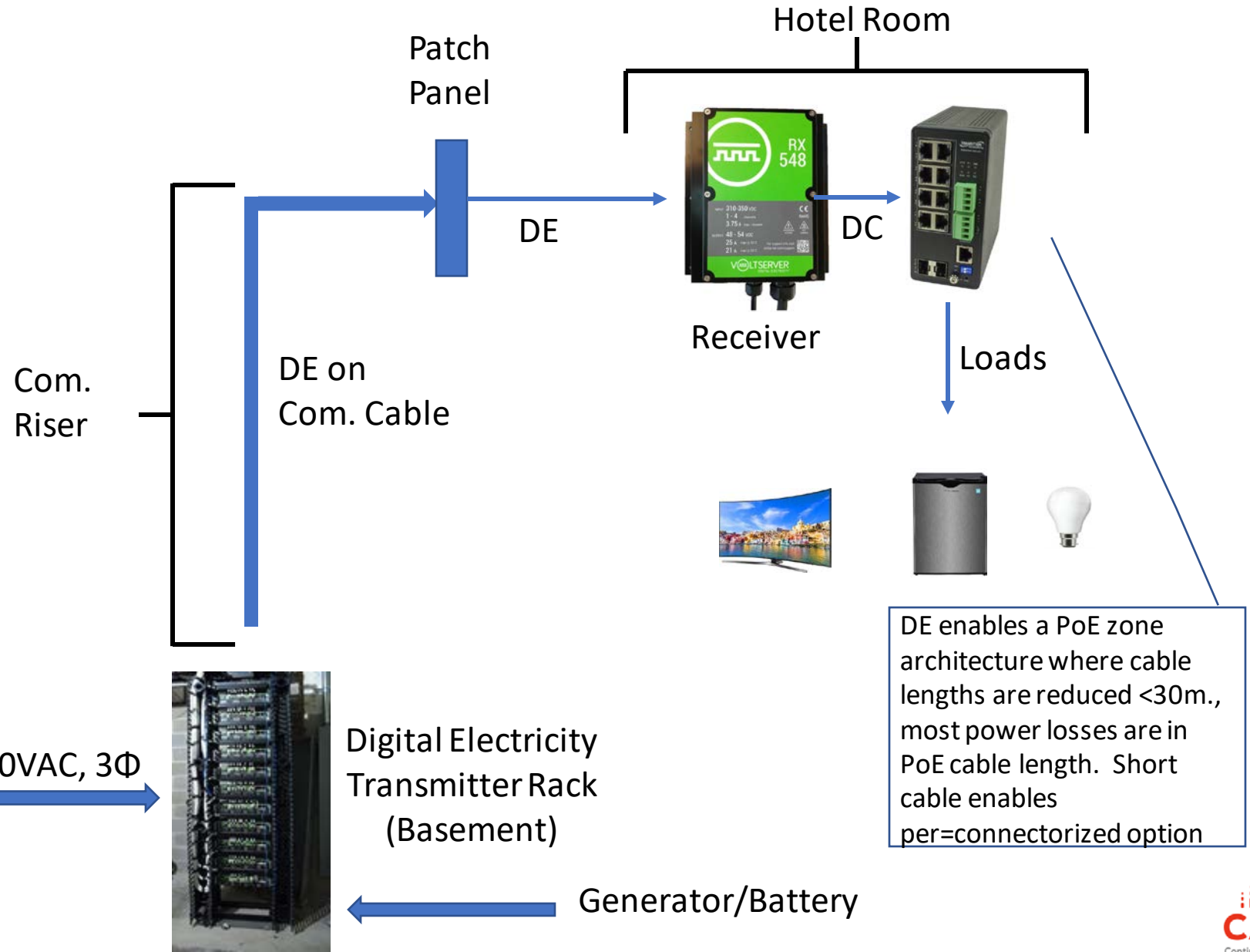
The 22kVA panel load reflects all the way back through the building distribution system.



# The DC Desktop using DE



# Hotel PoE Application





**Thank you!**

**Questions?**



# VoltServer, Inc.

Thank You!

**Steve Eaves, CEO**

[stephen.eaves@voltserver.com](mailto:stephen.eaves@voltserver.com)

401.474.4616

# 5. Keynote - Questions?

## Bob Allan (The Siemon Company)



**Stephen Eaves**  
CEO  
VoltServer



# 4. White Paper Sub-Committee Update

## Ken Wacks (Ken Wacks Associates)

### 4.1 In Progress:

### Part 2: “Impacts of Automated Shading in Building Projects”

#### TRC Energy Services (Chair)

Axis Lighting Inc.

Draper, Inc.

Ecotay Inc.

Ken Wacks Associates

Lawrence Berkeley National Laboratory (LBNL)

Lutron Electronics Co., Inc.

Mecho

NYSERDA (New York State Energy Research and  
Development Authority)

PLC-Multipoint, Inc.

Screen Innovations

Somfy Systems, Inc.

Sustainable Resources Management Inc.

Vistar Energy Consulting

#### Window Products Management



# 4. White Paper Sub-Committee Update

## Ken Wacks (Ken Wacks Associates)

### 4.1 In Progress:

### “Fire Alarm Systems in Buildings”

Canadian Fire Alarm Association (Chair)  
exp. US Services, Inc.



# 4. White Paper Sub-Committee Update

Ken Wacks (Ken Wacks Associates)

## 4.1 In Progress:

“Architecting Intelligent Self Learning Adaptive Smart Campus Framework for Smart Cities”

NAVTAT Solutions (Chair)





# 4. White Paper Sub-Committee Update

## Ken Wacks (Ken Wacks Associates)

### 4.1 In Progress:

“Needlepoint Bipolar Ionization and its Contribution to Smart and Safe Buildings”

Pure Air Control Services, Inc. (Chair)



# 4. White Paper Sub-Committee Update

Ken Wacks (Ken Wacks Associates)

## 4.1 In Progress:

“Part 2: The Evolution of Integrating LiFi Technology into Smart Lighting and Control Systems for the Intelligent Building”

Wharton County Junior College (Chair)

Acuity Brands, Inc.

ArcoLogix LLC

SnapAV

Ken Wacks Associates

National Electrical Manufacturers Association

Telecommunications Industry Association (TIA)



# 4. White Paper Sub-Committee Update

Ken Wacks (Ken Wacks Associates)

All proposals and previously completed IBC White Papers can be downloaded at:  
[www.caba.org/whitepapers](http://www.caba.org/whitepapers)



# 6. Research Update

## Bob Allan (The Siemon Company)

### 6.1 2021 IBC Landmark Research “AI and Predictive Maintenance in Intelligent Buildings”



# 6. Research Update

## Greg Walker (CABA)

### 6.2 Annual “BACS Market Sizing North America”



AutomatedLogic



**BELIMO**

**Delta**  
CONTROLS  
A Delta Group Company

**DISTECH**  
CONTROLS™  
an Acuity Brands company

**Honeywell**

Johnson  
Controls

**Schneider**  
Electric

**SIEMENS**  
Ingenuity for life

# 7. New Business

## James Carlini (Carlini & Associates)

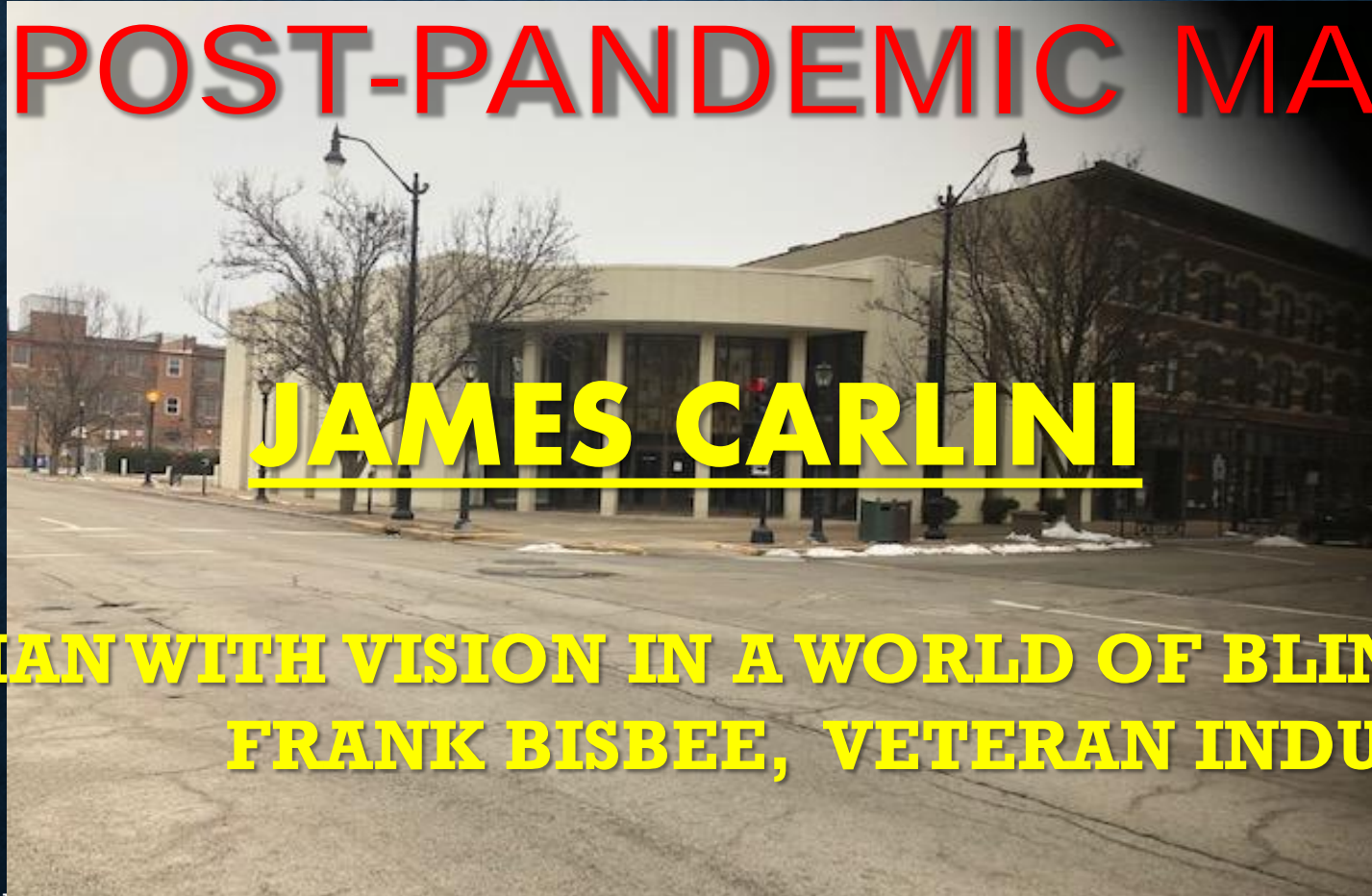
### 7.1 Paradigm Shift Impact on Commercial Buildings in a Post-Pandemic Market



James Carlini, MBA, IC

Author, Strategist, Visionary- Mission Critical Infrastructure, Expert  
Witness

# PARADIGM SHIFT IMPACT ON COMMERCIAL BUILDINGS IN A POST-PANDEMIC MARKET

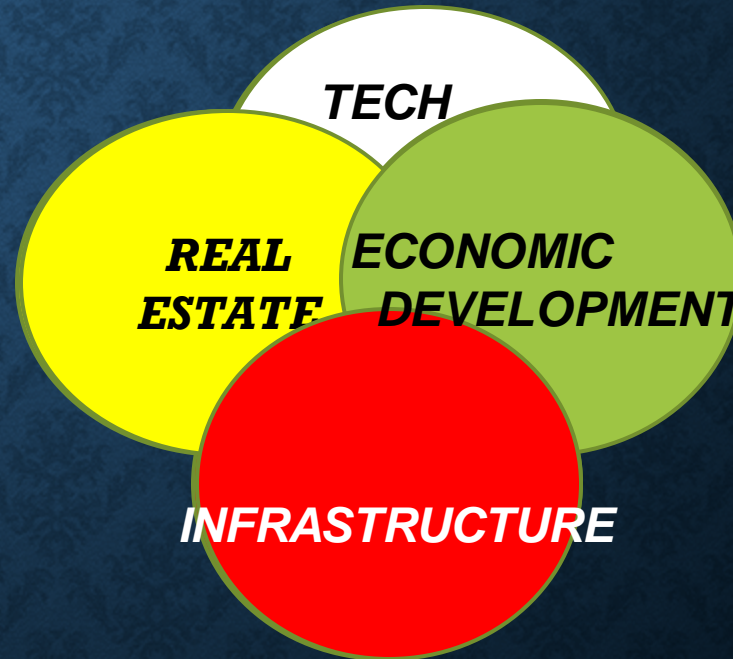


**JAMES CARLINI**

**“YOU ARE A MAN WITH VISION IN A WORLD OF BLIND PEOPLE” –  
- FRANK BISBEE, VETERAN INDUSTRY PUNDIT**

# THE NEW MARKET (SMART CITIES)

HOW DO YOU  
FOSTER ECONOMIC  
DEVELOPMENT  
FOR THIS MARKET?



**JOB CREATION = TAX BASE**



# THE IMPACT OF "WORK-FROM-HOME" WORKFORCE BECOMING PERMANENT

**PRE-COVID**

**6%**

**POST-COVID**

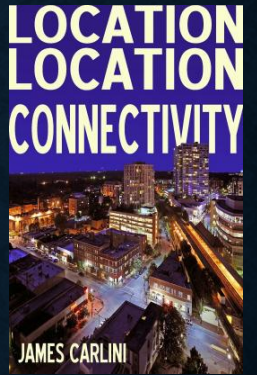
**46%**

**SAMPLE UNIVERSE:** 1,000 Employees at one International Company in US with locations across the US.

# "MISSION CRITICAL APPLICATIONS MEANS THERE CAN BE NO SINGLE POINT-OF-FAILURE"

- *James Carlini*

- **AUTHOR, KEYNOTE SPEAKER**
- **FORMER AWARD-WINNING ADJUNCT PROFESSOR,  
NORTHWESTERN UNIVERSITY**
- **STRATEGIC ADVISOR, INTELLIGENT INFRASTRUCTURE &  
MISSION CRITICAL APPLICATIONS**



# YOU CANNOT HAVE A SMART CITY



**If you have Dumb Buildings!**

# WHO WILL LOSE OCCUPANCY?

- **THOSE WHO FAIL TO SEE THE PARADIGM SHIFT**
- **THOSE WHO DO NOT HAVE INTELLIGENT AMENITIES IN THEIR BUILDINGS**
- **REDUNDANT POWER**
- **REDUNDANT NETWORK CONNECTIVITY**
- **ROUTING DIVERSITY**

A nighttime photograph of a city skyline reflected in water. In the foreground, a bridge with green-lit supports spans across the water. The background features several illuminated skyscrapers and buildings against a dark blue sky. The text 'IN A POST-PANDEMIC ECONOMY CAN YOUR CITY COMPETE?' is overlaid in white, bold, sans-serif font across the upper portion of the image.

IN A POST-PANDEMIC ECONOMY  
CAN YOUR CITY COMPETE?

CAN YOUR BUILDINGS COMPETE?

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07/15/2021

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# HOW MANY BUILDINGS IN YOUR DOWNTOWN AREA ARE TECHNOLOGICALLY OBSOLETE?

**PROPOSED  
RESEARCH  
STUDY**



**WHERE ARE THE  
OPPORTUNITIES  
TO ADD  
AMENITIES?**

# WHAT ARE WE LOOKING FOR IN BUILDINGS?

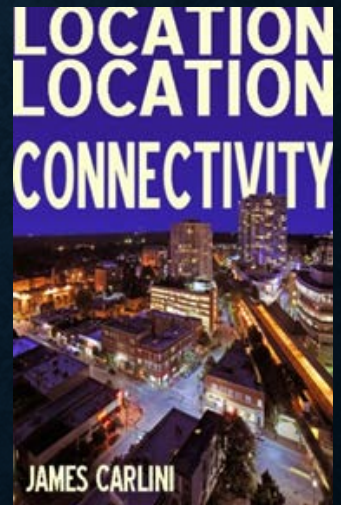
TEST METHODOLOGY (TARGET AREA)		
AMENITY	REDUNDANT	ROUTING DIVERSITY
POWER	Yes or No	Yes or No
BROADBAND CONNECTIVITY	Yes or No	Yes or No
CABLING CAPACITIES		
SPARE CAPACITY OF CABLING WITHIN THE BUILDING	USING TWINS* FORMULA (Proprietary Methodology)	*TOTAL PAIR, WORKING PAIR, IN-SERVICE PAIR, NON-WORKING PAIR, SPARE PAIR
SPARE CAPACITY OF CABLING COMING INTO THE BUILDING	USING TWINS FORMULA	SAME AS ABOVE

# CONTACT INFORMATION

**JAMES.CARLINI@SBCGLOBAL.NET**

**773-370-1888**

**PRESIDENT, CARLINI & ASSOCIATES**  
**Expert Witness, Civil & Federal Courts**





# 7. New Business

Brian Ensign (Superior Essex Communications)

## 7.2 Other new IBC business?



## 8. Adjournment

Brian Ensign (Superior Essex Communications)

Next IBC Meeting, Late September/Early Oct 2021

### Continental Automated Buildings Association (CABA)

[caba@caba.org](mailto:caba@caba.org)

[www.CABA.org](http://www.CABA.org)

[www.caba.org/ibc](http://www.caba.org/ibc)



**Connect to what's next™**