SFS AM Learning Academy
Intro to SI Higher Education Vertical Market
Fred James & Linda Rega

SFS Americas Learning Academy – September 1, 2022

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Presenters

Fred James

National Business Director - Education Markets
Siemens Smart Infrastructure

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Senior Manager
Financial Services
Siemens Smart Infrastructure

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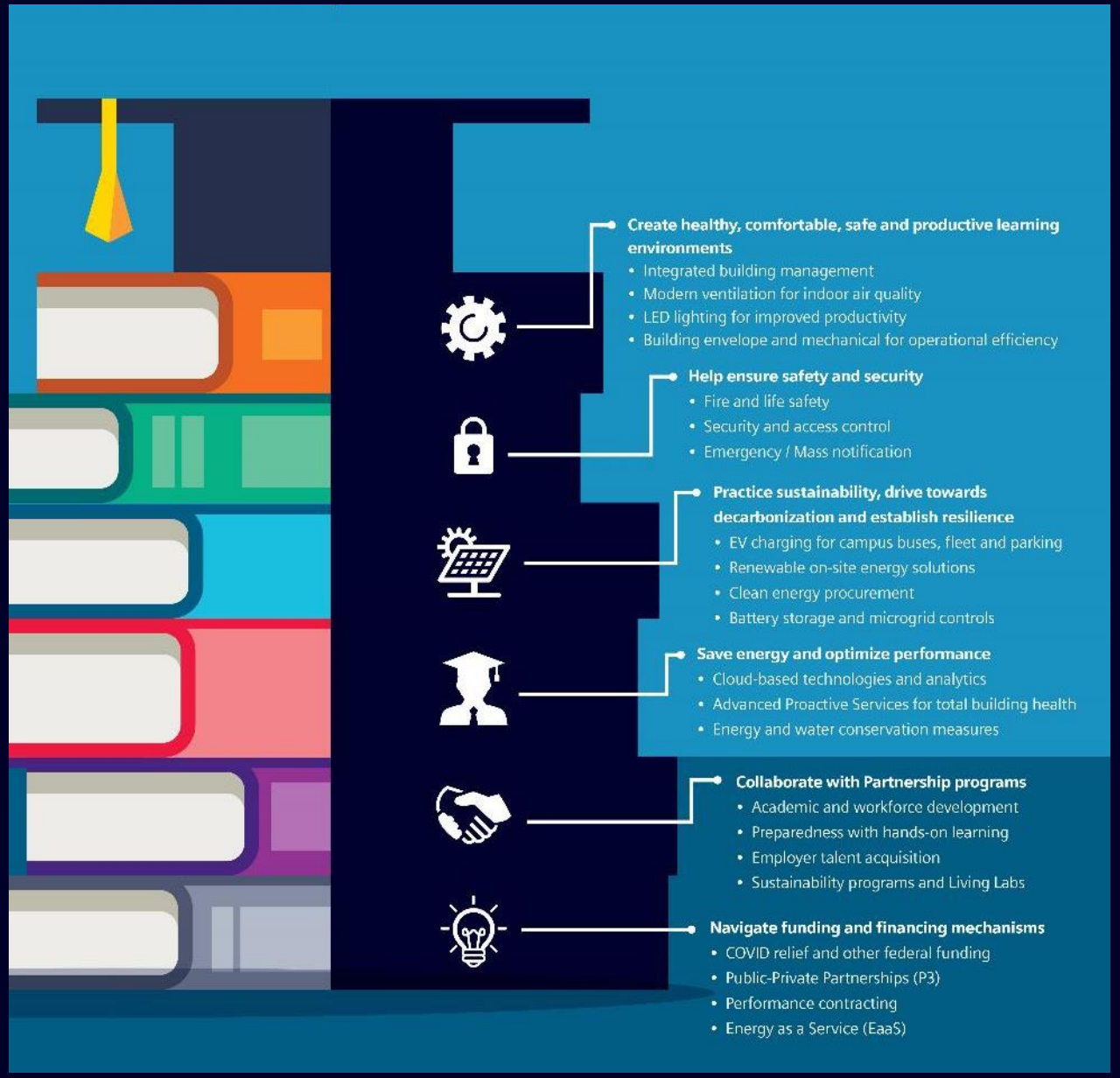
Today’s Agenda

1. Introductions
2. SI Education Markets Leader
3. Siemens, a leader in Smart Infrastructure
4. Smart Campus Journey
5. Alternative Financing & Contracting
6. Success Stories
7. ED VM Marketing & Comms
8. ED VM Support for SI
9. Siemens ED Partnership Programs



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Siemens is a Leading Partner to Higher Education

800+
Customers
U.S. and Canada

Empower
Partnership
programs

Alternative
Financing

Carbon
neutral by
2030

Integrated
Smart
Building
Systems

Leading
Energy Services
Company

Digital
Services
Center

Distributed Energy
and Grid Edge
Solutions

Financial
Strength

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Over 100
Local offices

Top
Company
Global
Recognition

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Siemens Education Market Leadership

- Full Services “Smart Campus” Partner
- $600M annual business
  - $400M HE + $200M K12
- Industry leading customer base, consisting of over:
  - 800 higher education customers
  - 2000 K12 customers
- SI RSS RAM (Over 50 Branch offices + EPS) is primary direct sales channel
- Electrical Infrastructure Sales (EIS) is primary indirect sales channel

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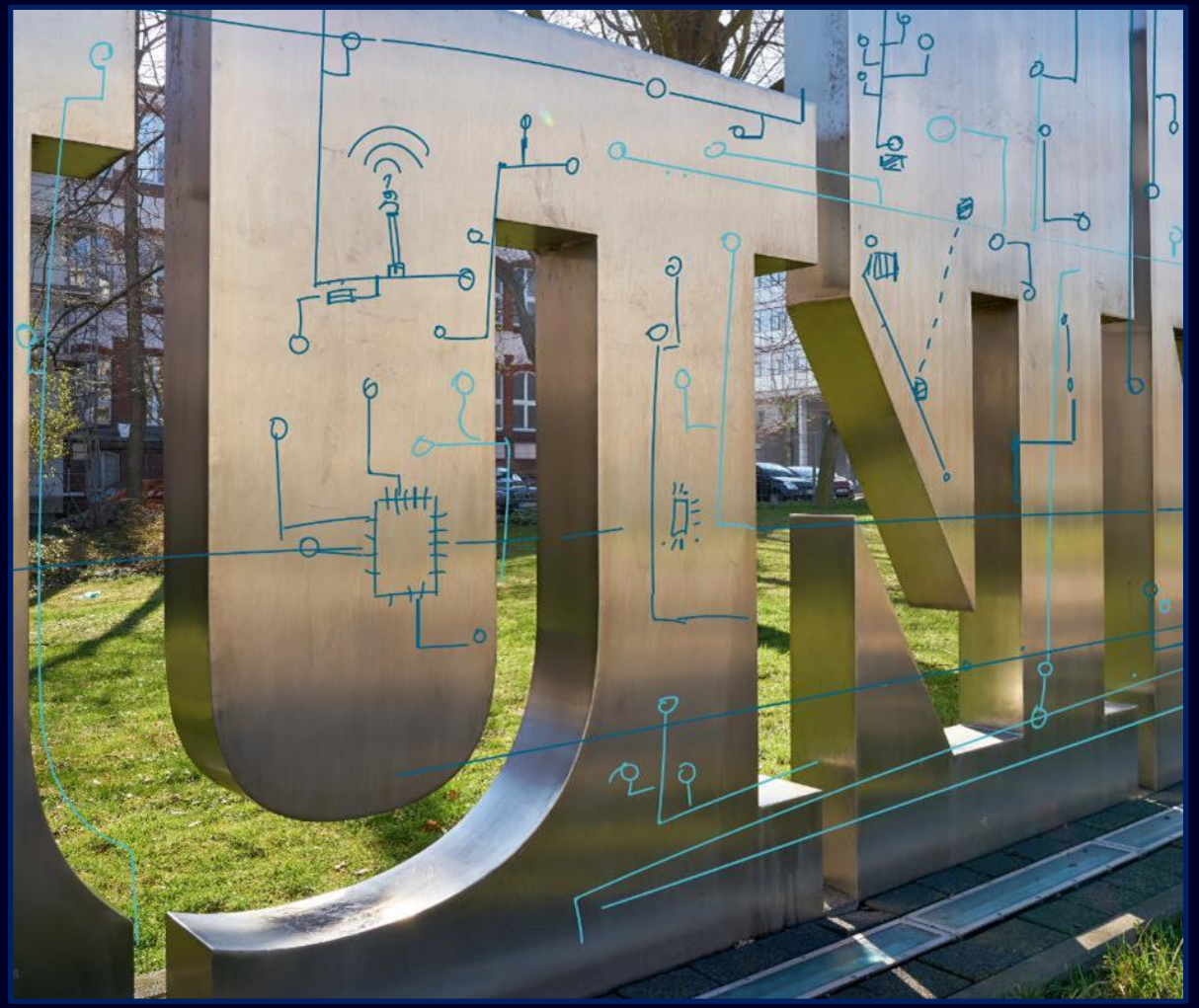
Strong Foundation of Flagship University Customers - (most with 20+ year Siemens relationship)

Siemens Top 30 University Customers

Rank	Top HE Customers
1	President and Fellows of Harvard College
2	The Texas A&M University System
3	Southern Methodist University Inc
4	State of California
5	The City University of New York
6	State of New York
7	Board of Governors State University System of Florida
8	University of Texas System
9	New York University
10	Duke University
11	University System of Maryland
12	Yale University
13	University of Tennessee
14	Regents of The University of Michigan
15	The Trustees of Princeton University
16	University of Oregon
17	Trustees Indiana University
18	Virginia Polytechnic Institute & State University
19	Massachusetts Institute of Technology
20	The University of Alabama System
21	University of Illinois
22	West Virginia University
23	Johns Hopkins University
24	Lehigh University
25	Miami University
26	Regents of The University of Minnesota
27	Board of Regents of The University System of Georgia
28	Louisiana State University
29	The Regents of The University of Colorado
30	Trustees of Boston University



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Siemens, a leader in Smart Infrastructure

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Siemens Smart Infrastructure

Siemens Smart Infrastructure

Established in 2020 to address the rapid convergence and integration of building, campus, community and grid

Electrical products

Building Products

Regional Services & Solutions

Grid Software

Electrification & Automation

eMobility

A leader in automation, digitalization, electrification & decarbonization

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Smart Infrastructure
Our broad offerings

Building Products

- Integrated building management software
- Building automation and control systems
- Room automation and lighting control
- Sensors, valves and actuators
- HVAC OEM controls
- Fire safety products and systems
- Cloud applications and gateways

Electrical Products

- Low-voltage protection, switching, measuring and monitoring devices
- Low-voltage distribution boards and systems UL
- Products and solutions for OEMs including medium-voltage vacuum circuit breakers, skeletons, and contactors
- Contactors, overload relays and motor starter protectors
- Hybrid starting including soft starters
- Push buttons and pilot lights
- Functional relays, safety relays and monitoring devices

Electrification & Automation

- Medium-voltage primary and secondary switchgear (indoor and outdoor), controllers, contactors, circuit breakers, OEM and replacement/retrofit solutions
- Medium-voltage overhead switching solutions
- Low-voltage distribution motor control centers and replacement/retrofit solutions
- Distribution solutions (e.g. prefabricated E-Houses)
- Field services (start-up, installation, commissioning), extended warranties, spare parts, training for full portfolio of distribution systems
- Photovoltaic inverter systems
- Substation automation, protection, power quality, and communications

Grid Software

- Grid operation, control, planning and simulation
- Smart grid applications, analytics / IoT offerings and managed services
- Microgrid simulation and optimization
- Power system consulting and energy business
- Advisory communications

eMobility

- Charging infrastructure solutions to support the decarbonization of the mobility sector

Regional Solutions and Services

- Solutions and Services for building automation, fire safety, security and other domains
- Remote and cloud-based Digital Services
- Energy performance services, including energy efficiency projects and distributed energy systems
- Alternative financing and contracting, incl. ESPC and Calibrant
- Vertical markets specific offerings (data centers, life sciences, smart spaces)

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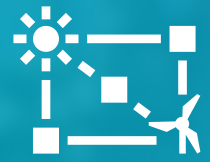
Buildings, Campuses and Grids are Growing Smarter and Converging

Smart grid

Electrification / TOU / RE / Net Metering

Grid edge

Renewable Energy / Storage / EV



Microgrid

Campus Utilities

Demand Response

Smart campus

Building technologies

Sustainability | Energy efficiency | Resiliency | Economic efficiency | Occupant Needs

Digitalization … enables new services and new business models.

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Smart Campus Journey

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Challenges Facing Higher Education Facilities

- Budget Constraints
- Safety and Security
- Facilities Workforce Challenges
- Indoor Air Quality
- Aging Infrastructure / DM
- Sustainability Expectations
- Building Performance and Comfort
- Complexity / Digitalization

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Your journey to a **Smart Campus**

usa.siemens.com/SmartCampus

Transform your campus

Implement your smart campus transformation plan in phases. Leverage the power of smart, integrated systems for continuous optimization, space and maintenance management. Address sustainability and resiliency goals through efficiency, clean energy supply, storage, transportation and electrification.

Enhance your status as university of choice

Bring technology into the classroom curriculum with living laboratories, certifications, and degree programs. Showcase research spaces and innovation centers. Become a climate and "education to workforce" leader.

Determine the best way to fund

Determine optimal financial and contractual vehicles, and consider federal relief funding and grants, including P3 as appropriate.

Build a Smart Campus foundation

Upgrade critical infrastructure. Implement metering and integrated control and management systems that enable performance-based management, leveraging KPIs and analytics.

Assess current infrastructure and digital readiness

Engage facilities team to understand their needs and challenges. Perform a Smart Campus readiness assessment. Develop an implementation plan based upon energy and sustainability planning.

Create a vision

Involve key stakeholders to create a vision for an ideal learning environment that advances your core mission. Incorporate smart infrastructure improvements and leverage clean energy technologies.

Smart Campus Foundation is the Enabler

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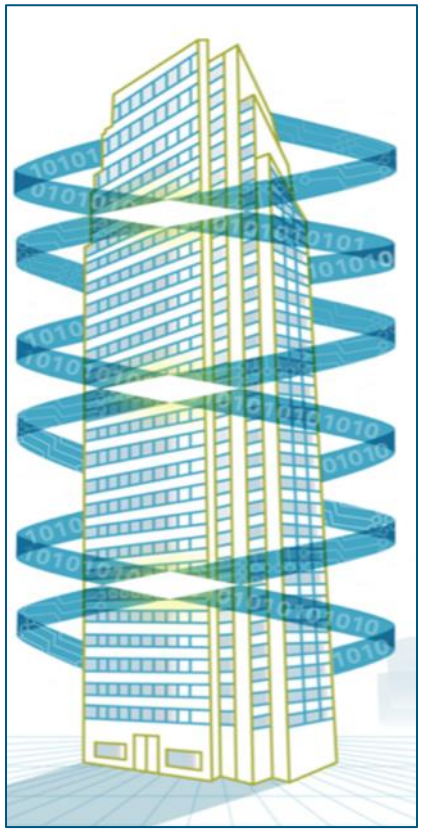
Ingenuity for life

Value Pillars	Comfortable & Safe	Energy & Asset Efficient	Space & User Efficient	Energy Intelligent and Resilient
Digital Services	Analytic Services	Remote Services	Monitoring Services	
Digital Applications	Occupant Experience	Space Utilization	Location-based Services	
Cloud-based Analytics Platform				
Intelligent Infrastructure (IoT + OT + IT)	Desigo CC			
SMART CAMPUS FOUNDATION	Total Room Automation			
	Lighting Control	Occ. & IPS Sensors	Shades	HVAC
	Security & Access	Fire & Life Safety	Electrical Distribution	Digital Grid



Smart Campus

Built on smart infrastucture

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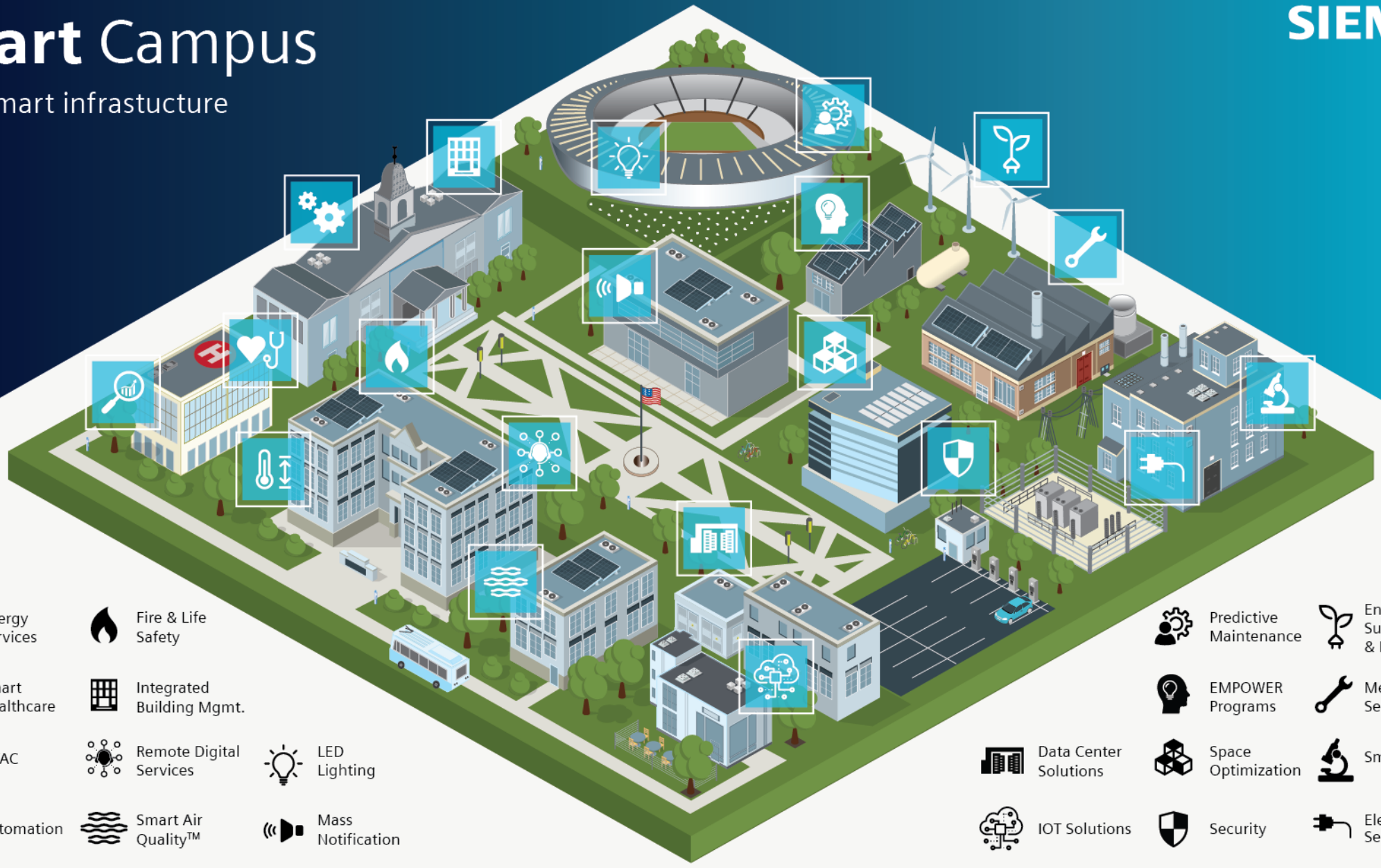
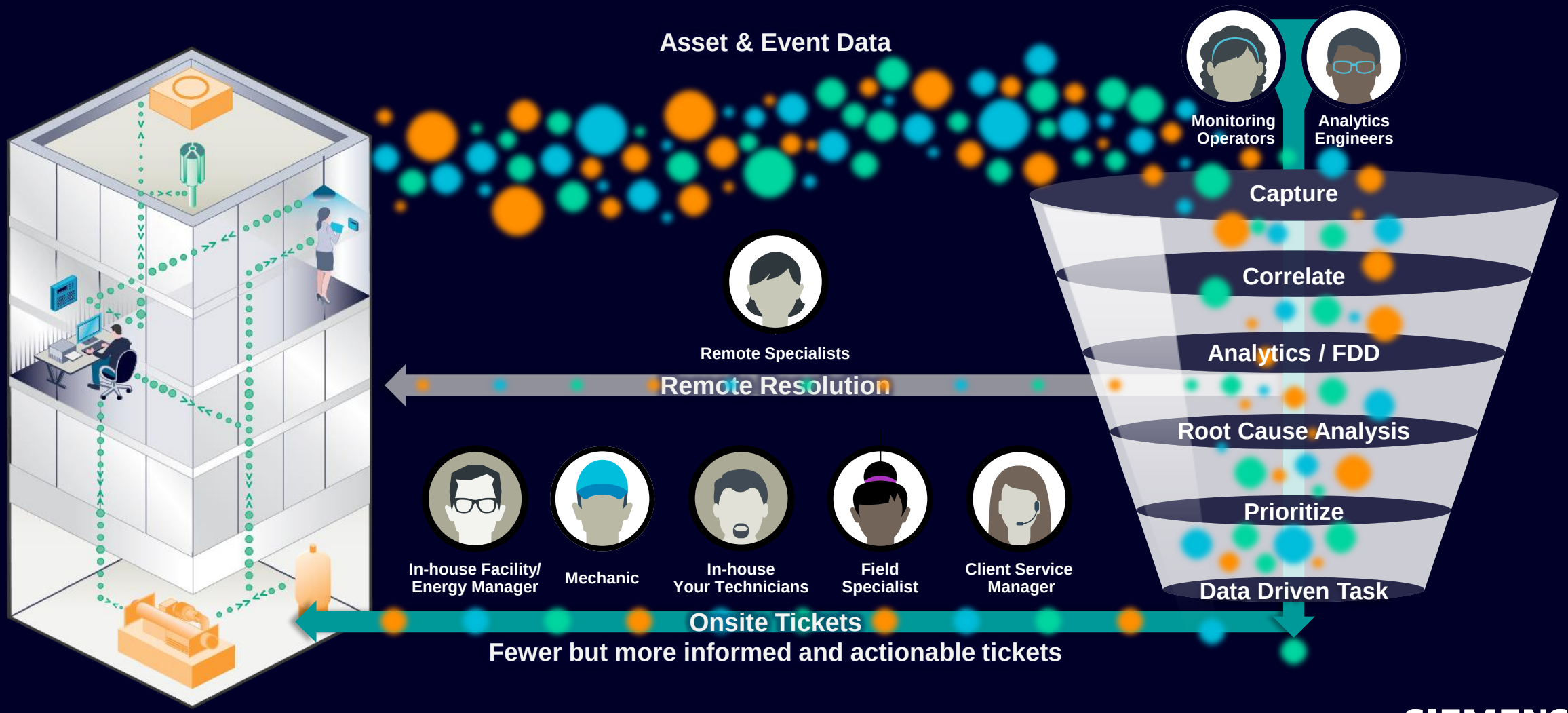


- Energy Services
- Fire & Life Safety
- Smart Healthcare
- Integrated Building Mgmt.
- HVAC
- Remote Digital Services
- LED Lighting
- Automation
- Smart Air Quality™
- Mass Notification
- Predictive Maintenance
- Energy, Sustainability & Resilience
- EMPOWER Programs
- Mechanical Services
- Data Center Solutions
- Space Optimization
- Smart Lab
- IOT Solutions
- Security
- Electrical Services

Remote Monitoring, Analytics (Fault Detection & Diagnostics), and Maintenance Services enable a proactive O&M program with minimal on-site staffing requirements



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Smart Campus: Grid Edge

Built on smart infrastucture

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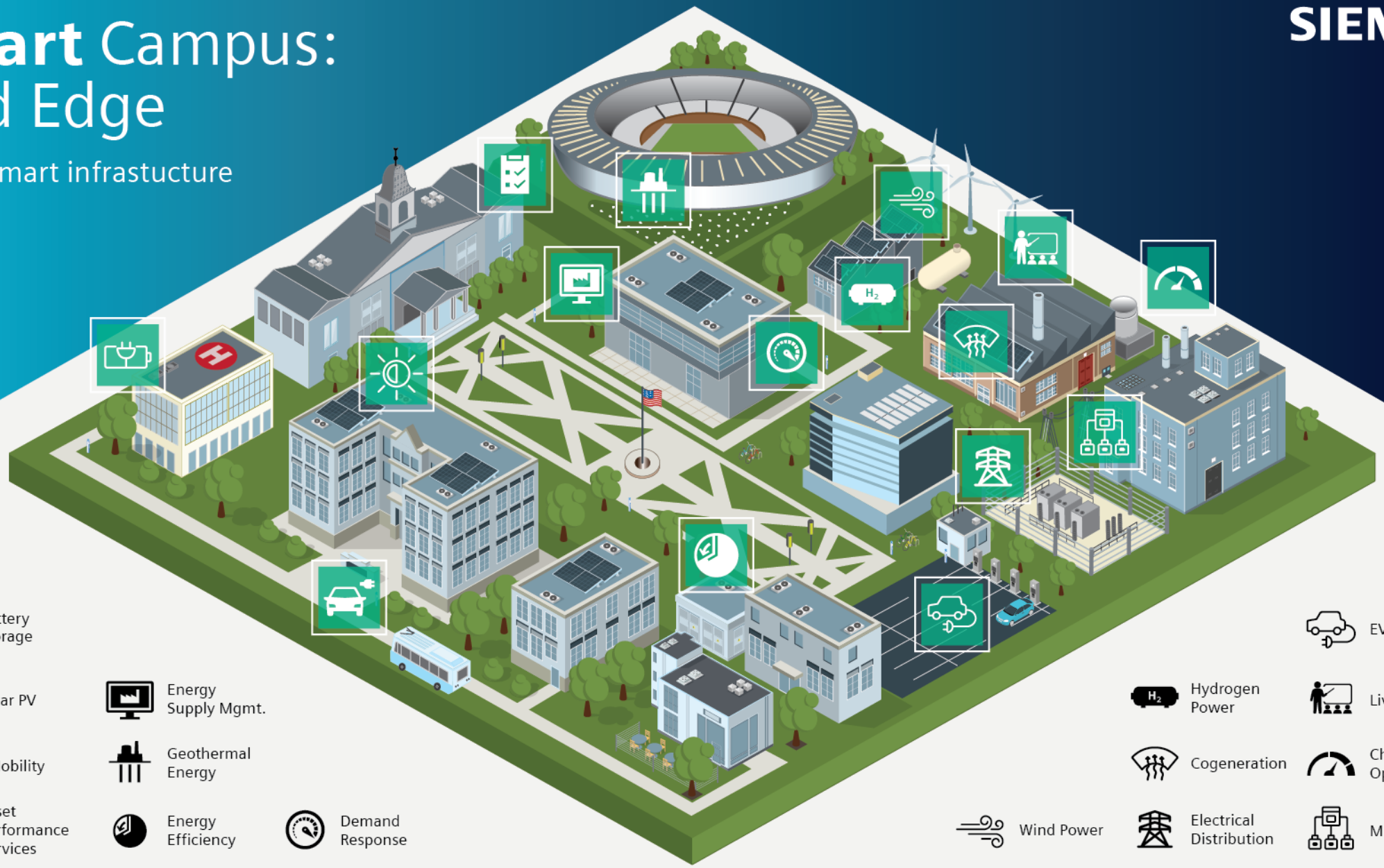

Battery Storage

Solar PV

eMobility

Asset Performance Services

Energy Supply Mgmt.

Geothermal Energy

Energy Efficiency

Demand Response

EV Charging

Hydrogen Power

Livings Labs

Cogeneration

Chiller Optimization

Wind Power

Electrical Distribution

MicroGrid

What does a Smart Campus deliver?

→ Performance and ROI !

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Alternative Financing & Contracting

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Performance Based Contracting Solutions

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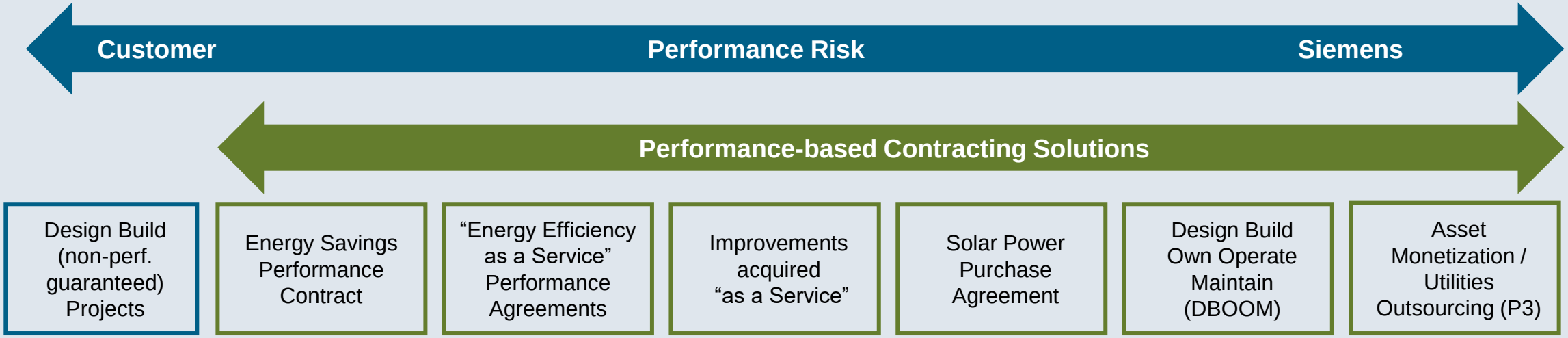
Ingenuity for life

Primary drivers for Alternative Contracting structures

- Preserve limited capital for core mission.
- Shift financial and operational risks to third party partner(s).
- Capture tax benefits on clean energy investments.
- Long-term energy partnership

Large range of innovative financial structures to meet campus customer's objectives.



Energy Savings Performance Contract
Traditional Financing Methods

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Financing Sources

- Bonds/Revenue Bonds
- Tax-Exempt Lease Purchase Agreements
- Endowment Funds

➡ *No upfront capital required.*

➡ *Financing or loan is paid back through **guaranteed** energy savings. Debt service is structured to provide annual budget neutrality.*

➡ *Post contract term, all savings maintained by University.*

Supplemental Funding Sources

- Donor Funding
- Utility incentives

Improvements Acquired “as a Service”

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What?

- University enters into a service agreement to receive the benefits of improvements.
  - Example: BAS panel migration, security systems with card access, video cameras with 24/7 video monitoring.

Advantages to Customer?

- SII designs, installs and maintains the system, and SFS owns it for the Customer’s benefit.
- No capital requirement or operating responsibility during contract term.
- Short term (up to 7 years) service agreement

Our Solution

Calibrant Energy helps clients realize their unique vision for energy transformation.

We do that through the design and delivery of a fully integrated and managed Energy as a Service (EaaS) solution with no up-front capital investment, operational or performance responsibilities from our customers.

CALIBRANT ENERGY

Siemens Smart Infrastructure can deliver!

CALIBRANT ENERGY
Simplifying energy transformation

University of Florida

Solar Photovoltaic Financing RFI21NH-118
November 4, 2020

Renewables & Hybrid Power

- Solar, Geothermal
- Battery Storage, EV Charging
- Microgrid Controls

Campus Utility Plants

- Chillers
- Boilers
- Cogeneration

Utilities Outsourcing / P3

- “Monetize” Campus Utility Assets
- Outsource Utility Operations, Energy Management, etc.

Utilities Outsourcing P3 Trend in Higher Ed is Accelerating: Opportunity and Threat!

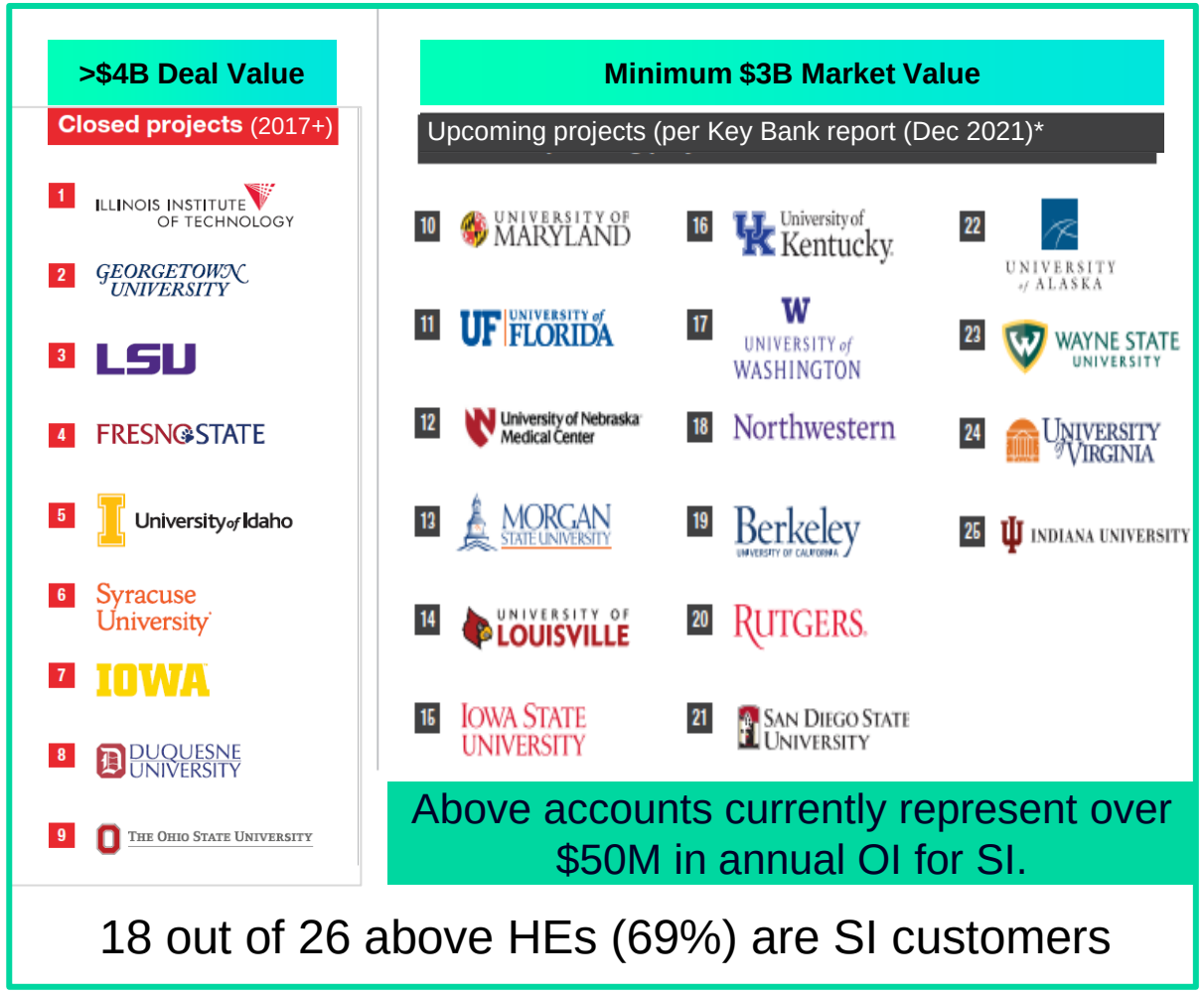
Outsourcing of campus utilities (via 30-50 year P3 concession agreements) is accelerating:

Main drivers:

- Escalating deferred maintenance
- Staffing constraints
- Unfunded decarbonization goals
- Preservation of limited debt capacity for core mission
- Offer of upfront capital as part of deal structure

The majority of these campuses are SI customers

- How can we participate (leveraging our leading national HE customer base)?



*Additional IHEs known to be exploring P3 include: UPenn, UWisc, USCar, UCol, CSUs, IIT, Princeton, UDel, Lehigh, STXU, UDC

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Success Stories

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Morgan State University

Campus transformation: smart, sustainable & efficient

Solutions

- Strategic Energy & Sustainability master plan defines 4-phase campus modernization and transformation
- Delivering a smart campus foundation with Desigo CC integrated automation, HVAC, security, fire and life safety systems, with a focus on energy efficiency, resiliency and sustainability (Phase 1)
- Addressing utility systems, renewable energy and enabled digital services for continuous improvement & optimization (Phases 2-4)

Benefits

- Improved infrastructure and operational excellence
- Leverage digitalization to reduce opex and labor dependence
- Deliver a healthy, safe, secure, and resilient campus setting

~$10Million

Guaranteed Savings (Ph.1)

>65%

GHG reduction planned

R1

Carnegie Research University Goal

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Morgan State University's Journey to a **Smart Campus**

1 Phase

SETTING THE FOUNDATION

- Implement initial energy conservation measures for efficiency
- Upgrade building, fire, and security systems for modernized safety and security
- Install submetering for energy measurement and systems management
- Establish master energy and sustainability plan
- Address critical deferred maintenance

MORGAN STATE UNIVERSITY | MARYLAND CLEAN ENERGY CENTER

PARTNERSHIP PROGRAMS IN EACH PHASE TO ALIGN WITH UNIVERSITY'S MISSION

- **Siemens Empower Program** - Living labs, customized programs, student and faculty engagement
  - Mechatronics Degree Program
- **Smart Communities** - Partner with the community to share best practices and technologies
- **Adopt a University** - Match students with potential employers in need of qualified mechatronics graduates
- **Diversity and Inclusion** - Work with on-campus recruitment and minority subcontractors

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Southern Methodist University, Dallas TX
Optimized building performance via Digitalization

Transition Campus to **Desigo CC** Management platform

Central Utilities Management utilizing:

- **Desigo CC** integrated control platform (buildings and CUP)
- **Demand Flow** Chiller Plant Optimization
- **Siemens Digital Services** – remote monitoring, analytics, control/remedy, O&M integration

Analytics and VFM Services

- Continuous optimization of building performance and maintenance, leveraging Siemens **DSC** and **Navigator**
- **Analytics** on **60+** buildings with **65.000+** points (15min)

Value

- **60%** remote resolutions via the DSC
- **$3.6 M/yr** maintenance budget reduction driven by Analytics and Virtual Facility Management
- Position SMU as recognized "top tier" energy management program within Higher Ed

Marketing & Communications

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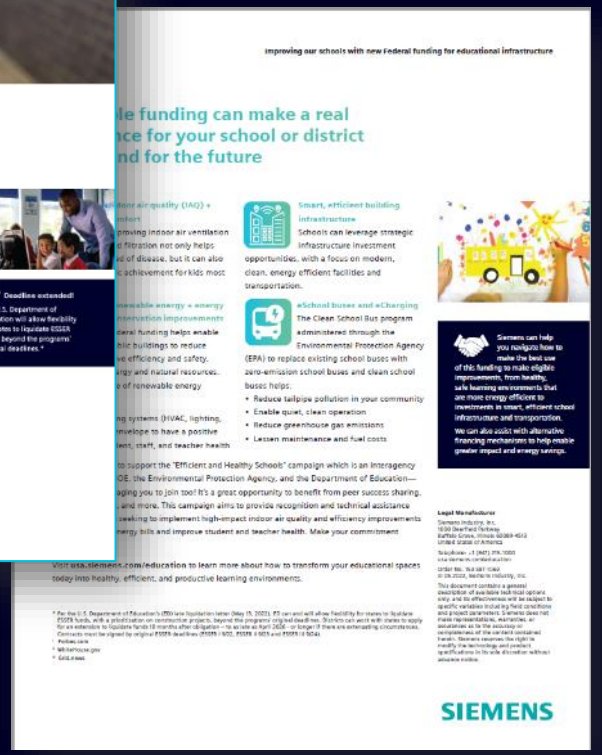
Improving our schools and campuses with new Federal funding + programs

“Reopen Ed” campaign = $192M OI to date!

Collateral + Social Media + Training + Sales Support

- Customer outreach letter on funding and eligibility
- Social media posts on Amplify
- Guidance for K-12 Schools Convo Guide
- Guidance for Colleges and Universities Convo Guide
- Pitch letter for Highspot (in progress)



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Improving our schools and campuses with new Federal funding + programs

Website Stats

- 1,257 visits, 1,112 unique visitors
- Avg. time on site: 3m 38s
- 35% related to campaign, 76% new

Traffic Sources

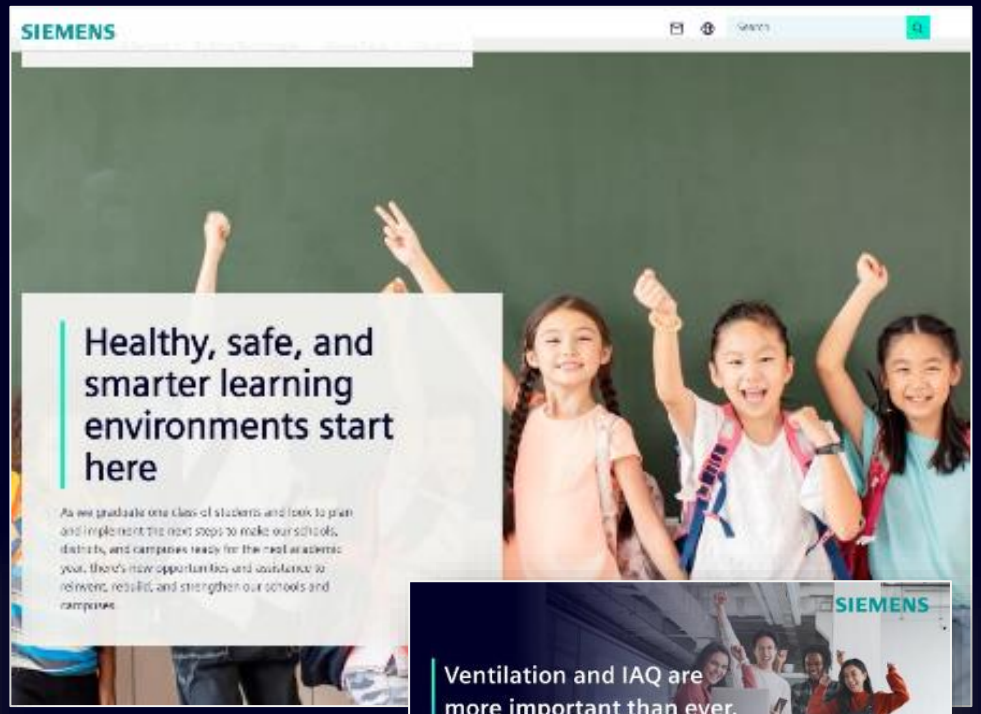
- Organic search 48.7%
- eNewletter (associations) 17.4%
- Direct/No referrer 15.8%
- Social owned/earned 5.8%

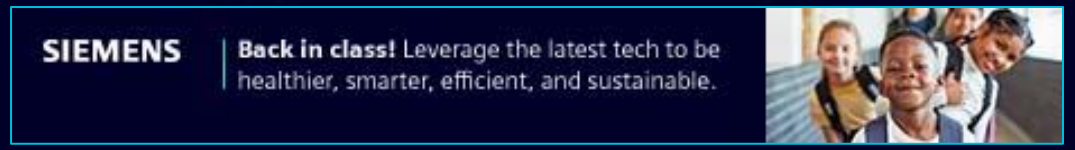
Top Referrers

1. LinkedIn
2. Appa.org
3. Campus Safety

ED VM Websites

1. www.usa.siemens.com/education
2. www.usa.siemens.com/highered
3. www.usa.siemens.com/k12





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Education Association Engagement

APPA Leadership in Educational Facilities (APPA)

APPA is the leading facilities-based trade organization for higher education in North American enabling Facilities professionals to share, elevate, and transform the learning environment. APPA provides training and professional development, performance measurement, and evaluation tools, standards, best practices, research, credentialing, and thought leadership to more than 1,300 learning institutions.

- Annual conference and T3 presence, thought leadership speaking
- Sponsor and develop annual APPA Thought Leaders Series market report
- Local chapter speaking and conference support

Second Nature

Second Nature is committed to accelerating climate action in, and through, higher education. This is done by mobilizing a diverse array of higher education institutions to act on bold climate commitments, to scale campus climate initiatives, and to create innovative climate solutions. The organization works to align, amplify, and bridge the sector's efforts with other global leaders to advance urgent climate priorities.

- Presence at national conference
- College of Charleston – Darcy Everett, Fred James
- Solution Center SI-dedicated page

IDEA CampusEnergy (International District Energy Association)

IDEA is a premiere community of decisionmakers that own, operate or provide technology and services to district energy systems that supply steam, hot water, chilled water and energy services to multiple buildings in cities, communities, campuses, and more. IDEA's mission is to inform, connect, and advance the district energy industry around the globe in the areas of reliable, economical, efficient, and environmentally sound district heating, district cooling, and combined heat and power.

- Corporate membership
- Annual conference "co-presence" with Siemens Energy

National Association of College and University Business Officers

ASSOCIATION OF SCHOOL BUSINESS OFFICIALS INTERNATIONAL

P3 Higher Education Summit

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Siemens Education Partnership Programs

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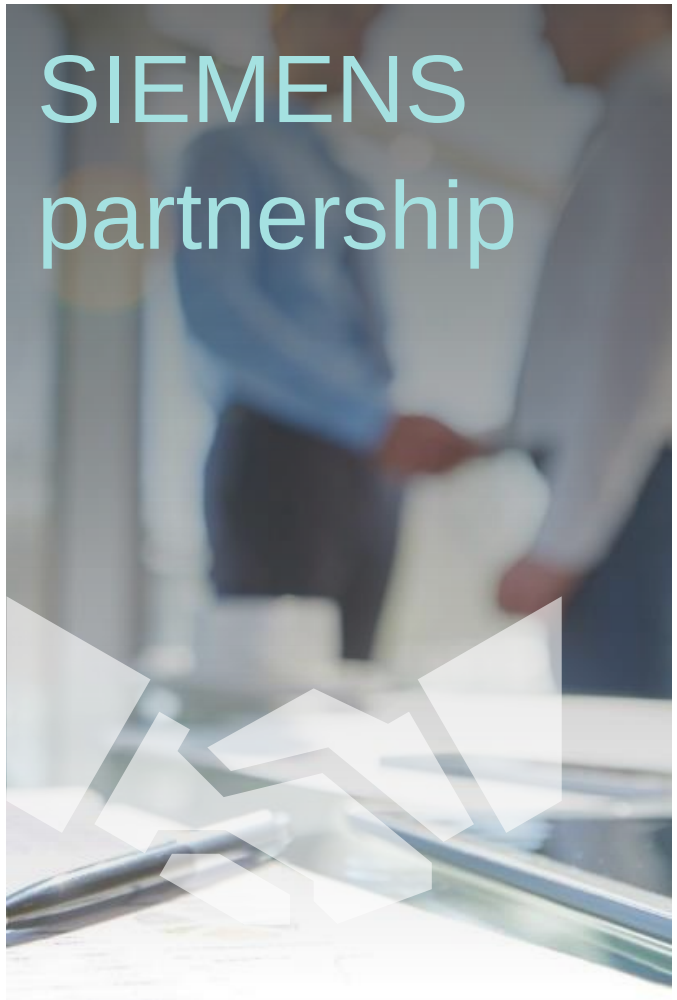
Siemens Higher Education Partnership Programs
[Director – Steve Hoiberg]



Siemens Empower

- Customized programming and seed grants
- Sustainability / infrastructure awareness and publicity
- Community outreach, sustainability initiatives, living labs
- Academic and research support

Academic and workforce development

- Digital Industries Software (DISW)
- Digital Factory (SCE)
- Mechatronics certification (SMSCP)
- BAS tech certification (ACP)
- Microgrid simulation (MGT)
- SiSchool (EE)

Communications & HR

- Reference-based marketing
- 360º communications
- Internships
- Recruiting

Examples of Living Labs

University Florida Central Plant

- Vet Med CUP as Living Lab
- Human Environments graduate course development
- Showcase for future UF campus central plants

Durham College Geothermal

- Geothermal plant as Living Lab
- Multi-disciplinary academic integration underway
- Promotion and branding campaign

Columbia University Solar

- Two off-campus solar farms via PPA
- Meet carbon neutrality for LDEO University research campus
- Solar kiosk for education and awareness

Algonquin College Energy Centre

- Cogen, Solar, BEES Microgrid
- New Energy Management certification program
- Workforce and Sustainability programs

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Closing

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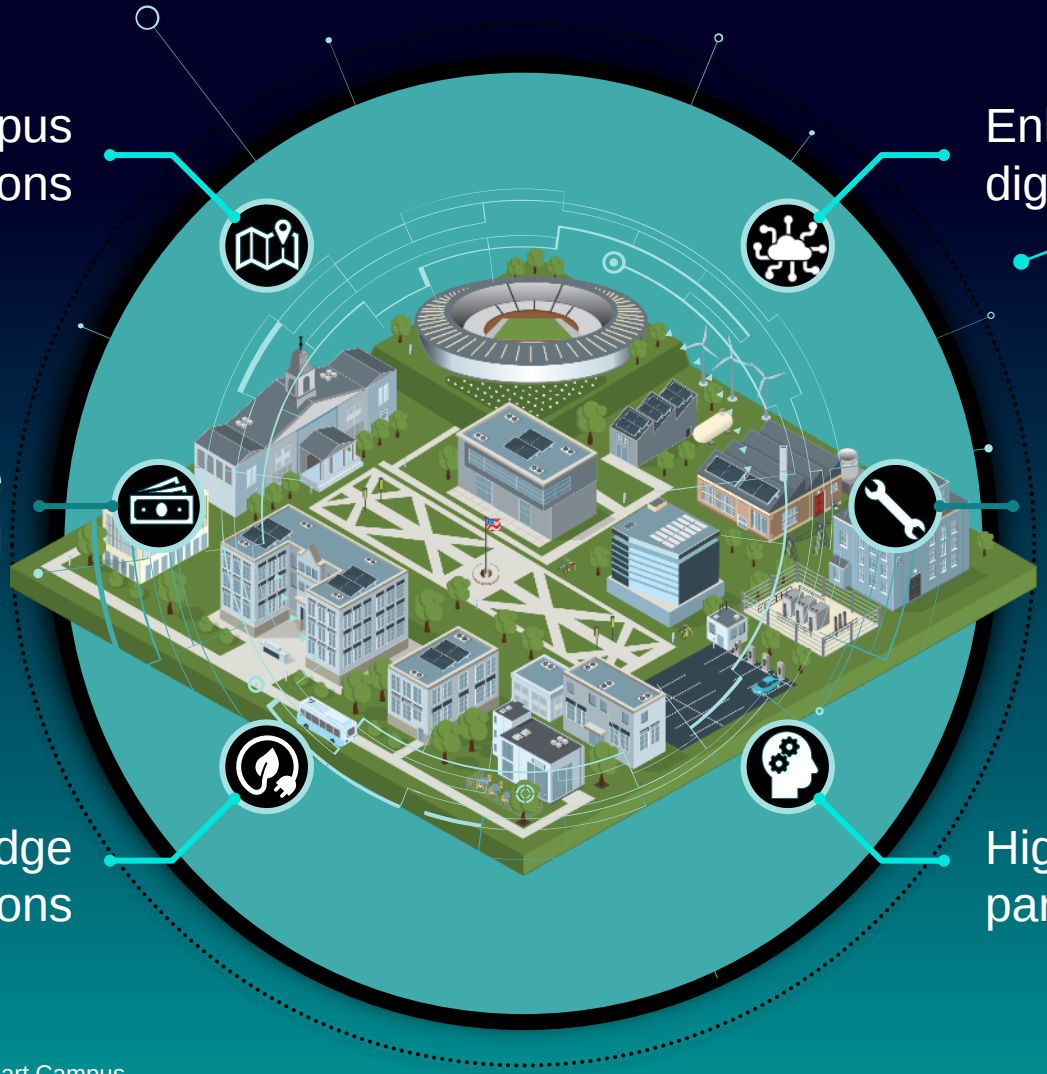
Siemens Approach to Delivering a Smart Campus



Campus experience

- Safe, healthy & secure
- Comfortable
- Connected

Smart Campus solutions

Alternative financing

Resilience

- Sustainable
- Reliable
- Budget stable

Grid Edge solutions

Enhanced by digitalization

Operational excellence

- Energy efficient
- Ease of operations
- Low lifecycle cost

Local services

Partnership

Higher ed partnerships

- Workforce & customized programs
- Lifecycle partner
- Promotion

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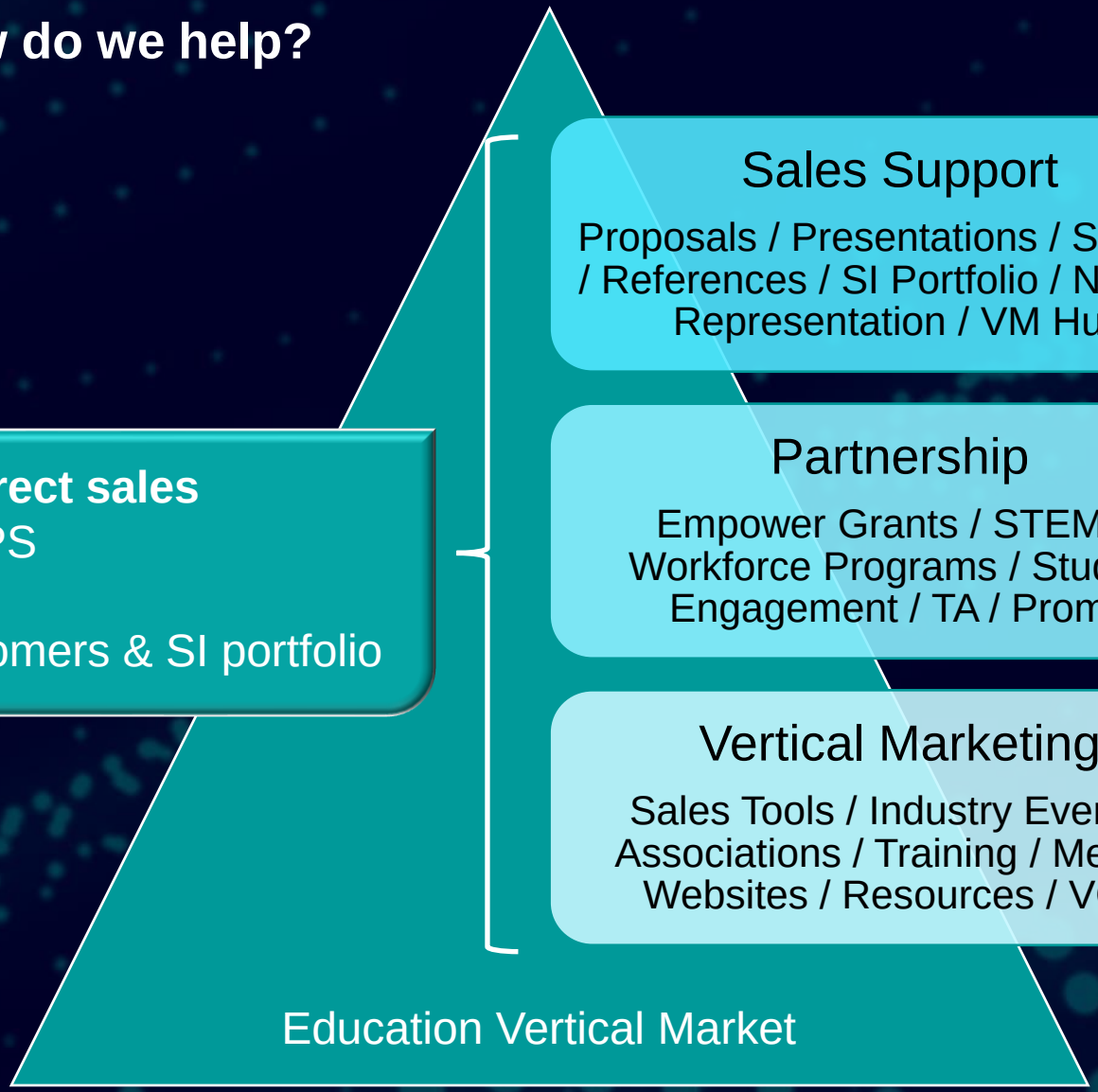
Vertical Markets:
What do we do? How do we help?



Support Customer-direct sales
- RSS Branches & EPS

Cross BU-integration
- Leverage RSS customers & SI portfolio

Sales Support

Proposals / Presentations / Strategy / References / SI Portfolio / National Representation / VM Hub

Partnership

Empower Grants / STEM & Workforce Programs / Student Engagement / TA / Promo

Vertical Marketing

Sales Tools / Industry Events / Associations / Training / Media / Websites / Resources / VOC

VM Workshop: *"Winning with Federal Funding, Consultative Sales, and Partnership"*

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