

Smart Campus Roles of Participants, Benefactors, and Stakeholders

Along with the Chief Technology Officer (CTO), Chief Facilities Officer (CFaO), and Chief Sustainability Officer (CSO), many other campus leaders are essential in developing sustainable smart campuses. If these initiatives are not improved, they will impede institutions in the decades ahead. To preserve its global leadership, American academic institutions must take the initiative. Additionally, the CEO must highlight how AI can transform the physical world, altering how individuals collaborate, innovate, learn, and interact with their environments, devices, and energy. Maintaining the current state signals an unsustainable future for our institutions, communities, regions, and the planet.

Exhibit 1. Strategic Role Matrix

Role	Core Responsibilities	Skills and Competencies
President / Chief Executive Officer	Champion the long-term vision for an AI-enabled sustainable campus; secure resources and board support; model an innovation-first culture.	Vision casting, strategic storytelling, coalition building, and high-level resource orchestration.
Provost / Chief Academic Officer	Align curricula, research agendas, and faculty incentives with smart-tech and sustainability goals; embed “living-lab” pedagogy.	Academic planning, cross-college diplomacy, change management, and accreditation savvy.
Chief Financial Officer (CFaO)	Fund smart-campus portfolios; structure ROI models, green-bond/ESG financing, and long-range capital strategies.	Strategic budgeting, capital-markets fluency, risk analytics, and incentive-based allocation.
IT and Facilities Management Leaders	Implement and maintain IoT, BAS, and digital-twin platforms; retrain staff; sustain operations during transformation.	OT/IT convergence, program management, workforce development, vendor negotiation.
Trades Workers	Share tacit knowledge of building systems; operate and maintain evolving smart infrastructure.	Craft expertise, digital-literacy upskilling, collaborative problem-solving, safety compliance.
Faculty and Staff	Leverage smart tools to enhance teaching, research, and admin workflows; provide user-experience feedback.	Pedagogical innovation, process redesign, data-informed decision-making, and a continuous-learning mindset.
Students	Co-design, pilot, and evaluate smart-campus solutions; voice priorities through student governance.	Digital fluency, peer engagement, feedback articulation, and advocacy.
External Partners	Advise, co-develop, and promote smart-campus projects; share best practices and training resources.	Solution architecture, partnership brokering, knowledge transfer, and industry insight.
Facilities Manager	Oversee building operations, space strategy, maintenance, and compliance in a smart-enabled environment.	Organizational leadership, building-systems literacy, budget control, and KPI tracking.
Energy and Sustainability Specialist	Deploy efficiency and renewable projects; monitor performance; advance environmental stewardship.	Energy analytics, green-building standards, carbon accounting, stakeholder education.
Smart Campus Coordinator	Orchestrate deployment and daily operation of smart systems; manage vendor SLAs; liaise across departments.	Project coordination, IoT familiarity, communication excellence, and issue triage.

Role	Core Responsibilities	Skills and Competencies
Director of Integration	Align disparate systems; lead user training and change adoption from the job site to the C-suite.	Systems thinking, stakeholder translation, onboarding design, and continuous improvement.
IoT Systems Engineer	Design, secure, and optimize the campus IoT backbone; ensure interoperability among devices and data flow.	Network architecture, edge computing, protocol mastery (MQTT, BACnet), and troubleshooting.
Data Analyst	Transform smart-system data into actionable insights for operations, sustainability, and student success.	Statistical modeling, BI tools, data storytelling, cross-domain interpretation.
Security Manager	Protect cyber-physical systems and data; embed zero-trust architecture; manage physical security.	Cybersecurity frameworks, risk assessment, incident response, and crisis leadership.
Sustainability Program Coordinator	Run campus-wide sustainability campaigns, events, and reporting; cultivate culture change.	Program logistics, stakeholder outreach, behavior-change tactics, and metrics tracking.
Building Automation Specialist	Configure and fine-tune BAS (HVAC, lighting, etc.) for efficiency and comfort.	Controls programming, BACnet/LonWorks expertise, commissioning, and diagnostic analytics.
Renewable Energy Consultant	Advise on solar, wind, and geothermal integration; perform audits; craft optimization roadmaps.	Renewable-tech know-how, financial modeling, policy literacy, and feasibility assessment.
Environmental Health and Safety Officer	Ensure EH&S compliance, implement health and safety programs, and monitor IAQ and hazards.	Regulatory mastery, inspection and audit skills, safety-training delivery, and incident investigation.
Strategic Planning Coordinator	Embed smart-campus priorities into institutional strategic plans; track progress and adjust roadmaps.	Strategic facilitation, scenario planning, KPI alignment, stakeholder diplomacy.
Director of Campus Planning and Development	Lead physical-growth strategy, integrating smart infrastructure and sustainable design.	Master planning, BIM/digital-twin literacy, capital-project leadership, regulatory navigation.
Director of Energy Management	Manage campus energy portfolio, renewables adoption, and smart EMS deployment.	Energy engineering, demand-response strategy, utility negotiation, MandV analytics.
Director of Environmental Health and Safety	Oversee compliance, risk mitigation, and safe implementation of sustainability initiatives.	Comprehensive EH&S knowledge, risk analytics, emergency preparedness, and training programs.
Director of Transportation and Parking	Design low-carbon mobility solutions—EV charging, bike-sharing, transit partnerships, and smart parking.	TDM expertise, GIS analytics, partnership management, and user-experience design.
Director of Student Affairs	Engage students in sustainability culture through programs, events, and living-lab opportunities.	Student-engagement strategy, co-curricular design, equity lens, outcomes assessment.
Director of Communications	Craft and disseminate the smart-campus narrative; manage crisis comms; visualize impact metrics.	Strategic communications, brand storytelling, data visualization, and multichannel engagement.

These contributors and stakeholders—collaborating with the CTO, CFaO, and CSO—transform executive intent into operational reality, propelling the institution up the Building Management Hierarchy of Needs toward an AI-enabled, resilient, and student-centered smart campus.