# SITC Case Study

*of*

# Campus IT Infrastructure Buildup

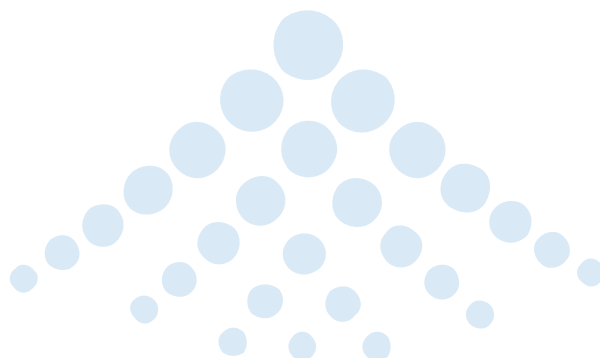*for*

# Presidency University, Newtown

Submitted by

**Future Netwings Solutions Pvt. Ltd.**

5A SYNERGY Building, Rajarhat, PO Krishnapur, Kolkata - 700102, WB, India
Tel: +91 33 27062797 / 64601559

# Presidency University, Kolkata

Presidency University has a unique place in history. It was one of the first institutes of Western-type higher education in Asia. In 1817, a group of enlightened Indians and Englishmen set up the Hindoo College. This was taken over the British Government in 1855 as the College of the Bengal Presidency, and placed in 1857 under the newly founded Calcutta University.

The new campus of Presidency University, spread over 10 acres in New Town, will house five advanced study centres. The New Town campus of the iconic College Street institution was inaugurated by chief minister Mamata Banerjee on Monday evening. Classes on the new campus — two 14-storey towers with a field in the middle — are already started. Both towers are centrally air-conditioned and equipped with fire alarms and "state-of-the-art" firefighting devices and cutting edge Cisco Network & Collaboration IT Technologies.

## Why Future Netwings

FNSPL empowers Presidency University to become a pioneer in providing a world class next generation education. It infuses the modernity in education systems, thus, creating a system to help teachers, students, administration, and the entire staff. The solutions help teachers to be more effective and improve the quality of the education by increasing the relevance of classroom instructions. Additionally, our educational technology solutions enable Presidency to make quantifiable and measurable progress towards improving-efficiency.
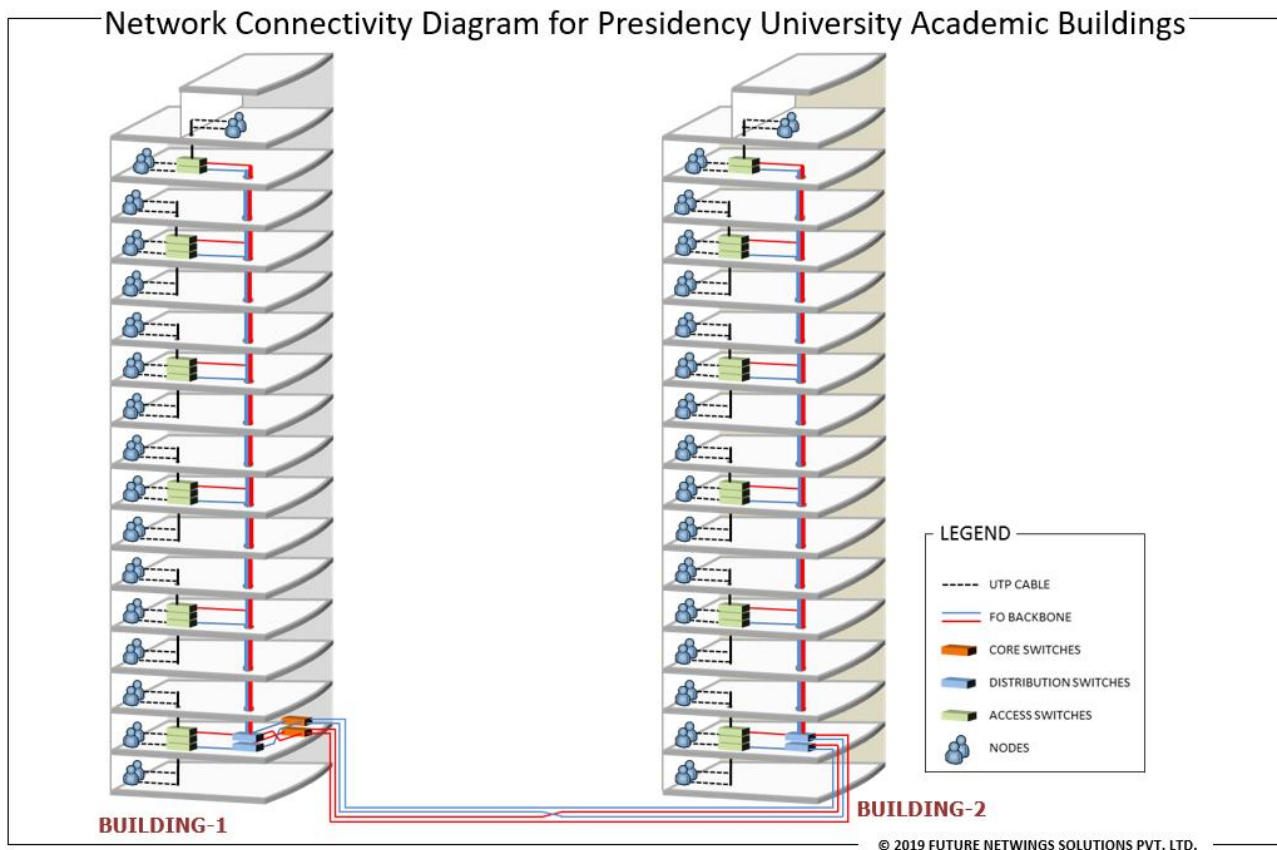
### Challenge ?

- **Serve 5,000 users** on campus daily
- **Increasing number of devices** vs Single Attendance
- **Providing great user experience** vs. just connectivity
- **Online Exam**
- **All wireless network – no time for downtime**
- IT team needed **to simplify management, updates and refresh** without adding staff

## ❖ Logical Topology implemented at Presidency University



Network Connectivity Diagram for Presidency University Academic Buildings

LEGEND

- – – – – UTP CABLE
- FO BACKBONE
- CORE SWITCHES
- DISTRIBUTION SWITCHES
- ACCESS SWITCHES
- NODES

**BUILDING-1**

**BUILDING-2**

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## ❖ Provided Campus Access Solution with Cisco Technologies

### Wi-Fi & IP-PBX inside Presidency

Fast becoming a criterion to consider at Presidency campus, Reachability & Wi-Fi is the need of this campus as it not only keeps students connected, it also helps them improve their grades.

**Solution**

- Use 289 Nos **Cisco AIR-AP1832I-D-K9 Access Point**
- Use **Cisco redundant AIR-CT5520-K9** Wireless Controller
- Use Cisco **BE6M-M4-K9** CUCM Call Manager Suite
- Use Cisco **SIP 3905 and IP Phones (7821)**
- Use Cisco **BE6K-UCL-BAS Lic** for Soft Phones
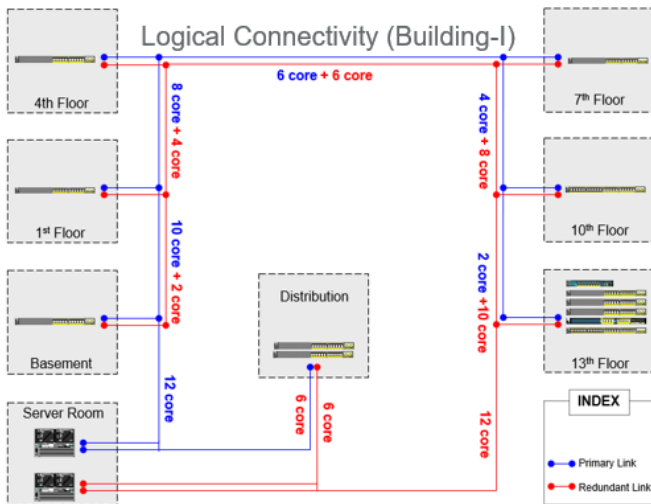- Use Cisco **CP-7861-K9=** Operator Console
- Use Cisco **8831** Video Phone

# Network Infrastructure

Our solution helps to manage the complete Presidency campus network. This huge portfolio includes Hardware and Network setup & installation, Servers/database, connectivity between various departments, wireless / Collaboration networks in campus, ICT Helpdesk, Network Operations Centre, and Remote Education.

## Solution Active

- Use Cisco Redundant **L3 WS-C4500X-32SFP+** (Core)
- Use Cisco Redundant **WS-C3850-24XS-S** for Distribution Layer (Data + Voice)
- Use Cisco **2960X** for Access Layer (Data + Voice + CCTV)
- Use Cisco **IE-1000-8P2S-LM** for Industrial Device Access
- Use Cisco **ISR4451-X/K9** as Gateway Router
- Use Cisco 10G Transceiver **SFP-10G-LR-S=** for backbone connectivity
- Use Cisco **Prime NMS (R-MGMT3X-N-K9)** for entire Network manageability

## Solution Passive

- Use 6 Core / 24 Core Single Mode **Molex Fiber Cable**
- Use 35 Nos 12/24/48 Port **Molex Loaded LIU**
- Use 2464 Nos LSZH CAT6 **Molex Patch Cord**
- Use 2454 Nos Single / Dual Port **Molex Face Plate**
- Use 220 Box Cat6 UTP, FR-PVC **Molex CAT6 Box**
- Use 40 Nos **LC to LC FO Patch Cord** - 3mtr Molex SM

## Logical Connectivity (Building-I)

4th Floor — 6 core + 6 core — 7th Floor
8 core + 4 core
6 core + 6 core
4 core + 8 core
1st Floor — 10th Floor
10 core + 2 core
2 core +10 core
Basement
Distribution
12 core
6 core
6 core
12 core
Server Room — 13th Floor

**INDEX**
- Primary Link
- Redundant Link

# Digital Signage

For Presidency University, Digital Signage helps student to communicate effectively for any events and message will be seen by its target audience. It helps University to share the Dynamic, Contextual Content Updates to their students and guests.

## Solution Digital Signage

- Use 2 Nos **65" LG** Digital Signage **(LG65SE3KD)**
- Use 28 Nos Wi-Fi Enabled **10" LG Meeting Room Signage (LG10SM3TB)**
- Use 8 Nos **49" LG Signage (LG49VL5B)**
- **LG Controlling software** for Signage

# Surveillance inside Presidency

Grant or restrict students/staff from accessing various areas in the campus. Biometrics also be used to take attendance. IP Cameras has installed at various sensitive locations like entrance, corridor, labs, etc., in the campus which requires close monitoring.

**Solution** 🧪

- Use Honeywell IP-based IR **VariFocal Bullet** Camera - **HBW2GR1**
- Use Honeywell IP-based **IR VariFocal Dome** Camera - **H4W2GR1**
- Use Honeywell **PTZ Camera - HISD-2201WE**
- Use Honeywell 256 Channel **Network Video Recorder (NVR)** and separate **VMS Server**
- Use Honeywell **MCR55 Reader** and **Pro3000 Controller + WPP43** Access Monitoring
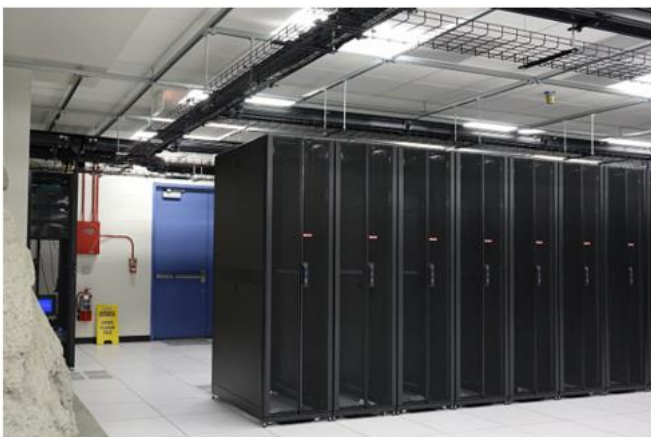- Payroll Integration with Honeywell ACS

# Data Center Buildup

For Presidency University, We FNSPL understand the **Fire**, **cooling**, **BMS**, **DCIM** and **Perimeter DC Security** characteristics of their Data Center infrastructure is why important because it helps them to better assess to protect their potential costs and future computing needs.


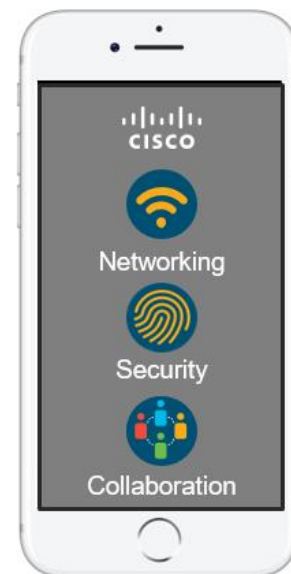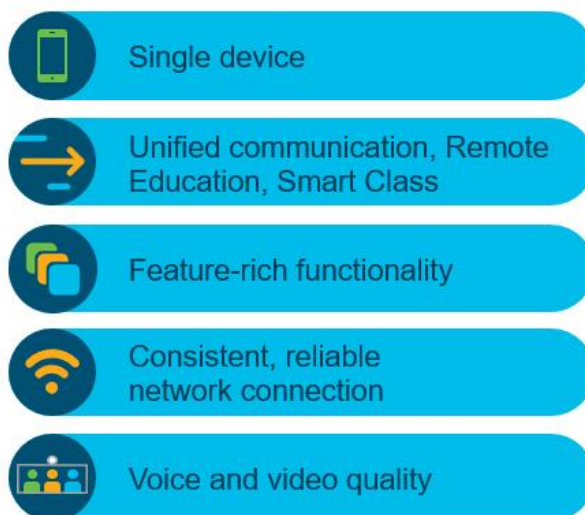Presidency Data Center (Inside)

**Solution** 🧪

- Use Schneider Electric **(Uniflair)** – 10 Ton Redundant PAC
- Use Schneider **StruxureWareTM** Data Center Expert (DCIM Appliance)
- Use Cisco **Firepower 2110 NGFW** Firewall
- Use APW **Rack** with Intelligent APC intelligent **PDU – AP8853**
- Use APC **Temperature & Humidity** Sensor **(AP9335TH)**
- Use Kanex Firetrace **Direct Low Pressure (DLP) Novec 1230** Fire Suppression System
- Use **Schneider BMS** System for entire campus (**Enterprise Server, LON Works, Smart-X Controller, TAC Xenta, DP Switch, Sensors**)

## ❖ Transforming the Student Experience with Cisco Technologies



- Single device
- Unified communication, Remote Education, Smart Class
- Feature-rich functionality
- Consistent, reliable network connection
- Voice and video quality

CISCO
- Networking
- Security
- Collaboration

## ❖ Overall Achievement



Facilitate safety and security

Promote active learning

Fuel innovative research

Connect the campus

Streamline administration

**Connect the campus**
Campus wireless and connectivity
Mobile experiences and location services
Smart campus and automation

**Streamline administration**
Data-informed operations
Administrative collaboration
Student engagement and retention services

**Promote active learning**
Active learning spaces
Distance learning
Faculty professional development

**Facilitate safety and security**
Network, endpoint, and web security
Identity and access control
Video surveillance and physical security

**Fuel innovative research**
Research collaboration
High-performance computing
Research cloud security

## ❖ Purchase Order

Work Order Ref. No: SP/CAL/3000/2017/WO/162
Date: 23rd August 2017

Company: Shapoorji Pallonji & Co. Pvt. Ltd.
Project Name: Presidency University at Plot No.DG/02/02, Premises No.14-0358 in AA-ID, at New Town, Kolkata

**WORK ORDER**

Order title: Work order (WO) for Supply, Installation, Testing, Commissioning of ELV Works for "Presidency University at Plot No.DG/02/02, Premises No.14-0358 in AA-ID, at New Town, Kolkata"

Work Order Ref. No: SP/ CAL/ 3000/ 2017/ WO/162    Date: 23 August 20 17

Subcontractor Name and Address & contact person details

| M/s Future Netwings Solutions Pvt Ltd. Synergy Building, 5th Floor, Thakdari Road,P.O Krishnapur, Rajarhat Kolkata-700102, West Bengal, India | Kind attention: - Mr. Sandipan Dutta Email-sandipan.d@futurenetwings.com Mobile- +91 9830769333 |
|---|---|

Reference: Final communication dated 25.07.17 and subsequent discussions and correspondence had with you on the subject

| Sr. No. | Work Description | Amount |
|---|---|---|
| 1 | Supply, Installation, Testing, Commissioning of ELV Works (LAN Networking, Surveillance System, Data Centre) (Refer detailed BOQ appended as Annexure I) | Rs. 6,26,79,045.00 |
| | GST @ 18% | Rs.1,12,82,228.00 |
| | Total | Rs. 7,39,61,273.00 |

Amount in Words: Rupees Seven Crore Thirty-Nine Lakhs Sixty-One Thousand Two Hundred and Seventy-Three only.

Currency: INR

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**Shapoorji Pallonji And Company Private Limited**
Regional Office: Mira Tower, 2nd Floor, DN-27, Sector-V, Salt Lake, Kolkata 700 091.
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Corporate Office: SP Centre, 41/44, Minoo Desai Marg, Colaba,
Mumbai 400 005, Maharashtra, India.
(T) +91 22 67490000 (F) +91 22 66338176 website: www.shapoorji.in

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Work Order Ref. No: SP/CAL/3000/2017/WO/162
Date: 23rd August 2017

This price is inclusive GST, TDS & other statutory deductions as applicable shall be deducted from each RA bill. Labour Cess@1% to be borne by SPCPL.

The Work to be executed as per terms and conditions elaborated in the following documents enclosed with this work order:

Annexure I: Priced BOQ
Annexure II: SCC or PART B
Annexure III: GCC or PART A
Annexure IV: Technical Specifications & make list
Annexure V: Contractor's Health, Safety & Environment Programme
Annexure VI: Format of 'No Claim Certificate'
Annexure VII: PBG Format
Annexure VIII: ABG Format

This work order is being issued to you in duplicate. The duplicate copy of the work order along with BOQ and all enclosures are to be signed by your authorized signatory and stamped with your official seal and returned to SPCPL.

For and on behalf of Shapoorji Pallonji & Co. Pvt. Ltd.,

Sunil Kumar Ghosh
Vice-President and Regional Head
(Eastern Region)

Accepted above terms and conditions
For M/s Future Netwings Solutions Pvt Ltd.

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**THANK YOU**

**FUTURE NETWINGS SOLUTIONS PVT. LTD.**
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