

Case Study

Wipro Technologies Kodathi Bangalore Campus

How Piller's unique electrically coupled UPS solution with kinetic energy storage backup provided Wipro with the ideal green power protection solution for its brand new 2m sq. ft. built space campus.

Start date: JANUARY 2019
Hand over: FEBRUARY 2020

THE OBJECTIVE

In 2015 giant BPO solution provider Wipro began an ambitious project to develop a 50-acre campus with 5 building blocks and a data centre in 2.2m sq. ft. of buildings that would accommodate 30,000 employees supporting the firm's global customer portfolio.

Wipro is one of India's top three IT companies and a globally recognised BPO brand for enterprise customers across the world.

Wipro set out to develop a modern, future proof campus which would be recognised for its sustainability credentials.

Wipro wanted a sustainable, green, LEED certified campus. The project would reflect the company's Life-cycle and Whole Systems Thinking in Sustainability.



Wipro Technologies, 50-Acre
LEED certified Bangalore Kodathi Campus



Power yard acoustic canopies and
separated GenSets

WHY PILLER?

Piller's engagement with Wipro had begun back in 2015 with initial discussions about potential technical solutions to its power provision and protection requirements for critical and non-critical load across the 5 block Bangalore campus.

The campus power design proposed by Piller was innovative with elements that would be a first for a project at such scale in India.

As the Wipro campus development advanced Piller India was also executing its major project at the NetApp Bangalore Campus.

When this project was completed NetApp was keen for Wipro to tour its campus. It wanted to demonstrate the NetApp labs and invite its customers to see the power infrastructure innovations based on Piller's advanced solutions that it had adopted to meet its green targets.

Seeing the sustainable power infrastructure supplied by Piller at the NetApp campus gave Wipro the confidence to re-evaluate its power options for its Bangalore development and to further explore how this could help it attain its own sustainability objectives.

Once Wipro saw what achievable the decision was made to deploy Piller's unique UPS solution with kinetic energy storage backup. This would be a first for Wipro in India.

CHOICE OF SOLUTIONS AVAILABLE

Piller's technology roadmap utilises Electrically Coupled UPS designs. These are UPS systems in which the energy store is coupled electrically to the UPS itself and as such, offer flexibility, reduced maintenance and adaptability not available from mechanically coupled systems.

Considering the potential benefits, Wipro decided it would look to the market for standalone gensets and electrically coupled UPS.

Piller would focus on the supply of its medium voltage UBT+ UPS technology configured in its sophisticated fault-tolerant electrical bus system known as IP-Bus (Isolated Parallel bus).

The design would be for four blocks each of 1.8MW. The IP-bus system would bring about efficiency improvements at the same time as reducing UPS numbers without compromising reliability.

Wipro has an option to scale by adding another two 1.8MW blocks for expansion under Phase II.



THE PILLER SCOPE OF WORK

Design, supply, installation & commissioning of 4 x Medium Voltage electrically coupled UPS, UBT+ 1800 with 21MJ flywheel. IP control; 11kV cast resin chokes; IP Chokes; MV transformers; Low impedance stepdown transformers.

For the external gensets this included Low noise remote radiators; Exhaust silencers low noise; Y pipes; Fuel and water piping including Centrifuge, pumps and automation; Exhaust Chimney structure 32mtr, for 4 gensets.

Balance of plant works covered MV IP switchgear; LV panels at respective blocks; Associated MV power & control cabling, complete with cable trays, Terminations; LV bus ducts with accessories; works, placement, installation and security.

The Piller solution provided big savings on space and big savings on maintenance. Wipro infrastructure developments had seen it use 30,000 batteries in its existing campuses. It was replacing 4,000 batteries every year incurring at significant maintenance cost. Savings on the number of UPS being deployed were seen as IPBus cuts down on number UPS units needed.

Additional capex and opex savings were realised on air conditioning infrastructure which was no longer needed.

By having the same gensets for both critical and non-critical back up this helped simplify the installation and for Wipro meant maintenance and part replacement was easier. It meant lower costs than having different generator back up for the Piller equipment than for the rest of the campus.



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CHALLENGES IN IMPLEMENTATION

For Piller, the supply of the UNIBLOCK™ UBT+ UPS and Powerbridge kinetic energy back up was a turnkey project.

Deploying the MV IP UPS to operate with an external genset saw deep collaboration between Piller India and Piller Germany to meet the technical requirements and customer expectations.

There were further constraints to be addressed such as the need to keep noise levels to a minimum. The UPS are located next to a boundary wall on the site. The boundary wall separates the campus from residential properties so a highly effective acoustic solution was needed. The requirement was for 50dba at 14mt. Other suppliers balked at the challenge with many saying this level of noise management was impossible.

Piller, working with local contractors convinced Wipro that it could be done using Piller technology, acoustic solutions and intelligent layout. And this is what was delivered at the yard away from the main buildings where separate canopies were used for the individual gensets and each individual UPS.

THE RESULTS

Piller began its on-site work at the Wipro campus in January 2019. The system was completed and handed over to the client in February 2020.

In addition to UPS and IPBus Piller provided a complete power chain to the LV panels in the buildings – a complete solution from power entering the site right through to the LV panels where the customer connects the load. This included the supply and installation of all equipment, even the cables.

Wipro and Piller enjoy an ongoing customer relationship with all maintenance and operational management provided directly by Piller India from a dedicated team for UPS and IPbus support.

The solution matched Wipro's sustainability construction and design practices. The Wipro campus is LEED certified.

To support its ongoing expansion Wipro subsequently engaged Piller for additional exciting sustainable infrastructure development projects. In 2021 Piller is working with Wipro at its Hyderabad 1 million sq. ft. campus development. Piller India is supplying and installing 3 x 1.8MW block power systems. The project is due for completion and handover in Summer 2021.

Nothing protects quite like Piller.

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