BUILDING TECHNOLOGY BIZBITS

Building Tech and Business Bites: Jan 2024



Smart Buildings, Sustainable Spaces

Leading Smart Infrastructure of Digital India

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INBAC IS A THOUGHT PROCESS!

Over last 4 years, INBAC has been steadily making progress. The fundamental position of INBAC as a community is to promote "Technology with social impact" and to create "360 degrees stakeholder collaborations"

A youthful leadership team is at the core of every step, creating avant-garde ways of connecting people together for facilitating high performing connected buildings.

The JAN 2024 edition is a conglomeration of various topics to make the built environment sustainable. It includes voice of customer, use of effective technology, ECSBC stakeholder workshops, coverage from BAC DAY – 3rd edition and upcoming 4th edition – BAC E & C (Building Automation Community Expo and Connect-Convention).

The good work and strong togetherness of the community is certainly a force to recon with! BE A VOICE NOT AN ECHO!



Sakhee Chandrayan

Editor

SMART INFRASTRUCTURE OF A DIGITAL INDIA

We present here a transcript of our keynote speaker, eminent industry veteran Mr. Chandresh Mehta, Director, Rustomjee presented on BAC DAY 2023.

His enriching talk explained about the present challenges and what the future holds for real estate industry.

Digital Transformation – A Real Estate Developers perspective:

- Legacy system and it's pain points
- Digital Work Environment and it's advantages
- Future

Legacy System:

There are various approaches that legacy system has:

- 2D Drawings: Piece Meal issue and separate drawings for all discipline
- Budget & Cost: Manual quantification and budgeting.
- Schedule: Time driven schedule
- Manual Contract Award
- Execution of Work: Compliance & issue of manual quality certificate
- Manual Bill Certification

state Developer. Joint founder & driving force behin A. Mr. Mehta also empraces an WEA tion force behin ubaneswar), which maske bed shape in some forces for the field of Real Estate in sproses of enter approximation publed with market of the field of Real Estate in sproses of enter approximation by has enable on Square feet

DMJ

Chandresh Mehta Director Rustomjee





Critical Pain Points:

- Frequent Changes in Design Lack of Visualization
- Badly coordinated designs and drawings – Lack of Visualization & piecemeal design finalization
- Reworks & Waste Generation Lack of Visualization & incorrect qty take-off
- Inventory Stock Piling Incorrect quantity take off & improper planning
- Lack/ Duplication of Accountability Stakeholder involvement missing across project life cycle
- Bill Certification Process & Time Stakeholder involvement missing across project life cycle

How Digital work Environment matters:-

- 3D Models Clash Free models (All Discipline)
- 5D Cost 2D & 3D Elements
- 4D Schedule- 7days to 1 day
- Digital Award
- Execution of work Model Updation, Compliance & Quality Checklist (BIM Field)
- Digital Bill Certification 6 to 24 Hrs





Vision:-

Rustomjee methods:

Adopt simple, robust digitally enabled processes that leverage technology to improve efficiency in 4 critical project aspects:

- Quality
- Cost
- Time
- Safety
- Lean & Simplified
- Digital
- Low Latency
- Quality Time Cost

THINK SMART THINK INBAC!



Advantages of Digital Environment:

PROBLEMS	SOLUTIONS
Sub Standard Quality of End Product	Robust & transparent process through digital checklist
Cost Overrun	Due to efficient and accurate schedules, resource cost can be delivered accurately
Cash Flow Mismatch	Project Milestone can be planned and hence proper planning for Inflows & Outflows - can be done
Lack/ Duplication of Accountability	Through Workflows channels (CDE), responsible stakeholders will have to approve and take the accountability
Bill Certification	Bill Certification process and time reduced to less than 1 day using digital framework.
Frequent changes in design	Relevant stakeholders are involved from design to GFC Stage
Badly Coordinated Design	Proper 3D Visualization effects clash free design

Advantages of Digital Environment:

PROBLEMS	SOLUTIONS
Rework	Day zero all clash free models are available at site to construction team
Inventory Stock Piling	Due to accurate schedules, just in time theory can be used for material procurement.

FUTURE - Where Tech can make a Difference

- Need-fast quantity estimation from 2d drawings the way it is done with the 3d models. Techno-commercial project viability is assessed at the concept/schematic drawing stage on 2d drawings- accurate quantification is vital
- 2.Need to develop a single graphic user interface where the site supervisor/daily wage earner would be able to upload daily work done graphically on his smartphone. Adoption of technology at grass roots level is the key- people need to be evaluated and rewarded for their performance & efficiency.
- 3. Simple api/plugins for smooth interface between ERP and construction softwares for dynamic budget updation. Having complete visibility on accurate cost to complete is vital in today's dynamic environment where rates fluctuate daily.
- 4. Need ai /bi tools that work on data sets available-both captively and those available on the internet to help forecast time and cost accurately. Vast data needs to be analysed and technology should aid in forecasting and better decision making by employing statistical tools at hand.

Enhancing use of Fiber Optics for Greener buildings



Introduction

We all know application of fiber optics in data communication networks for its high-speed data transfer capabilities with almost zero noise and EMI. It is widely deployed for campus backbone and in data centers. The potential for a more sustainable future is created with fiber optic cables that provide higher bandwidth for longer-distance data transfers. Fiber optic networks are more durable when equated to copper, requires less maintenance and it has good longevity.

Not just the IT or ICT services but by designing various ELV utilities in a building like CCTV surveillance systems, intruder detection, perimeter security, Access control systems, etc., to run on fiber optics can offer numerous benefits.

With that extra mile efforts of collaboration by Architects, MEP consultants and PMC; constructing an eco-friendly sustainable, energy efficient, smart intelligent building is achievable.

Fiber optic cables are widely installed in backbone and laying the same deeper to wire up the last mile end devices will put to good use of this remarkable technology also offering environmental benefit. May look audacious but considering Fiber to The Desk (x) technique can revolutionize the art of erecting a 'green collar' building.

8

Application

Fibre optic technology uses very less energy when transmitting digitized information than twisted pair and other copper cables. Fibre optics require 1/5th of power or even lesser in some instances compared to copper and UTP cables. This energy efficiency leads to lower heat generation, eliminating / reducing the need for cooling systems to an extent. Conventional cables can be replaced and integrated by fiber cables within building management systems (BMS) / iBMS. Online instant monitoring using IoT sensors and advanced analytics and concurrent data transfer helps optimize energy usage, resulting in long run total cost being driven down.

Various means are thought while designing the lighting and how to premise much illuminate the as naturally as possible using the God gifted resources. Here too with thoughtful conceiving of fiber cables at the design stage it can transmit natural sunlight to cover various zones of the complex. These mix use of natural light energy and wherever necessary artificial LED lights creates a blooming and more productive environment.

It does not emit spurious signal, has interference low emission or no health and minimizing hazards reduces Fiber e-waste. optics facilitates the putting up a smart grid, enabling efficient power distribution and management. This allows for integration better of renewable real-time energy sources and monitoring of energy consumption.

Remote monitoring of Temperature, humidity, energy consumed, air quality index, water needs and water recycling, occupancy rate, fire systems, public address, security, people density are key aspects of green buildings. Fiber optic sensors measuring these parameters and along with fiber optic backbone improve comfort levels and enhance overall building performance.

Another important point is material efficiency derived by increasing the use of fiber. First and foremost, is by saving the depleting natural resources. Copper entails mining which means disturbing The Mother Earth. Replacing it with fiber for as much application possible would benefit reduction in extracting raw material.

Application

option of producing The fiber technology minimizes uses of metals pollution level. and Another advantage is size. Installing fiber cables required space less in pathways that are planned by architects such as in shafts, under floor trunks and cable trays, ceilings, and conduit pipes. Fiber cables are lighter also and require less material compared to traditional copper and twisted pair UTP cables which are bulky. Fiber thus has an edge over these bulky copper cables in urban infrastructure where space is a constraint.

Future Proof indeed: -

Investing in fiber optic networks is a future-proof solution ensuring easy migration and technology upgrade to the real estate developer.

networks offer the optic Fiber scalability and bandwidth capabilities that are required to meet present, any unforeseen need that may come future, changes across in and mandatory adoption due to compliances and statutory goals necessitated by policy changes, and windfall technology trend that would compel deployment.

Controlled Carbon Emissions: -

The transmission of data and fiber through information optic networks consumes less electricity compared to traditional copper networks because fiber particularly offers mode very low single resulting attenuation in faster, smoother without much heat dissipation signal transmissions. This reduction energy consumption in helps in minimizing carbon emissions, contributing to a greener building.

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Summary and Key elements: -

Fiber optics is revolutionizing green construction. Let's give 'SALAMI' to fiber the 'AMIR' of eco-friendly future because it is the implementation of fiber optics that brings in

- Space saver
- Augmentation of energy proficiency
- Longer life span of the network build balancing e-waste being generated
- Achieving sustainability goals
- Material efficiency leading to resource conservation
- Innovation in infrastructure development

- Able to meet country's demand of new age digital connectivity
- Minimizing carbon emission contributing to greener surroundings
- Investment protection as the backbone is Future proof that adepts to any unforeseen or emerging technology
- Reduced environmental impact

Fib-tech (Fiber Technology) is the eco choice moving forward and let's embracer it for digital future giving humanity healthy life and sustainable living.



Chintak Dalal

Education Committee, INBAC Association VP, Secure Connection Limited (Honeywell SCS)

LET'S CO-CREATE SMART BUILDINGS, SUSTAINABLE SPACES!

High-Tech buildings offering luxury with sustainability

the realm of architectural In advancement, the synthesis of luxury sustainability within high-tech and buildings is spearheading a paradigm shift. These edifices, adorned with opulence and fortified by innovative technologies, stand as testaments to a new era in sustainable design. This technical article delves into the intricate and design engineering underpin that intricacies these elucidating structures, how they redefine luxury while living championing environmental stewardship.

dynamic landscape the of In architecture, contemporary a revolutionary paradigm has emerged, ushering in a new era where luxury and sustainability converge seamlessly confines of high-tech within the buildings.

The conventional notion that opulence and eco-conscious living are mutually unequivocally exclusive has been shattered as architects, designers, and harness cutting-edge innovators technologies to redefine the very essence of extravagant living. These high-tech structures are more than architectural marvels; they represent a harmonious fusion of sophistication environmental and responsibility, challenging preconceived notions and setting a new standard for the epitome of modern living.

As we delve into the intricate tapestry of high-tech buildings, it becomes apparent that they transcend mere structures, embodying a commitment to sustainable practices without compromising on the hallmark features of luxury living.



The combination of advanced technology with careful selection of environmentally friendly materials creates a living space that not only stands out with its beautiful shine, but also slowly walks the earth. In this narrative, the sustainability is achieved through the transformation of security, creating a narrative that transcends the beauty of real estate and emphasizes the life ahead.

The basis of this reorganization is the importance of electricity and smart machines, which have become the limit of design. These high-tech buildings not only meet the needs of their inhabitants, but also anticipate and adapt to those needs. Smart lighting adapts to the natural flow and flow of daylight, while the climate control system seamlessly creates an environment that is both environmentally luxurious and friendly. The combination of cuttingedge automation and luxury living represents a departure from the norm; It's hard to believe that environmental responsibility should be reflected in lifestyle.

In addition, the structure of this high-tech process is intertwined with environmental protection. green Building materials that redefine the scope of sustainable construction. Reclaimed steel, recycled wood and energy-saving glass are more than just materials; they form the basis of the narrative designed to minimize the environmental footprint while maintaining a beautiful aesthetic. Sustainable architecture is becoming a symbol of commitment responsibility unity and to in transcending construction, traditional design boundaries and the emphasizing narrative of environmentally responsible

In this symphony of sustainability and prosperity, water is the essence of life and is not ignored. The hightech building incorporates modern water conservation technologies, with rainwater harvesting systems and gray water recycling being key features. The lush green landscape adorning these buildings is not just ornamental; They are committed to water conservation by creating a place where sustainability is in harmony with resource conservation.



The air in these high-tech facilities is controlled not only to ensure good air quality control, but also to provide an unparalleled commitment to indoor air quality. Advanced systems combine HVAC with certified systems to create an atmosphere where residents not only breathe richly, but also create an environment important for health and wellness.

Waste products, usually bulk products, are transformed in this technology. Smart waste management automates the separation and recycling process, making waste disposal an easy and responsible task. Residents not only have a great place to live, but also the spirit that permeates their home and leads to an expansion of caring for the environment.

In this panorama of high-tech architecture, technology becomes a tool of sustainability that can not only be seen but also experienced on a personal level. Smart home automation systems allow residents to control every aspect of their living spaces, from lighting and security systems to entertainment.

The combination of technology and sustainability is not an elaborate process, but a collaborative and personal partnership that meets everyone's needs and preferences. To ensure their commitment to sustainability, these best practices often seek certifications such as LEED (Leadership in Energy and Environmental Design) or regional equivalents. These certificates are much more than badges of honor; They demonstrate compliance with stringent environmental standards and support the idea that business can be reconciled with responsible living.

When we begin to explore luxury and sustainable high-tech architecture, we find ourselves at the intersection of innovation, beauty and environmental responsibility. The journey transcends the physical boundaries of architecture; It is an adventure into a future where the meaning of wealth is separated from commitment to the well-being of the world. In the next section, we will dive deep into the intricate details of these architectural marvels and reveal the layers that make them a testament to the harmony between luxury and sustainability in today's world.



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Energy Efficiency at the Forefront: -

At the heart of these high-tech wonders is a great way to save energy. Solar photovoltaic systems cover the roof, converting sunlight into renewable energy. But maximum efficiency comes from smart systems that run lighting, HVAC, and energy efficiency, making the most of every electricity and watt.



Water Management as a Pillar of Sustainability:-

Water is a limited resource and this is respected in these beautiful buildings. Rainwater collection, greywater recycling and purification systems are used to reduce wastewater and create self-sufficiency in the building.



Material Innovation: The Backbone of Sustainability:-

Materials have been carefully selected to reflect sustainability. Engineered wood, recycled steel and advanced composite materials not only meet design requirements but also reduce energy and environmental impact. Each option demonstrates a commitment to sustainable development.



Intelligent Building Systems: The Vanguard of Efficiency:-

The integration of IoT sensors, Alpowered algorithms, and predictive analytics is driving a revolution in home automation. These intelligent systems control the environment, respond dynamically to occupants and other factors, and increase efficiency without compromising comfort.





Biophilic Design: Blending Nature and Technology:-

Biophilic design incorporates natural elements such as lush greenery, natural light, and interactive spaces into the urban landscape, creating a harmonious environment that promotes well-being within the vibrant urban landscape.

INBAC is your own platform to reach out to your customer! #VoiceOfCustomer



Community-Centric Approach: Fostering Sustainable Lifestyles:-

These buildings are not just architectural marvels; They encourage communities to commit sustainable living. Shared to spaces, educational initiatives and partnerships promote a culture of environmental awareness among residents and visitors

Certifications as Proof of Commitment:-

Achieving LEED Platinum or WELL certification clearly indicates that these buildings meet stringent sustainability standards. However, their importance is beyond recognition; They are strong and flexible, providing stability in changing environmental conditions.

To summarize, high-tech buildings offering luxury with sustainability represents the combination of human creativity and environmental awareness. They represent the blueprint for the future, where luxury seamlessly combines with ecological awareness and sets a new standard for urban development. Like beacons, these architectural masterpieces illuminate the way to a world where technological innovation and environmental responsibility harmoniously coexist.

Dr. Amit Chaudhari

Associate Director | KPM Engineering | Leading Sustainable Infrastructure Solutions



INBAC AT Global Platform

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SAKHEE CHANDRAYAN FOUNDER & PRESIDENT, INBAC ASSOCIATION

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Building Automation Community Expo & Connect-Convention



18 & 19 OCT 2024

My Journey with INBAC Association

I remember it was about 6 months back, I was talking to Vijay Sanap (one of my best Friend & colleague from Honeywell). Somehow, while having Coffee we landed discussing about Automation & Vijay drove that discussions towards Building Automation. I mentioned that this is one of the Area in Automation World which have not touched. He INBAC suggested to join me Association.

Few months passed. I was occupied with my other activities with ISA, MCCIA, PMA & also putting up my own Venture. Then landed, Mr. Sadanand Teje (Another great Friend & colleague of mine.) And believe me he simply instructed me (invited me) to installation Meeting of Pune Chapter of INBAC. The launching was done in an extra professional manner & that motivated me to join this Esteemed Organization. So I am now a Proud member of this community effective 25th October, 23.

The journey began & I found my involvement is creating lot of interest within.

Added to that got an opportunity to work with some fabulous personalities like Sakhee herself, Adrija & Parth. Very friendly characters & I enjoy working with them.

Moving ahead, I was not contended with just a place holder as Associate. I spoke to Sakhee & what a great response from her. She immediately garlanded with me as a part of Editorial Committee of INBAC Bimonthly News Letter. To my pleasant surprise I could do my part nicely.

Then came the whole day event of BAC Day on 2nd December, 23. A day loaded with full of Technical Expertise in this field & a fantastic opportunity to Network.

Then came a very crisp celebration of 4th Foundation Day. (16th December, 23).



I can not forget this compact celebration over a cup of Coffee during we had a nice chat actually discussions) with stalwarts like Sadanand Teje, Nitin Joshi, Vinod Joshi. We discussed about the Building Community challenges in and around Pune & how INBAC Association & in particular Pune Chapter can help. Lot many ideas got discussed like:

- Improving the shortage of Talent Availability
- Get into specific Skills
 Development
- A working knowledge of Project Management
- Obtaining blessings from Government Agencies
- Focus on Sustainability
- Awareness of new & upcoming Technologies.

The plan is to make few industry visit, meet some Skill Development entities, try & put some MOUs with them & of course followed by a structured implementation.

I am sure this is doable with such a motivated team & under the great Leadership.







Ajit Chigteri

Editorial Committee, INBAC Association Founder Director, Mcube Partners LLP



CONNECTING THE DOTS





Open Protocol a catalyst in Decarbonization

an era dominated In by rapid technological advancements, the choices we make in adopting and technology promoting have consequences for society. Embracing open and interoperable technology stands out as a key paradigm that not only empowers individuals and communities but also generates significant social impact.

The use of open standards and solutions often results into reduced making technology costs, more accessible to a broader spectrum of population. Interoperability the further amplifies these benefits by ensuring that different systems can seamlessly work together, eliminating for costly the need custom The financial integrations. advantages of open and interoperable technology are more economically sustainable.

Open and interoperable systems allow to select technologies that align with their preferences and needs. The seamless integration of different devices and platforms enhances user comfort, creating a user-friendly environment. User experience matters with technological adoption.

Open systems act as a catalyst for innovation, as they invite a diverse range of contributors to participate the development process. in Interoperable solutions are adaptable, capable of evolving with technologies. changing This adaptability that ensures communities and individuals are not left behind as the technological landscape undergoes continuous transformation.

Open and interoperable technology also helps in Decarbonization. Decarbonization now-a-days is а global concern. This comprehensive approach encompasses various sectors, including energy, transportation, industry, and agriculture aiming to transition towards a more sustainable and low carbon future.



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Open standards encourage the development of eco-friendly technologies by fostering innovation and collaboration. Interoperability plays a crucial role in sustainability by promoting the efficient use of resources and reducing electronic waste through the integration of existing technologies. Hence, open, and interoperable technology offers a resilient pathway to align with the goals of environmental responsibility, ensuring that technological progress is in harmony with the planet.





Kapil Kapur

Delhi Chapter President, INBAC Association Director, Jay & Co

LET'S CO-CREATE CONSISTENLTY HIGH PERFORMING BUILDINGS!



PUNE, OCT 18 & 19, 2024 **BACE & C** Building Automation community expo & connect-convention



Pioneering Sustainability in Building Automation: A Smart Tech Odyssey

In the ever-evolving realm of building the automation, intersection of sustainable practices and intelligent technology has become a focal point of innovation. As the world grapples with the imperative of environmental of conservation, the integration smart technology sustainable in building automation emerges as a solution. One pivotal noteworthy illustration of this synergy comes from a visionary approach in shaping the architecture of tomorrow.

In a prominent location, a corporate campus showcases the harmonious integration of sustainable practices and smart technology in building automation. This forward-thinking initiative exemplifies how a leading organization is leveraging innovation to create an eco-friendlier and efficient workplace. The campus employs an intelligent system building automation that optimizes energy usage through a network of sensors and smart controls. This system adapts lighting, heating, and cooling based on real-time occupancy and environmental conditions, enhancing the working environment for occupants while significantly reducing energy consumption and lowering the carbon footprint.

Water conservation is a key focus of the sustainable initiative. Smart water management systems, including rainwater harvesting and efficient irrigation practices, ensure responsible water usage. These measures contribute not only to the campus's green credentials but also align with broader efforts to address water scarcity issues.



Renewable energy is a pivotal element in the commitment to sustainability. The campus incorporates extensive use of solar panels to harness clean energy, reducing dependence on traditional sources and contributing to the overall reduction of greenhouse gas emissions.

Additionally, the sustainable campus incorporates green building design principles, utilizing eco-friendly materials and emphasizing natural ventilation and lighting. This holistic approach ensures that the campus minimizes its environmental impact while providing a healthy and comfortable workspace for its occupants.

Embracing intelligent technology for sustainability isn't merely a trend; it represents a dynamic leap towards a better world. By adopting eco-friendly practices integrating and smart solutions into our environments, we advocates for change, become steering our planet towards a brighter future. Each small effort compounds into a powerful force for environmental good. Therefore, let's make purposedriven choices, using innovation as a tool to create a sustainable legacy. Together, through conscious decisions and smart technology, we have the ability to inspire a global movement towards a harmonious and resilient Earth. The future is in our hands - let's make it sustainable, let's make it extraordinary.

Gaurav Karale INBACer Storyteller & IOT Enthusiast







News from India: Energy Conservation and Sustainable Building Codes (ECSBC), the Bureau of Energy Efficiency (BEE)

In the pursuit of Energy Conservation Sustainable Building Codes and (ECSBC), the Bureau of Energy Efficiency (BEE) orchestrates groundbreaking stakeholder consultations, ensuring the comprehensive involvement of industry leaders. These meetings, held Gurugram, Hyderabad, in Bhubaneswar, and Pune, have been instrumental in fostering collaboration among the building automation community, architects, and society. Organizations like INBAC play a crucial role in promoting these stakeholders' meetings, ensuring their deep penetration into the industry.

The update of ECBC to ECSBC is a humoungous efforts directed and executed under visionary leadership of Mr. Ashish Rakheja. He has ensured the involvement of the best of the minds and organizations from India pertinent to each chapter in ECSBC. Within these dynamic discussions, INBAC emerges as an important ally, working hand in hand with other industry colleagues to shape the ECSBC. Ms. Sakhee Chandrayan, served as a co-chair of the IoT and Controls committee at ECSBC. This collaborative effort extends beyond constructing codes, aiming to build a foundation for a greener and more sustainable future.

INBAC's active involvement highlights a collective dedication to pioneering sustainable practices and advancing building automation technologies. Noteworthy contributions from the team under the able leadership of INBAC Standards Committee Chair, Mr. Rajesh Adhangale, have significantly impacted the IoT and chapter. Controls this As collaboration showcases what can be achieved when diverse stakeholders unite, ECSBC stands poised to propel India's building sector into an era of responsible, energy-efficient, and sustainable growth.

Building Technology BizBits Team



Sakhee Chandrayan

22+ years industrial experience leading global teams for product strategies, businesses and customer experience focused on enterprise-scale software for sustainable building solutions and open standards and protocols. She has been engaged in the techno-social movement in India by bringing together visionary industry leaders to create an ecosystem for sustainable growth and interdependence empowering Smart Infrastructure in India.

Adrija RoyChoudhury

Electronics engineer who has been instrumental in expanding INBAC's network, playing multiple roles as a designer, marketing, and operations executive. She designs creatives for marketing campaigns and social media handles of INBAC, also create content videos for the academic ventures of INBAC. She has been hosting and representing INBAC at various events.





Ajit Chigteri

41+ years of Experience in Automation & Electricals in Domains of Oil & Gas, Pharma, Chemicals & Metals & Mining. In Operations, Pre-sales, Site Management.

Professional certification in 6 Sigma- Green Belt & ISO Internal Auditor Current Organisation- Mcube Partners LLP (Founder Director), A 360 Degrees Consulting Company.

Parth Shah



I have a total of 10.5+ years of experience in Digitalization and building automation. Currently working as Business Development manager at FPC GLOBAL consulting.



Anukriti

I have total of 6+ years of experience in ELV and Building Automation products. Currently working as Sales Co-ordinator in Jay & Co. India Pvt. Ltd.

Teamwork makes the dream work. - John Maxwell