



ABOUT THE CREATOR

A leader is one who knows the way, goes the way, and shows the way.' John C. Maxwell's famous saying truly defines the inspirational leadership of J. R. Tanti. A leader with a vision, JR has unshakeable work ethics, a welcoming attitude to continuous learning, and believes in going beyond the call of duty to create excellence. He avidly advocates dreams that come with deadlines, calling for meticulous planning, dogged perseverance, invincible focus and dauntless pursuit. During his illustrious career, he has transformed geographical barriers into global footholds, introduced the concepts of branding to a commodity B2B company, institutionalised employee motivation, and most important of all, created strong infrastructural foundations to support growth.

JR very strongly believes in the adage of keeping one's saw sharpened. Sharpening the saw means preserving and enhancing one's skills. It means having a balanced program for self-renewal in the four areas of life: physical, social/emotional, mental and spiritual. Failing to devote some time daily for self-renewal will have a negative impact on one's productivity, effectiveness and levels of performance, in both the short- and the long-term.

Making sense of conflicting priorities, allocating limited resources, understanding the impact of the organisation's actions, comparing performance with competitors, and responding to customer needs are just some of the issues that feature on his daily calendar. Nothing upsets him more than a sub-optimally executed or under-attempted job.

As a visionary, JR sees not just the structure but the entire big picture. He believes that buildings are bodies built for a purpose and inhabitants are the souls which make them come alive. No infrastructure should be built without keeping its use and occupants in focus. JR ensures that each member of the team is acutely aware of his/her role and how it will contribute to this big picture. He has his own charisma which attracts the right people and draws the best from them. He has a knack for recognising talent and pushing people beyond their own potential. In a career spanning more than 25 years, JR has truly lived up to the idea that a leader isn't defined by titles or positions but by his actions and the legacy that he leaves behind.



Mr J R Tanti

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TRAILBLAZING KNOWLEDGE MANAGEMENT



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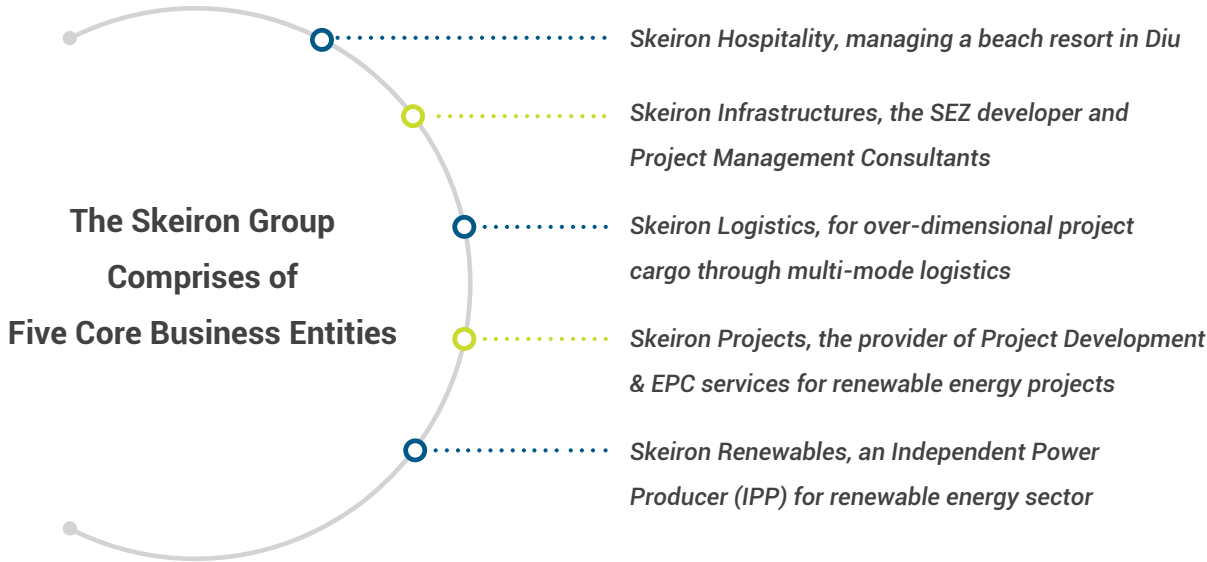
THE SKEIRON GROUP



Skeiron is a group of companies with varied businesses, sharing a common philosophy of sustainability and a commitment to do business responsibly. It brings together inspired people from different sectors under one roof, offering multiple services that bring about responsible change for a more sustainable world. Most of the companies in the Skeiron Group have decades of experience in providing world-class ancillary services for

for the renewable energy, automobile, and pharmaceutical sectors, large institutes, and companies requiring over-dimensional cargo logistics. Building on this, the Group aims to leverage the experience and expertise of each company to create a formidable entity in the sustainable development space, with unmatched capability and customised solutions.

THE SKEIRON EDGE



The Skeiron Group's combined experience of over a decade helps it arrive at the right solutions by identifying the best technology, applying the most suitable design, and constantly innovating to add value. Exceptional execution skills and on ground experience gives the Group the ability to ensure the best quality at the right price and time. The diversified yet complementary

businesses of the Skeiron Group make it a one-stop shop for a range of customised and integrated solutions to meet customer needs. The Skeiron edge of expertise and knowledge, adaptable value chain integrations, end-to-end solutions, vast execution experience, global exposure and customer centric solutions ensure trust and value for customers.

SKEIRON INFRASTRUCTURE



Skeiron Infrastructures offers two distinct lines of business, with a focus on sustainable practices:

- 1. Aspen Infrastructures Limited
- 2. Synefra Infrastructure Private Limited

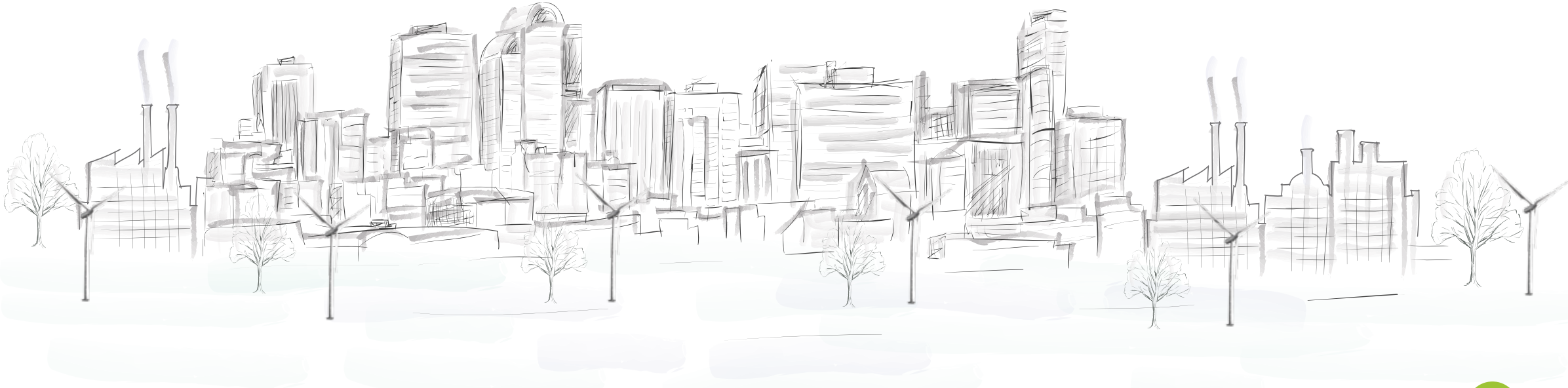


Aspen is a large scale industrial park developer, having developed over 1,000 acres of SEZs land in Gujarat, Tamil Nadu and Karnataka. The engineering and engineering products notified SEZs have been functioning optimally for over eight years, with all unit holders operating successfully.



Synefra - Unmatched capability in sustainable infrastructure development

Providing best-in-class infrastructure consultancy services, Synefra Infrastructure Pvt. Ltd. is a leading infrastructure company that provides integrated consultancy for infrastructure development that entails a wide array of specialised services like Infrastructure & Master Planning; Design Engineering; Lender's Engineering services, Audit, Monitoring; Program Management, Project Management; Validation, Proof Checking, Value Engineering, Cost Management, Technical Due Diligence, Project Audits, Quality and Cost Audits, Feasibility Study and Third Party audit. With over 18 years of experience, Synefra Infrastructures has delivered successful projects across varied sectors worldwide.



“

Stories, long and short, are everywhere around us. From the blossoming of a flower to the sound of incessant rain, from the birth of a child to the achievements of a youth, from dawn to dusk, each passing day and every object we come across has a story of its own – some told, some untold. Would it not be intriguing if every infrastructure, which to the common eye is just brick and mortar, had a story to tell? Each one its own different story?

I believe it would! And we will find not one, but a million memorable stories worth telling...

Infrastructure is much more than just physical structures in varying forms, shapes, colours and sizes; infrastructure fulfils societal need, facilitates human well-being and enables progress and development by providing mobility, communication opportunities, shelter and easy access to energy resources.

Given this context, it is natural that infrastructure too has many stories to tell. Of big dreams and great visions, of technological breakthroughs and architectural innovations, of testing times and glorious days, of success smelling sweet and pride that rises sky high. Beyond the four walls of the structure are stories, some already written and others waiting to be shared.

During my more-than-two decades in the field of infrastructure, I have had the pleasure of being a part of many such beautiful stories. I have personally witnessed employees taking pride in the state-of-the-art facility they work at, senior leadership beaming with joy at the iconic infrastructure they have established, and architects smiling with satisfaction at their work of art.

When it comes to the stories built around infrastructures, who else would have a better picture to share than the project directors themselves - the Project Management Consultants! Once a matter of choice, Project Management Consultancies (PMCs) have become imperative to infrastructure management today. The competitiveness of the market along with the increasing scale and complexity of projects have elevated the need for infrastructure experts who can maintain consistency in construction standards, eliminate undue delays, remove cost overruns, and improve the project management process. The absence of, or engagement of inept, Project Management Consultancies has seen projects failing due to inadequate planning, delays, inconsistent quality standards, and lack of relevant and updated knowledge of processes. In these days of growing demand for PMCs, it has become crucial to find a consultancy that has widespread experience across industries and geographies, and is knowledgeable and accountable.

While organisations across sectors have realised the competitive advantage of partnering with a PMC, I am convinced that the need of the hour is to generate awareness around the extensive scope of work an efficient PMC can deliver. It is this pressing need in the business scene today that led me to the idea of compiling a book that would throw light on the difference Project Management Consultancies can make to large infrastructural projects. By industriously compiling a variety of projects that Synefra has delivered across industries and geographies, I hope to provide an in-depth view of the service scope of a PMC and the benefits it can deliver to its partners.

Through the book, we would like to highlight how a PMC becomes the custodian of a project on behalf of the client, bringing in core competencies to achieve desired goals. Going forward, I'm sure this book can become a ready reference not only for companies seeking the assistance of a PMC, but also contractors, architects, builders and other associated businesses. I dedicate this humble effort to my entire PMC fraternity.

Putting together brick and mortar to meet an architect's design could sound relatively easy. Constructing a building that houses equipment, people and machinery might seem like a no-brainer. Erecting a glass building in place of hundred trees that once graced a piece of land may seem like par for the course. But to breathe life into infrastructures with a focus, and consciousness of the impact that it will have on the surroundings and the people who will inhabit it, takes skilful expertise, collaborative efforts, a synergistic integrated approach, and unshakeable commitment; a cumulative result that only a team of Project Management Consultants can best deliver!

Let me conclude with a quote by Lee Iacocca: "Motivation is everything. You can do the work of two people, but you cannot be two people. Instead, you have to inspire the next person down the line and get him to inspire people down his line."

”

Mr J R Tanti



BUILDING STORIES

A FINE BALANCE



The Torchbearers of Fine Balance

The universe, in its entirety, is an intricately designed web of interlinked and ever-interacting elements synergistically functioning together. Between all these constituent entities – living and non-living, natural or man-made – there exists a fine balance bringing stability and steadiness to our path of progression. There is ample evidence that a fine balance in all fields facilitates sustainability. In simple terms, sustainability is the ability to support and survive in the long run. The fine balance in nature enables environmental sustainability. The fine balance in society drives social sustainability. The fine balance of human health, skills and knowledge constitutes human sustainability. The efficient flow of goods and cash in an economy ensures economic sustainability. Due to the progressive nature of sustenance,

this fine balance has never been a rigid state of affairs. It is dynamic, evolving constantly despite disruptions that come its way. And such is the profoundness of restoration that the contrasting elements achieve a new state of fine balance, also referred to as equilibrium, inclusive of the change that has occurred due to the recent disruption. However, history has also been witness to times when the fine balance of sustenance is disturbed beyond repair. The extinction of numerous living species, health disorders, calamities like floods and earthquakes, and the economic gap between rich and poor are all instances of disrupted balance, and in turn weakened sustainability. Maintaining the balance in nature, society, economy and among humans is of utmost importance to ensure the continuation of existence as we know it.

Nations across the planet are competitively racing towards development and progress, and several such activities have harmed the fine balance in numerous ways, many painfully stretching the limits of the balancing elasticity. However, with time and experience, a majority of humanity is fast realising that sustainability depends on a fine balance across all entities and fields. It is this focus on sustainability that has brought to the forefront torchbearers who are conscious about maintaining the required balance in every field of concern. Torchbearers are emerging everywhere to sustain our cultures, our value systems, our economies, our personal health and skills, and our lifestyles. They include researchers dedicated to finding new means and methods

to regain balance or work around disrupted situations. They are the educationists and social workers who are spreading awareness of conscious living. They are environmentalists who have dedicated their knowledge and time to create awareness and make a difference. They also count among them citizens who are rectifying their own means and ways to contribute to saving the fine balance. It will not be far-fetched to say that in the Infrastructures space, Project Management Consultants (PMCs) are among the biggest contributors to maintaining the fine balance. With their team of Subject Matter Experts (SMEs), they are questioning the established norms and applying knowledge towards value engineering to maintain the fine balance between the requirement of the project and its impact.

PMCs have a cockpit view of any project and are focused on delivering effective infrastructure in terms of cost, scope, time, human resources and quality. Project management is not a new fad; its origins can be traced back to ancient times. The Egyptian Pyramids are said to have been managed by a group of leaders who oversaw work, delegated tasks and resolved challenges in various zones. Julius Caesar, the Roman General, built a bridge across the Rhine river in 14 days; the achievement was credited to a Roman who sat in a tent calculating, scheduling and allocating resources. By the 19th century, segregated job roles were established in the field of infrastructure. Architects, engineers, and construction workers came into the picture with one master builder tracking and managing all activities for better efficiency. With time and experience, master builders transformed into project managers and various new techniques emerged that facilitated the task of project management. In the past few decades, the importance of PMCs has grown significantly with the rising need for specialised skills and handling multiple packages and stakeholders, which is beyond the functional domain of the clients.

In their multiple roles, PMCs shoulder the responsibility of creating and driving this balance in various fields of infrastructure development for the benefit of people who will use / live in and around these structures. This comprises:

1. Cost-Quality Balance:

The primary objective of any infrastructure is to achieve the highest standards of quality at optimum cost. With the increasing number of stakeholders in the process of construction and the clients themselves not being subject matter experts, there is the likelihood of losing track of costs incurred during the process due to various internal and external factors. PMCs help manage the cost-quality balance. Armed with their expertise, and maintaining overall control of all aspects of the project, they ensure a complete cost-quality balance without any compromise.

2. Time-Scope Balance:

Almost every construction project is time-bound. Delivery of the scope of work within the planned timelines is a challenge especially with the need to coordinate, track and manage various stakeholders and their work. PMCs lead the time-scope fine balance and ensure that the project's scope of work is delivered within the stipulated time.

3. Work-Human Resource Balance:

Overseeing the quality and quantity of workers and various other stakeholders on a project is a growing concern among organisations, especially for those who do not have the time or expertise to manage such large-scale projects. With specialised capabilities in work delegation, human resource management and project scheduling, PMCs maintain a fine balance by allocating tasks to human resources to ensure timely completion of a project.

4. Infrastructure-Environment Balance:

Infrastructure is synonymous with development, and it becomes necessary to maintain a fine balance between infrastructure and its surrounding ecology. In the unprecedented need for development, humans have grown inorganically and in a non-coordinated manner. Overuse of land and resources, inconsiderate deforestation, and minimal regard for advanced technology is the order of the day, all of which results in degradation of water, air and other resources. Indiscriminate urbanisation is threatening the sustenance of humans and all other forms of life on earth. PMCs can and have played the role of custodians for environmental sustainability.

Synefra: A Leading Project Management Consultancy

Synefra Engineering & Construction Ltd. was founded in 1998, today known as Synefra Infrastructures Pvt. Ltd to conceptualise, invest, develop and maintain hi-tech infrastructure globally for the Suzlon Group, the world's third largest wind energy company. Over the last 18 years, Synefra has developed in-house capabilities to provide end-to-end, hi-tech infrastructure solutions, from concept to completion, for various sectors such as pharmaceuticals, automobile, renewable energy, education, and R & D centres. The company has made its presence felt through its customer-centric approach, integrated working style, knowledge-based value engineering, and quality-cost conscious solutions. Synefra has performed all over the globe, having executed projects across India, Europe, USA and China. The company has carried out project management for over 1,400 acres of land for Aspen SEZs; 2.5 million sq. ft. built up of industrial projects; and 1.5 million sq. ft. of commercial and office spaces. Synefra's core strength are its people who are at the heart of everything they do. The team of subject matter experts and the operating teams are providing opportunities to learn and develop throughout their careers to explore their potential beyond their imagination. A diverse and inclusive work culture is promoted which creates a healthy and learning work environment. Backed by a team of experienced subject matter professionals, Synefra is an efficient and effective techno-commercial solutions provider for a variety of large industrial projects. A one-of-its-kind PMC, it offers integrated project management with a wide array of specialised and synchronised services, including Master

Planning, Design Engineering, Utility Services, Audit, Monitoring, Value Engineering, Due Diligence, Validation, Proof Checking, and Cost Management. Synefra has delivered highly complex projects in some of the most challenging environments, facilitating significant cost savings for its clients. The company uses a full-spectrum management approach from concept development to commissioning. It integrates environmental, social, economic, and quality factors into every project to ensure positive and lasting effects.

Over the years Synefra has established a reputation for knowledge-based consultancy, strongly relying on in-depth research to provide innovative and customised solutions that look beyond the conventional norms of infrastructure management. The company has the ability to take complete ownership of a project and go the extra mile to provide inputs and suggestions that result in cost or time savings and quality enhancement, and are always in the domain of sustainability. Under the dynamic leadership of J R Tanti, Team Synefra has always believed that sustainability is not a separate component of any infrastructure development but an integrated approach that begins with selecting the site and continues through to final operation. Every project it undertakes is energy efficient, environment conscious, neighbourhood enhancing, and socially responsible. Synefra aims to nurture an environment that facilitates the development of technology, innovation, material science and its application to develop finely-balanced infrastructure that will remain a legacy for future generations at the best possible cost, timeline and quality.



“Every large infrastructure (greenfield or brownfield) are complex capital investment programs. They exist within a wide business context and involve multiple interdependencies and interfaces, diverse stakeholders, competing priorities and challenging goals. All of these things combined, together with the push to maximise outcomes, demand an efficient and integrated management approach and that is the role that Synefra plays for all its client.

Every project that Synefra has been tasked with till date speak volumes about the value that the organisation has brought to infrastructural development. As collaborators and cross-functional knowledge partners, Synefra has played a critical role in some of the landmark industrial infrastructures in India and overseas, in the sectors of renewable energy, automobiles, pharmaceuticals, electricals, real estate, manufacturing, information technology and government agencies.

Presented here are the chosen milestone projects that Synefra has delivered for its clients.”

OUR MILESTONE PROJECTS

“Instituting infrastructural breakthroughs to house human life and technological advancements for the Renewable Energy sector.”

**SUZLON
ENERGY LTD.**
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SUZLON

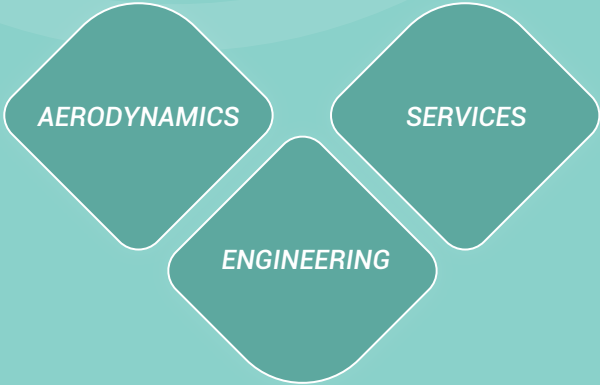
SUZLON
ENERGY LTD.

Global leader in renewable energy and pioneer of wind energy in India, Suzlon Energy Ltd. has been innovating, creating and nurturing a greener tomorrow in 19 countries across six continents for over two decades now. With humble beginnings in the Indian state of Gujarat in 1995, the company now has a combined installation of 15.5 GW of wind energy capacity, and 8,000 employees across the globe. Suzlon has constantly provided sustainable solutions by leveraging cutting-edge technology. Its in-house Research and Development (R&D) set-up is among the largest of its kind, with facilities in Germany, The Netherlands, Denmark and India. Manufacturing-driven supply chain strengths and global expertise enable Suzlon to offer clients a range of key benefits, from development to construction and operation. The company's turnkey services range from complex front-end engineering design, construction, installation and commissioning to long-term operations and maintenance; they cover the length, breadth and depth of customer requirements across the wind energy value chain. Suzlon's key differentiator is strong front-end engineering and the benefit of local experience, interface management, and construction know-how.

Through the years of its existence, this renewable energy giant has continuously grown through backward integration focusing on creating 100% self-sufficiency. Technology is a defining characteristic of Suzlon's efforts to develop sustainable energy solutions. Suzlon's product and service supremacy lies in three key areas: aerodynamics, component engineering, and its after sales service commitment. The infrastructure required for these areas is of utmost importance; high priority with stringent measures of precision, time, quality and required cost. Synefra, which was once an integral part of Suzlon as their Corporate Utility & Infrastructure Department (CUID), backed the company's growth trajectory by instituting robust infrastructures that formed the foundation for uninterrupted growth. As an in-house team, they demonstrated exceptional commitment and assiduity in enabling Suzlon to explore newer territories, adopt new-age technology, and create complementary services through infrastructural breakthroughs, despite its own newness in the sector. Today, backed by the experience and exposure accumulated over a decade now, Synefra has evolved to become a preferred Project Management Consultancy in the Renewable Energy industry.

In the words of Mr. Tulsi Tanti, Chairman, Suzlon Group, "Synefra follows a holistic approach to construction management that ensures the end result is always an outstanding piece of architecture, which is aesthetically pleasing, ecologically responsible, culturally compatible and practically manageable. As our in-house team, Synefra delivered not just infrastructures but our own growth."

Presented here are the milestone projects that Synefra executed for Suzlon in three key areas of its expertise:



AERODYNAMICS

The physics of aerodynamics plays a pivotal role in the engineering of Suzlon's wind energy products and solutions. Wind turbines are manufactured on aerodynamic principles; the wind turbines, otherwise called rotor blades, cut through the air to harness the force of the wind created in tandem with its velocity. To derive the best benefits of aerodynamics application, rotor blades are required to be manufactured with acute precision, focusing on prolonged durability and enhanced quality in accordance with the physical conditions of the wind farm's locality. After almost five years of dependence on an overseas vendor for procuring rotor blades, in the year 2000, Suzlon made the crucial decision to start manufacturing the blades in-house, taking its first major step towards self-sufficiency.

The company soon realised the need for internal expertise in creating world-class facilities within India that could support the manufacture of rotor blades, usually 90-120 metres in length and weighing 8-10 tonnes. This led to the birth of Synefra as the CUID team in the very same year. Over the years, Synefra has successfully delivered various critically infrastructure-dependent rotor blade units for Suzlon, amongst which the Daman plant – Synefra's first ever rotor blade project and Pipestone, US plant – Synefra's first ever overseas rotor blade project remain major contributors to its evolution as a Project Management Consultancy.



A FEATHER IN SUZLON’S HAT

ROTOR BLADE MANUFACTURING FACILITY

A QUICK LOOK

Duration: November 2000 – February 2001
Location: Bhimpore, Daman
Land Area: 16,188 sq. meters

Suzlon ventured into the wind energy sector when India was just starting to recognise the potential of this alternative form of energy. Back then, the market was monopolised by foreign players who mainly imported the wind turbine set-up. Mr. Tulsi Tanti foresaw the potential in the field of wind farming and the wide array of associated alternative energy opportunities that it would open up for India, a developing country largely dependent on non-renewable forms of energy. Despite their newness to the field and dearth of on-field experience at that time, Mr. Tanti, along with his team, started aggressively studying wind farming and its technicalities. Such was their passion and drive that they bagged their first few projects very early into their operations. The team started off operations with foreign collaborations for sourcing raw materials but soon experienced the need to lessen the dependency on external vendors and build a self-sufficient company, allowing them to gain better control over quality, cut down on excessive costs, and execute projects within promised timelines.

With massive efforts from CUID, Suzlon's first ever rotor blade manufacturing unit was functional in Daman within nine months of commissioning. The team recalls that the journey was as difficult as it was commendable. The implementation of this project saw them taste the first of their challenges since inception. Despite having only a two-line brief from Suzlon in hand and limited expertise to establish a facility of this nature in India, they went more than just the extra mile to deliver an infrastructure that would later go down in the history of Suzlon. Their urge to deliver the best saw a team travelling to Holland to engage with a rotor blade manufacturer and study the nitty-gritties of its production. Back home, another team simultaneously finalised the site for the unit at Daman. Its proximity to the state of Maharashtra and other central states, and the taxation benefits towards production in a Union Territory made Daman the most preferred choice for the infrastructure.

On successful liaising with their Holland-based counterpart, they invested in pre-engineered building (PEB), a relatively new concept in infrastructural development during those days, which involves assembling factory-built structures at the infrastructure site. Equipped with the latest technology and infrastructure know-how, they succeeded in handing over a project that continues to perform optimally. Working under stringent timelines and on an infrastructure that was relatively new to the entire team, they honoured the brief and delivered the manufacturing unit well on time. This facility began immediate production and within a short duration exported its first blade to the United States of America, a first-of-its-kind milestone to be achieved by an Indian company.



VENTURING INTO THE UNKNOWN

ROTOR BLADE MANUFACTURING FACILITY

A QUICK LOOK

Duration: November 2005 – July 2006
Location: Pipestone, USA
Land Area: 158,642 sq. meters

Alternative sources of energy came more clearly into the picture in early 1999, with an increasingly evident shift of focus to wind energy. Surveys on the growth of the wind industry revealed an upward trend, with nearly 40,000 megawatts (MW) of wind power being installed in 2004 world-wide. In U.S.A, the year 2004-05 was of great significance to the medium but burgeoning wind energy industry. An estimated 2000 MW of new wind power capacity was likely to be added to boost economic development, especially in the semi-urban areas. Ready to tap this huge opportunity, Suzlon took the historic step of venturing into the U.S market in the same year. It was a big leap for the company to be venturing into a developed market from its own status of being an entrant in the relatively younger industry in India. However, Suzlon gradually went on to make its presence felt and gained a formidable reputation in a market of well-established players. Team Synefra, then CIUD, aided Suzlon's plans for

expansion into a new territory and in the record time of eight months established the company's first overseas rotor blade manufacturing unit in Pipestone, Minnesota. Suzlon, being an ambitious and progressive organisation, has always moved forward aggressively. Being well aware of this aspect of the organisation, the CIUD team was well-prepared for any overseas expansion plan that would come their way which finally took shape with Suzlon's entry into the U.S market. Suzlon entrusted the team with the responsibility of developing its first overseas rotor blade manufacturing unit in the U.S. that would enable Suzlon to cater to American demand without compromising on quality standards or timelines, a trait that defined them in the Indian markets too. For the Synefra team, the new territory, culture and laws were the greatest challenge to delivering a solution that was quality, cost and time compliant. In the U.S, the government sanctions the land for a manufacturing unit. Suzlon was designated a site in



a small town Pipestone, about 200 miles from Minneapolis, in the state of Minnesota. The remoteness of the location wasn't as much of a problem as the climatic condition at the site. Minnesota's weather, in all its notoriety, fluctuates between extreme heat in summer and bone-freezing cold in winter. Working in the open site under such extreme conditions was one of the challenges that the team encountered and bravely overcame in Pipestone. The team also dealt with issues due to differences in culture and business environment, yet all necessary compliances were dealt with strategically without compromising on the standard of delivery practiced by Synefra. The team had to consciously make amends to their working style and communication to match the U.S way of functioning.

The simplest of examples was the strict five-day, eight-hour work culture practiced in the U.S.A as opposed to the fast-track 7 to 9 months delivery pattern of projects in India. Overcoming challenges innovatively and creatively working around problems has been a quality ingrained into the organisation's core DNA and remains with it even today. The first-time use of a remote-controlled project management system in the execution of the Pipestone project is one such example of solving coordination challenges inventively. The Synefra team not only adapted to the advanced systems and technology-driven processes of their U.S counterparts but also added value to certain technical aspects, making it a two-way learning experience for all stakeholders.

ENGINEERING

Another technological aspect that drives and defines Suzlon is its engineering. Along with the rotor blade that taps the wind energy, the other important wind turbine components are -

- Wind Turbine Generator (WTG)
- Nacelle, Nose cone (NANOC)

The Wind Turbine Generator (WTG) connected to the far end of the rotor converts the mechanical energy produced by the blades into electrical energy which is then transferred to the nearest electricity board for distribution through the substations established at the wind farms. The nacelle becomes the external covering that houses all the integral components of a wind turbine, built parallel to the ground to also support the rotor blade.

Suzlon's venture into manufacturing rotor blades in-house was closely followed by its decision to also start production of the engineering components; this would further supplement its vision of self-sufficiency. As the infrastructure development partner to Suzlon, Synefra team diligently bore the responsibility of bringing to India the technological know-how required to build manufacturing units for engineering components that would go on to establish Suzlon as India's first company to self-produce WTG and Nacelles.

With the engineering components' manufacturing units for Suzlon, Synefra gained a firm foothold in infrastructure management in the renewable energy sector; the notable ones being a 2 MW capacity plant in Daman, followed by the forge and foundry units in Vadodara and Coimbatore respectively.



CONTUINUING ALONG THE GROWTH TRAJECTORY

WTG (Wind Turbine Generator)PLANT

A QUICK LOOK

Duration: July 1999 – May 2000
Location: Dabhel, Daman
Land Area: 6,400 sq. meters

Continuing its series of successful forays, Suzlon established its first 2 MW capacity Wind Turbine Generator (WTG) Plant in Daman managed and executed by Synefra. Regardless of the new type of infrastructure that was to be constructed, the project management team showed great confidence in delivering a unit that would be in tandem with Suzlon's techno-commercial requirements.



The site selected for the facility was finalised for its shape and size which was optimal for the scale of the project and the functional requisites that Suzlon was looking at, however, the site had a fully operational city drain running right in the middle of the plot. Synefra took it up as a challenge to maintain the current ecology and address all the functional needs of the plant, hence, keeping the drain as it is in the master plan of the premises. Even till date, the plant and drain are fully operating in synergy without any disturbance, even bearing the monsoon season when the drain flows in full potential.

Another issue that Synefra was faced with was the land filling required for the site which resulted in the filling of over 6-7 meters, achieved in record time, optimising resources and available time.

In keeping with Suzlon's mission of powering a greener tomorrow and Synefra's own philosophy of responsible infrastructures, all efforts were taken to maintain the ecological balance, right from the design phase till execution. The plant was commissioned from start to finish in 10 months as per the requirement of the client.

The establishment of the 2 MW WTG plant in Daman enabled Suzlon to add a new product to its line and achieve better control over the quality of products they delivered.

SERVICES

Another important aspect in Suzlon's end-to-end solution value chain are its large windfarms. These windfarms have hundreds of wind turbines installed that cater to their clients' energy needs. In keeping with the commitment of providing quality services to its clients, round-the-clock surveillance at windfarms is inevitable which necessitates the availability of a workforce on ground 24/7 and infrastructure that enables the workforce to work optimally. This ultimately led to the coming up of many ancillary buildings

(Central Monitoring Station (CMS), hostels, canteens, guest houses, warehouses and training centres) at the windfarm sites that Synefra coordinated and delivered for Suzlon. Also, to service their Pan India and global clients, Suzlon required quality office setups at important locations in major cities around the world.

Both its ancillary and office setups, though only complementary to Suzlon's main production line, are integral to the overall successful delivery of its products and

services. And for Synefra, two of the most critical service infrastructures were the establishment of ancillary buildings at the remote location of Vankusawade in Maharashtra and the setup of a world-class office facility in Amsterdam.



REACHING THE REMOTE
CMS (Central Monitoring Station) CENTRE

A QUICK LOOK

Duration: August 2000 – December 2000
Location: Vankusawade, Satara
Land Area: 600 sq. meters

Suzlon's foray into the state of Maharashtra saw its biggest wind farm emerge at Vankusawade, spread over 1000 acres, located on a high mountain plateau 1,150 m above the Koyana Reservoir, around 40 kilometres from the town of Satara. The wind farm was set up to address the growing clientele in the state. However, the remoteness of the location proved to be a major challenge for Synefra in providing quality infrastructure on the wind farm.

The Satara wind farm was to house full-fledged infrastructural facilities including central monitoring stations, a large components store, an engineers' training centre, staff residential facilities, a guest house, and a well-equipped dispensary.

Working on the rough and undulating terrain, without access to any roads, proved to be an uphill task in terms of human and material logistics. The massive scale of the wind farm added to the challenging situation. However, quickly identifying the pain-points of the project,

Synefra drew out an optimal masterplan for all ancillary infrastructures required, placing the Central Monitoring Station (CMS) at a location that would give full visibility of the farm and each turbine. In quick succession the staff hostels and canteens, warehouses, storage space for equipment, and a training centre were built around the farm.

The team braved extreme climatic conditions and high wind velocities. Despite the remote location, raw materials and labour were sourced at optimum costs and moved along almost non-existent roads. In spite of all odds, and this being the first such project, the team completed the work in just three months, establishing a culture of reliability that is practiced by Synefra to this day.

In time Suzlon spread its wings to other Indian States – Gujarat, Karnataka, Tamil Nadu, Andhra Pradesh, Rajasthan and Madhya Pradesh - with Synefra continuing to provide quality and cost-driven infrastructures at various other wind farms.



THE PRESENCE IN EUROPE
OFFICE INTERIOR

A QUICK LOOK

Duration: October 2006 – January 2007
Location: Amsterdam, The Netherlands
Office Built up Area: 883 sq. meters

In view of the locational and operational advantages that an office in Europe would offer, in the year 2007, Suzlon established a Group Management office in Amsterdam, considered the Mecca of the wind energy industry. The Synefra team was tasked with the responsibility of choosing a location and developing an office in the most optimal timeframe possible. After careful consideration of Suzlon's own requirement and the locational edge that the site offered, the World Trade Center in the heart of Amsterdam was finalised. The design brief for the office interiors was very specific; the office should provide a direct visual connect to the wind energy industry, giving Suzlon a distinct identity amongst

the various MNCs functioning in the complex.

The Synefra team faced an array of challenges in execution, including newness of territory, unfamiliar compliances, and a completely different work culture and language. The Synefra team tactfully worked around the barriers, aligning with various local agencies and vendors, and making them understand the functional needs and requirements.

The brand new office space was completed in a very challenging time span of 120 days. Today it is rated among the 'Top 25 Best Office Spaces' in the World Trade Center, Amsterdam.



RAISING THE BAR
SUZLON ONE EARTH

A QUICK LOOK

Duration: April 2006 – December 2009
Location: Hadapsar, Pune
Land Area: 45,529 sq. meters

A striking example of Suzlon's vision of powering a greener tomorrow, One Earth proves that infrastructure and nature can be balanced with ease. Moving away from the conventional glass box infrastructures, One Earth (Suzlon's headquarters located at Hadapsar, Pune) is a global village that replaces the dullness and routine of a workplace with an open and inspiring atmosphere that stimulates employees.

This award-winning infrastructure is the only one in the country to be accredited with Leadership in Energy and Environment Design (LEED) Platinum, and a five-star rating from Green Rating for Integrated Habitat Assessment (GRIHA), a ministry of new and renewable energy.

ENVISIONING THE CREATION

Establishing a working space to accommodate employees wasn't the sole purpose of the new campus. Mr. Tulsi Tanti, the Chairman and Managing Director, envisioned a space:

'Where we can breathe fresh air
Where we do not feel restricted in thought and movement

Where we live our values through behaviour
Where we demonstrate by the example of our commitment to sustainability everyday
Where we do not miss the seasons while we go about achieving targets
Where daylight changes can be felt at workstations
Where we experience and benefit from world-class technology'

He aspired to bring to life an inspiring workspace that worked on the end-to-end sustainability model. The campus architecture, design, interiors, landscape and communication were to be a reflection of the core Suzlonian values of agility, creativity, adding value, commitment and creativity.

To realise his dreams, Mr. Tulsi Tanti entrusted the task of transforming the simply worded brief into a reality to Synefra, which had by then gained a growing reputation for building challenging infrastructures innovatively and synergistically. In the days to come, Synefra led the creation of a knowledge and support base campus for the company's round-the-clock global operations, creating a responsible infrastructure that directly benefits the well-being and productivity of people associated with it.



“

When I was first introduced to this project in the planning phase, it was described to me with such clarity and passion that I was able to immediately visualize Mr. Tulsi Tanti's vision for this project and that is exactly what flowed into the drawings too. Suzlon One Earth was to be a global technological centre meeting international standards but with an Indian appeal. Hence, every detailing from the deepstamb to the swastika were meticulously planned.

”

- Mr. Christopher Beninger, Chief Architect

ESTABLISHING THE BALANCE

From envisioning the entire campus to realizing it, Synefra strongly recommended to the client on two main aspects:

- The concept of sustainability and human well-being had to be imbibed into every step taken towards this project through pre-construction, construction and post construction.
- Every stakeholder to be part of the project right from the start to ensure a well-coordinated synergistic result

THE TEAM

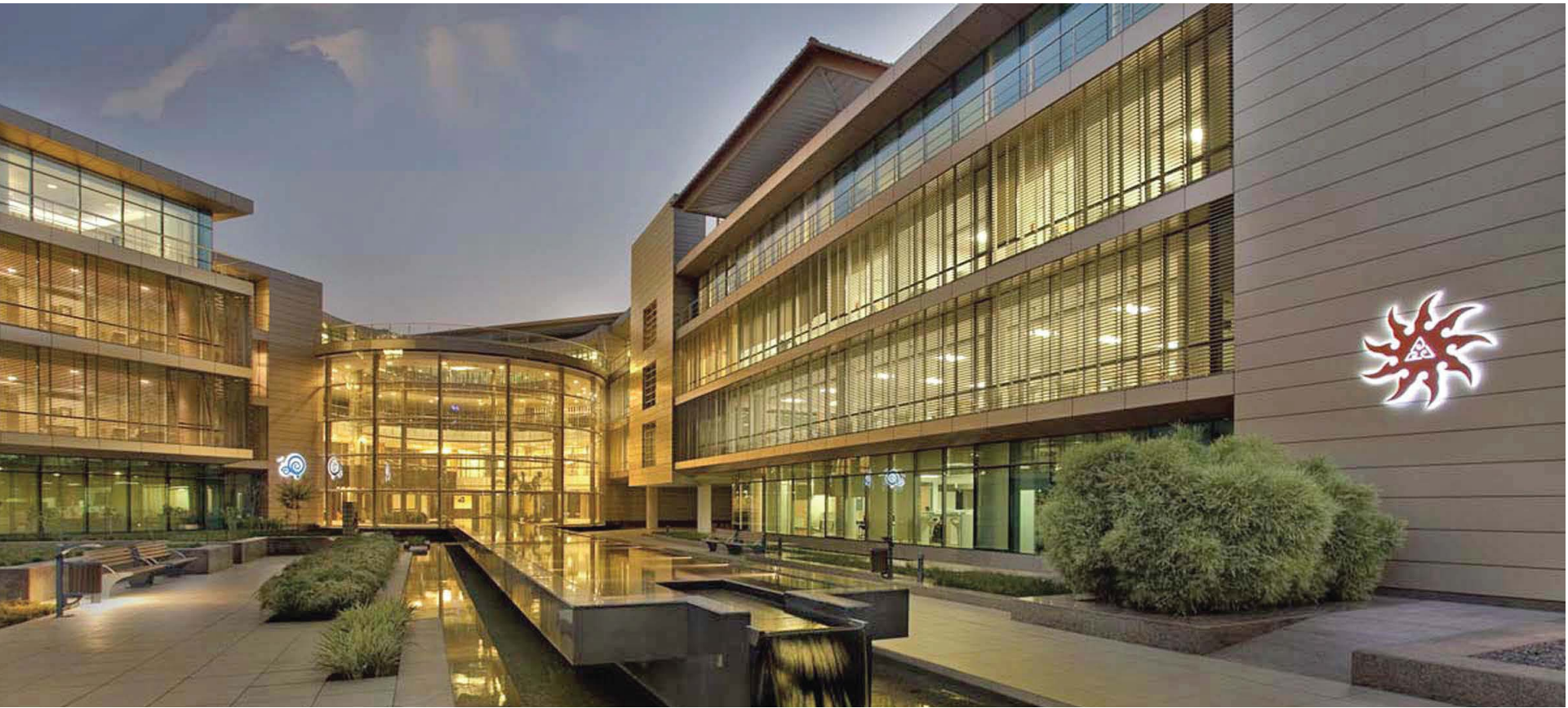
For a project of this vast magnitude and futuristic vision, Synefra understood that choosing a team that shared a common vision on sustainability was absolutely necessary, along with having best-in-class industry knowledge and talent. After a thorough search, Synefra along with the client, named the stakeholders for architecture, engineering and construction, landscape architecture, interior designing, green building partners, and communication; together they would create capabilities that would exceed that of any individual alone.

In keeping with its proposal to the client, Synefra involved every team member from the very start to ensure seamless transmission of knowledge and information. After several rounds of discussions and brainstorming, a collaborative perspective of the project proceedings emerged. Complete transparency of processes backed by regular formal and informal get-togethers with various stakeholders gave way to synchronisation that kept

everyone treading in the same direction. Synefra also commissioned a team of project managers, designers and civil engineers to be stationed together at the site to monitor, screen and guide the project.

THE SITE

The choice of an appropriate site for the infrastructure was among the first steps taken. After careful consideration, Survey No. 17 Sade SatraNalli of Hadapsar was finalised. Spread across 45,393 sq.m., the site lay opposite Magarpatta City, flanked by corporate offices and residential areas. The main criterion was to select a site with minimum environmental impact, consciously excluding farm land, lands with elevation lower than five feet above the elevation of the 100-year flood level, areas identified as the habitat of any endangered or threatened species, or land within 100 feet of any wet land.



ENERGY CONSERVATION

One of the main aims of Suzlon One Earth was to enable an energy-efficient campus. Conservation of energy resources and energy production from renewable sources are synonymous with any sustainable project. In keeping with this basic concept, Synefra oversaw the development of a campus powered 100% by a combination of onsite and offsite renewable energy sources; 6% of the total energy consumption comes from 18 onsite hybrid wind turbines, solar panels and photovoltaic cells and the remaining from offsite wind turbines. Synefra also ensured 35 KW of renewable power was connected to the communication server, making green energy the backbone of the communication system at One Earth, achieving an incredible 50% energy savings in comparison to projects of similar scale. Other energy saving efforts include the installation of solar water heating systems with a heating capacity of 10,000 litres per day, saving more than 1.4 L kWh of electricity annually. Use of louvers, occupancy sensors and efficient ventilation systems also helped reduce

consumption of light energy, in turn saving electricity and energy. One Earth also happens to be the only campus in India that uses LED street lighting to conserve energy. Synefra took the innovative yet risky step of using water cooled VRV (Variable Refrigerant Volume) systems in place of conventional air cooling systems, successfully achieving 40% savings in energy.

WATER CONSERVATION

With water scarcity being a major concern across the globe today, a highly-efficient water conservation plan was on top of the agenda for Synefra and its associates. One Earth is equipped with the latest technology including dual flushing systems, low flow faucets, urinal sensors and pressure compensated pipelines, saving more than 40% of potable water. All rain water received is channelled into a controlled flow thereby enhancing the existing water table, preventing soil erosion and facilitating removal of silt. A separate water treatment plant of 240 cum/day for rainwater is used for HVAC, gardening and flushing.



“

In any infrastructure, aesthetic elements must be optimally balanced out by its functionality. Long glass cylinders running from the roof to the ground floor added aesthetic value but also helped in flow of fresh air and light to the basement.

”

- R Vasudevan, (designation)

WASTE MANAGEMENT

Achieving a zero waste target for Suzlon One Earth was a major challenge that had to be strategically tackled. In this regard, Synefra proposed segregation of waste at source to recycle and reuse waste. All the organic waste is converted into manure by an Organic Waste Controller with a converting capacity of 100 kg/hour. Electrical and electronic waste is treated through a Pollution Control Board authorised agency. Recyclable materials like paper and cardboard are sent for recycling through NGOs.

IBMS

As the PMC for the project, Synefra was aware of the fact that while establishing a sustainable model is one thing, the maintenance of it is another. Hence, Integrated Building Management System (IBMS), a state-of-art

monitoring system, was installed at One Earth with advanced features to minimise, monitor, supervise and keep track of services like energy, water, waste, security and movement in the campus.

EMPOWERING LIFE

Studies have shown that sustainability has a direct impact on human well-being. It is a well-accepted fact that human health, comfort and productivity are influenced by our built-up environment. A sustainable building enhances the indoor environment quality and working condition of occupants by providing them with greater exposure to natural light, creating a soothing effect on the mind, and maintaining good indoor air quality.

In accordance with Mr. Tulsi Tanti's vision and Synefra's own drive to create an environment that motivates employees to work better, the Project Management Consultancy invested in a range of unconventional and offbeat technologies and procedures. Mechanical ventilation systems have been designed to allow 30% more fresh air to circulate indoors. CO₂ monitoring systems are installed in high density zones to regulate inflow of fresh air through use of dampeners and TFA Units. Fresh air quantities have been calculated on the basis of 30% more than ASHRAE recommendations for office areas, and 100% fresh air for short occupancy areas including cafeteria, gym, lift lobbies and core areas. An efficient HVAC system and treated Fresh Air Units have been provided in the service cores on all floors. Fresh air monitoring devices in these units and CO₂ sensors through

a BMS integrated scheme ensure that the planned fresh air intakes are maintained.

Low VOC content materials such as paints, adhesives and sealants as well as carpets and composite wood with low toxicity levels were utilised. All electrical panels are covered with water-proofing covers to protect them from water entry.

One Earth's monitoring system was structured to maintain fresh air intake quantities and to generate an alarm to the building operator (via the building automation system alarm) when the conditions vary by 10% or more from the set point. In view of the health hazards posed by tobacco smoking in the workspace, the entire One Earth campus is a strictly no-smoking zone.

Lighting plays a significant role in human comfort – too much can be as disturbing as too little. Synefra, with the

designers, proposed that over 90% of the regularly occupied areas be provided with individual lighting controls. This gives flexibility to the individual and helps save power. Individual lighting controls have been provided for large cabin occupants and medium cabin occupants, and workstations have been equipped with task lighting. Individual air conditioning controls allow the user to operate the unit only when needed; temperature control and air speed controls are available for each enclosed space. Special care has been taken to ensure that polluting zones such as toilets and copier rooms, where chemicals are used, have deck-to-deck full height partitions with self-closing doors. Make-up air in all these areas is drawn from outside or adjacent occupied spaces. Efforts have been taken to ensure that all exhaust locations are at least 25 feet away from fresh air intakes of air handling units.

In order to improve productivity and have a positive psychological effect on employees, 90% of spaces allow access to the view outside. It is believed that access to a window that allows enough daylight and an outside view is beneficial to occupants and improves their work satisfaction levels.

In the interests of sustainability, initiatives like carpooling are encouraged. Five percent of the total vehicle parking capacity onsite is earmarked as dedicated parking for carpooling. Easily accessible parking spaces near entrance lobbies in the basement of the building have also been allocated for differently-abled personnel. The company bus service caters to employees, providing pick-ups from convenient locations around the city. The company has also provided 96 e-charging points in the basement that can serve more than 3% of building occupants. Dedicated and labelled preferred parking spaces have been identified in the parking area for the same.

Suzlon One Earth was a challenge for Synefra, the execution of which helped the company live up to its own vision of creating responsible, sustainable, and living infrastructure. To date, it remains one of the finest examples of achieving holistic sustainability, for the good of the environment and people associated with it.



“

“Suzlon One Earth is one of the most successful green projects in the world. It brings together innovative approaches towards energy efficiency and sustainable infrastructure to make our vision of sustainable development a reality. We are proud that this remarkable facility – ably designed and built by Synefra has become a benchmark not only for corporate India, but for organizations all over the world. Our investment for our global HQ at Pune was fulfilled the day we stepped into this space built on a modern village concept – so much rooted in India values complimented with latest technology for ease of operations.”

”

- *Tulsi R. Tanti, Chairman, Suzlon Group*

ACCOLADES FOR ONE EARTH

AESA (ARCHITECTS, ENGINEERS, SURVEYORS ASSOCIATION) AWARD

- Best Corporate Building Award to Ar. Christopher Benninger

ECONOMIC TIMES ACETECH LEADERS IN INFRASTRUCTURE AWARDS

- Best Commercial Project of the Year 2010
- Best Interior Award to Space Matrix in association with Tao Architecture
- Best Architecture Awards to Christopher Charles Benninger Architects
- Best Eco – Initiatives Awards – Environmental Design Solution

CENTURY PLY - ACES OF SPACE DESIGN AWARDS 2010

- Ace of Space - Commercial Project of the Year to CCBA
- Ace of Space - Sustainable Design of the Year to CCBA

REALTY PLUS AWARD

- Environment Friendly Project of the Year 2010 – Commercial

PROPERTY AWARD

- Green Building of the Year 2010

CNBC AWAAZ CRISIL CREDAI REAL ESTATE AWARDS 2011

- Best Corporate Architecture to CCBA

GIREM LEADERSHIP AWARDS 2011

- Sustainable Project of the year 2011
- Best Office Space Design of the year 2011



SYNEFRA WINS THE PRESTIGIOUS ASIA PACIFIC PROPERTY AWARD 2011

The Asia Pacific Property Awards 2011 in association with Bloomberg Television & Google awarded the prestigious award to Synefra E&C Ltd for Best Office Development for Suzlon One Earth



SYNEFRA WINS MIPIM ASIA GOLD AWARD 2011

Synefra E&C Ltd was awarded the MIPIM Asia 2011 GOLD Award in "Best Green Buildings" category for its project Suzlon One Earth which it conceived, managed and executed.

This year, Synefra E&C Ltd. is the only Indian company to be announced as a winner amongst the 29 winners in 10 distinct categories in Asia.

LEED PLATINUM
CERTIFICATION



Pune, India		March 2010
LEED - India for New Construction V 1.0		
Platinum	57*	
	Achieved / Applied	Available
Sustainable Sites	10/11	13
Water Efficiency	06/06	06
Energy & Atmosphere	14/14	17
Materials & Resources	07/07	13
Indoor Environmental Quality	15/15	15
Innovation & Design Process	05/05	05
TOTAL	57/58	69
* Applied for 58 points out of a possible 69 points		

GRIHA FIVE
STARS RATING



Pune, India		March 2010
GRIHA - Green Rating for Integrated Habitat Assessment		
Five Star Rating	Achieved / Applied	Available
Sustainable Sites	16/16	13
Water Management	10/10	06
Water Efficiency	8/8	08
Energy Optimization	26/26	29
Sustainable Building Materials	13/13	14
Health & Wellbeing	17/17	17
Building Operations and Maintenance	2/2	02
Innovation	4/4	04
TOTAL	96	104





• Shri. A.P.J. Abdul Kalam •



• Mrs & Mr Azim Premji •



• Delegation from China Government •



• Mr Mark Ginsberg, US Energy Department •



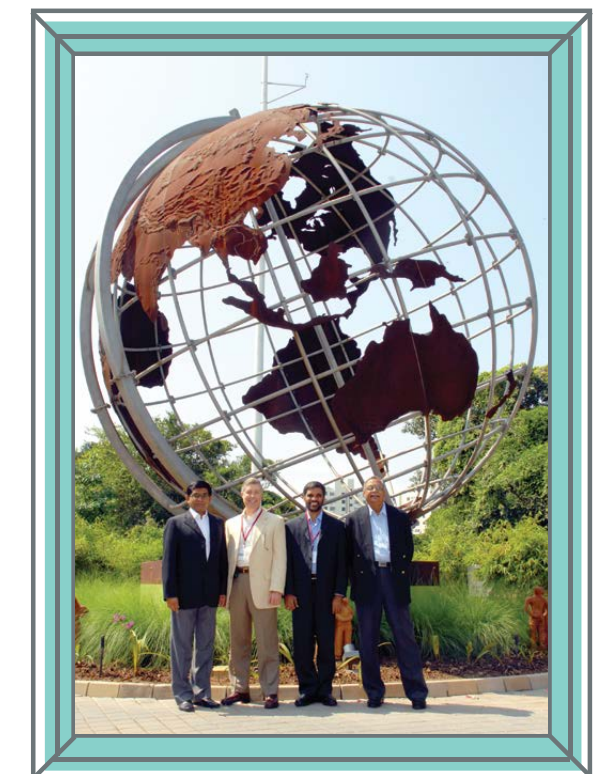
• Shri. Narendra Modi •



• Shri. Rajesh Pratap Rudy •



• Ms. Meher Padumjee and Mr Jamshed Godrej •



• USGBC Team •

EMINENT PERSONALITIES GRACE SUZLON ONE EARTH CAMPUS

AERODYNAMICS & ENGINEERING

With the growing diversity in Suzlon's product line, the need to bring the manufacturing of various products at one umbrella location became urgent, leading to the company investing in integrated facilities that housed rotor blade and WTG / NANOC manufacturing units. This enhanced accessibility, cut costs and improved the delivery timelines for the renewable energy conglomerate.

The Synefra team played a pivotal role in translating these large scale projects into coordinated, well-designed facilities that channelled greater benefits for Suzlon, the most commendable among them being the integrated facilities at Puducherry and China, and the first-of-its-kind blade testing centre at Vadodara.



FITTING INTO THE NATURAL REALM

INTEGRATED WIND COMPONENTS MANUFACTURING FACILITY

A QUICK LOOK

Duration: August 2003 – April 2004

Location: Puducherry (UT)

Land Area: 271,149 sq. meters

The Synefra team received its first intimation regarding a new integrated facility that Suzlon intended to erect in the southern union territory of Puducherry over a phone call from Suzlon's Supply Chain team. The proposed wind energy multi-components manufacturing campus was the first ever multi-component and two-industry (Engineering and Composite) project that the team would work on.

The first task involved creating the design brief for better clarity of the scope, and setting the right expectations with the client. Into the project, this design brief also served as a reference for stakeholders to stay aligned with the targets and specified parameters. On approval of the design brief, the process of site selection was initiated. Puducherry was finalised by the client owing to the tax advantage in an area of upcoming wind farms. An industrial site with abundant vegetation was

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An industrial site with abundant vegetation was shortlisted for the project. Clearing the site of the vegetation wasn't an option for either Suzlon or Synefra and, despite not being a part of the client brief, a strategy was proposed to save all the 180 coconut trees at the site. In the process, four had to be uprooted and replanted, of which only one failed to survive; the remaining 179 trees were successfully saved. Once the actual construction work started, Synefra extended support in terms of construction administration, design reviews, project procedures, construction management, cost and time management, quality assurance, site safety, procurement of approvals and compliances, status reporting, bill verification, risk assessment, installation of assembly line machinery, and manpower recruitment. At no point during the entire project did the project management team compromise on establishing the

balance with nature despite it not being a definite client mandate. In keeping with Puducherry's prerequisites for an industrial site to have water harvesting mechanisms in place, a large water reservoir was created opposite the administrative block, which enhanced the landscape and complemented the surrounding coconut tree plantation. To add to the ambience, tensile umbrellas were erected to provide shade for external sit-outs. Prolific use of local material and a local architectural profile enabled the infrastructure to fit seamlessly into the natural environment. Working within safe man hours, the project was completed successfully in eight months, 30 days prior to the actual deadline. The Puducherry project in totality was yet another challenge met, a new opportunity uncovered, and an added feather in Synefra's cap.





SETTING FOOT IN THE CHINESE TERRITORY
CHINA CAMPUS

A QUICK LOOK

Duration: January 2006 – April 2007
Location: Tianjin, China
Land Area: 250,000 sq. meters

China is one of the fastest growing economies in the world today, especially in the wind energy sector; it recorded a total capacity of 145.1 GW in 2015, maintaining its stature as a world leader in wind energy generation. Foretelling this opportunity 13 years ago, Suzlon formed a joint venture company called Suzlon Energy (Tianjin) Ltd. in China in 2006. To capture the leading wind energy market in the world, Suzlon commissioned the setting up of its first integrated production facility, consisting of Engineering and its Composites, in the state level Tianjin Hi-tech Industrial Park, Tianjin.

No two countries are ever the same. They differ in their cultures, lifestyles, demographics, climatic conditions, beliefs, value systems, and more. For a Project Management Consultancy that would in the construction of an infrastructure directly deal with every one of these

aspects, a well-rounded understanding of the site is imperative in order to give the best solutions to its clients, save on costs and time, optimally use human resources, and deliver a sustainable building. As the project managers for Suzlon's Chinese facility, the Synefra team delivered a facility that was in congruence with Chinese philosophies, completing it in a cost-effective manner within the stipulated time. Spread across 75 acres of land, this integrated facility at Tianjin caters to two different industries, Engineering and Composite. The zoning at the site also reflects this fact. The two areas are segregated by a 100-metre wide piece of land. The two proposed industries consisted of main production facilities, store buildings, office block, open storage yards, staff facility block with canteen, utility block, security office, internal road for human and material movement, and landscaping.



As the Project Management Consultancy, the Synefra team had to be familiar with the project site so that they could invest in local materials, find good labour, engage with the best local vendors, and explore locally-available means to keep cost in control. Though different in most aspects, the experiences in India came very handy as no two sites in India are ever of similar nature either. The team had earlier dealt with fluctuations in weather, changes in demography and differences in human resources; all these experiences helped them execute the project in the Land of the Red Dragon. Developing manufacturing and allied spaces spread across 60,000 sq. m. in a new territory in less than 380 days was no easy feat, but the team managed to successfully meet the stringent timelines.

Language was one of the foremost barriers in China. Stark cultural differences made the interpretation of even sign

languages a tough task. Fortunately, all official dealings were carried out with the help of a translator. Like in every other project, the environmental sustainability aspect was considered and taken complete care of. Use of local soil for site development, minimum use of fossil oils, maximisation of power efficiency, and minimisation of energy use were achieved through technological interventions.

A unique concept of 'master-to-minor' was introduced during the finalisation of the project masterplan, wherein detailed engineering for each individual building was carried out simultaneously. This approach provided a lead of minimum four months for project commencement and execution, achieving one of the shortest project cycles in the industry for such a large and integrated complex project.



BRINGING ACCESS TO INDIA
BLADE TESTING UNIT (PART OF THE
MULTI-FACILITY CAMPUS)

A QUICK LOOK

Duration: Around 1.5 years (for 100% campus development)

Location: Vadodara, Gujarat

Land Area: Part of the Composite Engineering
Centre (CEC) of about 90 acres campus

As per the mandate in the wind energy industry, no rotor blade can be utilised until its prototype is tested for usability and durability at a blade testing centre. The growing size of the blades, usage of new materials, and changing designs have made testing very critical from a safety and durability aspect. During the early days, due to the lack of enough wind energy players in Asia, the closest centre for testing was located in the Netherlands. The process of regularly shipping prototypes from India for testing in the Netherlands incurred huge costs and loss of time for Suzlon. For a customer-centric organisation, this was a matter that needed to be answered immediately, and Suzlon's leadership resolved to set up Asia's first blade testing centre in Vadodara. The centre would test rotor blade

prototypes for Suzlon and other companies in the same sector. With no players or expertise for blade testing available in India, Suzlon acquired a leading European blade testing firm. Drawing insights and expertise from the newly acquired company, Suzlon set up a similar testing centre under the guidance of Synefra. The centre required the creation of a controlled environment with just the right accuracy and precision levels. There was no scope for deviation, with precision levels being as accurate as +/- 0.1. The thickness of the flooring had to be 1.2 metres, twice as much as for other projects. In executing the blade testing centre, Synefra effectively coordinated the efforts of various stakeholders to maintain the levels of precision and quality mandated for a unit of such a nature.



BOOSTING SUZLON’S PRODUCT LINE

SE FORGE FOUNDRY UNIT

A QUICK LOOK

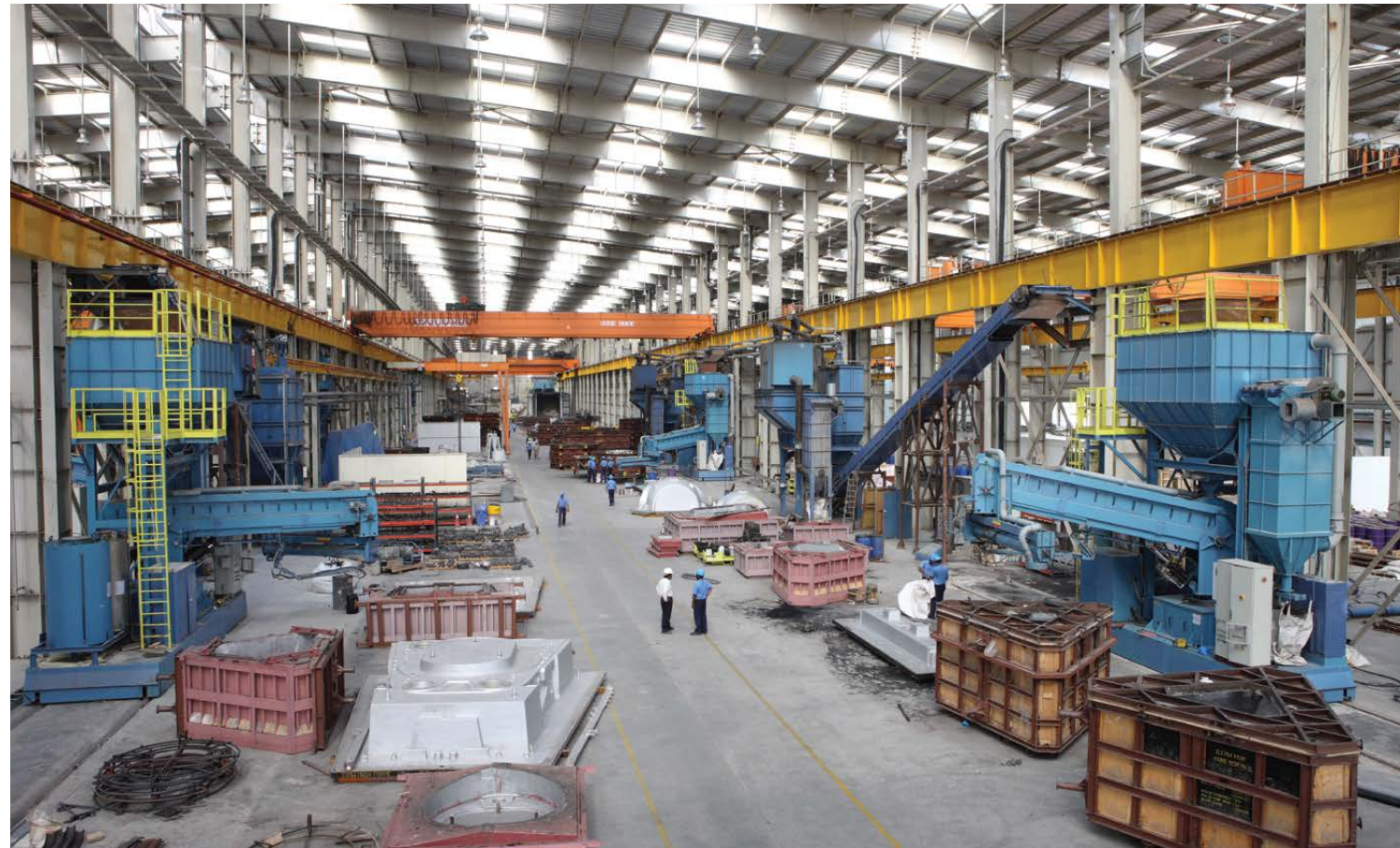
Duration: August 2007 – May 2009
Location: Aspen SEZ, Coimbatore
Land Area: 238,178 sq. m.

Strengthening their supply chain management further, the Suzlon Group incorporated SEForge in 2006 to produce the castings required for Wind Turbine Generators. The production of casting components started at SEForge's first manufacturing unit located in Coimbatore, Tamil Nadu; this technologically superior facility, with its skilled workforce, delivers end-to-end solutions for all its customers. The majorly mechanised facility uses the latest technology for its foundry and machining sections to make large, complex, ductile and grey iron castings weighing between 1,000 kg to 55,000 kg. The estimated production of this plant is 100,000 MT of finished castings per annum.

Synefra constructed the facility in a time span of 21 months with the scope of work including the construction management of a main production building for foundry, machining workshop, pattern shop, administration and production offices, open and closed storage areas, canteen and staff facilities block, utility block, security office, underground and overhead water tanks, electrical substation, water treatment plant, internal roads for material movement, lighting, electrical and other utilities, and landscaping.

Along with the basic construction management, Synefra focused on building a resource-optimised unit, over and above the client's brief, in order to create a sustainable facility. As per the conceptual design, the team thoroughly structured the resource usage plan for the building. The power for the entire factory was proposed to be obtained from the local electricity board, with consumption being approximately 40 MVA. The light intensity was calculated and designed to provide minimum light at areas of least access and maximum light on the production floors. Areas outside the factory were brightened with streetlights at regular intervals along the roads and floodlights at strategic locations. Emergency lighting systems inside the shop floor and other areas were installed as per the safety norms and statutory regulations. Compressed air to drive various hand tools, machines and the pneumatic control system of various machines was produced through a rotary screw type air compressor installed in a compressor room. The capacity of the compressor was such that it was capable of discharging compressed air as per the plant's varying requirements. Supplementary refrigerant air dryers were also installed to remove humidity and produce moisture-free air.





Enough water to cater to the entire premises for a minimum of two days was stored in an underground water tank that was divided into two equal compartments and lined with R.C.C. and glazed tiles. Both the compartments were interconnected and suitable for individual cleaning / maintenance without disturbing the other. An overhead water storage facility was also set up to feed the entire water distribution system with available natural head. This was to act as buffer storage in case of any emergency. One of the major challenges was the high temperature required for melting and casting steel. The infrastructure had to not only support extremely high levels of heat but also be safe for the people working in that environment. To effectively meet this requirement, Synefra collaborated with vendors and suppliers from across the globe, bringing them under one roof to discuss and decide on the best design to house the manufacturing requirements without compromising on the health of the structure and safety of the people who would work in it. In order to maintain good and healthy working conditions, Synefra also identified the need for forced

air ventilation systems. All offices and labs were provided with a centralised air conditioning system, and a forced ventilation system was designed considering a minimum of six complete air changes per hour for the entire shop floor area. An exclusive staff facilities block with dining facility, changing rooms and recreation area was also established. All buildings were designed to harness maximum natural light and enable air circulation, keeping in mind the comfort and need of users. Like the parent company Suzlon, the Synefra team too has a rich legacy of successfully implementing many firsts. Their keenness to learn and willingness to share knowledge has given them an enviable position in the field of infrastructure development. Every project that they undertake follows a thorough research-based approach, helping them to gain the best knowledge from practices around the world and provide customised solutions to each of their clients. Even today, Synefra is equipped to accept projects from any sector due to its global experience and cross-functional subject matter expertise.





BEST IN TECHNOLOGY
SE FORGE

A QUICK LOOK

Duration: August 2007 – May 2009
Location: Aspen SEZ, Vadodara
Land Area: 199,396 sq. metres

At the peak of its growth journey, under the brand name of SEForge, Suzlon Group invested in a sophisticated technologically superior forging plant to manufacture fully machined, forged rings of diameter 700 mm (27") to 5000 mm (196") in Vadodara, Gujarat. Simultaneously with the Foundry Plant in Coimbatore, and on similar lines, the Synefra team developed this manufacturing unit with a near capacity of 80,000 MT of rolled products per annum in a span of 21 months. Synefra's scope of work for the project included the construction of the main production building for the forging shop, machining workshop, metallurgy lab, administration and production offices, open and closed storage areas, canteen and staff facilities block, utility block, security office, underground and overhead water tanks, electrical substation, water treatment plant, internal roads for material movement, lighting, electrical supplies and other utilities. For the largely robot-controlled manufacturing unit, Synefra was tasked with creating an infrastructure that would seamlessly support high levels of automation,

enabling smooth flow of processes with minimum human intervention. The unit was to be designed to facilitate the manufacture of wind mill rims with a diameter larger than any produced in the region. This required the latest machinery to be sourced from different parts of the world, at optimum costs and meeting the highest standards of quality. Synefra conducted extensive research of vendors and suppliers world-wide and brought the best of the lot on board to execute the project. As is tradition, the Project Management Consultancy enabled resource optimisation, cost savings and quality enhancement for its client. The Forging plant, given the extent of its automation, was a new challenge for Synefra. It spent considerable time in researching the technology and infrastructure needed to support automation, engaged the best vendors from across the world and oversaw the tiniest details of execution to develop a unit that would be error proof and sustainable in the long run.



ENABLING SUZLON’S
BACKWARD INTEGRATION
*GENERATORS MANUFACTURING
FACILITY*

A QUICK LOOK

Duration: October 2004 - July 2005
Location: Chakan, Pune
Land Area: 30608 sq. m.

Efficient generators are key to the optimal functioning of a wind turbine, and providing reliable and high quality wind energy products has been at the core of Suzlon's endeavouring efforts. In keeping with this thought and facilitating its overall vision of self-sufficiency, Suzlon set up its generator manufacturing plant in Chakan, Pune in the year xxxx, engaging Synefra as its project custodian. Suzlon engaged in a joint venture with a counterpart from Austria, ELIN EBG Motoren, to leverage their existing supremacy in manufacturing various technologically advanced generators including those used in the wind energy sector. As a Project Management Consultancy, Synefra had to understand and deliver the scope of work expected by both the partners while ensuring that all the proposed requirements met Indian standards especially in the safety, legal and environmental aspects. Synefra

actively participated in the conceptualisation and development phase of the project and seamlessly converted the production needs into reliable and cost-effective infrastructure solutions. Along with the Suzlon-Elin production technology team, Synefra value engineered solutions for the Coil Shop, air conditioning, VPI area and shop ventilation. As the overall project coordinator and extended arm of the client, Synefra adopted the most modern and state-of-the-art technology for construction management. The team thoroughly studied the entire scope of work and developed packages, segregating the work into manageable segments, using the WBS (Work Breakdown Structure) methodology. This fragmentation synchronised various activities to achieve maximum possible optimisation in quality, cost and time, and helped engage the right agencies for specific activities.



The PMC added value to the project by working on the concept of Line Balancing, which aimed at optimising production infrastructure and generated detailed technical specifications of all equipment including the production machinery, support machinery and building systems. Synefra also cautiously selected a water-based air conditioning system for the Coil Shop area, as water-based systems are more energy efficient than air-cooled systems. One of the greatest challenges in execution of this project was in the initial stages when the land dressing and construction work had to be carried out simultaneously. However, the Synefra team meticulously planned both the activities, calculating and allocating resources required for each in a manner that enabled complete adherence to timelines. They conducted daily meetings with contractors/vendors to manage micro-level planning and make online corrections, if any, to the planned schedule. This coordinated way of working helped Synefra overcome small and big challenges to achieve the target in a record time of 10 months. Going by the client testimonial, the SGPL project is one of Synefra's most efficiently managed projects. Not only was the project completed on time, it has also won many accolades and appreciation from the entire management team at Suzlon. The core strategy applied by Synefra, i.e., the formation of a joint project team and fragmentation of the entire scope of work into independent WBS elements, helped effectively synchronise the entire project. With the successful coordination of yet another infrastructure project for Suzlon, Synefra added another memorable experience to its bank of diverse expertise.



SUZLON PROJECTS - TEAM OVERVIEW

Project	Location	Key Suzlon Team	Key Synefra Team	Major Contractor / Consultant / Vendor
Rotor Blade Manufacturing Facility	Daman	Mr. J R Tanti Mr. Pragnesh Mehta Mr. Niraj Shah	Mr. T R Tanti Mr. Harish Mondal	M/s Desai Construction, Valsad M/s Kirby, Hyderabad M/s Jatson, Vapi
Rotor Blade Manufacturing Facility	Pipestone	Mr. J R Tanti Mr. Niraj Shah Mr. Tushar Agarkar	Mr. Willem W Mr. Handrik R Mr. Harish Mondal	M/s Miller M/s Bluescope M/s Pipestone Construction Co
WTG (Wind Turbine Generator) PLANT	Daman	Mr. J R Tanti Mr. Pragnesh Mehta Mr. Niraj Shah	Mr. T R Tanti Mr. G Ranganath	M/s Desai Construction, Valsad M/s Jatson, Vapi
SE Forge Foundry Unit	Vadodara	Mr. J R Tanti Mr. Niraj Shah Mr. Prashant Trivedi	Mr. Kamlesh Bhadani Mr. Hugo S	M/s Desai Construction, Valsad M/s Lloyds Insulation M/s Jatson, Vapi
Office Interior	Amsterdam	Mr. J R Tanti Mr. Jitesh Donga Mr. Niraj Shah	Mr. T R Tanti Mr. Manish Patel	
Suzlon One Earth	Pune	Mr. J R Tanti Mr. Jitesh Donga Mr. Shimon Samuel Mr. Prashant Trivedi Mr. Manoj Modi	Mr. T R Tanti Mr. G R Tanti	M/s Panchshil, Pune M/s Vascon Constructions, Pune M/s Tao Architects, Pune
Integrated Wind Components Manufacturing Facility	Puducherry	Mr. J R Tanti Mr. Niraj Shah Mr. R Satish Mr. Prashant Trivedi	Mr. G Ranganath Mr. Harish Mondal Mr. Ketan Gandhi	M/s GDC, Hyderabad M/s Tiger Steel, Mumbai M/s Arun Excelllo, Chennai M/s Rohini Electricals, Mumbai
China Campus	Tianjin	Mr. J R Tanti Mr. Niraj Shah Mr. R Satish Mr. Prashant Trivedi	Mr. G Ranganath Mr. Harish Mondal Mr. Ketan Gandhi Mr. N Iyer	M/s Haisum Engineering, Shanghai M/s Kone Cranes, Shanghai M/s Jingong Constructions, Tianjin
Blade Testing Unit (Part of the Multi-Facility Campus)	Vadodara	Mr. J R Tanti Mr. Jitesh Donga Mr. Niraj Shah Mr. Prashant Trivedi Mr. Rajeev Bhabhra	Mr. Willem W Mr. Harish Mondal	M/s Sharad Constructions, Mumbai M/s Shah and Talati, Vadodara
CMS (Central Monitoring Station) CENTRE	Various Locations	Mr. J R Tanti Mr. Jitesh Donga Mr. A R Deshpande	Mr. Nilesh Vaishnav Mr. Anil Gagwani	M/s Petron Engineering, Pune M/s Kamal Developers, Nasik M/s Anukool Furniture, Ahmedabad M/s Arun Excelllo, Chennai M/s SMP Constructions, Bharuch
Generators Manufacturing Facility	Chakan	T S N Iyer T. Pradeepkumar Adolf Pais	J R Tanti Niraj Shah Tushar Agarkar Prashant Trivedi	

MERCEDES BENZ



MERCEDES BENZ

Adjudged India's 'most exciting brand' in the automotive sector by Economic Times in 2015, Mercedes Benz lives up to the consumer perception of being a class apart in the luxury car segment. A subsidiary of German-based Daimler AG, Mercedes Benz India Pvt. Ltd. is headquartered at Chakan in Pune district, and has been locally producing and assembling cars since 2008-09. Automotive companies like Mercedes Benz invest in massive manufacturing units and assembly lines across potential markets by maintaining a uniform base model for their industrial infrastructure functioning and adopting localisation wherever necessary; this helps to maintain the same levels of quality in their products across the world. Technological evolutions have also brought in complex infrastructural

provisions that enable extensive automation of the production process. Synefra's wide-ranging project management exposure across various states, countries and continents enables it to impeccably partner global MNCs keen on starting production in India. It is able to provide location-specific expertise and knowledge-based consultancy in adapting the infrastructure to Indian standards of geography, demography and law. Synefra partnered Mercedes Benz in developing their Chakan plant, which has been credited with being one of the fastest greenfield operations to have ever been created; its CKD (Complete Knockdown) unit is rated among Mercedes Benz's topmost globally.



A PARTNERSHIP THAT CREATED HISTORY

*City Bus Assembly Plant, Paint Shop for Car Plant,
Q3 Block Allied Structures, QII Body Shop Expansion*

Mercedes Benz's presence in India dates back to almost 60 years. During the initial years of operation in India under a joint venture, Mercedes Benz cars were only assembled in the country from complete knockdown (CKD) kits imported from Germany. By the year 2000, the automotive giant had formed a 100% self-owned company, Mercedes Benz India Pvt. Ltd., and decided to begin assembly of luxury car models at Chakan, Pune. Back when the strategic expansion plan in India was signed off, Mercedes Benz sought a counterpart who was well-versed with the locale, had specialised expertise in the automotive sector, and a thorough understanding of its requirements. The company was seeking a Project Management Consultancy to help set up a world-class manufacturing unit. The Projects Team at Mercedes was keen on associating with Synefra for various reasons, the most pivotal being the expertise that Synefra had demonstrated during the initial interactions, and the similarity of vision the two organisations shared. In the year 2009-10, Synefra was awarded the responsibility of managing end-to-end concept to project management of Mercedes' manufacturing facility (city bus plant) measuring 1,00,000 sq. ft., which the team successfully fulfilled

A QUICK LOOK

Duration: July 2010 – March 2016
Location: Chakan, Pune
Land Area: 66,773 sq. meters

in terms of both time and cost. In the year 2012, in a bid to take their presence in India a step further, Mercedes Benz decided to start local production of their cars, especially the M-class to meet the growing demand for luxury SUVs in India. After a series of internal discussions and deliberations, and with an investment of Rs. 200 crore, the plan to establish the Paint Shop at Chakan, Pune was finalised. However, given the scale of the project and since their own in-house project team was new to the Indian terrain, the company sought the expertise of a Project Management Consultancy to partner with in this visionary project. In view of Synefra's efficiency in coordinating the city bus plant, the automotive company opted to associate with them yet again for the establishment of their first state-of-the-art paint shop facility with an annual capacity of 20,000 units and extendibility to 40,000 units. In keeping with Daimler's global norms and Mercedes' in-depth brief, Synefra enabled a fully automated Paint Shop which maintains the highest painting standards and is capable of water-based painting using highly sophisticated and environment-friendly painting technology.

The key highlights of this site are:

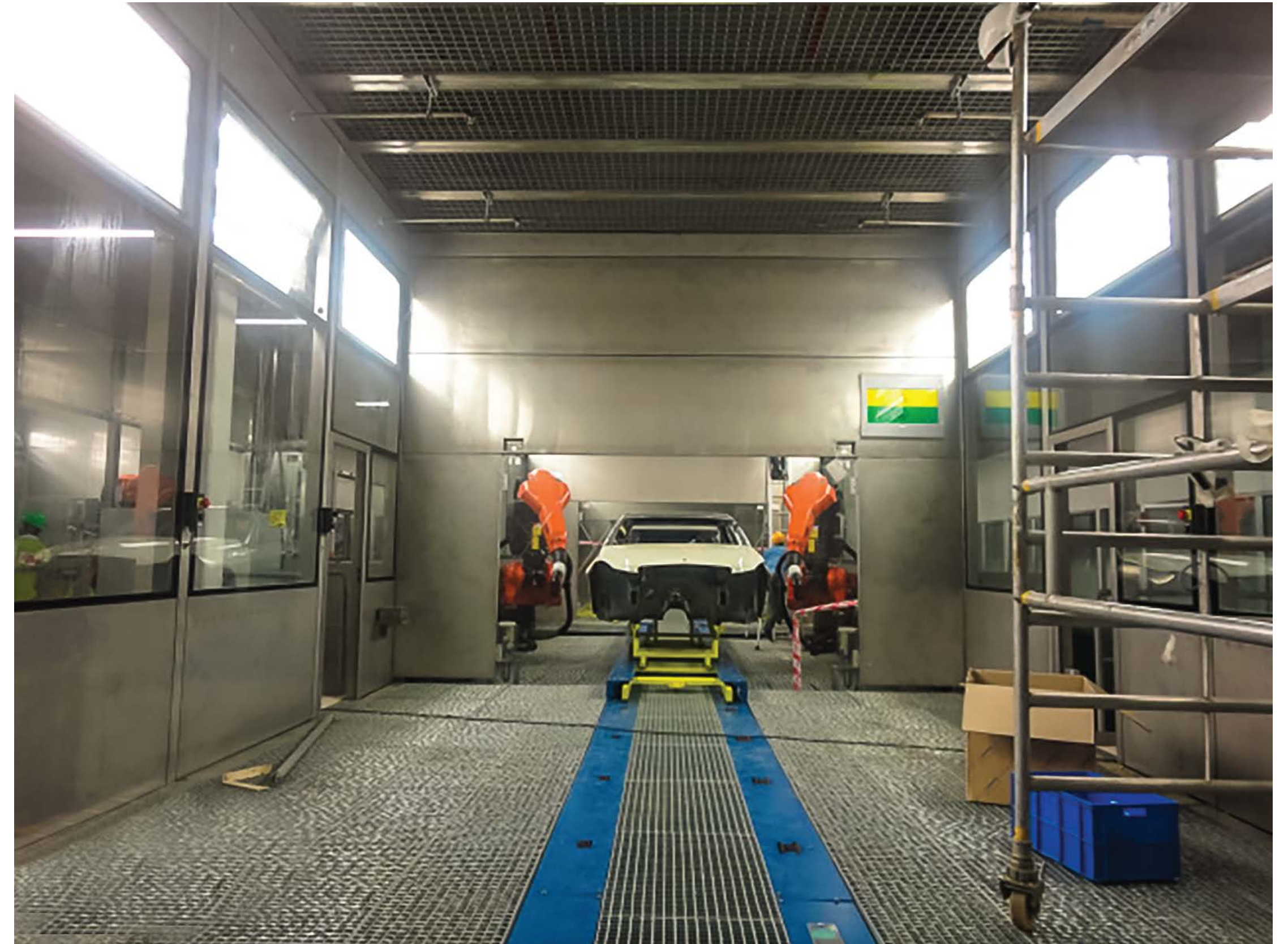
- The flow of cars with the latest communication systems for conveyors and tracking of each car at every stage with Radio Frequency Identification (RFID) systems.
- The entire setup is controlled by a central server and automated feedback loops, ensuring optimum settings as per processes and environmental conditions.

Today, a significant number of cars are produced at this location, owing to the agile and flexible nature of infrastructure that accommodates the growing demand experienced by one of the premier automotive companies in the country. Despite having the complete know-how of establishing a paint shop, one of the biggest challenges faced by Mercedes Benz's internal team was its newness to India and unfamiliarity with the demographics, climate, communication, and culture. Synefra perfectly filled this gap, offering its expertise in comprehensive program management along with validation of infrastructure services designs, proof checking of structural services, and value

engineering. Synefra's team of specialists served as an ideal partner in understanding the demographics and climate of the location and in adapting the processes to Indian standards. Synefra also pioneered the implementation of an advanced project planning software, Primavera, utilising the latest technology to enable a better perspective and greater degree of control on the project, especially in the generation of timely and precise management information reports. The ease with which the team synergised with the client resulted in much easier and faster tracking of design and technical aspects.

The other major areas where the presence of a Project Management Consultancy made a significant difference were:

- Changing the base specification to implement an energy efficient screw chiller system which accrued savings on CAPEX and OPEX.
- Optimising the transformer capacity through a detailed analysis of loading pattern.
- Proposing an alternative for Regenerative Thermal Oxidizer (RTO) with incinerator-cum-waste heat recovery boiler for energy recovery.
- Adding value through subject matrix expertise for paint processes.
- Preparing quality plans and validation documentation specifically for paint shop equipment and allied utilities.









Within 15 months of project initiation, the new manufacturing unit in India was ready to roll and became the first to locally produce the M-class after Tuscaloosa, USA. Today, in response to the demand from the Indian market, the German-headquartered company also produces S-class and other new models at its one-of-a-kind facility in Pune. Mercedes' long-standing association with Synefra is proof of the Project Management Consultancy's quality of work and professionalism. Post-completion of the paint shop project

in 2011, Mercedes issued repeat orders to set up their assembly line expansion projects. Over the last eight years of this synergetic association, Mercedes has highly commended the innovativeness of thought and knowledge that Synefra brings to any project, be it greenfield or brownfield. Synefra, for its part, has been constantly living up to its philosophy of sustainability by going out of the way to project the benefits of deviating from the conventional and investing in an alternative, sustainable solution.



MERCEDES BENZ

Sr. No.	Package	Contrator Name	Synefra Team	Client Project Team
Project: Mercedes Benz (India) Ltd				
1	Architect Engineers	Chougule Sant & Associates	Vivek Deshpande	Dinesh Advant
		Archivista Engineering Projects Pvt.Ltd.	Girish Gokhale	Makrand Dixit
2	General Contractor	Devi Construction Co. Pvt. Ltd.	Vinayak Malavade	Ganesh Dalvi
		Shapoorji Pallonji & Co. Ltd.	Manoj Suryawanshi	Avadhoot Deshmukh
3	Paint Shop Contractor	Eisenmann India	Sandeep Gosavi	
			Chetan Chindam	
			Jigar Parikh	
			Rohini Patil	
			Sachin Patil	
			Girish Tambolkar	
			Chandrakant Shelar	
			Vivek Patil	
			Devendra Patil	
			Avdhoot More	
			Vinayak Bandaru	

“Engineering infrastructures for auto-component manufacturing that can meet the current and accommodate the future demands.”

VOLKSWAGEN INDIA



84.



VOLKSWAGEN INDIA

Think Polo, Vento, Ameo or Beetle, and the name 'Volkswagen' flashes across your eyes. Headquartered in Pune, Volkswagen India redefines quality engineering, with five brands represented under its name: SKODA, Volkswagen, Porsche, Lamborghini and Audi. The Indian journey started with the launch of SKODA in 2001, followed by Volkswagen and Audi in 2007, and Lamborghini and Porsche in 2012. Over the years, Volkswagen has made its presence felt across various sectors including small cars, luxury vehicles, heavy vehicles and sports cars. For the manufacturing industry, the right facility to research, pilot and build a product is of supreme importance.

Infrastructure becomes one of the founding components of successful and seamless business operation. Building infrastructure that is sustainable, built to last for a hundred years, and futuristic enough to accommodate the growing demands of the future is critical. In the year 2011, Synefra directed the end-to-end construction of such a project for one of the world's leading automakers, Volkswagen. Being a brownfield project, it came with its own share of challenges that Synefra was able to deal with gracefully owing to its long experience of delivering projects in record time without any compromise on quality.

SEEKING OPPORTUNITIES IN CHALLENGES

Central Kitchen, Logistics Hall, CKD Warehouse, Sales and Service Training Centre

A QUICK LOOK

Duration: October 2011 – December 2012

Location: Chakan, Pune

Built Area: 23,234 sq.meters

"In the profound words of businessman and author Stephen Covey, accountability breeds response-ability. The ownership and accountability that Synefra's team demonstrated during the entire project doubled our confidence in completing the project on time, at optimum costs and with no compromise on quality," recalls Mr. Vineet Edathara – Head of Plant Engineering, Volkswagen, Pune. Volkswagen's manufacturing facility at Chakan in Pune district was constructed in 2010. Within just a few months of its functioning, Volkswagen realised the need to expand the facility to meet growing demands. Synefra took on the brownfield project that involved construction management of the Central Kitchen, Logistics Hall, CKD Warehouse, and Sales and Service Training Centre.

Mr. Vineet Edathara shares details of the infrastructure development, from planning to execution.

Interviewer: What led to Synefra coming on board as your trusted partner for the expansion of the project?

Mr. Vineet: It was just a straightforward decision. As a team of 10-12 planners, we manage most of the projects

in-house. However, in the case of larger and simultaneous expansions taking place across locations, we engage Project Management Consultancies at various levels of the construction hierarchy, on a need basis, who then serve as an extended arm of our own team. In this scenario, we were in need of a team who could take complete responsibility of coordinating the construction management including documentation, quality control and cost management. Through our peers we had learnt about Synefra and a few of the successful projects they had recently completed in the automobile industry. A basic round of interactions revealed that their thinking aligned with ours and they complied with standards and regulations encapsulated by our organisation. That pretty much sums up the reasons that led to this association.

Interviewer: Given that you have an internal team of specialists adept at project planning and management, what did Synefra's scope of work include?

Mr. Vineet: Planning is one thing but execution another.





For us, the Synefra team was our eyes and ears on the ground. They were constantly at the site ensuring compliance with time, quality and cost, and coordinating with the vendors and other stakeholders who were involved, reporting back to my team on a timely basis. In fact, Synefra's team and our planners gelled so well that the thin lines of potential miscommunication and discord that can break out between two different entities working together dissolved away.

Interviewer: In your opinion, how does the presence of a Project Management Consultancy enable infrastructural development?

Mr. Vineet: Project Managers, whether in-house or onboarded through a Project Management Consultancy, bring great value addition to any infrastructure. For instance, an architect who has designed the building may not be aware of the actual demography of the site. In such situations, it is a Project Manager who, with his 360° knowledge of infrastructure development, pitches in and communicates with the architect to create a design that is in tandem with the demography of the site. Project Managers become the overseers of the project,

ensuring aspects like time and cost are optimised and quality is maintained all along. Being cross-functional subject matter experts in this field, they have the capability to guide their client or senior leadership in any aspect of construction.

Interviewer: Did you face any significant challenges during the execution of this project? How were they tackled?

Mr. Vineet: I believe challenges broaden our ability to think and innovate. And when it comes to infrastructural development, the challenges are numerous. However, that said, most of them are dealt with and resolved at the grass-root level itself. In our case, the main challenge was to coordinate the expansion of the facility without disturbing ongoing operations. Shutting down the unit was never an option. Therefore, we were required to constantly re-think logistical plans and re-route interfaces in the parent facility.

The prolonged monsoon became yet another challenge as we had stringent timelines to meet. However, integration of multiple contractors and the synergy that the teams exhibited under the able collaboration of the

Synefra team led to timely completion of the project. From a technical aspect, one of the main achievements was fitting complex MEP services in the kitchen area; this was a major challenge given the limited ceiling space and precise placement required to coordinate with kitchen hoods and equipment.

Interviewer: What value addition did Synefra, as a Project Management Consultancy, bring to the table for this project?

Synefra, being the team on ground witnessing the actual execution, proposed ideas and suggestions that could reduce time, resources and cost expended on certain aspects of the construction. Among their key achievements were:

- Management of multiple stakeholders towards integrated deliverables
- Managing kitchen services within available space meeting the design intent
- Layout optimization for various services
- Alternative cost effective design solutions for MEP Services to reduce cost and procurement time



- Construction as per the design intent, meeting VW Global Standards
- Robust safety practices throughout the project

Interviewer: According to you, where do people feature in the planning process of any infrastructure?

Right from the beginning to the end! People are at the core of any planning, be it a manufacturing unit or a warehouse or an office. Any infrastructure needs to be people-friendly and has to comply with the basic standards established by the government and other expert functional bodies. From lighting, ventilation and cooling to fire exits and safety measures, everything is taken into consideration to ensure human safety and convenience.

At Volkswagen, we have an established code of construction that we follow for any infrastructure, this being our 90th!

Interviewer: According to you, where do people feature in the planning process of any infrastructure?

Being a brownfield project, this was only an extension to an existing parent facility. Hence, no new sustainability-related measure was taken. However, any infrastructure of Volkswagen is constructed keeping in mind a life of 100 years! We believe that no infrastructure that is constructed without considering human, economic, social and environment sustainability will survive the test of time. I must also mention that our long-living philosophy of 'Think Blue' is incorporated across all our locations and actions.

Interviewer: According to you, where do people feature in the planning process of any infrastructure?

The presence of a Project Management Consultancy enabled the completion of the project in a year's time, without extravagant delays or loss to existing production.





VOLKSWAGEN

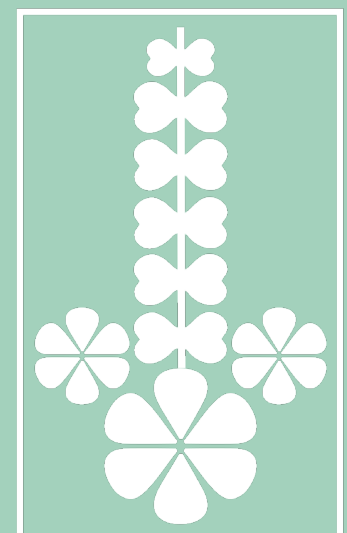
Sr. No.	Package	Contrator Name	Synefra Team	Client Project Team
Project: Volkswagen India				
1	Architect Engineers	IC-L	Vivek Deshpande	Dinesh Advant
2	Kitchen Consultants	Sodexo	Vinayak Malavade	Makrand Dixit
3	Electrical & HVAC	EMEA	Gangadhar Gunjal	Ganesh Dalvi
4	Civil & Structural	SJ Constructions	Rohit Khosare	Avadhoot Deshmukh
5	Electrical	Orbital Electromech	Vijay Ramamoorthy	
6	HVAC	Sterling & Wilson	Avdhoot More	
7	FAS & Fire Fighting	Tyco	Atul Parate	
			Amol Ajalkar	
			Sarang Rajapure	
			Michael Kharat	
			Amardeep Tiwari	
			Rajesh Swami	

“Creating infallible infrastructural environment for discovery and development of medical formulations in the Pharmaceutical industry.”

LUPIN PHARMACEUTICALS INC



96.



LUPIN PHARMACEUTICALS INC.

The fifth fastest growing pharma company in the U.S market, the second largest in the Indian arena, placed ninth in the Japanese market, and ranked fourth in South Africa, Lupin Pharmaceuticals is facilitating the fight against infectious and life-threatening diseases across the world through its range of affordable generic and branded formulations and APIs. Headquartered in Mumbai, the company has made significant contributions in the Cardiovascular, Diabetology, Asthma, Paediatrics, CNS, GI, Anti-Infective and NSAIDs therapy segments along with achieving global leadership positions in the Anti-TB and Cephalosporins segments. Lupin's world-class manufacturing facilities are benchmarked to international standards and approved by US FDA, UK MHRA, Japan's MHLW, TGA Australia, WHO, and the MCC South Africa. The

company is also extensively involved in research and development of new formulations with the potential of transforming the global healthcare scene. Continuous research and development is key to the sustenance of any pharmaceutical company. Infrastructure that supports the discovery and development of formulations, and at the same time, inspires the researchers, is integral to any R&D process. In the pharmaceutical industry, a precisely controlled environment is required to come up with the right formulations and avoid contamination or failure of any nature. Synefra's extensive expertise in various sectors and readiness to take on new challenges made it the obvious choice to build Lupin's iconic Research and Development Centre in Pune.

A MASTERPIECE IN THE PHARMACEUTICAL SECTOR

Research and Development Center

A QUICK LOOK

Duration: May 2012 – December 2016

Location: Lavale, Pune

Land Area: 24,700 sq. Metersed

Builtup Area: Approx 3,50,000 Sqft

For a company whose focus on research and development is evident in the increasing number of innovative solutions that have hit the market recently, building a landmark research centre was inevitable. The world-renowned facility ultimately took form in Lavale, Pune in 2016. Designed and earmarked for LEED Gold certified infrastructure, Lupin's global research centre is spread across 24,700 sq. m. and is an extension of the initially established R&D Centre. From the procurement of the interior fit-outs to the synchronised fountain at the entrance, every aspect of the infrastructure has been meticulously planned and developed keeping in mind the need, comfort and convenience of the numerous scientists who will occupy this space.

'Not just any other space but an iconic one' was Mr. Nilesh Gupta's singular vision for the Research & Development Center. The Managing Director envisioned a creation unlike any that existed; a space where every corner would exude the vision of Lupin Founder & Chairman, Dr. Desh Bandhu Gupta, and reflect the aspirations of every employee to innovate and create life-saving, life-changing drugs. A space that would inspire each and every one of its occupants to think bigger. A space that was uncompromised and built on superior quality and great taste. A space that would receive equal acclaim from experts and masses alike.





“

Synefra had the privilege of being part of this prestigious project as end-to-end Project Managers. Though this was our first venture into the pharmaceutical space, the Lupin team entrusted us with the task on the basis of the expertise we had exhibited in MEP, the state-of-art interior fitments we had procured and installed for Suzlon One Earth, and our streamlined internal processes.

”

- Mr. Vinayak Manager , Project Manager Director



LUPIN'S ICONIC INFRASTRUCTURE

Perched on the lush hills of Lavale on the outskirts of Pune, Lupin's trendsetting R&D Centre has a personality of its own. Surrounded by medicinal shrubs and trees, the campus houses 1,400 scientists working on crucial formulas that can become life-saving drugs tomorrow.

SUSTAINABILITY QUOTIENT

True to the words of Mike Parker, former Assistant US Secretary of the Army for Civil Works, an infrastructure needs to be carefully invested in, so that one doesn't end up paying for the compromises made sooner or later. And this thoughtful investment in terms of ideas and innovations is the foundation for an infrastructure that will survive the test of time and stay in complete equilibrium with nature, people and the economy.

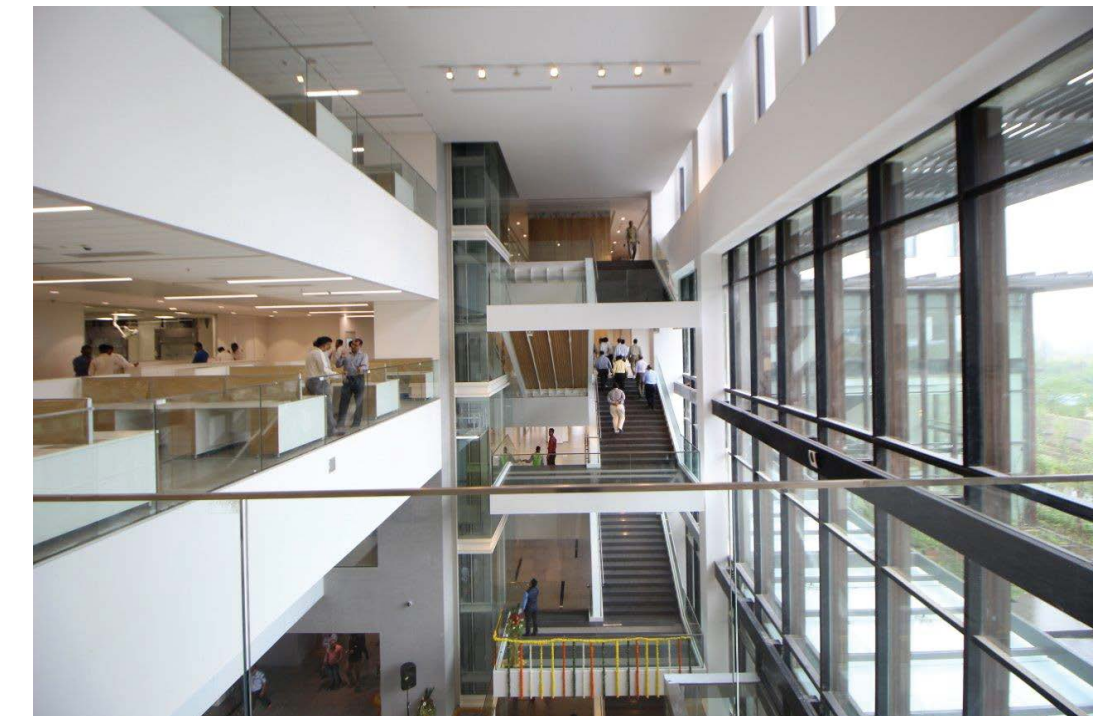
Lupin's R&D Centre strikes a perfect balance between aesthetics and sustainability, for the building is as appealing to the eye as it is in congruence with the nature and life forms found around it. The advanced Zero Liquid Discharge System ensures all waste water produced at site is purified and reused, thereby leaving no discharge outside that can potentially harm the environment. Similarly, the solid waste produced onsite is also sustainably managed by the deployment of waste incinerators that prevent the release of hazardous compounds into the air. The Effluent Treatment Plant complies with pharmaceutical standards.

Innovations in HVAC, use of energy wheels and energy-efficient glazing façade, and heat pipe installations drastically reduce the energy load. The use of LED lights and maintenance-free solar street lights are an add-on to the critical investments made in energy-efficient equipment.

LIVEABILITY FACTOR

For a Research & Development Centre where scientists are continually involved in creating new formulations, every aspect of the design and architecture needs to provide an environment conducive to innovation. Efforts have been taken to ensure that the synchronised fountain strategically positioned at the entrance area is not only visually appealing but also soothes the mind with its rhythmic rise and fall. The simple but striking design and high-end interior fit-outs add to the aura of the place, encouraging clear and focused thinking with minimum distractions. Lighting, furniture and other fit-outs have been procured from across the globe, through various vendors after careful consideration of the designs and features. The white and brown colour scheme of the interior is also occasionally punctuated with the raw, rugged look of brick and cement, characterising a dynamic way of thinking. Breakout areas are located outside the building, in a beautiful area landscaped with medicinal plants.

Measures have been taken to provide a safe workplace for employees who often have to work with hazardous chemicals. Apart from other infrastructure services, appealing landscape, minute detailing of services designs involving classified clean rooms, air pressure, temperature and relative humidity controls, management of toxic fumes extraction, stable electrical power, compressed air and various gases has been ensured. As of December 2016, the infrastructure has recorded five million safe man hours.



SYNEFRA
ADDS VALUE

As the famous saying goes, 'Any task is a success when each of us thinks, behaves and responds like an owner'. This is very true of Synefra's work ethics. Synefra has demonstrated incredible cross-functional expertise in every project undertaken and a large part of the company's successes can be credited to its unshakeable work ethics. As a Project Management Consultancy coordinating a visionary project of this stature, Synefra confidently shouldered the responsibility of transforming Mr. Nilesh Gupta's vision into reality. By conducting regular studies and analysis of every aspect of the construction, Synefra was able to successfully maintain the fine balance of nature

with infrastructure, cost with quality, work with workforce, and time with the scope of the project. It strategised and managed delivery of over 130 packages, and their integration enabled savings through the direct procurement strategy. At times, going a step ahead of its contractual obligation, Synefra strived to provide knowledge-based solutions throughout the infrastructure development. Among the cost-saving suggestions made at the excavation stage were reducing the working space for each lift considering substrate strata, and providing an alternative method to discharge the rain water accumulated in the excavated land.

Regularly assessing the work in progress enabled Synefra to make appropriate revisions to the plans, which helped optimise the cost, time and labour-hours.

- A one-sided PCC wall was built in the basement for shuttering; this reduced labour dependency and saved time.
- The UPS configuration was optimised to match the actual working requirement.
- Design upgrades and testing modalities were proposed to ensure generators sustained 100% load conditions.
- The switch-gear designs were optimised, saving approximately 10% on the cost.
- Various alternatives with thorough technical analysis for selecting the right chillers were suggested, finally providing the right type and mix of chillers in line with the operational pattern requirements. This facilitated substantial CAPEX and OPEX savings.
- Optimised layouts were ensured for ETP, RO, ZLD and boiler systems.
- Energy efficiency was achieved through the use of VFD-based Pumps, AHUs and Chillers

Synefra also effectively resolved complex services clashes to fit within the available constrained space. It coordinated the requisite documentation with all stakeholders for the LEED Certification application throughout the entire project cycle. Synefra was also actively involved in testing, adjusting, balancing and troubleshooting, leading to the smooth close out and transition for end user occupancy.





In the words of Mr. Sudhir Jamadagni – Sr. Vice President , Lupin Limited,

“Lupin's Research & Development Centre has by far been the most challenging and at the same time, most fulfilling project we have worked on. It was an amazing journey in terms of transforming a dream of creating an iconic infrastructure into reality. We experience a true sense of accomplishment every time an employee notices and appreciates the minute detailing that has been taken care of to ensure their safety and convenience.

”



“

Synefra as the PMC of Lupin R&D Centre, with an experienced workforce, coordinated with VA over the project duration of three years. As per the client's brief, the structure was to exhibit an 'iconic' flavour in terms of architecture and design. In addition to the design intent and budgeted cost, Synefra's focus on value engineering proved to be an advantage for the project. The team showed full-fledged involvement and supported the client on a continuous basis, thereby, achieving superlative quality and intelligent costing. They suggested and implemented the best industry practices for execution and avoided casualties from scratch to hatch. Also, the documentation methodology followed helped the Lupin FM team comprehend the project during handover stages. On the whole, clash-free services, timely completion and client satisfaction are major aspects achieved with ease and confidence by Synefra in conflation with VA, other consultants, contractors and vendors.

”

- Venkataramanan Associates, Chief Architects



LUPIN

Sr. No.	Package	Contrator Name	Synefra Team	Client Project Team
Project: Lupin Pharaceuticals R&D Centre				
1	Architect Engineers	Venkataramanan Associates	Vinayak Malavade	Sudheendra Jamadagni
2	Structural Consultant	Sterling Engineers	Jitesh Donga	Nilaysh Pimpale
3	Façade Consultant	BES	Manoj Suryawanshi	Prashant Kulkarni
4	Landscape Consultant	SHMA	Rohini Patil	Avinash khodwe
5	Excavation	Sumedha Infra Projects	Atul Parate	Avinash Gharal
6	Civil & Structural	Devi Construction Co. Pvt. Ltd.	Amol Waychal	
7	Interior	Swati Interiors	Pranav Patil	
8	Façade	Glass Wall Systems	Amit Acharya	
9	HVAC	Suvidha Engineers	Tanmayee Kulkarni	
10	Electrical	Orbittal Electromech	Abhishek Chaudhary	
11	Fire Fighting	Metec	Suhas Owhal	
12	PHE	Laxmi Sanitary Engineers	Vijay Ramamoorthy	
13	Gas Systems	Excel Gas	Chandrakant Yewale	
14	Landscape	Grotech Landscape Developers		
15	IBMS	Honeywell Automation		
16	Express Feeder works	Aditi Electricals		

“Partnering the development of infrastructural solutions that create a benchmark across industries and world-wide.”

GENERAL ELECTRIC INDIA



112.



GENERAL ELECTRIC INDIA.

A Fortune 500 company, General Electric's (GE) presence in India dates back to as early as 1902 when they set up their first hydropower plant in the country. Today GE has over 22,000 employees working out of its Indian units, developing new technologies and innovations for India and the rest of the world. GE operates in India through joint ventures, wholly-owned subsidiaries, strategic alliances, or business development and customer support services. It serves many major sectors including transportation, energy, oil & gas, healthcare, aviation and financial services.

Based on Synefra's expertise, technological know-how, and willingness to take ownership of end-to-end project management, General Electric India commissioned the PMC to collaboratively execute a one-of-its-kind multi-modal facility in Chakan, and later, the brownfield expansion of its Research and Development Centre in Bengaluru.

MULTI-PURPOSE APPROACH

GE MULTI-MODAL FACILITY

A QUICK LOOK

Duration: April 2012 - December 2014

Location: Chakan, Pune

Land Area: 20,000 sq. ft

GE and Synefra's strong alliance saw the birth of a first-of-its-kind manufacturing unit in India with the capability to produce a range of diversified products for sectors like energy, aviation, oil & gas and transportation. Founded on complex technological functioning, it would be among the few flexible factories in the country to manufacture components for multiple businesses using shared infrastructure, equipment and people. Addressing the media after the inauguration of the facility by the Honourable Prime Minister Narendra Modi in 2015, Mr. Banmali Agrawala, President and CEO of GE South Asia, said, *"It will give us a chance to invest in the right tools, processes and training, keep our machines utilised, and develop new products faster and cheaper. It will also give us a chance to experiment and try new things."*

As the Project Management Consultancy leading a visionary project of this scale, Synefra had a high-stake role to play. Effectively managing the end-to-end project management services, adhering to GE, FM Global and LEED standards, and achieving time, cost and quality parameters were the focal points of Synefra's responsibilities. Along with its day-to-day tasks of vendor management, quality inspections, monitoring and tracking progress, Synefra went out of its way to

make valuable contributions for localisation of the facility, to prevent cost overruns and avoid delays. Synefra spearheaded budget estimates with various value engineering proposals to curtail the cost of the project. Savings were achieved by introducing an interjected retaining wall instead of the conventional RCC design. By optimising various land levelling options to achieve minimum cutting and filling design, further cost savings could be achieved. Discussions conducted with MSECL eventually led to the removal of a substation from GE's premises, which significantly reduced the double circuit line work from 3 kilometres to 1.5 kilometres, once again enabling substantial cost savings. Conversion of the STP & ETP plant area from RCC roof to PEB also significantly saved construction time. On the insistence of Synefra, the specifications for the DG Sets were strictly adhered to with no scope for deviation. Synefra spearheaded the design approval and testing process to ensure that supplied DGs strictly met 100% block loading test conditions. Synefra worked closely with GE's U.S. Team to install a lighting control design that best suited the location. It led design meetings and proposed options after a thorough techno-commercial comparison that enabled GE's overseas team to make the right decision.



Synefra closely monitored the design and construction activities for the fire-fighting system to meet FM Global standards. It also actively supported the GE team in seeking all requisite statutory approvals. In keeping with its sustainability philosophy, Synefra suggested optimisation of the storm water line by reducing the chambers, corrected the internal road levels to match the site conditions, and effectively used black cotton soil in blending and landscaping. When commencement of construction during the monsoon posed a challenge for the erection of PEB structures, Synefra adopted unique approaches to prevent the delays in installation. GE's multi-modal manufacturing facility is proof of Synefra's commitment to successfully completing projects on time by proposing value additions that enable clients to reduce cost, improve quality, and save time.





“

We were commissioned by GE to design what would be a world class facility. At the same time, Synefra was appointed as the PMC to coordinate and manage the design process, validate designs and coordinate with various stakeholders. During our interaction, we found the Synefra team to be motivated, dedicated and well-versed in the different trades of infrastructure development. Synefra truly anchored the project by coordinating with the GE team and various other vendors to ensure timely completion of the project to the client's satisfaction.

”

- C R Narayana Rao (Consultants) Pvt Limited, Chennai

INFRASTRUCTURE THAT INSPIRES

JFWTC (JOHN F. WELCH TECHNOLOGY CENTRE) & GE HEALTHCARE

A QUICK LOOK

Duration: May 2012 – December 2016
Location: Lavale, Pune
Land Area: 24,700 sq. Metersed
Builtup Area: Approx 3,50,000 Sqft

Independent studies conducted across industries and countries reveal that most people spend at least 50% of their lives in indoor environments and nearly 90,000 hours at their workplace; this directly influences their behaviour, actions, abilities and performance. This correlation between the physical work environment and the productivity of an employee emphasises the need to create conducive environments that inspire performance and innovative thinking. As opposed to manufacturing units that are primarily functionality-focused, research and development centres are much more occupant-focused. This allows employees to work effectively in a space that facilitates easy

navigation, uplifts the mood and triggers productivity. John F Welch Research & Development Centre in Bengaluru is GE's first largest multi-disciplinary R&D centre to be located outside the U.S.A. Over 5,000 scientists and engineers work here, testing and building the latest technologies and innovations in the fields of energy, transportation, aviation, healthcare, consumer and industrial, finance and entertainment. Mr. Vinayak Malavade, the Project Lead from Synefra, shares his experience of working on a project whose end objective greatly differed from the manufacturing projects on which Synefra had built its reputation in.

Interviewer: Please give us an overview of the project.

Mr. Vinayak Malavade: GE's R&D Center in Whitefield, Bengaluru was established in the year 2000, and in 2014, they considered a revamp of the facility which would be flexible enough to suit the ever-evolving research and development needs. We had just successfully completed the project management of their multi-modal facility at Chakan, Pune and had the privilege of working on this brownfield project as well.

Interviewer: What was the scope of work for this brownfield project?

Mr. Vinayak Malavade: We were responsible for providing Project Management Consultancy services for civil, structural, architectural, labs, interior fit out and electro-mechanical services. We worked as the client representative, overseeing coordination with end users, engaging in tender management, deploying consultants, managing design, planning and scheduling execution, and ensuring statutory & and EHS compliances along with technical and commercial closure.

Interviewer: How different was this project from infrastructure management for manufacturing units?

Mr. Vinayak Malavade: At that point in time, we had an established reputation in the manufacturing sector, be it for automobiles, pharmaceuticals or wind energy; we had also successfully managed office spaces and R&D centres, delivering a state-of-the-art facility, One Earth, for Suzlon. However, the prime difference was the sensitivity surrounding the work environment we were to create. Here, we were preparing to set up workspaces for a group of

individuals who were going to discover and invent the next big technology that would transform the world. Hence, understanding their requirements deeply and accurately and delivering an infrastructure that not only spelt convenience but was also inspiring for them was very crucial. Like other infrastructure projects, here too, the entire process of project delivery demanded a methodical approach, encompassing execution of various operating processes by multiple stakeholders. Careful coordination to ensure completion within timelines under such circumstances was of absolute necessity.



Interviewer: Was it a challenge to execute the project without disturbing existing operations?

Mr. Vinayak Malavade: To be honest, no infrastructure project is ever without challenges. However, challenges are also most often situations that require innovative solutions. For instance, our biggest challenge was to manage work without disturbing the existing facilities' processes and to adhere stringently to Environmental Health and Safety (EHS) norms. Working our way around it by effectively coordinating with every stakeholder required innovative thinking and synergetic working, which was indeed challenging but in the end satisfying too.

Interviewer: What value additions did Synefra bring to the project?

Mr. Vinayak Malavade: In keeping with our philosophy of being the client's knowledge partners in construction management, we made it a point to establish and implement stringent safety standards and standardised specifications for all its services in line with GE's requirements.







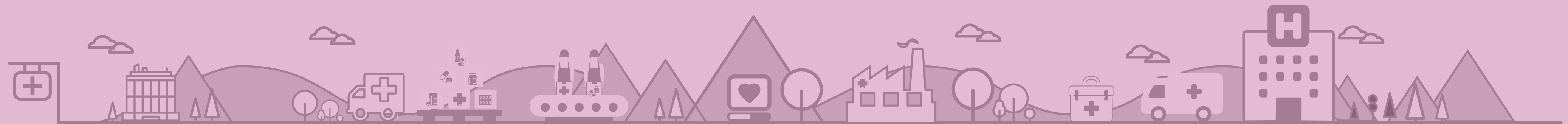
GENERAL ELECTRIC

Sr. No.	Package	Contrator Name	Synefra Team	Client Project Team
Project: GE Multimodal Facility				
1	Architect Engineers	C.R. Narayana Rao	Vivek Deshpande	Srikant Srinivasan
2	General Contractor	Shapoorji Pallonji & Co. Ltd.	Sudhir Ghalsasi	Makrand Dixit
3	PEB	TATA Blue Scope	Vinayak Malavade	P. Einstein
4	Landscape	Grotech Landscape Developers	Manoj Suryawanshi	Hariharan
5	Express Feeder works	Orbittal Electromech	Rohini Patil	
			Chandrakant Shelar	
			Ketan Parate	
			Mathew Thomas	
			Atul Parate	
			Amol Waychal	
			Amol Ajalkar	
			Ambalika Pradhan	
			Abhijit Shende	
			Devendra Patil	
			Abhijit Gawarale	
			Rajesh Swami	

Sr. No.	Synefra Team
Project: GE India, R&D Centre	
1	Lingaraj PB
2	Vinayak Malavade
3	Shanavas S
4	Muthu Ayyanar
5	Muithunraj N
6	Sharana Gowda
7	Prasad Babu
8	Srinivasa Mannira
9	Nagangouda Patil
10	Abhishek Chaudhary

“Pioneering cost-saving infrastructural strategies through innovative and environment-friendly technological solutions across sectors”

SERUM INSTITUTE
OF INDIA LTD.



128.



SERUM INSTITUTE OF INDIA LTD.

A leading manufacturer of immune biological drugs including vaccines, Serum Institute of India has grown to become the world's largest vaccine producer by the number of doses produced and sold globally. Over time it has established itself as a reliable producer of high-quality vaccines and biologicals internationally. Estimates reveal that two of every three children immunised world-over are vaccinated with a vaccine produced at the Serum Institute. With a reach spreading across 140 countries, this Indian pharmaceutical company is a trusted supplier to global organisations including WHO, UNICEF and PAHO.

At manufacturing and production units, regular due diligence and optimisation checks are ideal to ensure that the site is functioning at its optimal best, especially for manufacturers who deal in critical products like medicines and vaccines. On Serum's recommendation, Synefra conducted one such infrastructure optimisation check at their manufacturing unit in Hadapsar, Pune that led to a revolutionary change in its production process, the cost and functional benefits of which resonated across the organisation.

LEVERAGING TECHNOLOGY FOR SUSTAINABILITY

Due Diligence and Utility Upgrade

A QUICK LOOK

Duration: November 2010 – November 2011

Location: Hadapsar, Pune

Land Area: 5 Acres

One visit to the newly built Suzlon One Earth campus in Pune and Mr. Cyrus Poonawalla, chairman of the Poonawalla Group, was convinced that the Synefra team had the potential to effect a promising transformation at Serum Institute of India's manufacturing unit, also located in Pune. True to his belief, Synefra spearheaded a vital change in the root functioning of the production unit, which resulted in prodigious cost savings, the shortest return on investment and immense ecological benefits, the merits of which are being reaped till date. Serum Institute reached out to Synefra at a time when no expansion plans were on the cards. However, the company wanted to tap Synefra's expertise in analysing and recommending improvements in the existing operations, including electrical, HVAC, waste water management, rain water harvesting and solid waste management. Under the guidance of Mr. Vivek Deshpande, Synefra spent the next twelve months jointly studying the systems and procedures with the end objective of recommending means for resource optimisation (energy and water), and suggesting practices for managing waste, thus reducing total life cycle costs. For any pharmaceutical company, one of the major manufacturing dependencies is on heat produced from high-purity steam. The production of steam is achieved at the manufacturing unit using boilers usually fuelled by oil or gas. For numerous reasons including environment-friendliness, ease of storage, fuel cleanliness and compactness of installation, Natural Gas

is the most suitable fuel after Light Diesel Oil (LDO). However, due to limited availability and high cost, most companies turn to Furnace Oil (FO) as the next best alternative to Natural Gas and LDO. FO has its own share of disadvantages; emission of air pollutants during burning, loss of fuel due to inadequate pre-heating and spillage, and the mounting costs soon became a growing concern for pharmaceutical companies across the globe. It was in the midst of this ongoing crisis in the pharmaceutical industry that Serum Institute reached out to Synefra. The pharmaceutical giant's consumption of FO was at a record high, using XX to produce 8.5 tonnes of steam every hour; Synefra's analysis uncovered FO-based boilers as an area of major concern that needed immediate attention, not just from a sustainability standpoint but also from a cost perspective. However, what came as a surprise for Serum's top executives was the strategic way in which the Synefra team went beyond its call of duty to turn this challenge into an opportunity. Numerous studies and hours of research later the team piloted a substitute for FO - briquettes.

A briquette is a biomass substitute to fossil fuel made from agricultural waste, especially sugarcane. This renewable source of energy, in contradiction to popular belief regarding solid fuel, produces less than 3% ash and is environment-friendly. It is also easily available due to the Serum Institute manufacturing unit's proximity to sugarcane plantations.

“

Our study of the boilers at Serum revealed promising cost-saving opportunities. However, proposing an alternative that would be cost effective and at the same time sustainable and environment-friendly was a challenge. After considerable study of substitute materials at our end, we reached out to Thermax R&D with whom we jointly analysed and piloted the possibility of using briquette instead of furnace oil. Our attempts succeeded and the results are for all to see at Serum.

”

- Vivek Deshpande

Based on the proposal from Synefra, Serum Institute's traditional FO-based boilers were replaced with briquette-powered boilers that were specially designed by Thermax on Synefra's recommendation. The results of this pivotal change have been phenomenal.

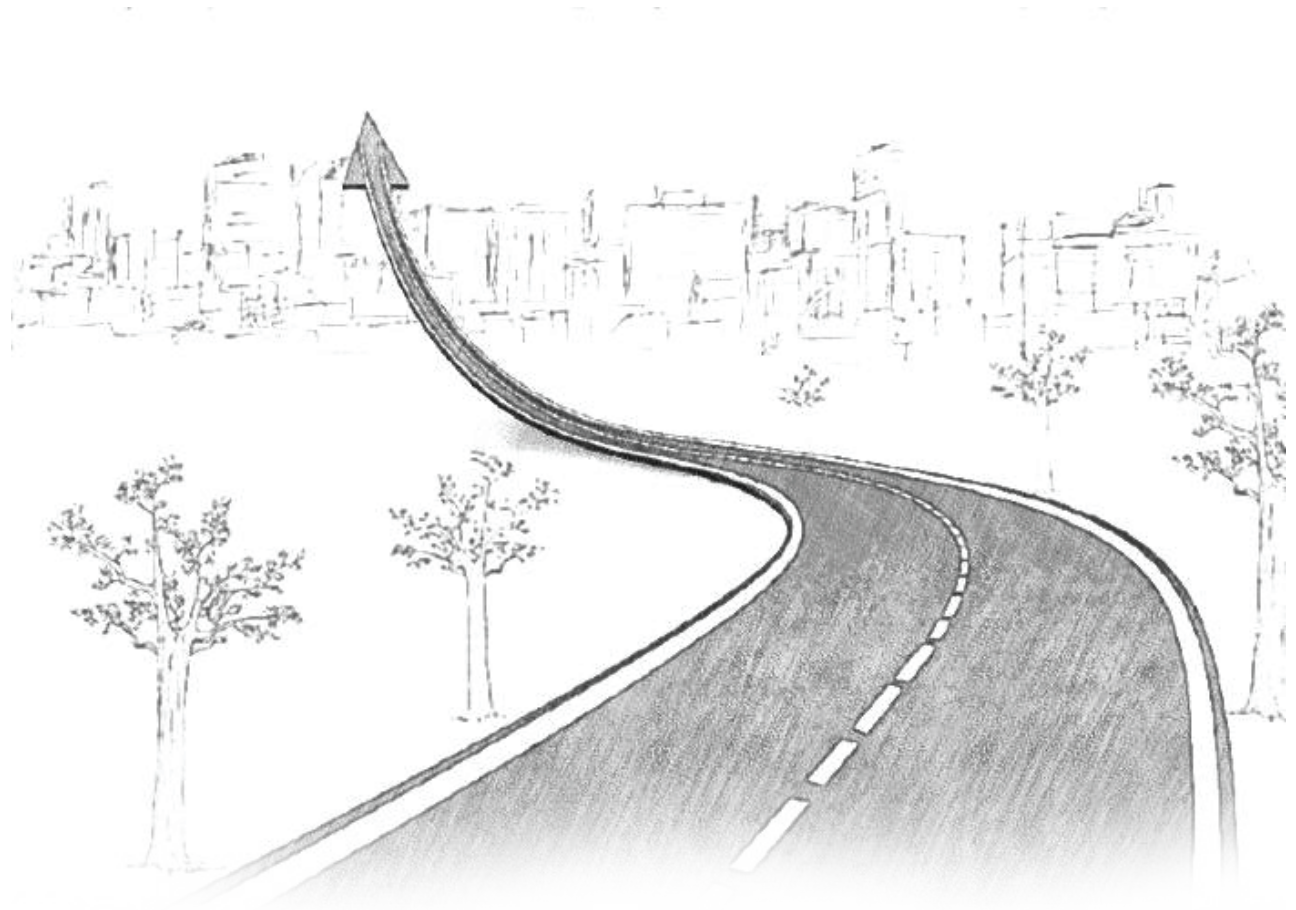
- Mechanized firing coupled with heat recovery system gives efficiency at par with oil/gas-based boilers.
- The capital cost for steam production dropped substantially, a near one-third reduction in the operating cost.
- Return on investment was achieved in no more than 9 months of installing the boiler and the pollution control system.
- Use of waste briquettes qualified us for Carbon Credits.
- Pollution Control Board (PCB) accepted 150 mg/m3 level of Suspended Particulate Matter (SPM) was achieved with the use of briquette as the fuel.
- Unlike FO, briquette neither produces sulphur dioxide nor spills due to its solid nature, making it environment-friendly and ensuring a clean boiler room.
- Synefra also gave recommendations on resource optimisation (energy and water) and suggested practices for managing waste.



Sr. No.	Synefra Team
1	Vivek Deshpande
2	Vinayak Malavade
3	Rohini Patil

THE ROADMAP FOR FUTURE

Synefra's journey has been a momentous one, from its humble beginnings in 1998 to becoming a globally-renowned Project Management Consultancy today. With over 170 successfully implemented projects across the globe, the organisation is set to conquer newer territories of knowledge and innovation. Evolving from a single-project approach, Synefra is scaling its expertise and presence to provide end-to-end infrastructural solutions, assuming the role of program manager for clients.



In this avatar, Synefra enables clients to:

- Systemise and manage end-to-end infrastructural needs
- Improve annual financial management
- Focus on critical business processes while the PMC manages infrastructural requirements

Synefra believes that constant learning has been at the foundation of its growth journey. It will continue to successfully partner its clients through its undeterred focus on enhancing the cost-quality, time-scope, work-human and infrastructure-environment balance.



2006 Annual Meet



2007 Suzlon Award



2009 Mission Now



2009 Team Workshop L&D Initiatives



2006 Annual Meet



2009 Annual Meet



2009 Skill Assessment Workshop



2008 Project Team 2008



2010 Vibrant Gujarat Participation



2012 Symphony



2012 Symphony



2010 Stall at Green Building Congress



2011 JR Tanti at Green Building Congress



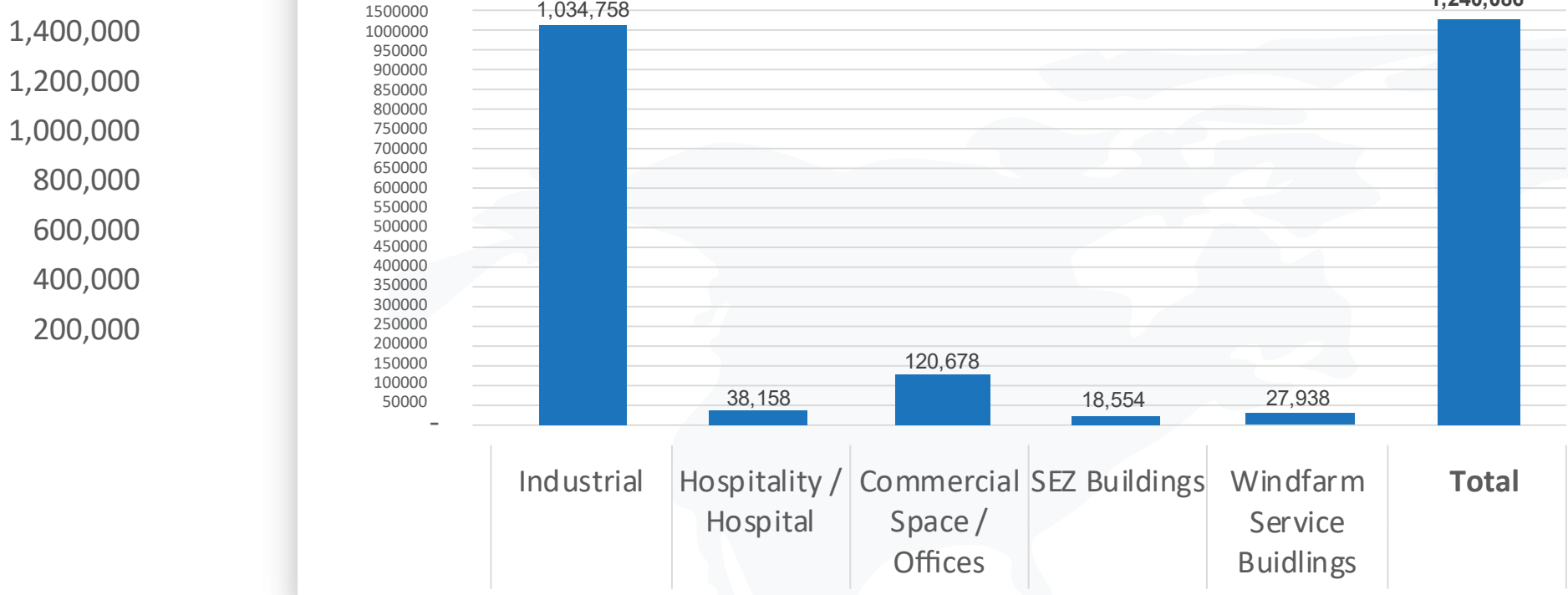
2012 Symphony

SYNEFRA'S JOURNEY

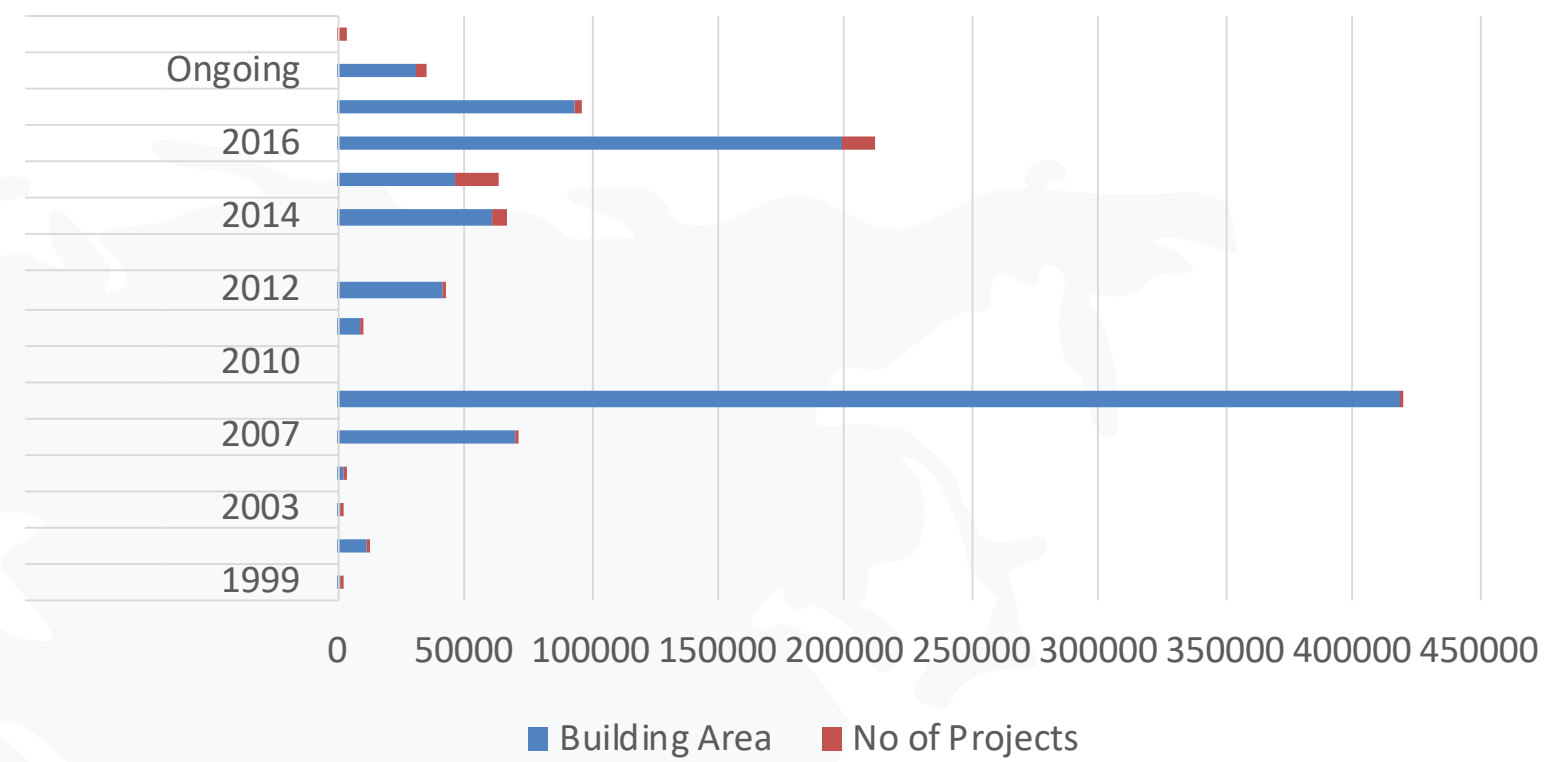
Sr. No.	Company	Sub No.	Project	Area	City	State	Type of Project	Total Investment Handled (In Rs. Crore)	Area in Sqm		Duration	
									Land	B/UP	Start Date	Completion Date
Andhra Pradesh												
1.	Xander Investment Management Pte. Ltd.	7.1	Technical Due-Diligence for IT Park	Gachibowli	Hyderabad	Andhra Pradesh	Commercial Office	10.06	NA	74,349	Nov-16	Feb-16
2.	Suzlon Energy Ltd	60	SEL Offices, Kamala Tower	Rajbhavan Road	Hyderabad	Andhra Pradesh	Office Premises	32.85	NA	382	Mar-07	Jul-07
		96	SEEPL Office, Subhan Shri	Subhan Shri	Subhan Shri	Andhra Pradesh	Office Premises	47.15	NA	310	Jan-07	Mar-07
		160	RBU	Village Ipperu	Anantapur	Andhra Pradesh	Industrial Greenfield	68.22	29.32	33166	Jan-16	Feb-17
		166	OMS @ Beluguppa	Village Beluguppa	Anantapur	Andhra Pradesh	Office & GH Greenfield	2.84	3393	1068	Aug-16	WIP
		167	OMS @ Amidyala	Village Amidyala	Anantapur	Andhra Pradesh	Office Greenfield	1.56	8461	470	Aug-16	WIP
		168	OMS @ Vajrakarur	Village Vajrakarur	Anantapur	Andhra Pradesh	Office & GH Greenfield	2.97	5116	1087	Aug-16	WIP
		169	OMS @ Ellutla	Village Ellutala	Anantapur	Andhra Pradesh	Office Greenfield	0.91	5044	118	Dec-16	WIP
Daman & Diu (UT)												
1.	Suzlon Energy Ltd	1	Upgradation of Hotel, Pensao Beira Mar	Diu	Diu (U.T.)	Daman & Diu (U.T.)	Hotel Premises	25.00	750	558	Jan-99	Apr-99
		2	Expansion of Unit 1	Diu	Diu (U.T.)	Daman & Diu (U.T.)	Industrial - Greenfield	12.75	2,820	1,128	Apr-99	Jun-99
		3	Wind Turbine Generator Manufacturing Facility Unit II	Dabhel	Daman (U.T.)	Daman & Diu (U.T.)	Industrial - Greenfield	160.00	6,400	2,880	Jul-99	May-00
		13	Rotor Blade Facility, Unit III	Bhimpore	Daman (U.T.)	Daman & Diu (U.T.)	Industrial - Greenfield	672.57	16,188	7,230	Nov-00	Feb-01
		33	WTG Unit 5	Daman	Daman	Daman & Diu (U.T.)	Industrial - Green Field	1,101.78	29,713	10,300	Jul-03	May-04
		45	Control Panel Unit - Refurbishment	Daman	Daman	Daman & Diu (U.T.)	Industrial - Green Field	20.03	1,800	2,500	Oct-05	Mar-06
		46	Nacelle Cover Unit, Carrier	Daman]	Daman	Daman & Diu (U.T.)	Industrial - Green Field	1,216.00	20,780	8,025	Sep-05	Mar-06
		47	Ware House	Daman	Daman	Daman & Diu (U.T.)	Industrial - Green Field	90.51	2,112	1,320	Aug-05	May-06
		83	Warehouse Building	Dabhel	Daman (U.T)	Daman & Diu (U.T.)	Industrial - Green Field	677.34	12,575	4,900	Jan-06	Sep-06
Maharashtra												
1	Mercedes Benz India Ltd	1.1	City Bus Assembly Plant	Chakan	Pune	Maharashtra	Industrial - Greenfield	600.00	14,164	9,294	Jul-10	Feb-11
		1.2	Paint Shop for Car Plant	Chakan	Pune	Maharashtra	Industrial - Greenfield	200.00	12,141	18,587	Apr-11	Jul-12
		1.3	Q3 Block Allied Structures	Chakan	Pune	Maharashtra	Industrial - Greenfield	160.00	40,469	46,468	Feb-12	Jun-15
		1.4	Q1 Body Shop Expansion	Chakan	Pune	Maharashtra	Industrial - Brownfield	40.00	NA	11,000	Oct-14	Mar-16
2	General Electric India	2.1	GE Industries Pvt. Ltd. - Multimodal Manufacturing Facility for wind nacelle & calibration equipments	Chakan	Pune	Maharashtra	Industrial - Greenfield	300.00	271,140	60,955	Apr-12	Dec-14
3	Alfa Laval (India) Ltd.	3.1	Phase 0 - Land Levelling & Compound Wall Package	Shirwal	Pune	Maharashtra	Industrial Infrastructure	20.00	190,202		Aug-13	Dec-14
		3.2	Phase 1 - Manufacturing facility for Engineering Products	Shirwal	Pune	Maharashtra	Industrial - Greenfield	190,202		39,963	Jul-15	Aug-16
4	Serum Institute of India Pvt Ltd	4.1	Due - Diligence & Utility Upgradation	Hadapsar	Pune	Maharashtra	Industrial Infrastructure	12.00	NA	NA	Nov-10	Sep-15
5	Volkswagen India	5.1	Central Kitchen, Logistic Hall Warehouse, Sales & Service Training Center	Chakan	Pune	Maharashtra	Industrial - Greenfield	50.00	NA	23,234	Oct-11	Dec-12
6	Lupin Ltd.	6.1	Pharma Research & Development Park	Lavale	Pune	Maharashtra	R&D Center - Greenfield	300.00	40,469	27,881	May-12	Ongoing
Delhi												
1	Suzlon Energy Ltd	37	SEL Office, Defence Colony	Defence Colony	New Delhi	Delhi	Office Premises	436.50	280	502	May-03	Jan-04
Gujarat												
1	Suzlon Energy Ltd	4	Interior work of Suzlon House, Regd Office	Navarangpura	Ahmedabad	Gujarat	Office Premises	250.00	NA	1,394	Nov-99	Jul-00
		40	Tubular Tower Unit	Gandhidham	Kutch	Gujarat	Industrial - Green Field	2,303.00	144,550	17,570	Jun-04	Mar-05
		50	Rotor Blade Unit	Bhuj	Kutch	Gujarat	Industrial - Green Field	1,854.00	88,730	14,100	Jun-05	Mar-05
		52	Tooling Unit	Por	Vadodara	Gujarat	Industrial - Green Field	227.63	370,550	26,120	Jul-05	Jun-06
		53	Glass Fiber Unit	Gandhidham	Kutch	Gujarat	Industrial - Green Field	664.74	37,030	5,612	Jul-05	Mar-06
		54	Transformer Unit	Hallol	Vadodara	Gujarat	Industrial - Green Field	129.67	8,771	3,500	Nov-05	Feb-06
		87	Office	Race Course	Rajkot	Gujarat	Office Premises	149.71	NA	74	Apr-06	Jul-06
		92	SE Forge Office, Sai Avenue	Karelibaug	Vadodara	Gujarat	Office Premises	23.00	NA	134	Oct-06	Jan-07
		93	SIL Office, Sai Avenue	Karelibaug	Vadodara	Gujarat	Office Premises	15.00	NA	78	Oct-06	Jan-07
		105	Medi CMS	Lamba	Lamba	Gujarat	Site Infrastructure	35.00	625	170	Nov-05	Feb-06
		106	Mini CMS	Changdai	Changdai	Gujarat	Site Infrastructure	25.00	150	140	Oct-05	Dec-05
		107	Mini CMS	Venku	Venku	Gujarat	Site Infrastructure	25.00	150	140	Oct-05	Dec-05
		108	Maxi CMS, Suthri 1	Kutch	Kutch	Gujarat	Site Infrastructure	65.00	2,800	365	Oct-05	Dec-05
		109	Mini CMS, Suthri 2	Kutch	Kutch	Gujarat	Site Infrastructure	25.00	150	140	Dec-05	Feb-06
		110	Satellite CMS	Nani Sindhoni	Nani Sindhoni	Gujarat	Site Infrastructure	12.00	90	90	Jan-06	Mar-06
		114	SIL Developer, HTIP	Waghodia Road	Vadodara	Gujarat	SEZ Developer	22,040.00	1,509,531	5,145	Aug-07	Mar-09

Sr. No.	Company	Sub No.	Project	Area	City	State	Type of Project	Total Investment Handled (In Rs. Crore)	Area in Sqm		Duration	
									Land	B/UP	Start Date	Completion Date
		115	SE Forge, HTIP	Waghodia Road	Vadodara	Gujarat	Industrial - Green Field	11,900.00	199,396	40,846	Aug-07	May-09
		120	SISL Office, Gunjan Tower	Karelibaug	Vadodara	Gujarat	Office Premises		NA	670	Sep-07	Dec-07
		146	Maxi CMS	Nani Sindhoni	Nani Sindhoni	Gujarat	Site Infrastructure	65.00	2,800	365	Sep-07	Jan-08
		147	Mini CMS	Moti Sindhoni	Moti Sindhoni	Gujarat	Site Infrastructure	25.00	150	140	Feb-08	May-08
		148	Mini CMS	Moti Sindhoni	Moti Sindhoni	Gujarat	Site Infrastructure	25.00	150	140	Feb-08	Apr-08
		149	Satellite CMS	Sanodar	Sanodar	Gujarat	Site Infrastructure	12.00	90	90	Feb-08	May-08
		150	Mini CMS	Jungi	Suraj Bari	Gujarat	Site Infrastructure	25.00	150	140	Feb-08	May-08
		151	Maxi CMS	Bhada	Bayath	Gujarat	Site Infrastructure	65.00	2,800	365	Mar-08	Aug-08
		152	Maxi CMS	Jakhau	Jamanwada	Gujarat	Site Infrastructure	65.00	2,800	365	Mar-08	Aug-08
		153	Mini CMS	Amaliara	Suraj Bari	Gujarat	Site Infrastructure	25.00	150	140	Feb-08	May-08
		154	Mini CMS	Manaba	Suraj Bari	Gujarat	Site Infrastructure	25.00	150	140	Feb-08	May-08
		155	Mini CMS	Ketela	Suraj Bari	Gujarat	Site Infrastructure	25.00	150	140	Feb-08	May-08
		158	SISL Training centre	Bhuj	Bhuj	Gujarat	Office Premises	50.00	NA	213	Jan-08	Apr-08
		159	SEL office	EMT varnama	Baroda	Gujarat	Office Premises	110.00	NA	450	Apr-08	Aug-08
		161	RBU	Village Paddhar	Bhuj	Gujarat	Industrial Brownfield	24.39	22,493	17391	Jun-15	Jan-17
		170	OMS-Nakhatarana	Village Nakhatarana	Bhuj	Gujarat	Office & GH Greenfield	4.27	6392	1068	Sep-16	Nov-16
		171	OMS-Jamanawada	Village Jamanarada	Bhuj	Gujarat	Office Brownfield	0.02	0	50	Sep-16	Nov-16
Madhya Pradesh (MP)												
1	Suzlon Energy Ltd	95	SIL Office	Indore	Indore	Madhya Pradesh	Office Premises	18.00	NA	134	Jan-07	Mar-07
		122	SEEPL office	Mansarovar	Bhopal	Madhya Pradesh	Office Premises	BTS	NA	240	Oct-07	Jan-08
		162	RBU	Village Borali	Dhar	MP	Industrial Greenfield	5.13	20,313	19,633	Oct-15	Sep-16
		172	OMS-KOD	Village KOD	Rathlam	Madhya Pradesh	Office Brownfield	1.31	1827	470	Sep-16	Nov-16
Rajasthan												
	Suzlon Energy Ltd	156	Medi CMS	Jaisalmer	Jaisalmer	Rajasthan	Site Infrastructure	35.00	625	170	Mar-08	Jun-08
		157	Medi CMS	Hansuwa	Hansuwa	Rajasthan	Site Infrastructure	35.00	625	170	Mar-08	Jun-08
		164	RBU	Village Akal	Jaisalmer	Rajasthan	Industrial Greenfield	9.36	18,285	17382	May-15	Oct-16
		175	OMS- Tejuva	Village Tejuva	Jaisalmer	Rajasthan	Office Greenfield	0.36	0	109	Apr-16	Nov-16
Tamilnadu												
	Suzlon Energy Ltd	26	SEL Office Raheja Chambers	T Nagar	Chennai	Tamilnadu	Office Premises	287.78	NA	325	Oct-02	Jan-03
		27	SIL & SWSL Office, Shri Gokul Chembar	Coimbatore	Coimbatore	Tamilnadu	Office Premises	54.98	NA	104	Mar-06	Jul-06
		30	Mini CMS	Pushpathue	Coimbatore	Tamilnadu	Site Infrastructure	28.76	150	140	Nov-02	Feb-03
		31	Central Monitoring Station	Kanyakumari	Sanganeri	Tamilnadu	Site Infrastructure	45.64	650	50	Dec-02	Apr-03
		32	Office & Guest House Building	Kanyakumari	Sanganeri	Tamilnadu	Site Infrastructure	38.98	400	108	Jan-02	Mar-02
		75	Satellite CMS	Uzumallai	Deverkulam	Tamilnadu	Site Infrastructure	12.00	90	90	Oct-05	Dec-05
		76	Medi CMS	Parmeshwarpuram	Parmeshwarpuram	Tamilnadu	Site Infrastructure	35.00	625	170	Sep-05	Nov-05
		77	Satellite CMS	Sundankuruchim	Deverkulam	Tamilnadu	Site Infrastructure	12.00	90	90	Sep-05	Nov-05
		78	Maxi CMS	Ponnapuram	Coimbatore	Tamilnadu	Site Infrastructure	65.00	2,800	365	Oct-05	Feb-06
		79	Satellite CMS	Andhiyur	Coimbatore	Tamilnadu	Site Infrastructure	12.00	90	90	Oct-05	Dec-05
		80	Mini CMS	Keenathukadavu	Keenathukadavu	Tamilnadu	Site Infrastructure	25.00	150	140	Sep-05	Nov-05
		81	Satellite CMS	Negmam	Coimbatore	Tamilnadu	Site Infrastructure	25.00	90	90	Sep-05	Nov-05
		88	SIL Office, Viscose Tower	Avinashi Road	Coimbatore	Tamilnadu	Office Premises	45.00	NA	500	Sep-06	Nov-06
		89	SE Forge Office, Viscose Tower	Avinashi Road	Coimbatore	Tamilnadu	Office Premises	56.00	NA	980	Aug-06	Oct-06
		111	SIL Developer, HTIP	Avinashi Road	Coimbatore	Tamilnadu	SEZ Developer	33,003.00	1,550,001	7,548	Aug-07	Apr-09
		112	SE Forge, Phase 1, HTIP	Avinashi Road	Coimbatore	Tamilnadu	Industrial - Green Field	16,902.00	238,178	71,402	Aug-07	May-09
		113	SEIL (Phase I), HTIP	Avinashi Road	Coimbatore	Tamilnadu	Industrial - Green Field	12,725.00	135,575	51,893	Feb-08	May-09
		141	Mini CMS	Chinnakuily	Chinnakuily	Tamilnadu	Site Infrastructure	25.00	150	140	Feb-07	Apr-07
		142	Medi CMS	Bogampatti	Bogampatti	Tamilnadu	Site Infrastructure	35.00	625	170	Feb-07	May-07
		143	Medi CMS	Govindapuram	Govindapuram	Tamilnadu	Site Infrastructure	35.00	625	170	Dec-06	Mar-07
144	Medi CMS	Chettikulam	Chettikulam	Tamilnadu	Site Infrastructure	35.00	625	170	Dec-06	Mar-07		
145	Mini CMS	Mywadi	Mywadi	Tamilnadu	Site Infrastructure	25.00	150	140	Feb-07	Apr-07		
Puducherry (UT)												
	Suzlon Energy Ltd	34	WTG, Rotor Blade Unit, Admin Block, Canteen & Utility	Puducherry	Pondicherry (Ph. I)	Union Territory	Industrial - Green Field	3,130.35	271,149	23,928	Aug-03	Apr-04
		35	RBU + NCU, RBU + NCU Store	Puducherry	Pondicherry (Ph - II)	Union Territory	Industrial - Brown Field	16.12	NA	16,959	Jan-05	Jul-06
		36	Nacelle Cover Unit, Control Panel Unit, NCU Store, WTG Store, Driver's facility, Staff facility 2 & 3, CPU Store, Waste Management Area	Puducherry	Pondicherry (Ph - III)	Union Territory	Industrial - Brownnd Field	3,523.15	NA	22,352	Nov-05	Jul-06
China - International Project												
1	Suzlon Energy Ltd	82	China Campus - WTG, Rotor Blade Unit, Nacelle Cover Unit, Generator Unit, Control Panel Unit, Support Facilities	Tianjin	Tianjing	China	Industrial - Green Field	10,340.00	250,000	63,100	Jan-06	Apr-07
The Netherlands - International Project												
	Suzlon Energy Ltd	97	Office Interior	WTC	Amsterdam	Netherland	Office Premises	550.00	NA	883	Oct-06	Jan-07
USA - International Project												
	Suzlon Energy Ltd	51	Rotor Blade Unit	Minnesota	Pipesstone	USA	Industrial - Green Field	7,520.00	158,642	19,800	Nov-05	Jul-06

Total Building Construction Area (in sq.mt)
Building Area



Year-Wise Building Construction (in sq.mt)



Sr. No	Type of Projects	Building Area
1	Industrial	1,034,758
2	Hospitality / Hospital	38,158
3	Commercial Space	120,678
4	SEZ Buildings	18,554
5	Windfarm Service	27,938
	Total	1,240,086

Total Building Construction Area (In sq.mt)

Year-Wise Building Construction (in sq.mt)

Sr. No	Year	Building Area	No. of Projects
1	1999	1686	2
2	2001	11731	9
3	2003	1345	5
4	2005	2202	29
5	2007	69856	33
6	2009	418275	10
7	2010	0	0
8	2011	9294	1
9	2012	41822	2
10	2013	0	0
11	2014	60955	1
12	2015	46468	2
13	2016	199403	14
14	2017	93307	5
15	Ongoing	30624	5
			118

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