



Dear Friends,

SSIDC is proud to announce the inauguration of an incubation centre at IIT Madras Research Park. This is a collaborative research and development space in IITMRP. SSIDC will have the opportunity to tap into the research wealth and will be able to leverage the specialized expertise of IITM for its strategic and complex structural designs as well as utilize their research facilities. The incubation centre will facilitate a collaborative relationship between us, our clients and IIT Madras.

Our business vertical, SSIDC-AES, has been picking up momentum in acquiring projects related to thermal structural analysis and blast structural analysis for a couple of clients. SSIDC's many assignments in the Non-Destructive Testing arena are being executed in both the Commercial and the Industrial sectors.

Through SSIDC team's unwavering commitment and focus on excellence, the company has succeeded in getting new orders from its prestigious clients - DRDO and HAL this year. Projects in the Private sector have also been added to the ongoing list, one being CYIENT DLM at Shamshabad, SEZ, Aserospace Park.

A few projects in the Real Estate sector for engineering designs have also been awarded. Services to large execution agencies to support them for designs for their Design and Build projects have been taken up. An expansion project for Biological E Limited for their manufacturing facility has been awarded to SSIDC and the work is underway. SSIDC is expecting to get some more orders from the Defence sector in the fourth quarter.

Mr. AV Rama Murthy joined SSIDC in Feb 2019. He carries with him more than 30 years of experience in Sales and Marketing of Advanced Engineering Products and Solutions to customers mainly in the segments of Defence, Railways & Industry in the government, public and private sectors. At SSIDC, his role is to widen the reach of the existing revenue streams to enhance revenues and identify major new areas of businesses for SSIDC to enter.

Dear Team, with our technical prowess and innovative service, let us forge ahead and deliver nothing short of exceptional service to our clients as we have been doing since the past three decades.

Satyanarayana Sundara
Chairman & Managing Director

WHAT'S INSIDE

- **SSIDC's Incubation Centre** at IIT Madras Research Park
- **AES** – The Solution's Provider!
- **Warehouses** – Recent Increase in Demand!
- **Shilpakala Vedika** – An Aesthetic Auditorium!
- **Manufacturing Unit** for BE-SEZ



SSIDC has set up an Incubation Center in IIT Madras Research Park!



IITM Research Park, Chennai

SSIDC would work with IITM regarding analysis of composites for use in Civil and Structural works.

The Industry Academia Collaboration team at IITMRP will help SSIDC with: **Faculty Collaboration** – Facilitate and secure an appropriate understanding with IITM faculty. **Business Process Assistance** – Provide some assistance with the business process besides proposing possible new opportunities. **Laboratory Facilities** – SSIDC will be able to use the state-of-the-art laboratory facilities at IITMRP. **Research Objective** – Assist SSIDC technically with the company's research objective. **On-going Support** – Provide ongoing support in the business cycle with IITMRP and help with changing dynamics!

SSIDC secured a collaborative space for its office in IIT Madras Research Park! IITMRP facilitates collaborative relationship connecting industry personnel to the expertise inputs of the faculty for innovative and high-tech development. IITMRP provides high quality infrastructure for companies to set up an R & D base and leverage the expertise of IIT Madras.

SSIDC's growth in offering comprehensive consultancy services involving projects of complex structural designs of deep underground structures, blast resistance structures, construction of Jetties and marine structures has been tremendous! Most of the designs often demand exploring new techniques and new approach for execution and construction. The expertise of IITM on blast analysis and blast resistant structures is required by SSIDC.



SSIDC Incubation Centre at IITMRP



IITMRP will help SSIDC in seeking expert guidance from the faculty and facilitate its interactions with other co-located research firms, interact with a good cross-section of teams from industry located in IITMRP.

Advanced Engineering Solutions (AES)

Advanced Engineering Solutions (AES) – SSIDC's business vertical provides for challenging multidisciplinary problems in the Automotive, Aerospace, Energy and Medical Industries. Using integrated CAD, CAE and CFD tools and Advanced Engineering Analysis techniques, AES assists industry, academia and government with engineering problems. This process allows products to be developed more efficiently, with better quality, at reduced cost and within less time!

Some of the projects taken up by SSIDC in the recent past!

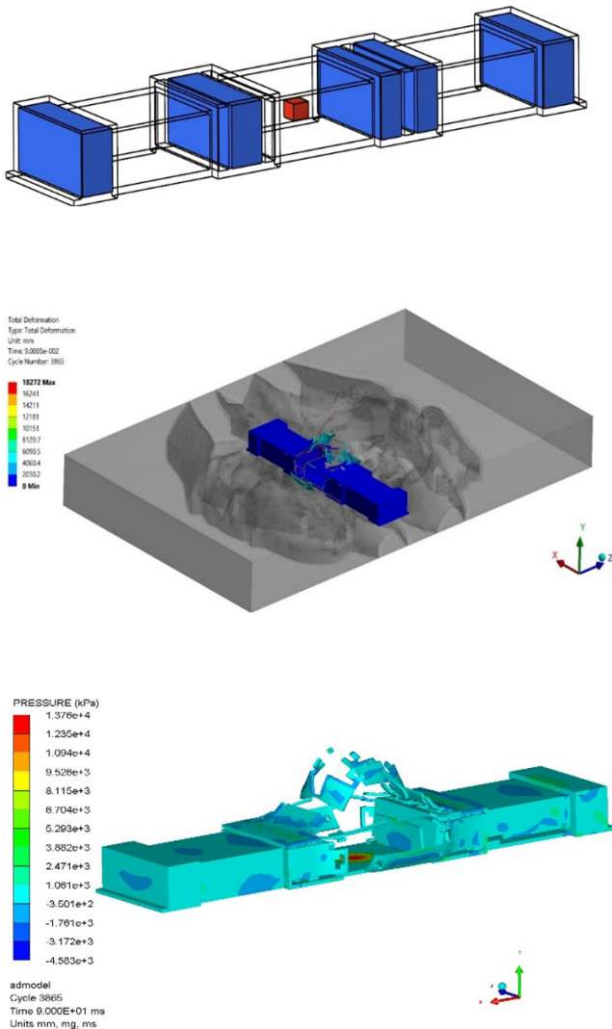
Project Name: Blast Pressure Analysis due to Confined Explosions

Client's Requirement: Simulation of Blast performance of a High-Performance Magazine

Scope: Validation of the structure's design in case of explosive detonation.

The need for construction of new inventory for explosives, with limited land for new explosive storages is creating a conflict between safety and operational requirements. The proposed magazine would reduce the land encumbered by the Explosives Safety Quantity Distance (ESQD) arcs and improve the weapon handling operations.

Implementation/Actual Usage: Highly Confidential.

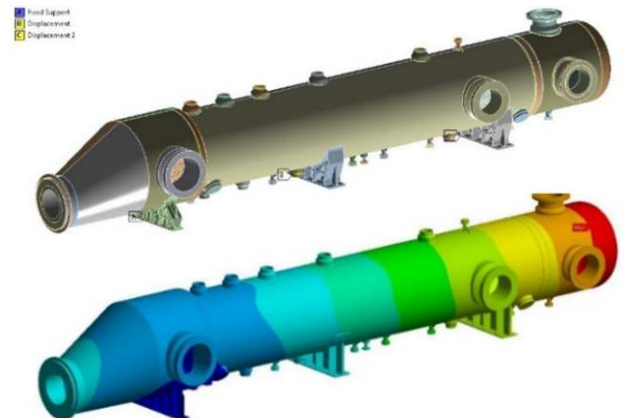


Project Name: Thermal Structural Analysis of WH Boiler

Client's Requirement: Validation of WH Boiler as per ASME Section-VIII Div 2 part 5.

Scope: Analysis of WH Boiler to evaluate protection against plastic collapse and protection against local failure using an elastic analysis according to ASME Section-VIII Div 2 part 5.

Implementation/Actual Usage: The WH Boiler is validated as per ASME code which ensures the equipment's performance as designed and it is a mandatory activity before commissioning.

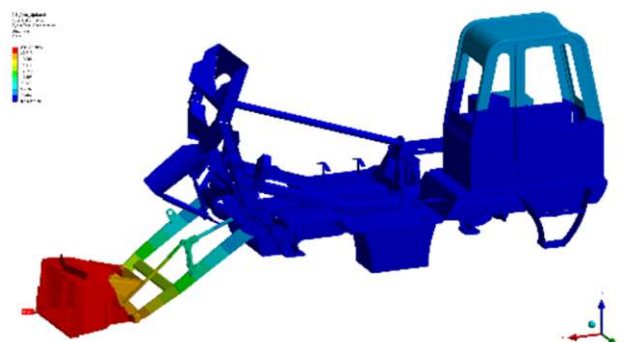


Project Name: Static structural chassis strength analysis.

Client's Requirement: Chassis' structural rigidity validation of a Cement Mixer Truck. A cement mixer truck designed by the client had to be checked for its structural rigidity under various loading conditions.

Scope: Validation of the structure's design under various loading conditions.

Implementation/Actual Usage: Analysis performed on the Chassis will be implemented in a Cement Mixer Truck.



Warehouses



High storage capacity in a small space!

The capacious rectangular building with views of the HGVs, pallet and fork trucks, stillages and gantry cranes is a “thing of beauty” for the user and the logistics company!

Warehouses have experienced surging demand since the past couple of years. This burgeoning demand for warehouses can be seen on the outskirts of India's big cities and they are getting larger and better equipped with advanced technology, robotics and fire-fighting systems. Online shopping boom gives a new impetus for the warehouse sector. With the recent trends in increase in online shopping as well as the benefit of returning goods once bought has given rise to warehouse spaces and “Reverse Logistics,” a fancy term for dealing with returned items, is the new user of warehouse space.

productivity and control, reduce the operating costs and improve customer service. Depending on the use of a warehouse being designed, space types differ extensively, namely storage space, office, loading docks for shipping and receiving, and light industrial/fabrication space.

A busy warehouse has one of the toughest flooring environments!

Warehouse floors are highly loaded and highly exploited floors. Due to their high loading, they need a reliable and durable concrete floor base and a durable finish coat.



Warehouses, being utilitarian facilities, the responsibility rests on the warehouse designers to focus on making warehouse spaces functional and efficient, while providing a safe and comfortable environment for workers to increase

Mahindra and Mahindra, Zaheerabad.



Floors in warehouses must meet special requirements to last long and be reliable. The most basic requirements being high structural strength, high evenness, resistance to temperature changes, stability to falling heavy objects as well as absolute dust and abrasion resistance of the finish coat.

Asian Paints Limited, Kasna



SSIDC's Experience in Warehouses – SSIDC has undertaken planning and designing of warehouse infrastructure requirements for the logistics as well as other industries. SSIDC has a long-standing experience of 25 years in dealing with all types of Industrial structures; Pharmaceutical, Automotive, Oil Industry, Seed Processing Industry and Food Industry.

SSIDC has been involved in multiple warehouse projects since 1998 and consultancy services for warehousing requirements of Defence, Auto, Logistics and Pharma companies has been catered by SSIDC effectively. Many of the projects involved the storage systems planned with Automated Storage and Retrieval System (ASRS). Some of the major projects for which the consultancy services offered by SSIDC were: **Mahindra and Mahindra, Granules, Blue Dart, Bharat Electronics Limited, Asian Paints at Kasna, Patancheru and Sriperumbudur.**

Granules India Ltd. Gagillapur, Hyderabad



Asian Paints Limited, Patancheru



Emerging Trends

Automated Storage and Retrieval Systems (ASRS) are reshaping the ways in which goods and services are manufactured, stored and distributed. ASRS have become a means to control and immediately report the movement of material, providing a critical link in the chain of information systems that control work-in-process, manufacturing schedules and distribution. ASRS warehouses are designed for maximum storage and minimum personnel on site. Clustering distribution centres in a single geographic area is among the new trends.

Automated Storage Retrieval System – Granules India



Spread over 26 Acres, this Campus consists of Factory Buildings, Large Warehouses, Production Blocks, Storage Buildings, Workshops, Utility Blocks, Kitchen & Dining Blocks.



As warehouses proliferate, they have also become a source of jobs for the local population. These large and impersonal spaces appear to be meeting needs in more ways than one!

SHILPAKALAVEDIKA – INDIA'S FINEST CONVENTION CENTRE AND AUDITORIUM



Standing up robustly, aesthetically pleasing and suitable for the purpose for which it was built, the Shilpakala Vedika has been a quintessential cultural destination and is one of the best auditoriums and convention centres in Hyderabad. It houses a gigantic stage even suitable for a ballet!

SSIDC won the ACCE Simplex Award 2006 for Innovative Design of Structures other than Industrial structure for this project!

Shilpakala Vedika is an auditorium and convention centre located in Hyderabad, Telangana. "Shilpa" means sculpture, "Kala" means art and "Vedika" means platform. An ethnic "sculpture art platform!"

Sprawling over an area of 60,000 square feet, the cultural centre has an auditorium that can house 2100 people, 1300 seats on the ground floor and 800 seats in the balcony. It is a state-of-the-art facility comprising a press room, cafeteria, modern multi-media projection system, luxurious green rooms, good acoustics and exquisite ethnic decor.

The edge curved girder was a challenge because the soffit level was restricted by the projector below and the top level was restricted by the view of the balcony audience.

The edge beam of the balcony which was curved in plan had to be of pre-stressed concrete supported on radial beams from the main columns.



The length, breadth and height of the actual auditorium are of the magnitude of 49m, 40m & 21m respectively. A gigantic stage of 35m x 15m x 7.60m height facilitates any sort of programme from a small drama to a ballet.

Challenges

The depth of the balcony girders was restricted to 1.8 m owing to the head room considerations. The balcony projects inside the Auditorium with a concave curve in plan.

Cost Effectiveness

To save time and money, the balcony seating arrangement was constructed using precast curved units sitting over secondary beams spanning across the precast girders.

Since the roof was very high, to eliminate staging and to speed up the work, precast waffle units were placed over secondary beams spanning across the precast girders of the roof.

The depth of the pre-stressed roof girder was restricted (It would have been about 3m or so had it been RCC) to 2.0m.

On an average, 8 number of cables of size 12.7mm - 7 ply (12 strands) were used for each girder.

In view of the large span of 40m, the roof beams were made of pre-stressed concrete to reduce the depth of the beams and hence the overall height of the Auditorium.



A diverse variety of lighting arrangements were made to facilitate the conducting of the programmes.

It features the latest state-of-the-art in projection technology as well as a sound system using Bose technology. It also has an acoustic false ceiling as well as an orchestra pit, with huge and well-equipped greenrooms located on either side of the stage. The stage itself uses a multi-level and multi-functional stage lighting to provide an added depth and atmosphere to a performance.



Lighting and Acoustics For stage lighting and operating the curtains, steel trusses were provided over the stage. For maintenance of lights and sound system, a network of catwalks was provided in steel, suspended from the roof beams.

To enhance the beauty of the auditorium, the three terracotta murals on the exterior walls blend perfectly with the environs of the Shilpakala Vedika. The traditional craft of pottery has been effectively integrated into the architecture and is a sight to behold!



"Architecture is a visual art and the buildings speak for themselves" - Julia Morgan

Vaccine Manufacturing Unit by SSIDC for Biological E – SEZ

SSIDC has designed the Research & Development Facility and Vaccine manufacturing plant for Biological E Limited in the Special Economic Zone of the Genome Valley in Kolthur village, Telangana. Biological E Limited, the first private sector biological products company in India, is a significant leader in the world of vaccine market. BE supplies several essential and lifesaving Vaccines and Pharmaceuticals in domestic as well as the global markets.

The site area of this SEZ vaccines plant is about 29 acres of land with an initial investment of up to Rs. 300 crores in this plant by BE and the commercial production is expected to begin by December 2019.



The various facilities include Process Block, SEZ office, OHC and Creche, Boiler House, Tank Farm, Utility Block, ETP and STP and Parking.

The Process block was planned for a column free structure (reduction in number of columns). To reduce the beam depth, the POST TENSIONING TECHNOLOGY was adopted and thus the beam depths were restricted which was less than the regular beam depths.



Whilst we hope that you find this issue both interesting and informative, should you have any queries or suggestions regarding how we can improve our newsletter, do get in touch with us: karuna@ssidcon.org (Corporate Communications).