Write up for website https://innogptechnologies.com

The Primary Competence of INNOGP TECHNOLOGIES is in Developing First of kind innovative Engineering Solutions. All the Technologies Listed here are either already Patented or Patenting Applied.

INNOGP TECHNOLOGIES is a "**Innovation Driven Design House**"

Category I

Design, Develop Challenging Engineering Systems

Catergory II

1. Emergency Bridges
   - 1.1. Advanced Truss Bridge
   - 1.2. Cable Supported Bridge
   - 1.3. Light Weight Composite Bridge
   - 1.4. Reinforcement Kit for Bailey Bridge
   - 1.5. Pedestrian Float Bridge & Deck

Category III

2. Marine Engineering Systems
   - 2.1. Autonomous Sea Surveillance System
   - 2.2. Solo Sailboat
   - 2.3. Wave Energy Harnessing System

Category IV

3. Prefabricated Pre-Engineered Buildings (PEB)

Advanced Truss Bridge

An Innovative Design of a modular **Advanced Truss Bridge (ATB)** has been developed that can be quickly deployed across gaps. The ATB is highly efficient and much lighter than the Bailey Bridge. **A patent has been granted for this innovative design**.

Even though, Bailey Bridges have been used very widely because of their modularity and ease construction, there are certain short comings viz. prone to lateral buckling failure, inefficient structural configuration in double and triple storey constructions as nearly fifty percent longitudinal members end up near the neutral axis of bending.

Advanced Truss Bridge has all the advantages of the Bailey Bridge and has overcome all the short comings of the Bailey Bridge. The ATB can bridge long gaps and can provide comfortable road width. **It can bridge longer spans with higher Load Class compared to Bailey Bridge**.

The Advanced Truss Bridge is **Lighter by 50% compared to Bailey bridge** in general, **structurally efficient**, and **easy to construct**. It has a unique joint configuration with higher stiffness and stability. A single type of joint configuration and a single type of structural members are used for construction of the Bridge girders. The principle of **fractal scaling**, an innovative concept of geometrical scaling is used that always results in higher efficiency bridge girders. The deck on top configuration offers **higher lateral buckling factor**.

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Cable Supported Bridge

The Cable Supported Bridge is an Innovative Design that is modular and can be quickly deployed for a Load Class of Class 70R requirements. The Bridge a Bottom Chord Made of Structural Steel Cables that are used for Prestressing applications. This makes the bridge both Modular and Quick to deploy. The Deck is a sturdy Steel / Aluminium Modular Structure that can handle all types of traffic.

The unique Design utilises the High Strength Steel cables with no joints except for anchoring at the ends where the loads are less.
A patent application has been filed

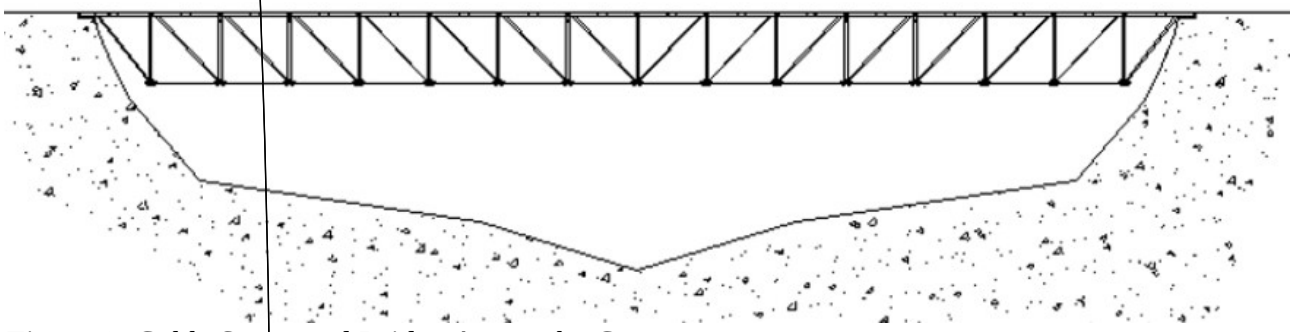
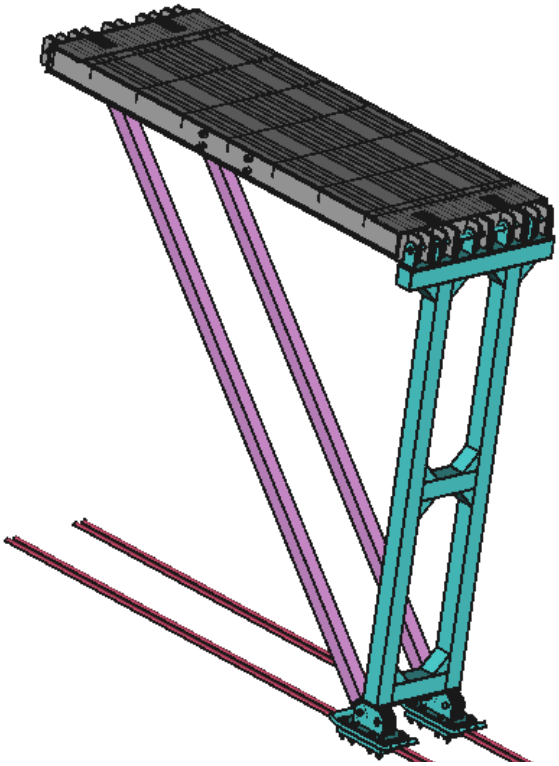


Figure 1: Cable Supported Bridge Across the Gap

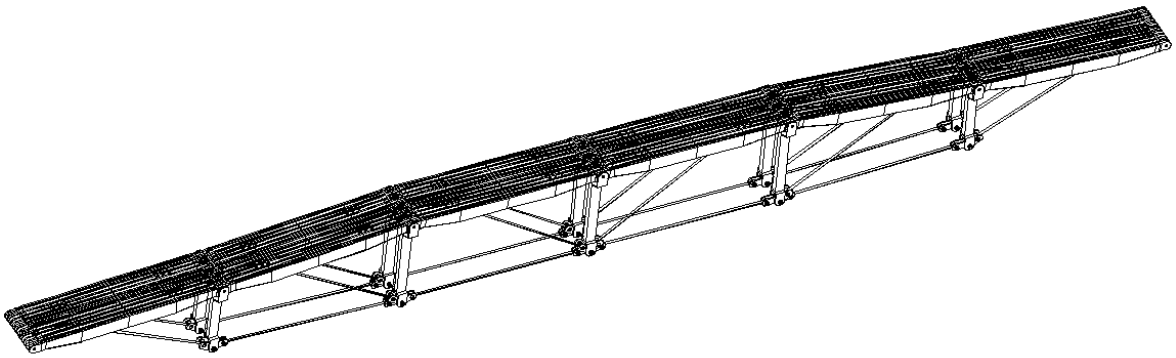


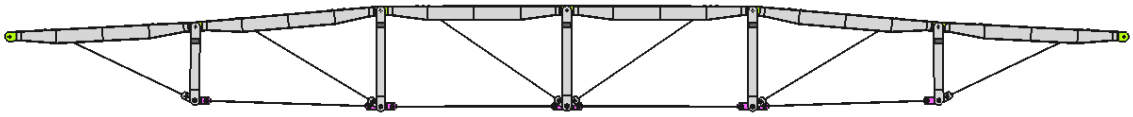
Lightweight Composite Bridge

The Composite Bridge is made of a combination of High Strength Aluminium Alloy, combination of Carbon and Glass Fibre composite material with a high performance epoxy resin matrix.

The Bridge can be directly placed across a Gap by a Helicopter while carrying the Lightweight Bridge underslung in an emergency and also carry out rescue operations in mountainous regions

The Technology uses Ultra High Strength Materials





Reinforcement Kit for Bailey Bridge

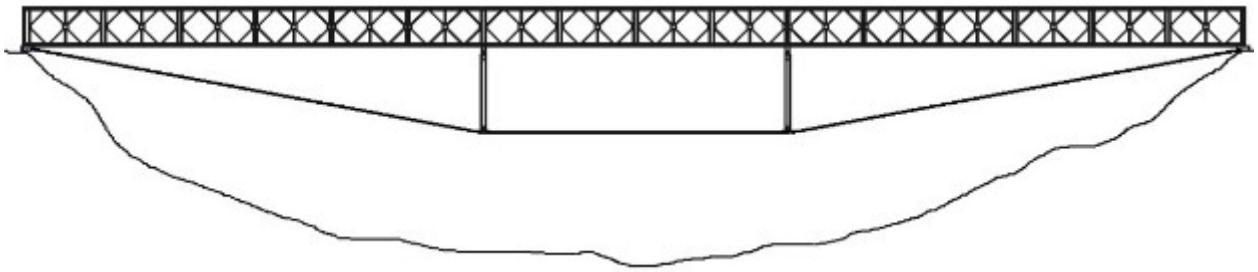
A Reinforcement Kit for Bailey Bridge has been developed that enhances the Load Class of the Bailey Bridge to nearly 3 times.

The 160 feet Triple Truss Single Storey Bailey Bridge that has a Load capacity of 10 tonnes is enhanced 30 tonnes by retrofitting of the Bridge with the Reinforcement Kit.

The Reinforcement Kit can be fitted in-situ within a Day

This will reduce the inventory and construction time of Bailey Bridges at a fractional cost.

The Technology has been Developed and Tested

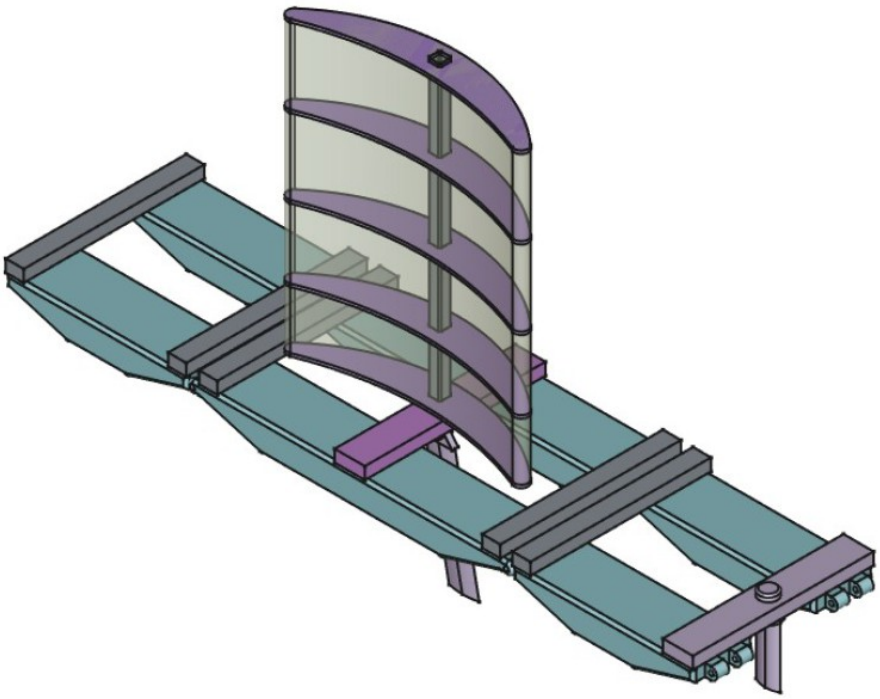


Autonomous Sea Surveillance System

An Autonomous Sea Surveillance System has been Conceptualised and presently under fabrication. A patent from Indian Patent has been granted to this Technology.

The Key Features of the System are as listed below:

1. No limits for endurance and range
2. Operates harnessing Wind, Wave and Solar Energy
3. Completely Autonomous or remotely operated
4. Autonomous multi-mode Navigation and Localisation
5. Provides three-dimensional situational awareness
6. Complete weather information
7. Can operate independently as well in a Group
8. Retractable Sails and Retractable Keel
9. Energy Harnessing System by water turbine while Sails are deployed
10. Inherently self-stabilising & Unsinkable



Solo Sailboat

This is inspired by the Autonomous Sea Surveillance System based on the same Design Principles. Solo Sailors need a better Sails that are more automatic and has less manual work. A prototype is presently under development.

Structurally, it is larger and is more stronger as it is for human occupancy.

Wave Energy Harnessing System

Renewable Energy Sources are the only option for sustaining growth and protection of the Environment. A Patent Application has been filed for this invention.

Sea Waves are Denser form of energy available all the time

PROBLEMS WITH EXISTING SYSTEMS:

HUGE INSTALLATION COSTS:

These systems have to be designed to operate under varying tidal levels

Withstand rough sea waves during storms

Requirement of massive permanent shore structure or seabed anchor structure

Interference with seabed topology

The Innovation has solved all the problems of the existing Systems in the domain of Wave Energy Converters.

Does not need any permanent structure to be built either on the seashore or on the seabed as required by many systems.

Can be easily withdrawn from sea during rough sea conditions during storms, hence need not be designed to withstand storms, hence cost effective, light and low cost of maintenance and operation

Modular and can operate in clusters and feed to the power grid

Elegant Design Concept, first of its kind proposed with significant inventive steps

Prefabricated Pre-engineered Buildings (PEB)

- Modular Steel Structure made of Hollow Rectangular & Square sections
- Can be erected with minimum intervention on Ground / Terrace
- Relocatable with minimum rework for reinstallation
- Completely Factory Built
- Assembled at Site
- No need of Crane
- No on-site welding
- Standard UPVC Door and Window
- All Members Coated with epoxy primary and finish paint coatings
- Standing Seam Roof Panels (with or without insulation)

What is Possible:

Prefabricated Terrace Room, Farmhouse, Homestay Rooms, PG Accommodation

Prefabricated Composite Capsule Room

Prefabricated Free Floating House