

# INFRACREATOR

## Newsletter

ISSUE 14 (DECEMBER 2024)



**GOVERNMENT  
POLYTECHNIC  
PALANPUR**



**CIVIL ENGINEERING  
DEPARTMENT**



### ABOUT THE DEPARTMENT

Started in 1984, Civil Engineering Department, Government Polytechnic Palanpur offers 3 years (6 semester) Diploma Civil Engineering Program with 90 intake capacity.

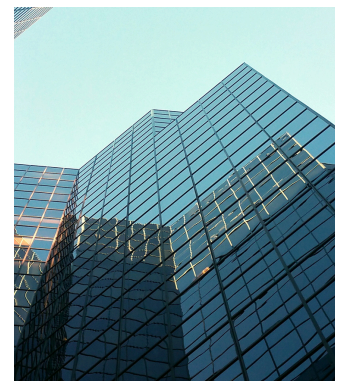
This Program is Approved by All India Council for Technical Education (AICTE) and Affiliated to Gujarat Technological University, Ahmedabad (GTU).

### Vision

The department envisions to achieve professionals in emerging field of civil engineering to meet aspirations of the society, by transforming students to be technically skilled, managers, ethical, entrepreneur's leaders, and environmentally sensible civil engineers.

### Mission

- To impart civil engineering skill to enhance their employability in the industries.
- Establish industry collaboration through internship and interaction with professional society through experts, workshops
- 3Promote leadership, management, entrepreneurship skills in a student through various projects, co-curriculum, extra-curriculum events.
- 4Impart social, environment awareness and responsibility in students to serve society and industry to promote sustainable growth.



01/12



# HOD's Message

Greetings from the Civil Engineering Department.

The Department of Civil Engineering aspires to excellence in professional development that is morally grounded in teaching and learning. We take great pride in having our academic program supported by cutting-edge laboratories and technical personnel. We have a creative, well-balanced teaching-learning environment, as well as a highly skilled and committed faculty. For the purpose of their own growth, the students are encouraged to engage in co-curricular and extracurricular activities, too.

## Newsletter Committee



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**Government Polytechnic Palanpur**  
**Department of Civil Engineering**

Opp. Malan Darwaja, Ambaji Road,  
Palanpur - 385001  
Phone: 02742-245219

Send your feedback to  
[gppcivil06@gmail.com](mailto:gppcivil06@gmail.com)

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# Independence Day Celebration

At Government Polytechnic Palanpur, On 15th August 2024, the occasion of 78th Independence Day, a flag hoisting program was arranged in which all the officials, employees and students of the institute enthusiastically participated.



## Admission Awareness Program

Diploma engineering admission awareness programs were arranged at major schools of all talukas of Banaskantha district in last week of december 2024



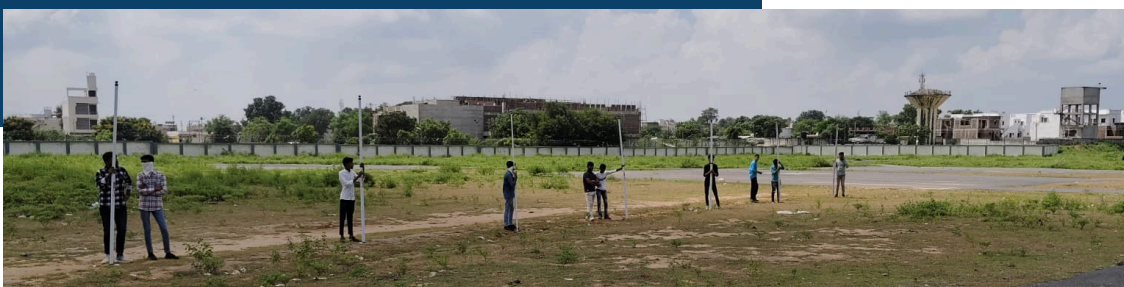
# Teachers Day Celebration

Government Polytechnic Palanpur celebrated Teachers' Day on September 5th. Teachers' Day marks the birth anniversary of Dr Sarvepalli Radhakrishnan - the first Vice-President and the second President of India. Students of semester 3 and 5th took part in 1 day teacher celebration and conducted class in their junior class



# Level Surveying Project on Theodolite

On 20 September, 2024, 3th semester diploma engineering students performed a project on level profiling at open ground near rampura circle. Total 63 students performed this project



# Site Visit Report: Sports Complex Construction near Dhaniyana Circle



Date: 14th October 2024

Time: 12:40 PM

Location: Construction site of Sports Complex near Dhaniyana Circle

Subject: Advanced Construction Technology (ACT)

Attendees: 29 Fifth Semester Diploma Engineering Students

29 fifth-semester diploma engineering students of Government Polytechnic, Palanpur visited the Sports Complex construction site near Dhaniyana Circle on October 14, 2024, at 12:40 PM. Observations focused on foundation type, structural elements (columns, beams, slabs), reinforcement details, formwork, concrete quality, construction methodology, site layout, water management, and other relevant aspects. Further visits and study of project documents are recommended for a deeper understanding.

# Summer Internship

Some examples of the reports of summer internship by semester 3 and 5 diploma civil engineering students are here:

## INTRODUCTION OF SITE

- Name of Project :- Residential Building
- Location of Site :- School of Science Behind , Akshatam 3 Gathamam Rd , Palanpur 385001
- Company Name :- Guruji Developers .
- Type of House :- 2BHK , 3BHK , 4BHK ( G +1 , G+2 )
- Area :-250000sq.ft
- Site supervisor :-Sharadbhai V Rathod.
- Stair :-
  - The stair was of doglegged
  - Trad:- 12 inch (30.48 cm)
  - Riser:- 6 inch (15.42 cm)



## Layout plan of site

Layout Plan



## Layout plan of 3 BHK House

Type-01



GROUND FLOOR PLAN



FIRST FLOOR PLAN

118, 116, 114, 112, 128, 127, 125, 123, 121, 138, 137, 135, 133, 131, 154, 152, 150, 148, 146, 144

Type-02



GROUND FLOOR PLAN



FIRST FLOOR PLAN

117, 115, 113, 111, 128, 126, 124, 122, 148, 136, 134, 132, 130, 128, 126, 124, 122, 148, 136, 134, 132, 130, 128, 126, 124, 122, 148, 136

# Summer Internship

## Material used for construction

### • Cement

- The function of cement is to combine with water and to form cement paste. This paste sets binds provides strength, durability.
- On site they used ULTRATECH CEMENT OPC 53 GRADE.



### • Sand

- It is used for plastering work for plinth filling and pcc work.
- Rotary cylinder type sieve used for sieving purpose.



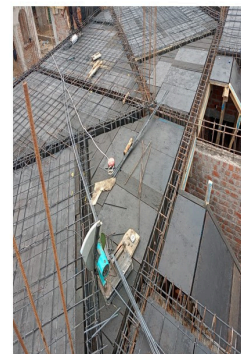
### • STEEL Bars

- Bars are widely used to reinforce the concrete. Concrete has good compressive strength but poor tensile strength.
- Bar Size(mm):- 6,8,12,16,25



### • SLAB WORK

- The slab is Horizontal structural element which is made from the R.C.C.
- IN slab casting cement bags , Aggregate , sand, This concrete material mix was mixed In the machine mixer by volume of 1:1:2.



### • BRICK WORK

- size of brick was 19cm\*9cm\*9cm
- We were checking verticality of wall by plumb bob, Horizontality of wall checked by lining straight.
- the brick company name NBC & HB



# Summer Internship

- **PLASTERING WORK**

-Plastering work give uneven brick masonry wall or R.C.C wall for resistant the structure against external environment effect.  
-we used cement plaster is a mixture of Portland cement, sand, and water are applied of mix 1:4



## **EQUIPMENTS USED ON SITE**

- **CUTTING MACHINE**

- This machine gives a one-shot cutting operation with perfect cutting accuracy thus minimizing the use of labor and long drawn cutting process for single cuts. It is durable, fast and easy to use.



- **NEEDLE VIBRATOR**

There are use needle vibrator is critical because by removing air bubbles & packing the aggregate particles together, it increases the density and strength of the concrete.



- **CONCRETE MIXER**

This is a power mechanically operated machine which is used to mix the concrete, it consists a hollow cylindrical part with inner side wings. In which cement, sand, aggregates, and water is mix properly.



## Gujarat's Anganwadi Construction Project: Focus on Construction Aspects

The Gujarat government's initiative to build 607 new Anganwadi-Nand Ghars focuses on modern construction techniques, specifically Light Gauge Steel Frame (LGSF) technology. This report focuses on the construction-related details of the project.

### Key Construction Highlights:

- **LGSF Technology:** The core of this project's construction strategy is the use of Light Gauge Steel Frame (LGSF) technology. This method utilizes lightweight steel framing to create the structural framework of the buildings.
- **Advantages of LGSF:** The choice of LGSF likely stems from several advantages:
  - **Speed of Construction:** LGSF construction is typically faster than traditional methods, allowing for quicker project completion. This is crucial for rapidly expanding childcare infrastructure.
  - **Durability and Strength:** Steel offers inherent strength and durability, potentially leading to longer-lasting structures compared to conventional materials.
  - **Precision and Quality Control:** LGSF components are often manufactured off-site, allowing for greater precision and quality control during the fabrication process. This can translate to a more consistent and reliable final product.
  - **Lightweight Nature:** The lightweight nature of steel simplifies transportation and handling of materials, potentially reducing construction costs and logistical challenges, especially in remote areas.
  - **Sustainability (Potential):** Steel is a recyclable material, potentially contributing to the project's sustainability, though this depends on the source and overall lifecycle analysis.
- **Scale of Construction:** The project involves the construction of 607 Anganwadi centers, representing a significant undertaking. Efficient project management and coordination will be crucial for successful implementation.
- **Modern Facilities Integration:** The project emphasizes equipping the Anganwadis with modern facilities. This likely requires careful planning and integration of various building services like electrical, plumbing, and HVAC systems within the LGSF framework.
- **CSR Funding Implications:** While GSPC Group is providing the CSR funding, the specific construction contracts and procurement processes will need to be transparent and efficient to ensure optimal utilization of funds and timely project completion.

# Sudarshan Setu: A Marvel of Engineering and Architecture

- **NANDOLIYA AHMEDRIJVAN**  
(Sem 4 Diploma Civil Engineering)

## INFRA ARTICLE



The Sudarshan Setu, formerly known as the Okha–Beyt Dwarka Signature Bridge, is a 2.32 km long cable-stayed bridge located in Gujarat, India. It connects Okha mainland to Beyt Dwarka Island in the Gulf of Kutch. The bridge was inaugurated by Prime Minister Narendra Modi on February 25, 2024.

### Civil Engineering Details

- Type: Cable-stayed bridge
- Length: 2.32 km (including 900 meters of central cable-stayed portion)
- Lanes: Four lanes (two in each direction)
- Width: 27.2 meters
- Footpaths: 2.5 meters wide on both sides
- Pylons: Two A-shaped curved pylons, 129.985 meters tall
- Construction Cost: Approximately Rs 980 crore
- Builder: SP Singla Constructions

### Architectural Details

- Design: The bridge features a unique design with a footpath adorned with verses from the Shrimad Bhagavad Gita and images of Lord Krishna on both sides.
- Solar Panels: Solar panels are installed on the upper portions of the footpath, generating one megawatt of electricity for the bridge's illumination.

### Significance

- Connectivity: The bridge significantly reduces travel time between Okha and Beyt Dwarka, benefiting both locals and pilgrims visiting the Dwarkadhish Temple.
- Tourism: The iconic bridge is expected to become a major tourist attraction in the region.

# ★ Out Star Students

Semester	Name of Student	Enrollment No	SPI
6	MANASIYA TALHA NIZAMUDDIN BHAI	216260306003	9.58
4	LUHAR RAGHUKUMAR NARAYANBHAI	226260306037	8.15
2	SUTHAR GOVINDBHAI BHARATBHAI	236260306096	8.82



## Faculty Achievements

Sr No	Name of Faculty	Achievement
1	D N SHETH, P D SHETH	Completed 3 Week <b>Industrial Training</b> at Banas Dairy, Palanpur
2	Y T RANA, V P PATEL, A R PATEL	Completed 3 Week <b>Industrial Training</b> at USP Construction, Patan
3	H P PATEL, A N PATEL, F A MUKHI, N V PRAJAPATI	Completed 3 Week <b>Industrial Training</b> at Tirupati Sargan Limited, Chhapi
4	D N SHETH, P D SHETH	Completed 8 Week <b>MOOC</b> on <b>Municipal solid waste management</b> at SWAYAM NPTEL
5	D N SHETH, P D SHETH, Y T RANA, A R PATEL, H P PATEL, A N PATEL, N V PRAJAPATI	Completed 8 Week <b>MOOC</b> on <b>Entrepreneurship</b> at SWAYAM NPTEL