



S J P N Trust's
Hirasugar Institute of Technology, Nidasoshi.

Inculcating Values, Promoting Prosperity
Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi.

Accredited at 'A' Grade by NAAC
Programmes Accredited by NBA: CSE, ECE, EEE, ME

Dept. Civil. Engg.

Industrial Visit

Co-Curricular

2021-22

Date of Activity held and Time:	14/02/2022	9.30pm to 5.30pm
Name of Activity	“Industrial visit to Hidakal Dam”	
Type of Activity: (cultural/curricular/co-curricular)	Co-curricular	
Keynote Address:	Assistant Executive Engineer. Mr. S Kamat Prof. M.D.Patil and Prof.M.M Shivashimpi	
Professional Details of keynote speaker:	Assistant Executive Engineer. Mr. S Kamat KNNL CBC Sub Division NO.2 Hidakal Dam.	
No. of students:	07	
No. of Staff:	02	
Activity In charge:	Prof. M.D.Patil and Prof.M.M Shivashimpi	
Description of Activity: A “Industrial visit to Hidakal Dam” was organized by Department of Civil Engineering and Department of Mechanical Engineering of the institute, for the 3 rd semester engineering students on 14thFebruary, 2022 as curricular and co-curricular activity. The event was addressed by Mr. S Kamat Assistant Executive Engineer Irrigation Department Hidakal Dam. The visit was focused on Introducing students to the Various components of the Dam and its working.		



CONTENT

1. Introduction
2. Dam & Reservoir
3. Pictures

Introduction :

Hidakal dam is a multi-purpose dam meant for Flood control, Irrigation, Domestic water Supply & Hydro-power generation. It is built across a Ghataprabha river originating in Amboli. Its Tributaries are Hiranyakeshi, Tamraparni and Markandeya. Its length is 260 km and it joins to Krishna River in Bijapur

HIDAKAL DAM

Dam across river Ghataprabha- Origin- Amboli

Tributaries- Hiranyakeshi, Tamraparni, Markandeya

Length- 260km, joins Krishna River in Bijapur- Rainfall in catchment is 6250mm to 1000mm

Drains 28 TMC of water 50% Dependable yield @ dam site- 85.20 TMC

TOTAL UTILISATION

- a) 84.42 TMC used to irrigate 7.84 Lakh acres through gravity irrigation (canal) including reservoir evaporation.
 - b) 0.392 TMC- Drinking water.
 - c) 3.328 TMC- Used by 3 lift irrigation schemes Kurni- Kochari, Rustumpur, & Kotabagi L,J Scheme
- Total- 85.20 TMC

STAGES OF GHATAPRABHA PROJECT

Stage I)

Ghataprabha left bank canal L=71 km It irrigates 1.2 lack acres Discharge $Q= 42.45 \text{ m}^3/\text{sec}$

Stage II)

Part a) Extension of left bank canal from 72 km to 109 km – 38km irrigates- 2.25 lack acres

(Total 3.45 acres) $Q=56.6 \text{ m}^3/\text{sec}$

Part b) Construction of Hidakal Dam RL=662.3m in masonry, RL = 663.85m in earthen Live storage capacity = 23.20 TMC

Stage III)

- i) Raising Dam height by 3.70m (12ft) in masonry section to RL=660.0& 4.3m in earthen section to RL= 668.1m with FRL/MWL-662.95m Storage capacity = 51 TMC Storage feeds Ghataprabha left bank canal, Right bank canal & chikodi branch canal, L
- ii) Construction of Right bank canal and chikodi branch canal irrigates 384000 acres
- iii) Lining of left bank canal with discharge = $0.56 \text{ m}^3/\text{sec}$ to increase discharge and minimise seepage loss so additional area irrigated 54997 acres



SALIENT FEATURES OF HIDKAL DAM

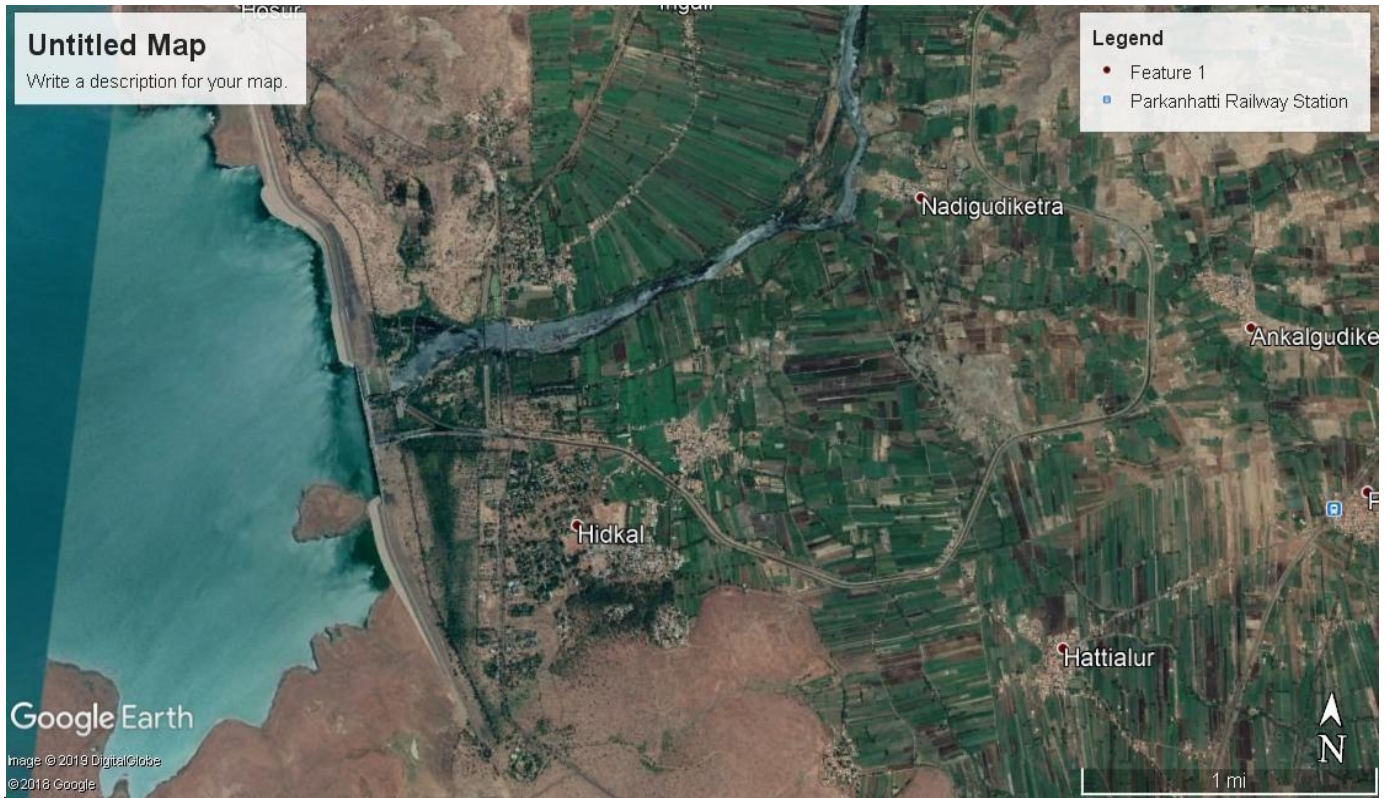
SL. NO	ITEMS	STAGE –I & II
A. General		
1	Location of Dam	Hidkal village of Hukkeri taluk of Belagavi district at: Latitude 16° 09' N Longitude 74° - 38' E
2	Means of Access	7..0 k.m from Pachapur Railway Sta- tion of Pachapur – Miraj Hubli sec- tion South western Central Rail- way
B. Geophysical Features		
1	Catchment area	1412.00 Sq.km (545.00 Sq.miles)
2	Nature of catchment	The Uppermost reaches are in hilly and forest area, while the lower reaches are in moderate country. It has many tributaries
3	Climate	Moderate.
4	Annual mean temperature	Max Temperature: 105° F Min Temperature: 45° F Normal Temperature: 85° F
5	Mean annual precipitation	Verifying from about 250 inches at the source to the river to about 25 inches at the dam site.
6	Net yield Dam site at 75 % dependability	2412 MCM {85.20 TMC}
7	Silt charge per year	1.00 Acre ft/sq.mile
8	Geological features at dam site	Hard quartzite rock (Coarse-grained) exposed at bed and quartzite's in the flanks
C. Technical Details of Dam		
1	Gross Storage Capacity	1444.32 MCM (51.00 TMC)
2	Dead Storage	0.06 Tm.cum (2.02 TMC)
3	Lowest Foundation Level (El.)	605.62 m (1986.94 ft)
4	Lowest River Bed Level (El.)	614.17 m (2015ft)
4.a	Sill of River Sluice (El.)	--



4.b	Sill of Irrigation Sluice (El.)	629.11 m (2064.00 ft)
5	(El.) Dead Storage Level at MDDL	633.37 m (2078.00 ft)
6	Full Reservoir Level (FRL) (El.)	662.95 m (2175.00 ft)
7	(El.) Maximum Water Level (MWL)	662.95 m (2175.00 ft)
8	Spillway Crest level (El.)	655.32 m (2150.00 ft)
9	Top Level of Dam (El.)	668.12 m (2192.00 ft) Earthen Dam 665.98 m (2185.00 ft) Masonry Dam Non-overflow section and Spillway Portion
10	Maximum area of water spread	171Sq.Km
D. Length of Dam		
11	Main Dam (Total Length)	4481.00 m
a.	Left Bank Earth Dam	1463.04 m
b.	Rock fill Dam	365.76 m
c.	Earthen Dam in Gorge Portion	457.20 m
d.	Masonry spill way Dam	149.35 m
e.	Masonry Non spillway Dam	612.65 m
f.	Right Bank Canal Dam	1433.00 m
E. Other		
12	Maximum height of dam above the lowest foundation level	62.48 m
13	Height of dam above the lowest River Bed Level	53.35 m
Sl. No	Items	Stage -I & II
14	Top width of dam	5.5 M
15	Designed flood intensity	4616.16 Cumecs (1,63,000 cusecs)
16	No. & size of spillway crest gates	10 Nos. of 12.90 M x 7.62 M gates – Radial Type
17	gates No. and dimensions of river sluice	Not Provided
18	No. and dimensions of irrigation sluice gates	6 Nos. of 1.83 m x 3.65 m In block (Ch 2682 m) (8800 ft)
F. Details of submergence		
1	Total area of submergence (Gross)	7891 Ha (19500Acres)
2	Villages submerge	22 Nos
3	Population affected	15,660 (Approx.)
4	Road line	National NH4 (Pune to Bengaluru Road)



VARIOUS PICTURES OF DAM



Picture of Dam site



Picture of Dam spillway



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Picture of the students and staff at Dam site



Picture of the students and staff near Power plant



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Office of Executive Engineer



Picture of Canal



Picture of Ogee spillway



Picture of Water Discharge From the Dam to Canal



Picture of Water Discharge From the Dam to Canal

CONCLUSION

The dam visit gave students the first hand experience of the mega-structures such as dam & its reservoir. They got the knowledge **about the purpose of the dam, design parameters like geology of the site, topography, capacity, size, shape, material, layout, life, cost, etc.** The various components of the **dam such as, dam, spillways, gates, galleries, canals**, Instrumentation, Power generation plant, etc .Also the reservoir, embankments, dykes its catchment could be seen. Working of these components was understood .Also the students got the briefing about the service of these structures for the development of area and country.

M.D. Patil
Coordinator

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15/2/22
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