

CIVIL ENGINEERING

1.0 INTRODUCTION

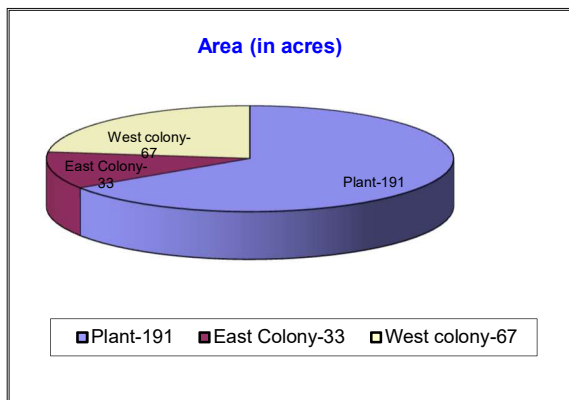
Civil Engineering department is responsible for development & maintenance of land assets, track, buildings, water supply and sanitation at RWF. A track length of about 11kms inside the factory and stacking yard of YNK station area is also maintained by Civil Engineering department. Horticulture & Environment concerns are also under the purview of this department. The department is headed by Principal Chief Engineer.

CADRE STRENGTH

The department is headed by Principal Chief Engineer. He is assisted by one Dy. Chief Engineer, one Executive Engineer & one Assistant Engineer.

2.0 LAND

- The Rail Wheel Factory (RWF) premises is consisting of factory, track, staff quarters and other utility buildings located at Yelahanka, 16 KM North of Bengaluru, on either side of the Bengaluru – Doddaballapur Road.
- The Rail Wheel Factory extends over 291 acres.



Factory & Buildings	
Plant	191 acres
Staff Quarters	
East Colony	33 acres
West Colony	67 acres
Total area	291 acres

Description	Factory	West Colony	East Colony
Covered area in Acres	61.57	20.89	4.44
Uncovered area in Acres	32.83	10.74	6.41
Green Cover in Acres	96.65	34.84	22.74

3.0 WATER

The total water requirement of RWF was around 18 lakh litres earlier. Subsequently, over the years the water requirement has been brought down to 15 lakh liters by water conservation measures.

- A Sewage water treatment system with a capacity of Approx. 1.5 lakh liters per day has been installed inside factory and is functioning properly. This treated water is being used for manufacturing purpose inside Factory as well as for Gardening purpose.
- In addition to rain Water harvesting pits (22 No's) in Administrative Block & in both east and West Colonies, Mega rain water harvesting has been done in Wheel Shop (01 No's), Axle Shop (01 No's) & Utility area (01 No's).
- STP of 3 lakh liters per day capacity is commissioned in West Colony to treat sewage from west colony. The Treated water from STP/West Colony is being utilized to meet the Non-portable water requirements of RWF/Plant and for watering purposes in west colony cricket ground.
- To have a better metering and control of water distribution and to avoid wastage of water in East Colony & West Colony, Water distribution lines has been automated by provision of level sensors, automated valves and PLC based control system. The system reduces manual intervention and optimizes supply. Automation of West Colony water supply system has been recently completed

4.0 BUILDINGS & STRUCTURES

A) FACTORY AREA

i. FACTORY: Comprises of Wheel Shop, Axle Shop& other ancillary units:

	Wheel Shop (in sqm)	Axle Shop (in sqm)
Covered area	25,520	21,200
Basement area	6,000	--
Uncovered area	4,850	1,296
Major working Areas	a) Mould Repair & Graphite Storage	a) Billet storing/cutting
	b) Normalizing furnace	b) Axle Forge Shop
	c) Moulding area	c) Normalizing Furnace
	d) Melting area	d) Machine Shop
	e) Scrap Storage area	e) Assembly Shop

ii. WHEEL SHOP

The height of the roof in the Wheel Shop housing cleaning section to the Melting Section varies from 8.4M to 26M. The roof consists of precast pre-stressed roof girders of span 30M with precast RCC roof elements. The Wheel Shop is also provided with basement for carrying out various production activities. The roof above the arc furnace area is provided with steel trusses, AC sheet roofing and ventilation. Gantry girders of 35T capacity are provided supported by RCC columns.

Adequate rest rooms with lockers and other facilities have been constructed for staff & supervisors. Steel melting shop and Mould shop & DG house have also been extended to facilitate additional production requirements.

iii. AXLE SHOP

RWF Axle Shop area is consisting of roof girders, precast roof and RCC cast-in-situ folded plates. Axle Shop is also provided with Assembly Shop wherein the finished wheels and axles are assembled as wheel sets and dispatched. Adequate rest rooms with lockers & other facilities have been constructed for staff & supervisors.

Both the Shops are connected with Railway track for feeding raw materials and also for dispatch of finished products.

iv. STORES:

Stores Area consists of (a) General Stores Depot (b) Graphite Storage shed (c) Oil & Grease Storage Shed (d) Scrap Yard (e) Scrap Pre-Conditioning Bay (f) ASRS Godown (g) Warehouse

B) COLONY AREA

Staff Quarters: There are 1016 units of Staff Quarters in Colonies:

Type	No. of units	Location
Type I (Single bedroom)	04	West Colony
Type I (Double bedroom)	216	West Colony
Type II	402	West Colony
Type III	267	West Colony
Type IV	82	EC-36, WC-46, Bengaluru Cantonment-6
Type IV (Spl)	6	East Colony
Type V	37	East Colony
RWF House	1	East Colony
TOTAL	1015	

5.0 SAFETY

During the year a number of works to enhance safety have been carried out

- Provision of Horizontal life line of crane walkways inside plant premises of RWF.
- Provision of MS clamps in New PC Bay of RWF.
- Re-construction of collapsed boundary walls inside Factory premises of RWF.
- Providing Chain Link & Barbed Wire Fencing at East Colony of RWF
- Trimming/pruning of branches of trees at colonies and factory premises of RWF for a period of 24 months.

6.0 HORTICULTURE

- RWF proudly own an aesthetically appealing green ambience housing rare varieties of plants including aromatic and medicinal plants. Parks have been developed with play equipment and colorful cement benches in both colonies. A Poli house has been made functional for sustainable maintenance of greenery. 16 No's of vermin composting pits have been developed in plant, Administrative block and colonies.
- Number of saplings are planted every month and records for the same are also maintained..

7.0 STAFF WELFARE

The following staff amenities are being maintained:

- Factory – Canteen, staff rest rooms, tea room.
- Administrative Block – PRS counter, Crèche, tea room, Staff Council & other association office rooms
- West colony – (a) Railway hospital with 46 beds, (b)sub-ordinate rest house with 4 suites & dormitory (c) Stadium with pavilion (d)swimming pool (e) Park (f) Hockey & Kabaddi stadium (g) Employees' Institute with badminton court, tennis court, basketball court, TT, snooker table, chess room, gym, etc.
- East Colony - (a) Officers' rest house & community hall (b) Mini golf course (c) Jogging track (d) park & skating rink (e) Officers' Club with badminton court, tennis court, squash court, TT, snooker table, gym, Jogging track, etc.
- Holiday homes at Ooty & Mysuru.

8.0 HIGHLIGHTS OF MAJOR WORKS UNDERTAKEN DURING THE YEAR:2023-24

- Construction of Zero Value Waste Management Shed Inside Factory Premises of RWF
- Extension of Crane Bay towards North side of New Axle Forging Complex (Phase-II) inside Factory Premises of RWF
- Construction of RCC pit & flooring at PC Bay to commission new Scrap Wheel Cutting Machine inside Factory Premises of RWF
- Constructions of shed in Axle forge shop of RWF for Stocking oil barrels and Refractory..
- Construction of stores shed in lieu of existing Gowdown Annexed to ward-21/GSD opposite to EMMS inside factory premises of RWF
- Construction of shed for welding activities of Wheel Sets inside Factory premises of RWF
- Construction of RCC Road (1) In New PC Bay for Lorry Entry on South Side Inside Factory Premises of RWF. (2) In New PC Bay for Lorry Entry on North side Inside Factory Premises of RWF & (3) From Melting North End Ward-30 Including Road in and around Weighing Bridge Inside Factory Premises of RWF
- Renovation of Employees Institute at West Colony of RWF
- Number of improvement works being carried out in both East & West Colonies
 - Construction of Additional Bed Room to Type II Qtrs (58 units) in West Colony of RWF
 - Improvements to Quarters in West Colony of RWF (Phase-1)
 - Inside Painting of Quarters and Service Buildings at East Colony and West Colony
 - Construction of Additional Bed Room to Type III Qtrs (312 to 315) 24 units in West Colony of RWF
 - Construction of Sewer Line in East Colony of RWF