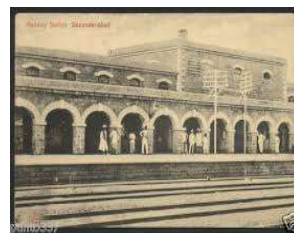




Into the history

- Built in 1874 as a part of Great Indian peninsular railway
- Taken over by Nizam Guaranteed state Railway company in 1879
- Asaf jahi architecture (terminal 1)
- New building constructed in 1995 on PF 10 side (terminal 2)
- NSG 1 category stn, handling 210 trains per day with a footfall of 1.80 lakh per day
- Maintaining the age old structure , yet satisfying the present day needs is a gigantic task.



Going Green

- Book on Green Railway stations (rating system) was issued by IR & IGBC in March 2017.
- Its designed primarily for exg stations
- Addresses the green features in 6 categories / modules --
- Certified with Silver rating in Sept 2017 with 68 points & Platinum rating in May 2018 with 88 points.
- Why railway should worry for green rating ?

Green Concepts

- ❖ Green & smart passenger amenities for enhanced comfort, health and hygiene
- ❖ Improved resource efficiency by reducing power & water demand
- ❖ Effective waste management
- ❖ Increased use of renewable energy
- ❖ Enhanced commuters' experience
- ❖ Discharging our duty in protecting the environment .



Rating achieved ...					
Sl. No.	Module	POINTS			
		Total	Awarded (Sep 17)	Attempted	Awarded (May 18)
1	Sustainable Station Facility	24	18	23	22
2	Health Hygiene & Sanitation	21	11	21	19
3	Energy Efficiency	21	17	20	19
4	Water Efficiency	16	09	13	12
5	Smart & Green Initiative	12	11	12	12
6	Innovation & Development	06	02	6	4
	Total	100	68	95	88

We Have....

- ❖ Junction station with 4 directional traffic.
- ❖ Located in the heart of city
- ❖ Connected with City bus stand & metro
- ❖ 10 platforms dealing 210 Trains per day
- ❖ 7 pit lines & 6 stabling lines
- ❖ Booking counters (27) on platform No. 1, 6&7, 10
- ❖ 14 ATVMs, 6 COTVMs
- ❖ 4 Reservation counters in station premises besides centralised PRS



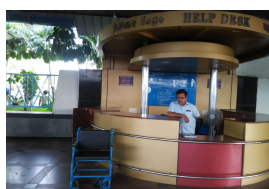
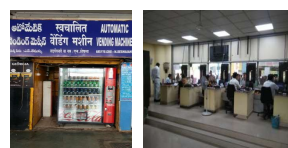
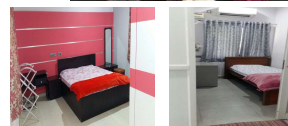
We Have

- ❖ "108" ambulance facility
- ❖ 3 foot over bridges
- ❖ Escalators connecting all platforms through middle foot over bridge (2014)
- ❖ Elevators are available on both end foot over bridges
- ❖ Mobile charging points on all platforms, w.halls
- ❖ Food courts, stalls on all PFs



We Have....

- ❖ Cloak rooms (24x7)
- ❖ 18 Retiring Rooms, Dormitory (37 bedded)
- ❖ AVM(automatic vending machine)
- ❖ Booking Office
- ❖ Adequate seating on platforms
- ❖ Help Desk with provision of wheel chair
- ❖ Tactile Path with warning strip



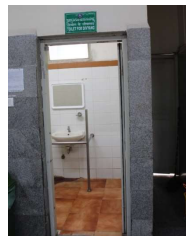
We Have....

- ❖ E-Booking wheel chair
- ❖ Directional signage board
- ❖ Braille buttons
- ❖ Electric vehicle charging point
- ❖ Bicycle racks
- ❖ Parking (1000 + 245)
- ❖ Battery operated cars (5)
- ❖ Child help line
- ❖ Water coolers

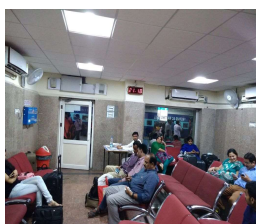


Amenities Available

- ❖ Sr Citizen & Divyang waiting hall on platform 1 with suitably designed toilet.
- ❖ Ladies waiting hall with baby feeding room
- ❖ Sanitary napkin dispenser & destroyer in Ladies w. hall
- ❖ General waiting halls
- ❖ Upper class waiting halls.
- ❖ Pre - Paid AC waiting halls (3).
- ❖ Pay & Use Toilets on Platforms 1, 6 & 7, 10



Waiting Halls



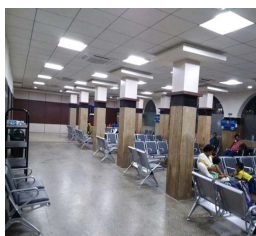
Pre paid AC waiting hall



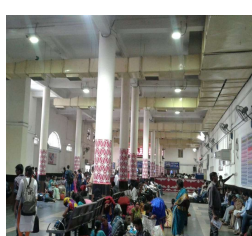
Ladies waiting hall



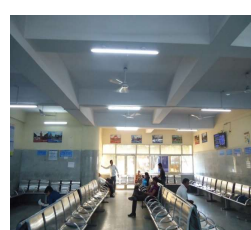
Upper Class waiting hall PF 01



Pre paid AC waiting hall



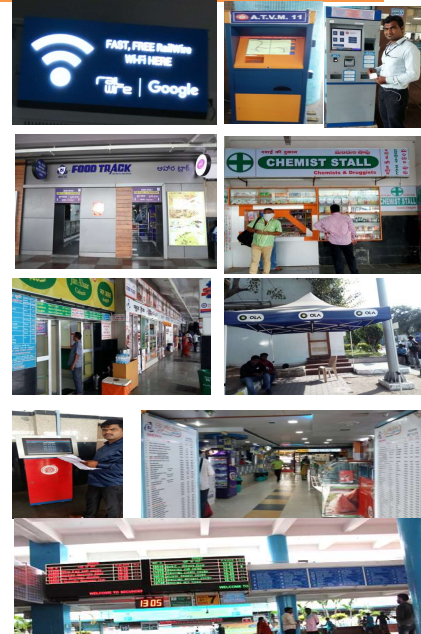
General waiting hall



Upper Class waiting hall PF 10

Smart Passenger Services

- ❖ Free WI-FI facility (2015)
- ❖ ATVMs, CoTVMs
- ❖ Smart card ticketing
- ❖ Pharmacy
- ❖ Prepaid auto services
- ❖ "OLA" cab services
- ❖ Tourism information & booking centre, OYO kiosk
- ❖ Touch screen information kiosk
- ❖ SBI Kiosk, health kiosk
- ❖ Electronic reservation charts
- ❖ TIB, CIB, TV screens, AGB
- ❖ UTS APP
- ❖ **Awarded as Most tourist friendly stn across IR (2018)**



Green cover at station..

- ❖ Conserved all the existing trees, as old as 100 + years.
- ❖ More than 450 trees at station premises. 30 trees per acre.
- ❖ Natural topography, vegetation and designed landscaped areas retained.
- ❖ **Green cover of 24% (12876 sq m) out of the total site area (53132 sqm).**
- ❖ 100 native tree saplings planted in Jan 2018.
- ❖ use of composted manure (Vermi compost), mix of neem cake, spraying of neem oil & sludge generated from STP.



Heat island reduction- Non roof

- ❖ 59% of non roof area (32000 sqm) is Paved with open grid pavers, tensile canopies in addition to the shade from trees – to increase to for 67%

- ❖ This is excluding the lawns (9926 sqm)



Heat island reduction – Roof

- ❖ Total roof area : 28704 sqm
- ❖ 83.50 % of exposed roof area is covered with -
- ❖ heat reflective paint, certified by IGBC. (36%)
- ❖ Solar PVs (500 KWp)(47%)
- ❖ 2250 units produced/ day



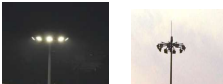
Material used for painting - cool roof - SRI 122



Temp reduction by 12 C

Roof cleaning, application 1st coat & Top coat

Outdoor light pollution reduction

- ❖ All exterior lighting fixtures are LED lamps including High mast lights.
 - ❖ 98.6 % of outdoor lighting fixtures are downward LED lights, which is much more than criterion of 75 %.
 - ❖ Only 1.4 % (70/4864) of total light fixtures emits light at an angle of 90 degrees or higher, as against the norm of 5% .
 - ❖ Adjusted the angle of depression
- 



HEALTH, HYGENINE, SANITATION

Safe drinking water

- ❖ Daily reqt of drinking water : 26 lakh litres . Nearly 200 Taps on PFs . 2 Taps per coach . --Alugadda bavi (1.5- 2 lakh lt)
- ❖ Safe drinking water storage facility available.
- ❖ **8 no. of WVM - spread on all PFs**
- ❖ Quality of water meets the prescribed standards as per IS 10500 : 2012.
- ❖ Periodic check on quality of water is done at authorised laboratory by health department.
 - Bacteriological test - monthly once.
 - Residual chlorine - daily once.
 - Chemical analysis - once in 6 M



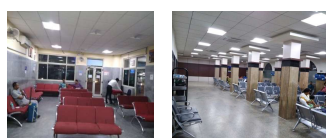
Fresh air ventilation

❑ Naturally ventilated rooms :

- ❖ Films to the windows removed, stalls in waiting hall relocated
- ❖ Ratio of openable area to the carpet area is 17.8 % (min 10%)
- ❖ Evaporative cooling is available in general Waiting hall

❑ Air Conditioned Rooms: Fresh air ventilation in all regularly occupied spaces meets the minimum ventilation rates as prescribed

- ❖ Co2 sensors with exhaust fans provided in AC waiting halls.
- ❖ Co2 level is maintained below 700 ppm
- ❖ 9 stage Air purifiers provided



Day lighting

❑ Improvement in day lighting:

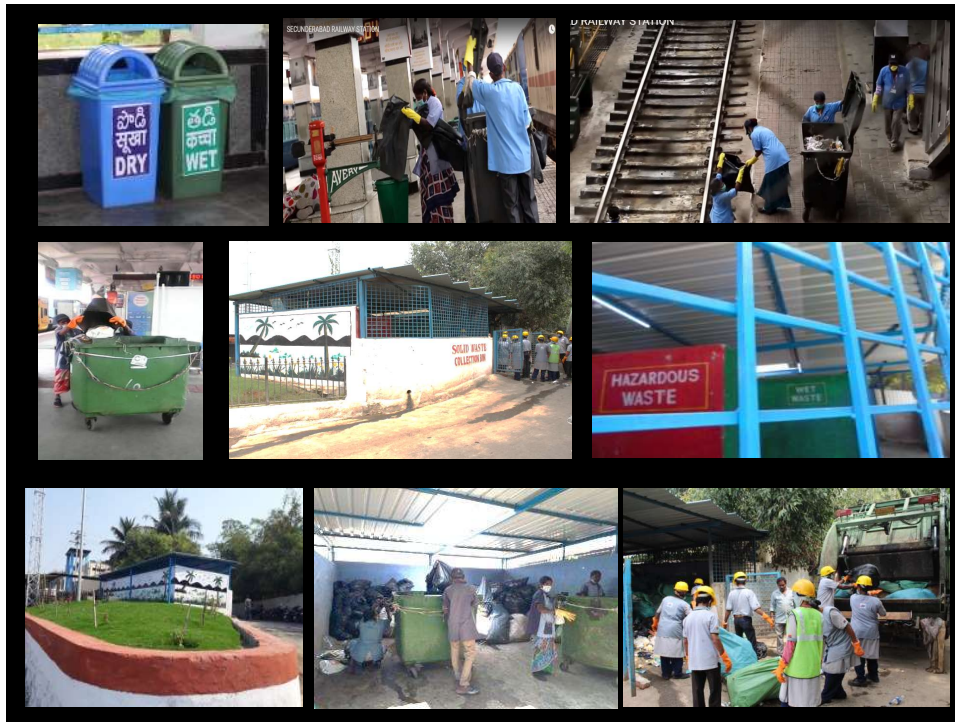
- ❖ 84 % of the occupied areas are day-lit in the station with illumination above 120 Lux. (min 75%)
- ❖ Some of the regularly occupied spaces have even 300 lux at 3pm.
- ❖ Natural sun light pipe in general waiting hall.



Solid waste Management

❖ Segregation:

- ❖ 2 separate bins for degradable / non degradable waste are available on every platform at an interval of 20 m. Emptied at 30/ 60 minutes interval .
- ❖ Central waste collection area is developed in station with separate cubicles for
 - ❖ Dry waste(paper, plastic, metal, glass, cardboard)
 - ❖ Wet waste (food waste)
 - ❖ Hazardous waste (e-waste like batteries, lamps)
- ❖ 6 Tonnes/ per day waste disposed through GHMC contract .
- ❖ In order to prevent entry of animals/ birds, this centralized collection bin is covered duly ensuring adequate air circulation and lighting (not to allow any decomposition). The location is surrounded by greenery.



- ❑ **Reuse/ Recycling:** Contract with recyclers for diverting paper , plastic, cardboard waste for recycling.
- ❑ 2 Nos of Sanitary napkin dispensers & Destroyers are provided in ladies waiting halls .
- ❑ **Environment friendly Disposal:**
 - ❖ Hazardous waste is disposed as per Hazardous Waste Management Guidelines of MoEF.
 - ❖ O&M contract with external agency is in place for cleaning of the station premises. AMC for cleaning machines is a mandatory clause in contract
 - ❖ **Plastic bottle crushers installed in central waste collection bin & coaching depot , besides on PFs .**
 - ❖ Waste collection area is being kept free from insects and mosquitoes by spraying disinfectant deodorant fluids twice daily & jet cleaning once daily.
 - ❖ **Dedicated work force of 170 persons / day**

Plastic free environment

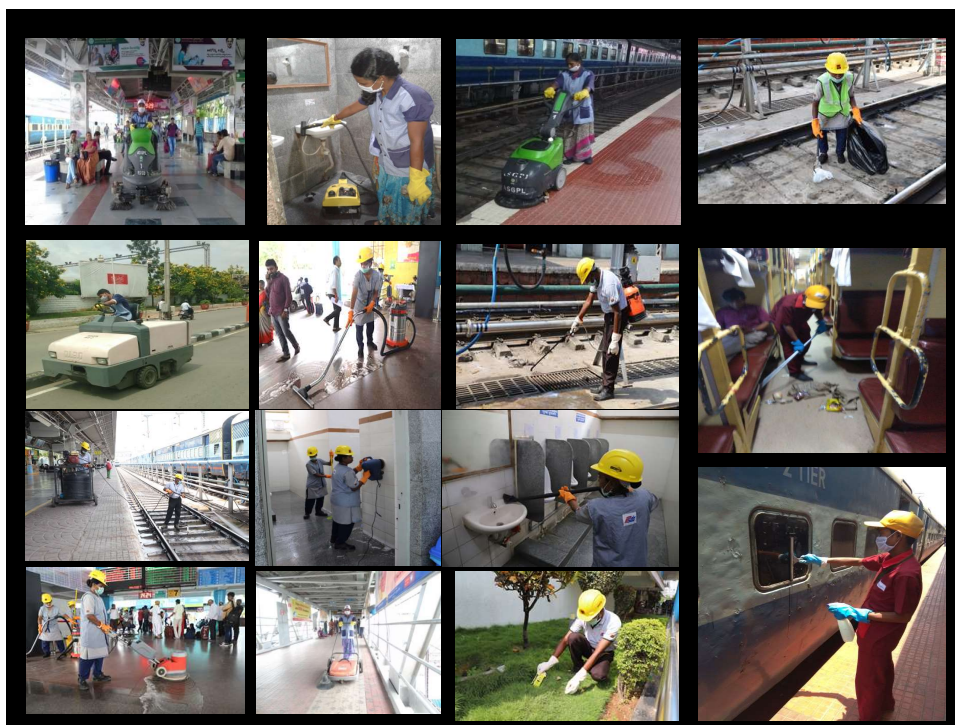
- ❖ Permanent signage and digital display to create awareness on adverse impacts of plastic bags.
- ❖ Ban on single use plastic . **No plastic carry bags in food court.**
- ❖ 13 nos of Plastic bottle crushers -HAL
- ❖ Articles being published in newspapers to create awareness



Station housekeeping

- ❖ Green pro – Green Product Certified products are being used for station mechanized cleaning .
- ❖ 40 machines of 11 types are being used for mechanized cleaning
- ❖ Pest & Rodent Control once in 15 days.
 - ❖ Natural Glue (secretion from specific tree) mixed with Choco/ peanuts is being used.
- ❖ Repairs to Amenities are done immediately on occurrence of any problem .
- ❖ Support station is available at station for on board house keeping services – OBHS available for 18 trains.
- ❖ CTS (Clean Train Station) facility is provided for cleaning of the trains passing through the station during the stop - 39 trains covered per day.
- ❖ **Awarded with ISO 14001 in Sept 2019 in recognition of its efforts to environment mgt system**

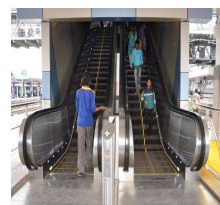




ENERGY
EFFICIENCY

Enhanced Energy performance

- ❖ 100% lighting is LED (4859 fixtures).
- ❖ Lights on PFs and circulating area are controlled by using timers & sensors.
- ❖ Motion sensors are provided for all escalators & lifts.
- ❖ All fans (1086)are BLDC/ BEE 5 star rated.
- ❖ All Inverter AC's are of BEE 5 star rated .
- ❖ Motors & Pumps are of BEE 5 star rated.
- ❖ 24690 units of power (5%) is saved per month with the above features.
- ❖ Station has bagged the coveted National Energy Conservation Award (2017), Excellent Energy efficient unit (2019) by CII.



On site renewable energy

- ❖ Solar power generation through 500 KWp. – 2250 units/ day
- ❖ 37% of power reqt is met from solar energy.
- ❖ 100 % of hot water reqt is met through solar heaters
- ❑ Measures implemented to reduce pilferage :
- ❖ 95% of energy use applications are sub metered.
- ❖ Kiosk level sub metering is done for all out sourced activities
- ❖ Energy audit for the station is being done every 3 years.





WATER EFFICIENCY

Water conservation measures

- ❖ 100 % Fixtures are with flow rates within baseline
- ❖ Taps with aerators
- ❖ Low flow rated taps
- ❖ Dual flush in toilets
- ❖ Waterless urinals
- ❖ **Reduction of consumption by 30%**
- ❖ 100% of the water reqt for coach washing (1.5 Lakh Ltrs) is met from treated water
- ❖ **saving of Rs 16 Lakh/ month**
- ❖ State-of-the-art mechanised laundries to undertake washing of bedrolls and Lenin used in trains.
- ❖ Water meters installed at source, major consumption points – audit once in 3 years



Rain water harvesting

❑ Rain water capture/recharge

- ❖ Rainwater harvesting system designed to capture at least “one day rain fall” run off volume (500 cum)

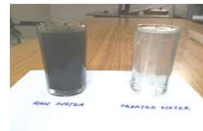
❑ Use of Harvested Rain water

- ❖ The recharged water through these rainwater harvesting pits helps in getting more yield of water supply through bore wells and thus contributes to water supply requirement of station.



Waste Water treatment

- ❖ STP has a capacity to treat 5 lakh litres of waste water per day. Daily 3.5 lakhs litres of waste water being generated and same (100%) is being treated.
- ❖ Operations & Maintenance of STP is outsourced for proper working.
- ❖ Periodic tests of the inlet & outlet parameters (BOD, COD and PH) is being done every month- meets the stds of TSPCB.
- ❖ Treated water being used for landscaping, coach washing, apron cleaning (100% reqt).



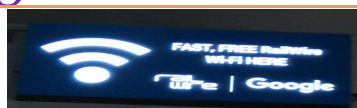


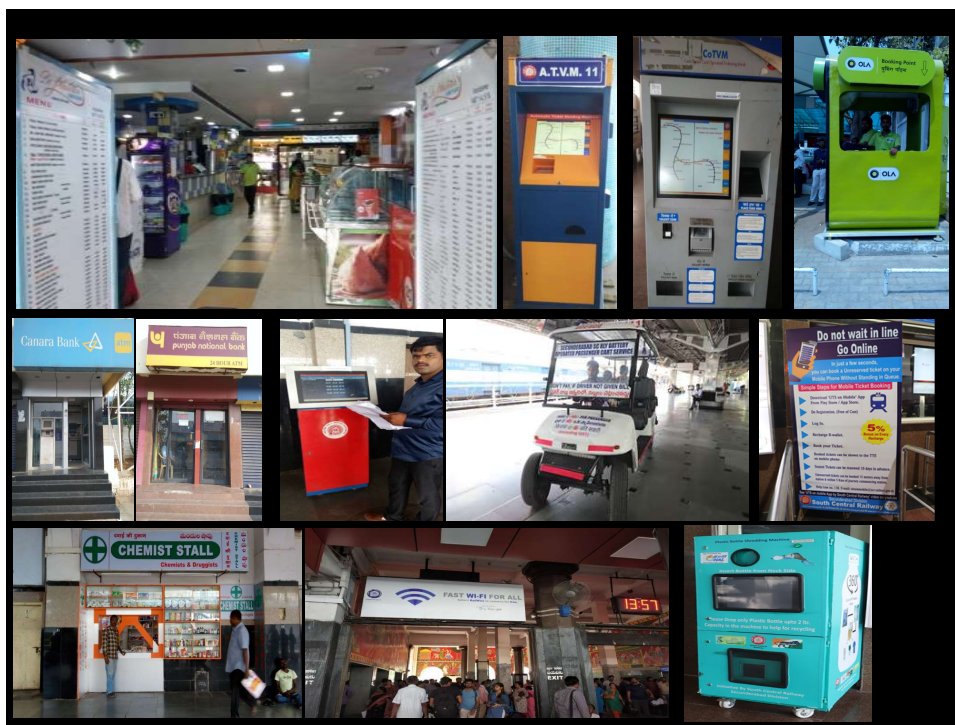
Smart & green
initiatives

Smart passenger services

□ We Have:

- WI-FI facility at station (2015)
- Pharmacy & Medical Facility
- Multi lingual e-Ticketing portal
- Prepaid Cab/ Auto Facility
- Automatic ticket vending machine
- CCTV surveillance for safety (86)
- Electronic Reservation charts
- Smart Card Ticketing
- Tourism Information & Booking Centre
- Laptop Charging station with seating facility at waiting halls.
- Touch screen information kiosk
- Medical Camp on a regular basis
- Child Help Desk
- 100% digital payment enabled





Green awareness



❖ **On adopting green features , we gained a financial benefit of around Rs 400 lakhs per annum.**

- Rs 73 lakhs from augmentation of STP.
- Rs 104 lakhs from water efficient fixtures
- Rs 3 lakhs from more yield of bore wells , open well
- Rs 68 lakhs from Solar Energy.
- Rs 5 lakhs from BLDC fans .
- Rs 10 lakhs from inverter AC's & 5 star AC's.
- RS 4 lakhs from LED lights.
- Rs 12 lakhs from solar heaters
- ❖ Rs 116 lakhs from STP of 2 lakh litres/ day
- ❖ Dependency issues, passenger comfort
- Spent : 535 lakhs**
- Elect : 500 lakhs
- Engg: 35 lakhs
- Part of the amount is funded under CSR

We believe in

❖ **Adoption of green concepts in our premises to significantly contribute to environmental sustainability & enhancement of passengers experience.**

❖ **Thanks to team IGBC & Team SC**

❖ **Our journey is continuing**

