Pre-Feasibility Report (PFR)

for

Development of Dhalbhumgarh Airport in the State of Jharkhand

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

Chapter 1

Dhalbhumgarh Airport

Chapter - 1
Dhalbhumgarh Airport

1.1 Background

Dhalbhumgarh Airport in the state of Jharkhand belongs to State Govt. It is an abandoned World War II airfield situated 60 Km from Jamshedpur of NH 33. The Airport is presently unfit for operations.

In pursuance of the decision taken in the meeting held on 17/03/2017 to review the development of Airport in Jharkhand under the Chairmanship of Hon'ble MoSCA, AAI team conducted technical study to assess the feasibility for making Dhalbhumgarh Airport operation for RCS flights initially for ATR-72 types Aircraft and subsequently for Code 4C Aircraft. The report was submitted to the State Govt on 01/06/2017.

Present Status

There are two Runways vis 01/19 with dimensions 1741 m x 45 m & 13/31 with dimensions 1771 m x45 m. The surface of runway is not suitable for operations. No other facility available at the airport. The location of the Dhalbhumgarh Airport on the Survey of India Toposheet is shown in **Figure 1.1.**

1.2 Need for Development of Dhalbhumgarh Airport

Jamshedpur is the headquarters of the East Singhbhum district of Jharkhand. According to the 2011 Census of India, Jamshedpur (East Singhbhum & Seraikela-Kharsawan) district has a current population of 1337131; the Jamshedpur urban agglomeration (UA), which includes the adjoining areas and the country's 36th largest urban agglomeration. The city is bordered by the rivers Subarnarekha and Kharkai on the north and west parts of the city.

Jamshedpur is home to the first private iron and steel company of India. The areas surrounding Jamshedpur are rich in minerals, including iron ore, coal, manganese bauxite and lime. It is a modern, industrial city; the main industries being iron and steel, truck manufacturing, tinplate production, cement and other small and medium scale industries revolving around these products.

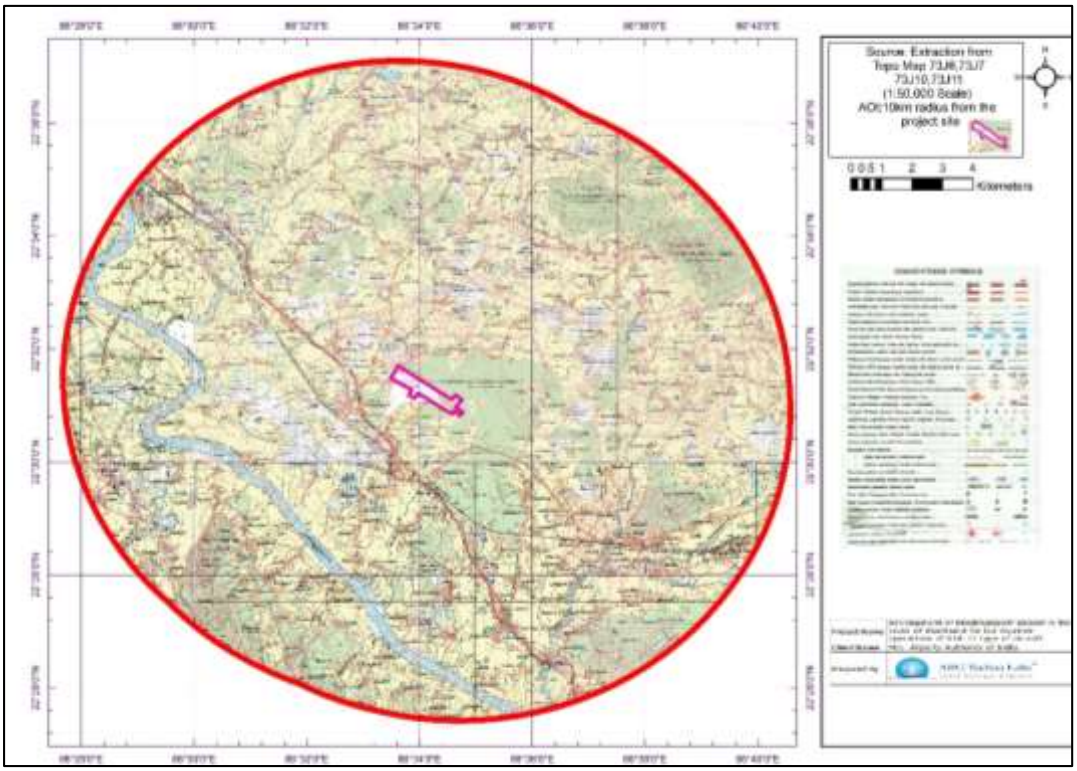

Figure 1.1: Location of the Dhalbhumgarh Airport on the SOI Toposheet

Tata Steel is the largest iron and steel producing plant in India, as well as the oldest. The other major factory in the city is Tata Motors with Tata Hitachi Construction Machinery Co. Ltd, which manufactures heavy vehicles and construction/earth moving equipment. Tata Motors is one of the largest in the country, and at peak rate can roll out 450 vehicles per day.

Jamshedpur is home to TATA Cummins Private Limited, Tayo Rolls Limited, TRF, JUSCO and Tinplate Company of India Limited. Apart from the above large corporates, Jamshedpur has a varied and powerful industrial base established at Adityapur Industrial Area (managed by AIADA). Jugsalai is key market for wholesalers while Sakchi is popular retail low cost market.

Ranchi Airport is located at distance of 130 km from Jamshedpur. In view of population and industrial activities at Jamshedpur, there is need for public airport for Jamshedpur City and region.

1.3 Dhalbhumgarh Airport

Dhalbhumgarh Airport is a proposed public airport located at Dhalbhumgarh, in the state of Jharkhand as a Greenfield airport for Jamshedpur. It will be built on the site of an abandoned World War II airfield situated 60 Km from Jamshedpur

on NH-33. The old airfield was built around 1942, as an ancillary runway for other airfields in the vicinity that were being built around India's eastern frontier as part of the war effort. The airfield was abandoned after the war.

1.4 Scope of Work for Development of Dhalbhumgarh Airport in the State of Jharkhand

Under the AAI's Policy on "Main steaming Civil Aviation Infrastructure in the States", the Govt of Jhakhand approached MoCA for taking up the development of Dhalbhumgarh Airport on the priority. The scope of work for proposed Development of Dhalbhumgarh Airport is given below:

A. Civil Works

(a) Pavement

(i) Construction of new runway dimensions 1745x30 m suitable for ATR 72 type of aircraft along with provision of turning pad at both the ends. The location of runway and other pavement is as indicated in master plan at Annexure - I. The slopes on the Runway, Apron, Taxiway, Basic Strips, RESA, etc should be as prescribed in Annex 14. Proper slope to be given for remaining area of original pavement to make it suitable for Runway shoulder.

(ii) Provision of taxiway of length 174 m, width 10.5 m. taxiway shall be provided with shoulders which extend symmetrically on each side of the taxiway so that the overall width of taxiway is 25 m as per para 3.10.1 of DGCA CAR. Fillets are provided at Taxiway and Runway/Apron Junctions.

(iii) Construction of apron of dimension 92 m x 75 m, with shoulder of width 7.25 m on all sides (as per para 3.10.1 of DGCA CAR) for the parking of two ATR 72 with in power in/power out configuration appropriate fillets at junction points with Runway.

(iv) Construction of GSE area of dimensions 20 m x 30 m as indicated in Master Plan

(v) Provision of Runway End Safety Area of dimensions 90 m x90 m at both ends of Runway.

(vi) Levelling, Grading and Development of runway Basic Strip (75 m on either side of Runway center line) as per DGCA CAR specification and Annex 14/ Planning No 1/2010 issued on 11th February 2010. The soil of Runway

should be flushed with the edge of pavements and appropriate slope as per Annex 14 of specifications to facilitate draining of rainwater into drainage system beyond the basic strips.

(vii) Levelling of ground beyond Runway Strip up to Boundary wall.

(viii) Levelling and grading of taxiway strip for taxiway and apron taxi lanes as per DGCA CAR & Para 3.11 of Annex 14 and Aerodrome Design Manual (Doc 9157) Part 2.

(ix) Construction of cooling pit and fire pit

(x) Construction of drainage system for runway, beyond runway strip.

(xi) Provision of Marking including Aiming Point of Runway and taxiways (non precision), apron stands, taxiway edge etc as per DGCA CAR & ICAO Annex 14, ACI Apron Marking Handbook and DTE of ATM circular F.No. AAI/ATM/32-01/10 dated 27th August 2010 in coordination with ATM directorate.

(xii) Provision of signal squire area, landing T and windsock etc as per DGCA CAR & ICAO Annex-14.

(b) Passenger Terminal Building

(i) Construction of Terminal Building of area 1400 sqm as per the standard design of RCS operations.

(ii) Car park for 50 Car away from any building as per BCAS for RCS operations.

(c) Construction of Control Tower and Fire Station

Construction of Control Tower and Fire Station as per the standards design operations.

(d) Miscellaneous Civil Works

(i) Technical evaluation of strength of pavements before and after the completion of work and declaration of strength of commissioning of pavements

(ii) Provision of water storage and water supply.

(iii) Construction of chain fence all around the airport boundary (6.5 km). with crash gate at either end of Runway direction to provide for outside access to RFF vehicles in case of emergency. Construction of watch tower/Morcha as per requirement.

(iv) Construction of electrical substation building for housing DG sets, stepping down main power supply, transformers, etc, storage facility for diesel, equipment, spare parts, etc.
(v) Provision of gates to segregate air side and city side area with security gurads posts at the entry gate and additional security posts inside the operation area at appropriate locations in consultation with ATM and Security DTES.
(vi) Construction of 3.5 m wide perimeter road as per Fire Manual 2015 all along the boundary wall inside operation area.
(vii) Construction of approach road from fire station to runway and apron through shortest distance and runway end to boundary of airport in the approach path of runway of sufficient strength to withstand the weight of the heaviest CFT or 60 tones, which is greater in accordance with Fire Manual 2015.
(viii) Procurement of furniture, chairs 100 % of Dep. passenger handling (i.e. 10 % for check-in and 90% for security hold). 10 % for Arrival passenger handling and baggage trolleys 60% of total PH. And adequate No. of Dust bins and planters.
(ix) Provision of covered drains and culvert (pipe/box) at appropriate locations in the operational / non-operational area for crossing of electrical, communication cables, draining storm water from runway, apron, terminal building and car park area.
(x) Horticulture and gardening works on city and airside.
(xi) Construction of 5 m wide internal circulation roads.

(B) Electrical Works

(i) Provision of mandatory and informative signage etc, internal and external electrification for all buildings.
(ii) Procurement ACs etc of adequate capacity for SHA
(iii) Provision of Apron fluid lights (as per the requirement) at appropriate locations without infringing apron safety lines/ clearance area for safety of aircraft operating on the apron with power in /power out parking stands
(iv) Lighting on car park, approach road around terminal building area, perimeter road and watch tower/Morcha.
(v) Procurement, installation and commissioning of conveyor belts behind the check in counters and baggage collection area.
(vi) Procurement and installation of additional split air conditioners for reserved lounge.
(vii) Procurement, installation and commissioning of signages, flight information display system in the passenger terminal building.
(viii) Provision of lighting in GSE Area (Edge light and low level instantaneous glow flood light)
(ix) Provision of water supply pumping arrangement system, drinking water coolers.

(x) Substation equipment, cabling, augmentation of power supply including deposits to State Electricity Authorities, etc.
(xi) Provision of PAPI (Precision Approach Path Indicator) on both ends of runway.

C) CNS Works

(i) Provision of communication and navigation aids including calibration and commissioning as per the requirements for VFR operations by CNS Dte at the locations indicated in the Master Plan.

(D) IT Systems

(i) Public Address System and car calling system
(ii) Surveillance Close Circuit TV (SCCTV) and provision of adequate numbers of close circuit TV, security Surveillance System with monitoring facilities in the Terminal Manager Room, Security Control Room, APD Office, etc.
(iii) Provision of Flight Information System (FIDS) with adequate numbers of plasma TVs in all areas of departure and arrival, restaurant, VIP, room area and airside & cityside of terminal building for passenger facilitation/entertainment.
(ii) Provision of adequate number of X ray machines for scanning hand/checked in baggage including provision of required number of ETDs, DFMDs & HHMDs as per BCAS norms.
(iii) Provision of cable data networking
(iv) Provision of adequate no. of VHF FM sets (Walkie-Talkie, Base Stations and Mobile Stations)
(v) Provisions of Telephone Exchange/ digital EPABX/IP EPABX system for Terminal Building including Telephone /Intercom instruments, wiring, etc.

Note: all the works are to be carried out as per DGCA CAR/ICAO documents

1.5 Airport Site Details

The total area requirement for Dhalbhumgarh Airport is 240 Acres. Longitude and Latitude for corners of the site of the Dhalbhumgarh Airport is given below.

1	86.56037777 E	22.52838302 N
2	86.57647706 E	22.5179689 N
3	86.57726821 E	22.51894315 N
4	86.57887047 E	22.51790136 N
5	86.57743485 E	22.51613348 N
6	86.57937016 E	22.51487189 N
7	86.57849122 E	22.51378952 N
8	86.57655591 E	22.5150511 N
9	86.57584692 E	22.51417798 N
10	86.56673668 E	22.52007733 N
11	86.56527392 E	22.51829554 N
12	86.56332584 E	22.51958887 N
13	86.56469137 E	22.52138659 N
14	86.55814519 E	22.52563321 N

The average ground elevation of site is 123 m above mean sea level.

The google map showing master plan of the proposed development of Dhalbhumgarh Airport is shown as **Figure 1.1.** The master plan of the proposed development of Dhalbhumgarh Airport is shown as **Figure 1.2.** The layout plan of the ground floor plan for the proposed terminal building at Dhalbhumgarh Airport is shown in **Figure 1.3.** The elevation section of the proposed terminal building at Dhalbhumgarh Airport is given in **Figure 1.4.**

Figure 1.1: Master Plan for Dhalbhumgarh Airport on Google Map

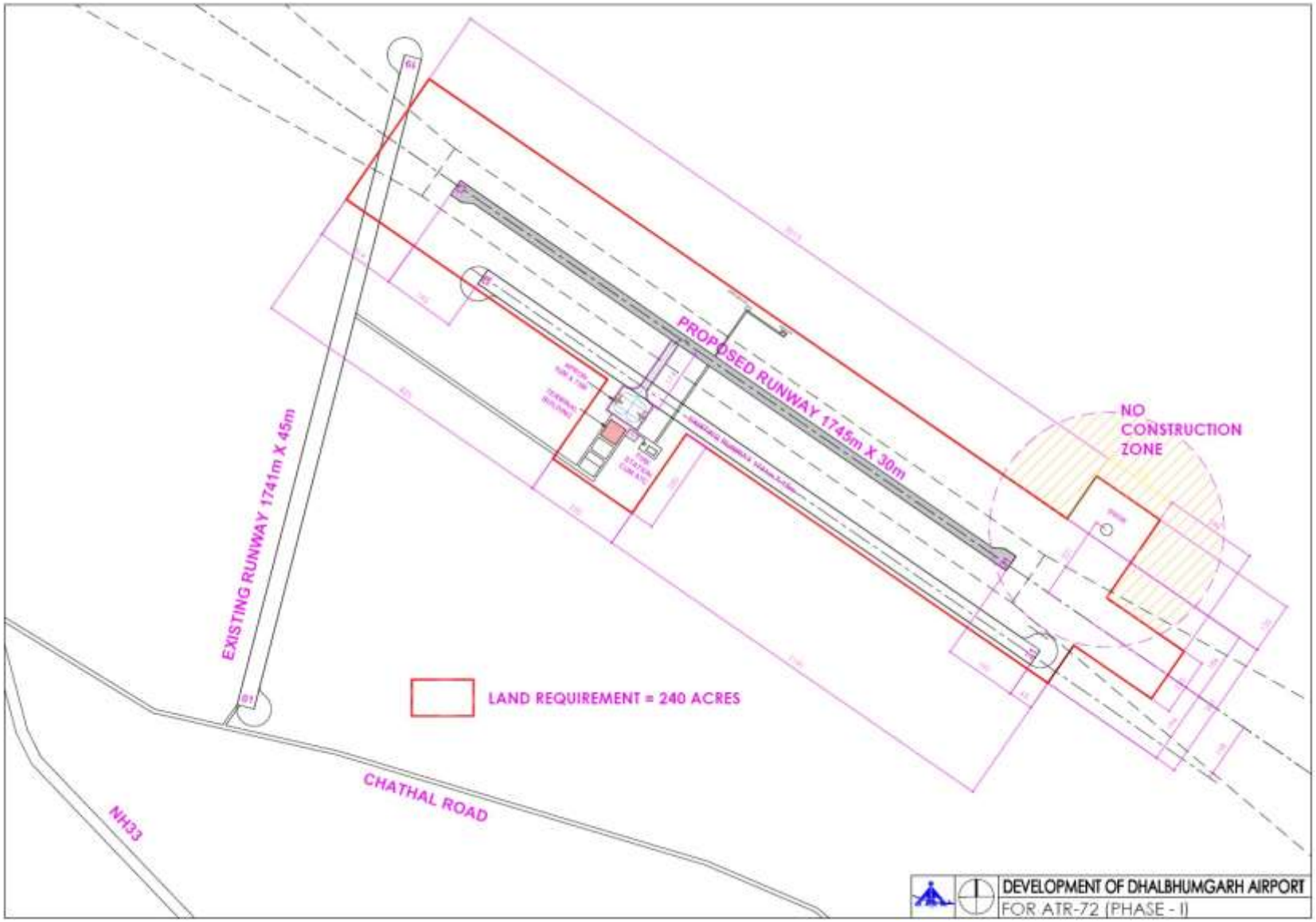

Figure 1.2: Master Plan for Dhalbhumgarh Airport

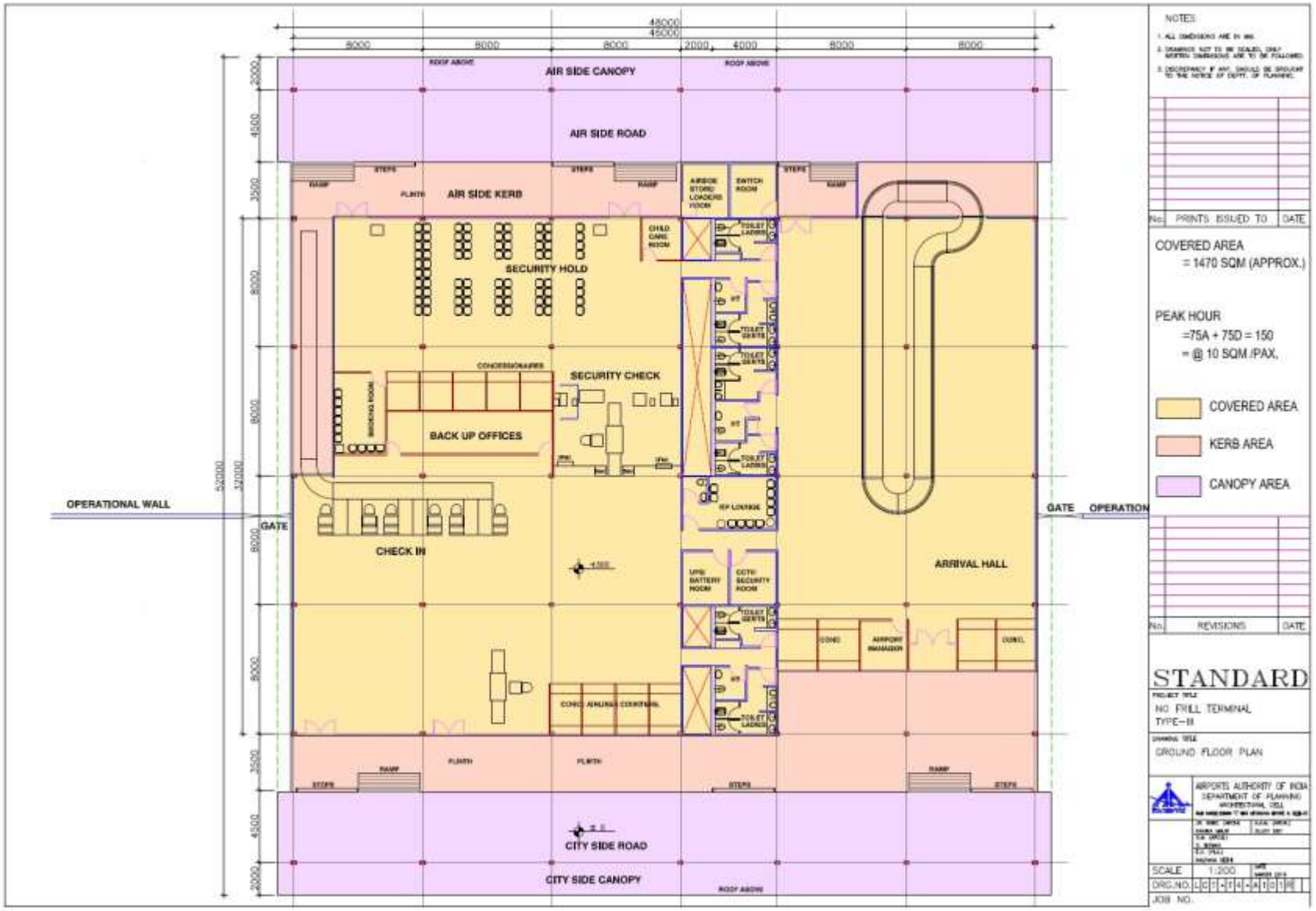

Figure 1.3: Cross Section of Terminal Building at Dhalbhumgarh Airport

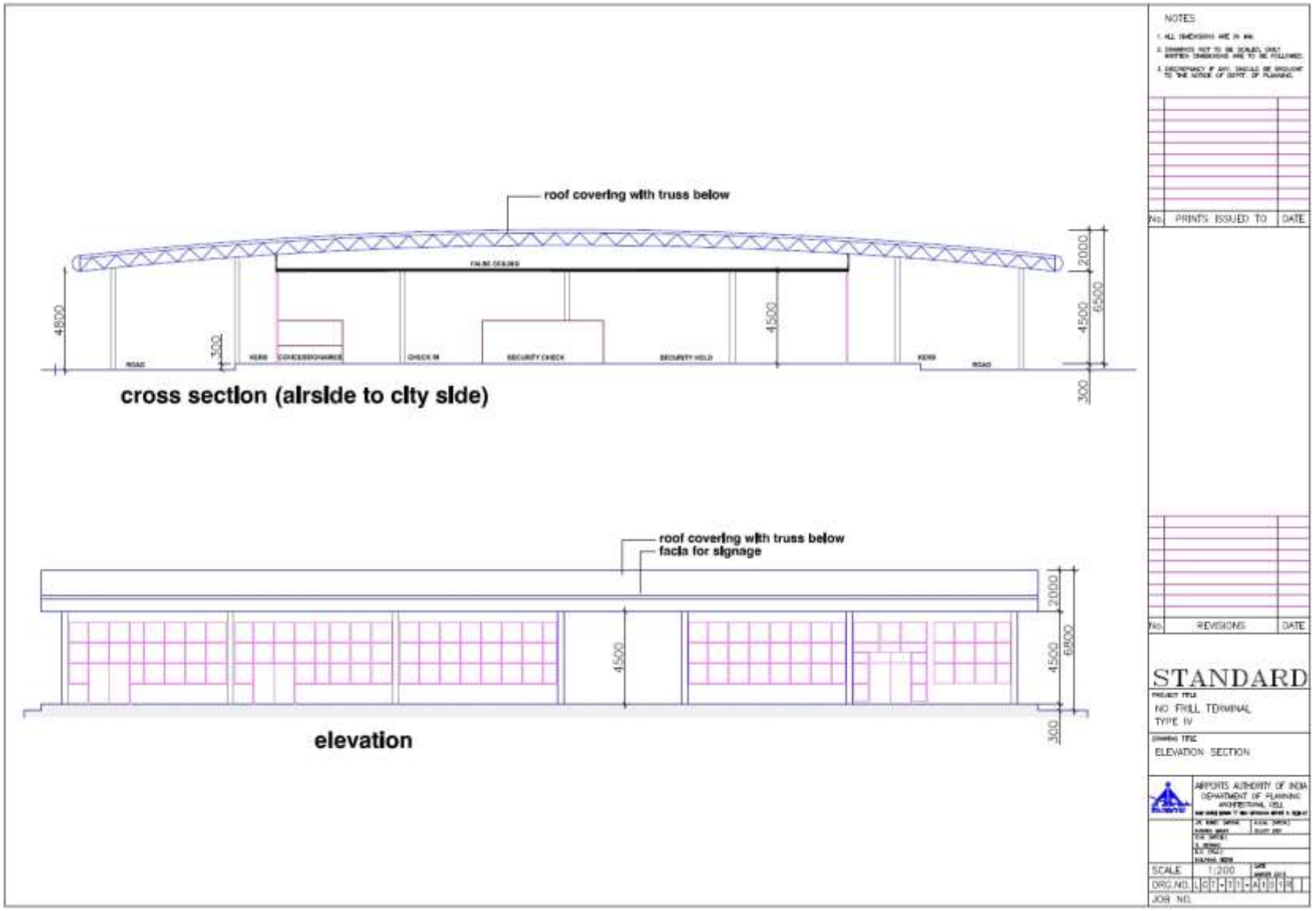

Figure 1.4: Elevation Section of Proposed Terminal Building at Dhalbhumgarh Airport

Chapter 2

Water Supply, Sewerage, Drainage And Fire Fighting

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Water Supply, Sewerage, Drainage And Fire Fighting

2.1 Introduction

At proposed development of Dhalbhumgarh Airport, proposed terminal building is proposed covering an area of approx. 1400 sqm for 150 peak passengers (75 Arrival and 75 Departure passengers).

2.2 Expected Population per Day at Airport

The expected population per day at the terminal building is given below:

Arriving and Departing Passengers	-	450
Airport Staff & Security	-	45
Drivers/Visitors	-	100

Water required as per National Building Code 2016 is given below:

Terminal Staff	-	70 Litres/Head/Day
Air Passenger	-	70 Litres/Head
Floating population	-	15 Litres/Head

2.3 Total Water Required

Water requirement for the proposed development of Dhalbhumgarh Airport is estimated as given below:

For Domestic Water Use

Air Passengers (450 x70)	-	31500 Litres
Staff (45 x70)	-	3150 Litres
Visitors (150x15)	-	2250 Litres
Total	-	36900 Litres

	Say	-	37 kld
For HVAC Use		-	15 kl
For Horticulture Use		-	15 kl
For CFT		-	3 kl

Total water requirement is estimated as 70 Kl per day. The water balance diagram for the operation of Dhalbhumgarh Airport is shown in **Figure 2.1**. The water requirement for HVAC and landscaping will be met through reuse of treated waste water from STP.

Table 2.1 – Water Requirement for Dhalbhumgarh Airport

S. No.	Description	Total Population at Peak hour	Daily Population (Considering 5 hr Peak population per day)	LPCD for Potable water	LPCD for Flushing Water	Potable Water Demand	Flushing Water Demand	Total Water Demand (l/day)
1.	Terminal Building (Passenger Load)	150	450	40	30	18,000	13,500	31,500
2.	Staff Day & Security		45	40	30	1800	1,350	3,150
3.	Visitors etc.		150	10	5	1,500	750	2,250
	Total in Litre/day					21,300	15,600	36,900
	Total in KLD							**37**
5.	**Water requirement for HVAC (treated waste water)**							
	Say in (KLD)							15000
								15
6.	**Horticulture Water Demand**							
	to be met with treated waste water							
	Say in (KLD)							**15**
7.	**CFT**							**3**
Total Water Demand for All Purpose in KLD								**70**

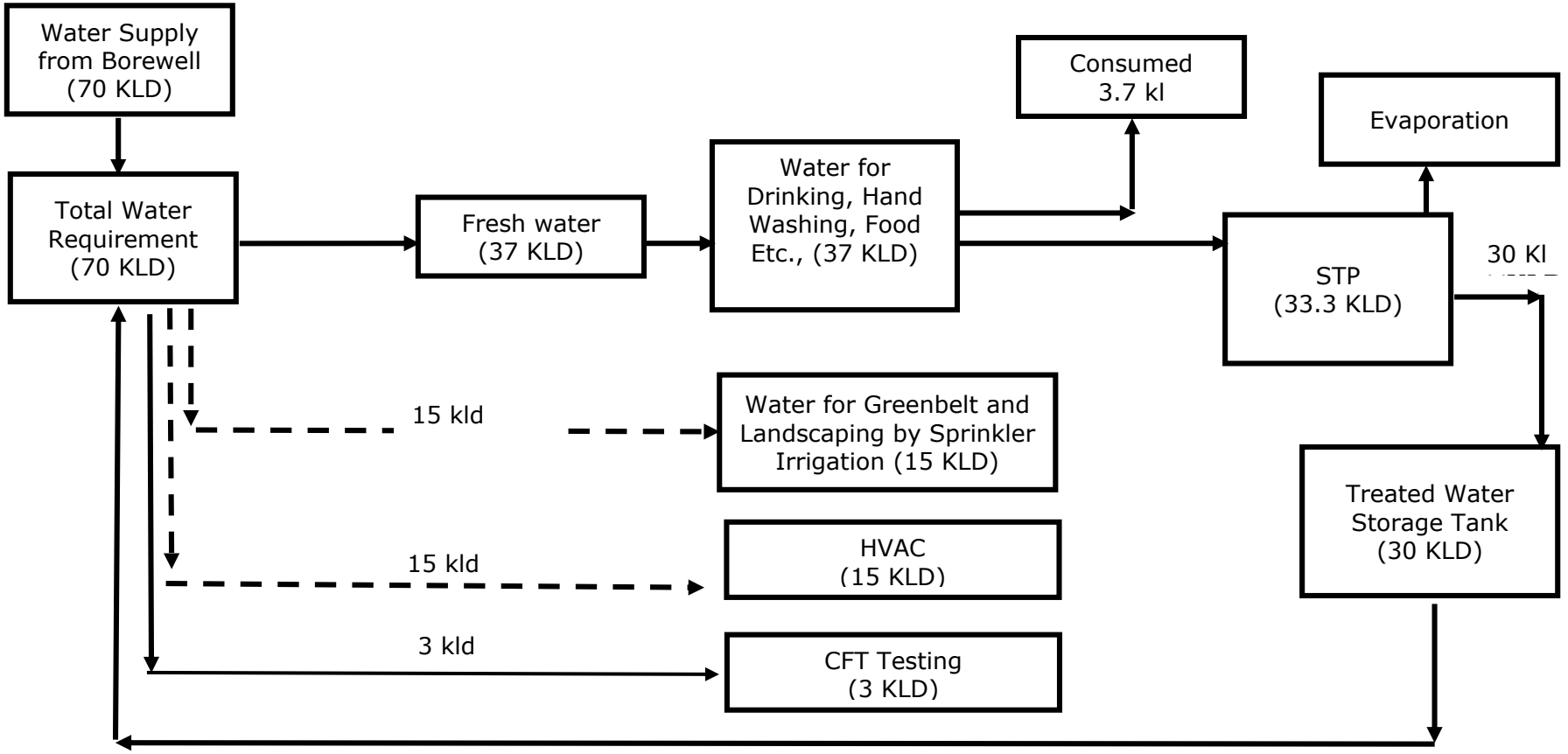

Figure 2.1 - Water Balance Diagram for Development of Dhalbhumgarh Airport

2.4 Sources of Water

Water requirement will be met through tube well, which will be bored after obtaining permission from CGWA.

2.5 Sanitary Fixtures And Toilet Accessories

Water Closet: All water closets will be wall hung with concealed dual flushing cistern and staff toilets WC will be provided with dual flushing cistern. Under counter/ circular above counter wash basins with battery operated auto sensor pillar taps will be provided.

- Flat back wash basins with CP brass self closing pillar tap will be provided in lodders and staff toilets.
- Semi stall urinal with battery operating auto sensor flush valves.
- Frosted Glass urinal portion with metal clips.
- CP adjustable shower with Diverter and spout in rest room's and VIP toilet.
- Vitreous china recess toilet paper holder.
- Automatic soap dispenser on wash basins (Stainless steel).
- Automatic air purifier (Stainless steel).
- Toilet tissue paper holder (Stainless steel).
- Automatic electrically operated hand drier (Stainless steel).

2.6 Water Distributions Pipe and Fittings

G.I. / composite Pipe and fitting for water. Heavy class G.I. pipe and fitting in shaft and under floor. All external under ground water pipe will be cast iron Class LA conforming to IS:1536 with specials and lead joints.

2.7 Sewerage Treatment and Disposal

As per water balance diagram, 33 kl/d sewage will be generated after the operation of new terminal building which will be treated in STP of 40 kl/day capacity.

2.8 Sewage Treatment Plant

Sewage generated from the proposed airport will be treated in well designed Sewage Treatment Plant (STP). It is proposed to install Moving Bed Biofilm Reactor (MBBR) type sewage treatment plant of 40 kld capacity.

Design of STP

Approximately 40 kl per day sewage/waste water will be generated from the proposed airport. Sewage will be collected and treated in well-designed sewage treatment plant. After meeting stipulated standards, treated waste water will be utilized for flushing purpose, irrigation of greenery and landscaping.

Details of Sewage Treatment Process

The sewage from the proposed airport shall be collected by gravity into the collection tank/equalization tank of Sewage Treatment Plant (STP) via perforated screens to prevent the large particles into system. In equalization tank, pH and temperature of incoming sewage will be equalized. The sewage from equalization tank will be pumped to Moving Bed Biofilm Reactor (MBBR) reactor for biological treatment, where required quantity of air in presence of MBBR system will be supplied to meet the oxygen requirements by mean of blower and fine bubbles air diffusers. After MBBR reactor, sewage will flow by gravity to settler (tube type) where sludge will be settled at the bottom due to gravity. This settled sludge will be recycled through sludge pump to MBBR reactor to meet the mixed liquor suspended solids (MLSS) requirement, excess sludge will be discharged through filter press for final disposal. Final discharge of waste water from settler will be collected in chlorine contact tank, where some chlorine will be dosed for disinfections of treated waste water. Then, treated sewage will be pumped for tertiary treatment through duel media filter or it will be passed through or it will be passed through Ultraviolet (UV) disinfection system. Treated sewage will meet the norms prescribed by State Pollution Control Board and will be utilized for flushing, HVAC and for irrigation of greenery & landscaping purpose. Treated wasted water will not be discharged out side the boundary of proposed airport.

Design Parameters

Design parameters for the proposed STP are given below:

Sl.	Parameters	Inlet	Outlet
1.	BOD	300 mg/l	Less than 10 mg/l
2.	COD	400 mg/l	Less than 100 mg/l
3.	Oil & Grease	50 mg/l	Less than 10 mg/l
4.	TSS	200 mg/l	Less than 50 mg/l
5.	PH	6.5-8.5 mg/l	6.5-8.5 mg/l

No treated waste water will be discharged outside the airport. Unit wise description of the proposed STP is given below and shown in **Figure 2.2:**

Screen Chamber

Prior to the actual treatment of the wastewater, a screen chamber will be provided. In this chamber removable type mechanical bar screens will be provided for removal of various large size elements, such as paper, cloth, plastic etc, etc, which may hamper the satisfactory functioning of subsequent units of the STP, if not removed at early stages.

Oil & Grease Trap

The oil & grease trap will be provided to collect oil and grease trace coming with sewage. Collected oil & grease will be stored in a drum and disposed of in environmental sound manner.

Equalization Tank

As the quantity of the flow is non-uniform in nature, an equalization tank will have to be provided. By the provision of an equalization tank, wastewater characteristics will become homogeneous in nature and, therefore, better treatment can be achieved in the subsequent units of the STP. Diffused aeration will be provided in this tank to stir the contents of the tank completely.

MBBR Reactor (Biological Treatment)

Moving Bed Biofilm Reactor (MBBR) technology employs thousands of polyethylene biofilm carriers operating in mixed motion within an aerated wastewater treatment basin. Each individual bio carrier increases productivity through providing protected surface area to support the growth of heterotrophic and autotrophic bacteria within its cells. It is this high-density population of bacteria that achieves high-rate biodegradation within the system, while also offering process reliability and ease of operation.

This technology provides cost-effective treatment with minimal maintenance since MBBR processes self-maintain an optimum level of productive biofilm. Additionally, the biofilm attached to the mobile biocarriers within the system automatically responds to load fluctuations.

The bacteria/activated sludge grow on the internal surface of the carriers. The bacteria break down the organic matter from the waste water. The aeration system keeps the carriers with activated sludge in motion. Only the extra amount of bacteria growth, the excess sludge will come separate from the carriers and will flow with the treated water towards the final separator. The system can consist of a one stage or more stage system (see underneath schedule), depending on the specific demands. The specific bacteria remain in their own duty tank because of the fact that the carriers remain in only 1 tank, protected by screens.

A bio-film develops on the media, which move along the effluent sewage in the reactors. The movement within the reactors is generated by providing aeration with the help of diffusers placed at the bottom of reactors. This thin film on the media enables bacteria to act up on the bio-degradable matter in the effluent sewage and thus reduce the BOD/COD content in presence of oxygen from the air used for fluidization. Aeration will be done with the help of twin lobe blowers. The MBBR reactors will increase the oxygen content of the sewage and thus, will help in the growth of the micro-organisms required to reduce the BOD. These micro-organisms will consume the organic matter and will convert it into active biomass, better known as sludge. The waste water, laden with sludge, will be transferred to tube settler for sludge separation.

Secondary Settling Tank Followed by Pre filtration Tank

The sludge formed will settle in the secondary settling tank followed by pre filtration tank. The settled sludge will be discharged in the Sludge Collection Tank and would be dewatered using sludge press. The clear supernatant from the outlet of the tube settler will be discharged as treated waste water and will be passed on to further treatment for final polishing. HDPE/PVC low maintenance tubes will be provided for trouble free operation of the tube settler.

Sludge Filter Press

The sludge from the settling tank of the STP will be collected in the tank and will be treated in the sludge press. This will be 18 plates CI sludge press completes with its pump and accessories. In sludge press, the sludge in the form of liquid slurry is fed into the press and dry solid cake of sludge is taken out from it. These dry cakes are used as manure for green belt and landscaping.

Pressure Sand Filter

For final polishing of the treated waste water, a Pressure Sand Filter (PSF) will be provided. The PSF comprises of a MS Vessel having filtering media sand topping for filtration of supernatant treated sewage water and thus ensuring clarity of water.

Activated Carbon Filter

For tertiary treatment, an Activated Carbon Filter (ACF) will be provided. This will be MS constructed tank in which activated charcoal/carbon will be filled as adsorbing media. This will not only adsorb impurities but will also act as the polishing tank for the final treated waste water. The resultant water shall be clear, odourless and will be reused for horticulture purpose.

Ultraviolet (UV) Disinfection System

Ultraviolet (UV) disinfection will use a UV light source. UV-rays are energy-rich electromagnetic rays that are found in the natural spectrum of the sunlight. They are in the range of the invisible short wave light having a wavelength ranging from 100 to 400 nm.

can pass through a flow chamber, and UV rays are admitted and absorbed into the stream. When ultraviolet energy is absorbed by the reproductive mechanisms of bacteria and viruses, the genetic material is rearranged and they can no longer reproduce. They are therefore considered dead and the risk of disease has been eliminated.

UV plant will have following features:

- Stainless steel construction
- Single lamp
- Long life of the UV Lamp

Figure 2.2: Schematic Diagram for MBBR Based STP

2.9 Rain Water Harvesting

Rainwater harvesting system for proposed Dhalbhumgarh Airport will be developed based in Central Ground Water Board (CGWB) Guidelines and Construction Manual of Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India.

Chapter 3

Solid Waste Management

3.1 Solid Waste Generation

It is estimated that approx. 65 kg/d solid waste will be generated from the proposed Dhalbhumgarh airport. From the proposed terminal building, waste will be generated in the form of paper, plastics, polyethylene bags, and food waste, etc.

3.2 Solid Waste Management

The following measures will be taken for management of solid wastes during operation phase of proposed airport.

- Solid wastes management will be carried out as per Solid Waste Management Rule, 2016.
- Wastes shall be collected in designated waste bins based on their types, placed at the strategic locations.

The solid waste handling and disposal services will be outsourced to authorized agency to ensure disposal of solid waste generated from the proposed airport. Solid waste generated in the aircrafts will also disposed off at the designated waste collection points from where the agency will pick up the garbage bags.

The agency will collect the garbage from designated bins, which will be spread over the area of proposed airport. The wet garbage of the aircrafts comprising of left over food in the tray from the security gates of flight kitchens will be disposed off at the specified places.

The collected garbage will be transported in covered container and will be arranged to dispose off after segregation of recyclable wastes as per provisions of Solid Waste Management Rule, 2016. After collection of garbage, garbage bins will be disinfected every day by sprinkling disinfectant powder by the agency. Weekly washing of garbage bins will also be carried out by this agency.

After collection of waste, solid waste management plan to be followed by authorized agency is as given below:

- Segregation of recyclable and non recyclable wastes.
- Disposal of recyclable wastes for recycling.
- Composting of biodegradable organic of wastes
- Disposal of segregated wastes to common municipal waste landfill Site

Chapter 4

Energy Conservation

4.1 Energy Conservation Measures

During design and construction of proposed terminal building at the proposed development of Dhalbhumgarh Airport necessary measures will be taken for conservation of energy in line with “Energy Conservation Building Code –2016” and “National Building Code 2016”. The important energy conservation measures proposed for new terminal building are described below:

- Airport Terminal building will be designed and constructed for GRIHA Rating 4 star,
- Use of Energy Efficient building material & glass,
- Use of Solar Backed up Light Emitting Diode Lamps instead of par lamps,
- Energy efficient HVAC system,
- Solar passive techniques for terminal building,
- Microprocessor-based Building Management System (BMS) will be installed for minimization of energy consumption,
- Automatic lighting on/ off control system will be provided in the airport area for optimum utilization of energy.

It is proposed that 50 KW solar power generation plant will be established at the airport to produce clean energy.

By adopting above measures about 30% energy will be saved.