

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, WESTERN
ZONE BENCH PUNE AT PUNE.**

ORIGINAL APPLICATION NO. 6 OF 2021

MRS. MEENAL GUPTA AND OTHERS .. APPLICANTS

V/s

UNION OF INDIA AND OTHERS .. RESPONDENTS

**REPLY ON BEHALF OF
RESPONDENT Nos.8 & 9**

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Place-Pune



Date-31/03/2022

ADVOCATE FOR THE RESPONDENT NO-8 & 9

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WESTERN ZONE BENCH PUNE AT PUNE.

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MAY IT PLEASE THE HON'BLE TRIBUNAL

1. At the outset, the Original Application as filed by the Applicants is devoid of any material and is liable to be dismissed with cost. The Answering Respondents submit that, the statements and averments made in the said Application are not admitted by these Respondents and hence denied, except so far they are expressly admitted herein under. The Answering Respondents reserve their right/liberty to file a detailed reply as and when required by this Hon'ble Tribunal. The Applicant herein has made allegations

against the Respondent Authorities as well as these Answering Respondents, but has failed to substantiate the destruction and or the harm the project has caused/will cause to the environment.

I. PRELIMINARY OBJECTIONS

2. It is submitted that cause of action for filing an application under the provisions of the National Green Tribunal Act, 2010 cannot accrue on the day when a person discovers the act of environmental damage. This Hon'ble Tribunal has rejected the proposition of 'Discovery Rule' being applicable to patent event perceptible to the public at large and therefore by no stretch of imagination can the cause of action for filing an application under the provisions of the said act could accrue on the day when such alleged environmental damage is discovered by the party. The Answering Respondents submit that the Respondent No.5 had granted Environment Clearance to the Respondent No.8 on 26.11.2012. The challenge to the EC can be made only by filing an Appeal u/s 16 of the NGT Act, 2010. The limitation provided u/s 16 of the Act is 30 days from the date of the receipt of the order and further period of 60 days can be granted by explaining the reasons for delay on the part of the person preferring the appeal. In the present case, the

Applicant has not challenged the EC and thus, to forgo the said bar of limitation, the Applicant has preferred the present Original Application u/s 15 of the NGT Act. It is trite law that, if the litigant cannot do directly before the Court or Tribunal, he cannot do the same indirectly. The OA is in effect a challenge to the EC dated 26.11.2012, and the same is evident from the pleadings. Such a challenge, being an order specified as an appealable order under Sec. 16, was necessarily to be challenged only under the said Section. However, if the Applicant had done so, the same would be hopelessly barred by limitation, as it has to be filed within 60 days from the date on which the order was passed. In the instant case, even taking the date on which the judgment in *Society for Protection of Environment & Biodiversity* was rendered i.e., 26.11.2012, there would have been a delay of over 9 years in filing the same. The Original Applicant, therefore to get over the bar of limitation preferred the said OA which was otherwise not maintainable.

3. The Applicants have filed the present application under the provisions of S.15, 17 & 18 of the NGT Act. S.15 of the Act says that the Tribunal has the power to grant relief, compensation and restitution. S.17 of the Act says that the liability to pay relief or

compensation is to be determined by the Hon'ble Tribunal after perusing the documents and records in the case in hand. It is worthwhile to mention herein that, under the National Green Tribunal, Practice & Procedure Rules 2011 and more specifically under Rule 8, it is mandatory upon the Applicant seeking compensation from this Hon'ble Tribunal to file the application for relief and compensation under Form 2 by disclosing all material particulars. It is further pointed out that, under Rule 12 it is mandatory upon the Applicant seeking compensation from this Hon'ble Tribunal to pay stamp duty equivalent to 1% of the amount of compensation claimed. It appears that the Applicants have not undergone the said exercise and hence the application U/s 15 would thus not be maintainable. It is submitted that, if this Hon'ble Tribunal comes to the conclusion that, in view of the legal provisions narrated above, the application of the Applicants is not maintainable before this Tribunal then the Hon'ble Tribunal would have no jurisdiction to entertain the present application and thus the application would have to be rejected with costs.

4. The Respondent No.8 had constructed 3 buildings and has created third party rights by allotting flats to the intended allottees by

executing agreements with the said purchasers. Not only that, the Respondent No.8 has also formed an Association of the said flat purchasers vide the Deed of Declaration dated 9th March 2018, which was registered in the office of the Sub-Registrar, Mulshi-2 Pune. Copy of the Deed of Declaration is placed on record by the Applicants.

II FACTS OF THE CASE

5. The Answering Respondents herein sought a permission from the Respondent No.3 to develop the land bearing Plot No.17 in Rajiv Gandhi InfoTech Park, Phase-II, Hinjawadi, Pune. Accordingly, the Respondent No.3 being the Planning Authority issued a letter dated 29.07.2008 in respect of land admeasuring 80.14 acres in favour of Respondent No. 8. The layout for 80.23 acres came to be granted vide letter No.MIDC/CP/1379 dated 10.01.2012. Accordingly, the Respondent No.8 decided to execute the construction of the project by the name "The Crown Greens". In accordance to the approval accorded by the Respondent No.3, the Respondent No.8 was directed to obtain an Environmental Clearance Certificate from the Respondent No.5 herein. Accordingly, the Respondent No.5 has granted the Environmental Clearance Certificate dated 26.11.2012 to the Respondent No. 8

herein. It is pertinent to mention herein that, in accordance to the said approvals granted by the Respondent Nos.3 & 5, the Answering Respondents have constructed the Building No.1 consisting of 3 wings (i.e Wings T1, T2, & T3) and have awarded possession to the flat purchasers. The Answering Respondents have formed an Association of Apartment Owners and that about 36 (out of total of 220 flats) Deeds of Apartment have been executed.

6. It is pertinent to mention herein that, the Hon'ble Tribunal vide its order dated 07.06.2021 had constituted a joint Committee consisting of the members of SEIAA, MPCB, CPCB, IIT Mumbai, and a Nominee of Ministry of Mines, Government of India. The said Committee has visited the site and has filed their detailed report before this Hon'ble Tribunal on 18.11.2021. In the said report, the Committee has given two recommendations in respect of the project of the Answering Respondents. As per the recommendations observed by the Committee and in accordance to the Environmental Clearance Conditions, the Committee has recommended that the project proponent should expedite the installation of Common Solar Water Heating System, and the second recommendation is that a Hydrogeologist and a Structural

Engineer should carry out a study in respect of the assessment of Ground Water Seepage.

7. The Answering Respondents have considered the recommendations of the Committee and would like to make their submissions in that regard. As regards, the installation of solar water heaters, the Answering Respondents have carried out the study of the consultant by the name ORB Energy who has vide their report dated 8th December 2021 pointed out that the site where the solar water heaters are to be installed falls under the shadow region and will be deprived of sunlight for most part of the day. The consultant vide the said report has thus recommended for not going ahead with the installation of the solar water heaters. Infact the said fact was also informed to the Committee during its visit to the site. The copy of the report is annexed hereto and marked as **ANNEXURE R-1**. The Answering Respondent has provided solar panels in accordance to the condition mentioned in the Environment Clearance. As per MIDC Development Control Rules 2009, Appendix XVIII Point No.3 on Page 124 following condition is mentioned:

“The capacity of solar water heating system to be installed on the building different categories shall be decided in consultation with

the Planning / Local Authority concerned. The recommended minimum capacity shall not be less than 25 litres per day for each bathroom and kitchen subject to the condition that maximum of 50% of the total roof area is provided with the system.”

The Answering Respondent submits that even if the solar water heating system has to be installed on the roofs it needs to be verified whether enough water can be heated on the available space. There will be lot of internal changes required to be done in the respective flats. Copy of the relevant extract of the MIDC Development Rules is annexed hereto and marked as **ANNEXURE – R-2.**

8. The Answering Respondents further submit that with respect to the second recommendation by the Committee, it is submitted that, the Structural Engineer by the name JW Consultants LLP had submitted its report dated 18th July 2020 and had recommended that there is no danger whatsoever to the structure of the project standing on the said land. The copy of the report dated 18th July 2020 is annexed hereto and marked as **ANNEXURE R-3.**
9. The Answering Respondents submit that the Committee in the report has observed that the Project Proponent has not declared the

information about the groundwater in Form IA. The Answering Respondents had submitted the relevant information before the Respondent No.5 at the time of preferring of the application for grant of Environmental Clearance. The Answering Respondents submitted a detailed geo technical report dated July 2011. In the said report it is clearly mentioned about existence of groundwater. The Answering Respondents also made a presentation before the Respondent No.5 and in the presentation as well existence of groundwater was mentioned. The Answering Respondents, thus submit that these documents were placed before the Respondent No.5, and the Respondent No.5 after perusing the said documents has proceeded to grant the Environmental Clearance. The Public Hearing for the grant of the Environmental Clearance was held on 17th December 2012. The Environmental Clearance remains unchallenged till date. The Applicants are thus seeking a backdoor entry to challenge the Environmental Clearance to overcome the hurdle of limitation and maintainability of the present application. The Answering Respondents further submit that the Environmental Clearance has a clear mention of the groundwater. The Respondent No.5 has mentioned the same on the basis of the information provided by the Answering Respondents. It is thus submitted that

the Answering Respondents have provided all the information and not withheld the same. The observation of the Committee is thus erroneous and needs to be recalled. Copies of the Geo Technical Survey Report and the presentation are annexed hereto and marked as **ANNEXURE – R – 4 and R – 5** respectively.

10. It is submitted that, in view of the said reports, which respond to the recommendations of the Hon'ble Committee, it is submitted that, it is thus not feasible for installation of solar water heaters in the project.
11. It is worthwhile to mention that, the Environmental Clearance to the said project came to be granted on 26th November 2012. The said Environmental Clearance has not been challenged before any Court of Law. The said Environmental Clearance has expired on 25th November 2019 and that the Project Proponent has further applied for renewal of the same in respect of the proposed constructions to be constructed in future at the said Plot. The Applicants herein purchased the said flats from the Answering Respondents in 2018.

PARAWISE REPLY

12. With respect to the contents of para No. 1 and 2, the contents are a matter of record and need not be commented upon
13. The Answering Respondents submit that the contents of para 3 are incorrect. The statements are vague and the Applicants are put to strict proof thereof. The Respondents shall deal with each and every allegation raised by the Applicants. With respect to the contents of para 4 with respect to the approvals, the same are a matter of record and that the Answering Respondents have received all the permissions from the respective authorities. With respect to the allegations on the deed of declaration as contrary to the provisions of the law, the statement is vague and the Applicants are put to strict proof thereof. Further, the Hon'ble Tribunal has no jurisdiction to decide on the validity of the formation of the Association.
14. With respect to the contents of para No.5 it is submitted that the same are false and not admitted by the Answering Respondents. The Answering Respondents have already narrated above that the Structural Engineer vide his report has already certified that the structure does not have any problem. The Applicants need to understand that in the year 2020 there was heavy rainfall and on

account of which the basement came to be flooded, and it is not a regular feature during the monsoons at the said site. There was no flooding in the basement when the Answering Respondents were maintaining the common facilities from 2016 to 2018. Since the maintenance of the common facilities was handed over to the Association on 28th July 2018 there was no flooding in 2018 and 2019. Basement flooding occurred in 2020 due to the following reasons for which the Answering Respondents are not responsible:

- (a) There was abnormal heavy rain in 2020
- (b) The storm water drains outside the plot on MIDC roadside were blocked.
- (c) The storm water drains at the entrance of the basement ramp were blocked.
- (d) Dewatering pumps in the basement which were handed over to the Association on 28 July 2018 were missing.

15. With respect to the contents of para No.6 & 7, it is pointed out that, the Committee has already taken cognizance of the allegations made by the Applicants in the said paras and have submitted a detailed report in that regard. It is further submitted that, the Applicants have not challenged the Environmental Clearance dated 26.11.2012 and the same cannot be challenged at this point of time

being time barred. It may be further pointed out that, the Applicants are seeking a backdoor entry by filing the present OA without challenging the Environmental Clearance granted to the Answering Respondents. The Applicants have miserably failed to prove that the Answering Respondents have violated the conditions mentioned in the Environmental Clearance (EC). The Answering Respondents further submit that, as pointed out in the aforementioned para's that, the EC granted to the Answering Respondents has expired and that the Answering Respondents have already submitted an application for renewal of the same with regards to the future constructions to be constructed on the said Plot.

16. With respect to the contents of para No.8, the same are false and denied by the Answering Respondents. It is submitted that, the Answering Respondents have applied to the Maharashtra Pollution Control Board (MPCB) for grant of consent to establish and operate in respect of the STP to be installed at the project. The consents have thus been granted by the MPCB and have been renewed time and again. It is submitted herein that, as stated earlier the Answering Respondents have already formed an Association of the Apartment Owners and that it is now the duty of the said

Association to make timely applications to the respective authorities for grant of consent. Be that as it may, it is further submitted that, the Applicants have not challenged the grant of consent to the Answering Respondents and that has not made any complaint of whatsoever nature to the MPCB. The Applicants have not challenged the grant of consent before the respective authorities and thus cannot make a hue and cry before this Hon'ble Tribunal.

17. With respect to the contents of para No.9, the same is denied by the Answering Respondents herein. It is submitted that, the Answering Respondents had not extracted any ground water and hence there is no question of applying for NOC from the CGWA. The understanding of the Applicants in that regard is thus misplaced and not tenable in the eyes of law.
18. With respect to the contents of para No. 10, the same are denied and not admitted by the Answering Respondents. It is submitted that, the Committee appointed by this Hon'ble Tribunal has not come to the conclusion that the Answering Respondents violated the conditions of the EC, and hence there is no need to treat the Answering Respondents as violator for enforcement of environmental compensation as claimed by the Applicants in the said paragraphs.

19. With respect to the contents of para No.11, the contents therein are false and incorrect. The Applicants are again trying to gain a back door entry of challenging the EC before this Hon'ble Tribunal under the garb of the present Original Application. The Applicants are well aware that unless the prior Environmental Clearance is not obtained the subsequent permissions from the respective authorities are not granted. The Applicants themselves have pointed out the various permissions received by the Answering Respondents. The Applicants are thus trying to mislead the Hon'ble Tribunal and suppressing material facts. The Applicants have thus approached this Hon'ble Tribunal with unclean hands and that this Original Application thus ought to be rejected on this ground alone.
20. With respect to the contents of paras 12 and 13 the same is not attributable to the Answering Respondents and hence the same cannot be commented upon by the Answering Respondents.
21. With respect to the contents of para No.14, the averments therein extracts from judgments of the Hon'ble Supreme Court and need not be commented upon. The Applicants have miserably failed to establish the destruction to the environment and the same can be confirmed from the report of the Committee.

22. With respect to the contents of para 15 the same is not attributable to the Answering Respondents and hence need not be commented upon.
23. With respect to the contents of para 16 the Applicants have failed to establish any case of destruction of the environment and that have unnecessarily dragged these Respondents to this Hon'ble Tribunal and thus are not entitled to any relief of whatsoever nature.
24. With respect to the contents of para No. 17, it is submitted that, since the Applicants have failed to make out any case under the provisions of Sections 15, 17 and 18 of the National Green Tribunal Act, 2010, the Hon'ble Tribunal will thus not have any jurisdiction to entertain and decide the present application.
25. With respect to the contents of para 18, the same are false and hence denied. The Answering Respondents have already narrated in para 13 above that the flooding was not on account of the fault of the Answering Respondents. The Applicants are unnecessarily trying to mislead this Hon'ble Tribunal. The Committee appointed by the Hon'ble Tribunal has already caused a visit and submitted the report.

26. The Answering Respondents submit that the contents of para 19 are false and incorrect. The Applicants have failed to elaborate the exact date of accrual of cause of action. The import of the language of Section 15 is very clear that the Applicants have to state the exact date of accrual of cause of action first arisen. The Applicants are also by way of this present Original Application are trying to challenge the Environmental Clearance dated 26th November 2012 which is impermissible in law. Hence the present application is not within limitation and ought to be dismissed.
27. With respect to the prayers mentioned in para 20, the same are also not maintainable. The Applicants are seeking damages and compensation without adhering to completion formalities of Section 15 of the Act. The Committee appointed by the Hon'ble Tribunal has ascertained the factual position at site and hence there is no question of assessing the environmental damage compensation as there is no evidence of environmental destruction.
28. The Answering Respondents thus submit that, since the recommendations given by the Committee have been responded to by these Respondents in the aforementioned paragraphs and also the allegations levelled by the applications have been denied by

these Answering Respondents, the present application ought to be dismissed with compensatory costs.

PUNE
DATE: 31/ 03 /2022



ADVOCATE FOR RESPONDENT NO.8 & 9

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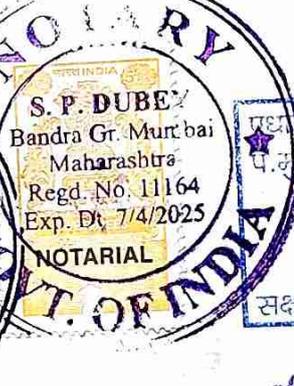
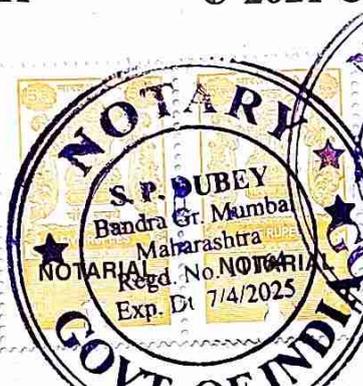
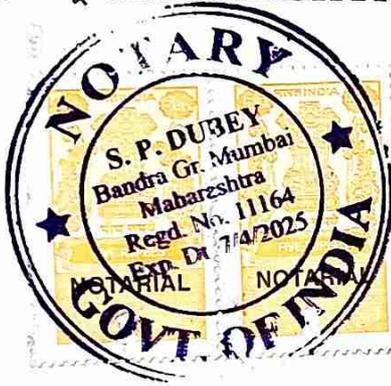
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महाराष्ट्र MAHARASHTRA

2021

ZS 882015



प्रधान मुद्रांक कार्यालय, मुंबई.
 पं.क्र.वि.क्र. ८००००९९
 - 8 MAR 2022
 सक्षम अधिकारी

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, WESTERN ZONE

श्री. दि. क. गवई

BENCH PUNE AT PUNE.

ORIGINAL APPLICAITON NO. 6 OF 2021

MRS. MEENAL GUPTA AND OTHERS .. APPLICANTS

V/s

UNION OF INDIA AND OTHERS .. RESPONDENTS

AFFIDAVIT IN SUPPORT

MAY IT PLEASE THE HON'BLE TRIBUNAL

I, Prasanta K. Biswal, Aged: 60 years, Occu.: Service, having address at TCG Financial Centre, 11th & 12th Floor, Plot No. C-53, G Block, Bandra Kurla Complex, Bandra (East), Mumbai - 400098, do hereby state on solemn affirmation as under:-



I am a Managing Director of the Respondent No.8 and responsible for day to day administration of the Respondent No.8's business. As such, I have gone through the Reply and annexures thereto being filed. I find that the contents therein are true and correct to the best of my knowledge and belief and which may be treated as part and parcel of the present affidavit.

WHATEVER STATED ABOVE is true and correct to the best of my knowledge and belief.

In witness whereof I have signed hereunder at Mumbai on 17th day of March, 2022.

For International Biotech Park Limited (Respondent No. 8)

Prasanta K. Biswal
Managing Director



BEFORE ME

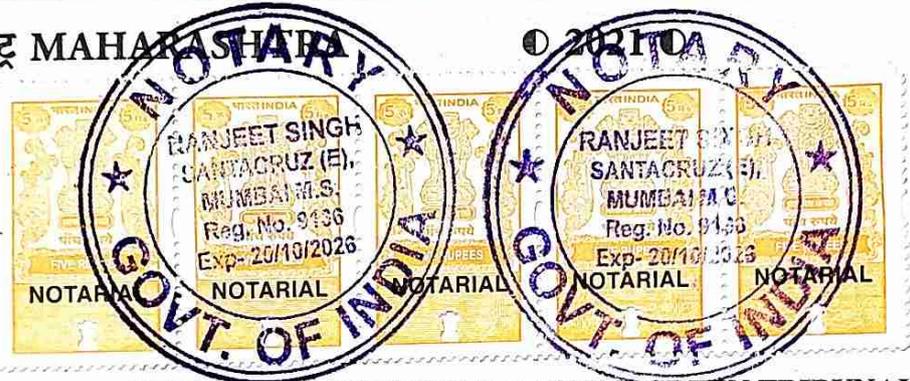
S. P. DUBEY
B.A.,L.L.B.
NOTARY GR. MUMBAI
MAHARASHTRA
(GOVT. OF INDIA)

17 MAR 2022



ZS 882014

महाराष्ट्र MAHARASHTRA



प्रधान मुद्रांक कार्यालय, मुंबई.
 प.सु.वि.क्र. ८००००९९
 - 8 MAR 2022
 सक्षम अधिकारी

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, WESTERN
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श्री. दि. क. गवई

ORIGINAL APPLICATION NO. 6 OF 2021

MRS. MEENAL GUPTA AND OTHERS .. APPLICANTS

V/s

UNION OF INDIA AND OTHERS .. RESPONDENTS

AFFIDAVIT IN SUPPORT

MAY IT PLEASE THE HON'BLE TRIBUNAL

I, Pratap Chatterjee, Aged :58 years, Occu.: Service, having address at TCG Financial Centre, 11th Floor, Plot No. C-53, G Block, Bandra Kurla Complex, Bandra (East), Mumbai – 400098, do hereby state on solemn affirmation as under:-





I am a Director of the Respondent No.9 and responsible for day to day administration of the Respondent No.9's business. As such, I have gone through the Reply and annexures thereto being filed. I find that the contents therein are true and correct to the best of my knowledge and belief and which may be treated as part and parcel of the present affidavit.

WHATEVER STATED ABOVE is true and correct to the best of my knowledge and belief.

In witness whereof I have signed hereunder at Mumbai on 21st day of March, 2022. *[Signature]*

For TCG Urban Infrastructure Holdings Private Limited (Respondent No. 9)

[Signature]

Pratap Chatterjee
Director



BEFORE ME

[Signature]

RANJEET SINGH
M.Sc.LL.B.

NOTARY
MAHARASHTRA
GOVT OF INDIA

21 MAR 2022



Date: 08/12/2021

To,
M/s. M/S. International Biotech Park Ltd,
The Crown Green plot 17 phase I,
Hinjewadi, Pune

Subject: Solar System for The Crown Green

With ref. to above subject last week visited site and survey @ M/S. International Biotech Park Ltd, Plot No17 phase I, Rajiv Gandhi Infotech / Biotech Park, MIDC - Phase II, Hinjewadi, Pune – 411057

Following is our observations,

Tower 1(T1) : 4800 LPD solar water heating system i.e. 75 ltr/flat , covering 50% of area 72 Sq mtr of total 143 Sq mtr.

Tower 2,3(T2,T3) :Considering hot water 75 ltr/flat, the covering area is coming 95 Sq mtr which is more than 50% of existing terrace area i.e. 140 Sq mtr.

So now we have to reduce the consumption of hot water for T2 _57 ltr/flat & for T3_63 ltr/flat then the area is coming 72 Sq mtr which is MIDC permissible limit.

➤ Bellow is the detail table showing capacities, area after shadow analysis report:

Tower	Flat type	Nos flats	Height in(m) of Tower	Hot water Capacity	Coverage of area(in Sq Mtr)	Roof area total(in Sq Mtr)
T1 Tower floor 15	1BHK, 2 BHK	60	53.65m	75	72	143
T2 Tower floor 21	2BHK	84	71.95m	57	72	139
T3 Tower floor 19	2.5BHK, 3 BHK	76	71.95m	63	72	135

- Hot water will be available daily 3 hrs* from 6 am-9 am.
- Solar efficiency will get appx. 80% depends on climate condition.
- To avoid shadow we need to install system on fabricated stand, total system height will go min. 2.5mtr from terrace.

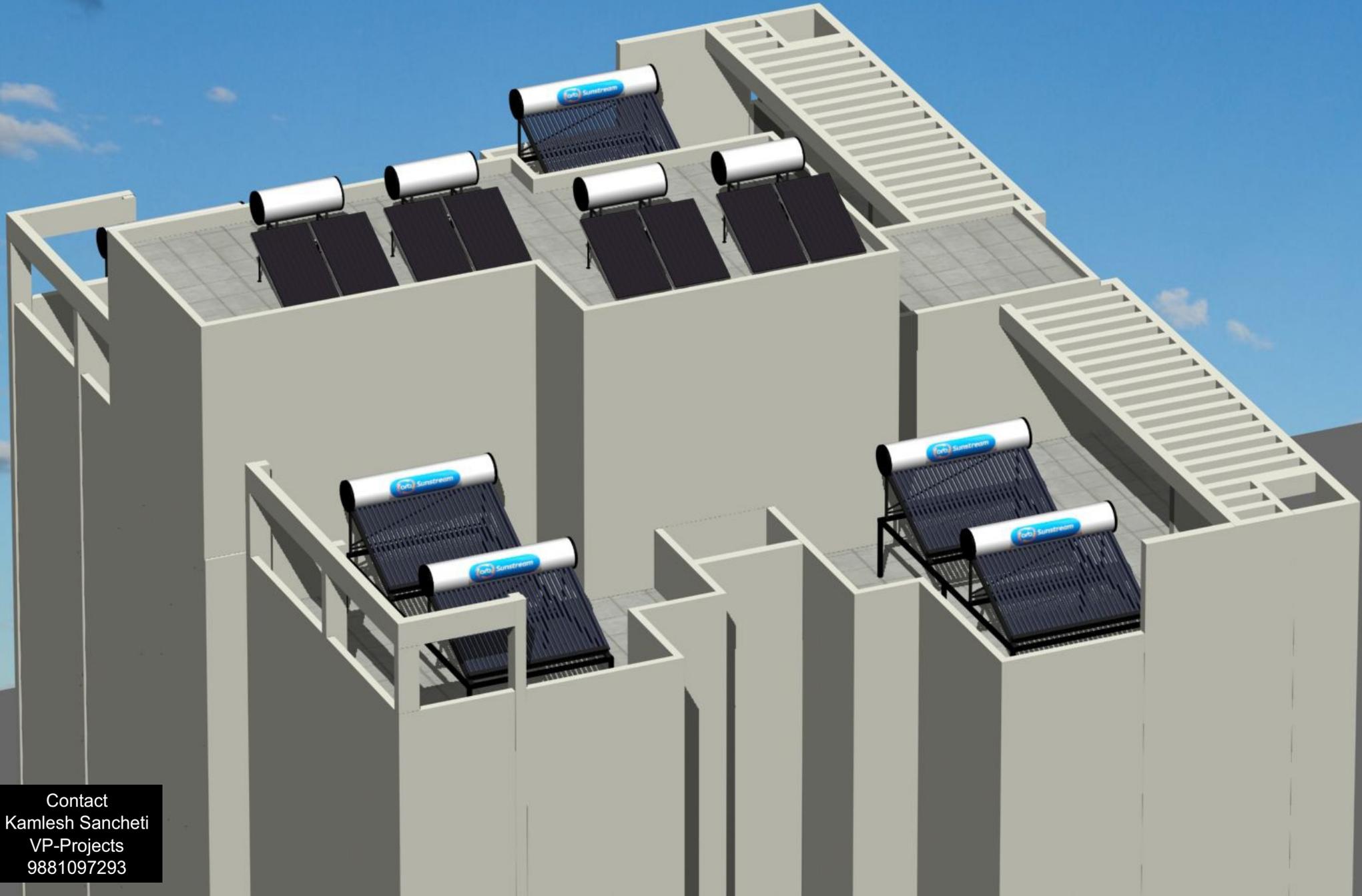
Thanking You,

For ORB Energy Pvt Ltd.,

Sachin Ghatkar
(Ass. Manager Projects)



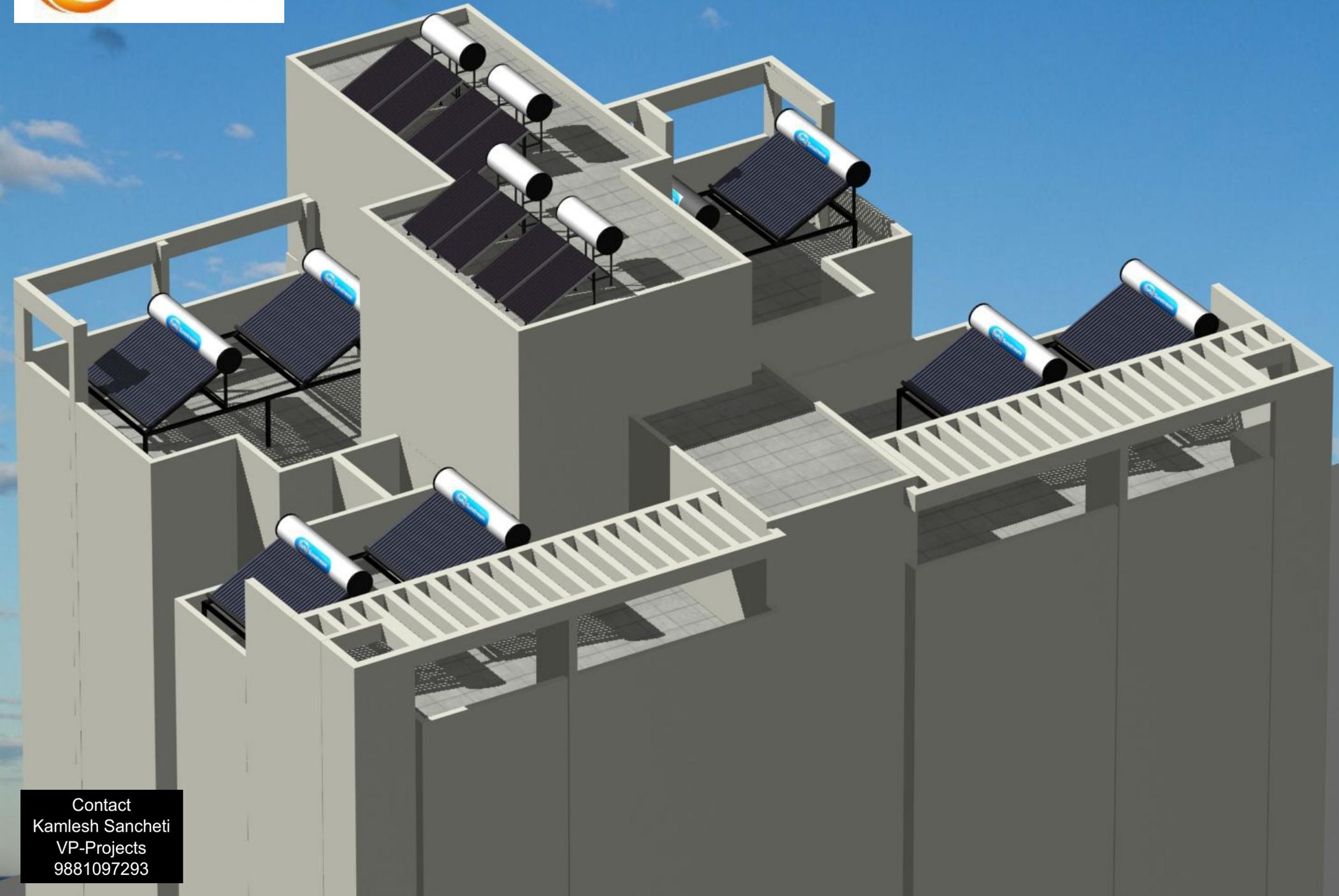
Proposed 1000 LPD (ETC) x 4 & 200 LPD (FPC) x 4 at Crown Green T1, Pune 555



Contact
Kamlesh Sancheti
VP-Projects
9881097293



Proposed 1000 LPD (ETC) x 4 & 200 LPD (FPC) x 4 at Crown Green T1, Pune 556



Contact
Kamlesh Sancheti
VP-Projects
9881097293



Contact
Kamlesh Sancheti
VP-Projects
9881097293

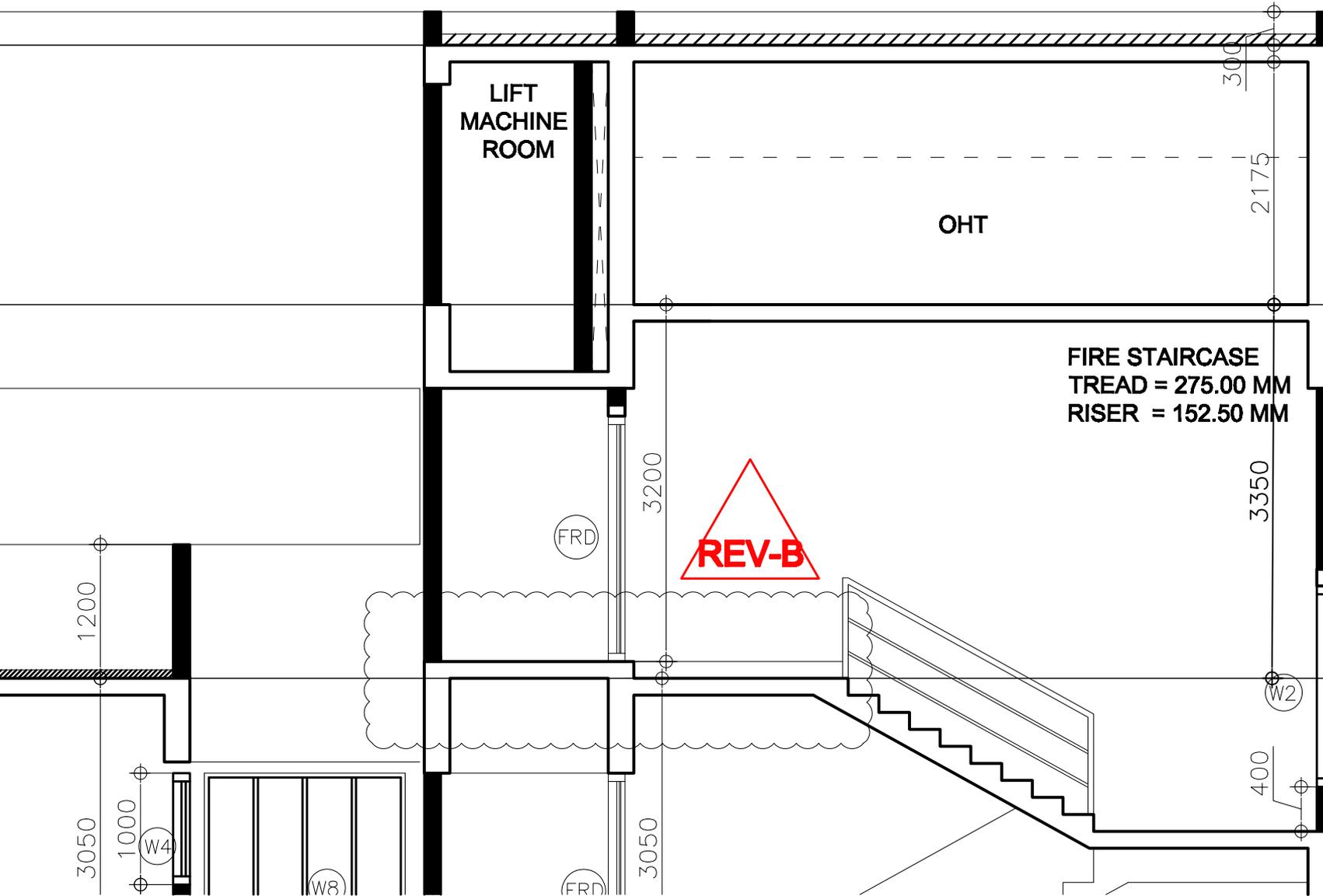


Contact
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9881097293



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OHT Details



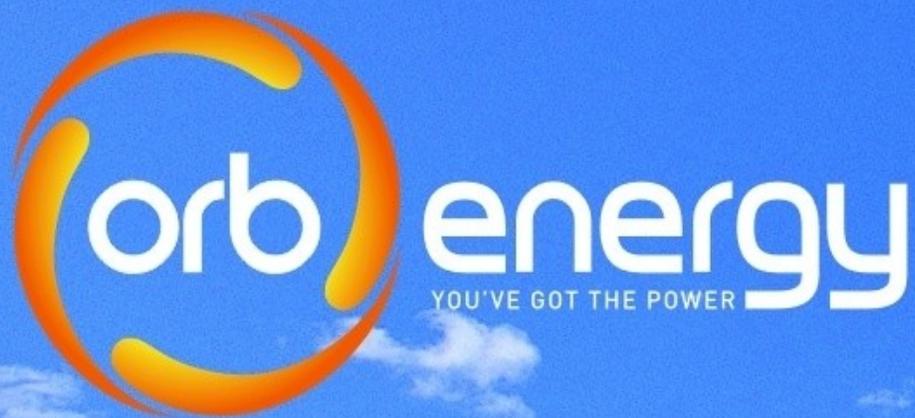
Contact
Kamlesh Sancheti
VP-Projects
9881097293

	Technical Specification Sunstream 200CPRC	Doc.No.: Orb-F-7.1-01
		Rev. Date: 11 th Aug 2016 Rev.No.:R0
		ISO 9001-2000 Clause 7.1

S. No.	Characteristics	Details
1.0	General	
1.1	BIS Conformity	IS 12933:2003
1.2	Major Components	Flat plate collectors, hot water insulated tank, interconnecting piping and collector-tank supports.
1.3	System Capacity	200 Litres per day (LPD)
1.4	Shadow free floor Area required for the system	2.5 Mtr.(N-S) x 2.4 Mtr. (E-W)
1.5	Water Hardness	Maximum 400 ppm (parts per million)
1.6	Total weight of system with water	400 Kg
2.0	Flat Plate collector	
2.1	Collector size	2030 x1030 x 100 mm Approx 2.1 Sq.Mtr area / collector
2.2	Absorber area of the collector	>1.92 Sq.Mtr / collector
2.3	No. of Collectors	Two
2.4	Water Output	Rated LPD at 60°C (Avg.)
2.5	Absorber Material	Aluminium
2.6	Coating	Selective-Black chrome
2.7	Construction of Absorber	Fin and Tube ladder type
2.8	Header & Riser pipe material	Copper
2.9	Header & Riser pipe size	Φ25.4mm and Φ12.5mm respectively.
2.10	Bonding: Riser pipe to Fins	Ultrasonic welding / laser welding
2.11	Bonding: Riser pipe to Header	Simple brazing
2.12	No. of Fins	9 Nos.
2.13	Absorbitivity of the Collector	>95%
2.14	Collector frame	Aluminium with Pure polyester powder coating.
2.15	Glass	4 mm Toughened, low iron, Transmittivity >=85%
2.16	Back Sheet	Aluminium

	Technical Specification Sunstream 200CPRC	Doc.No.: Orb-F-7.1-01
		Rev. Date: 11 th Aug 2016 Rev.No.:R0
		ISO 9001-2000 Clause 7.1

2.17	Glass Beading and sealing	EPDM
2.18	Grommets	EPDM
2.19	Collector – mounting structure	Mild Steel with pure polyester powder coating
2.20	Weight of one collector	50kg.
3.0	Hot water Insulated Storage tank	
3.1	Inner tank material	CRCA inner tank Shell - 2.0mm thick and side end dish - 2.5mm with Ceramic Coating
3.2	Tank Type	Horizontal
3.3	Welding	TIG (Tungsten Inert gas Welding)
3.4	Thermal Insulating material	PUF (Polyurethane foam)
3.5	Thickness of Insulation	50mm
3.6	Tank Cladding	GI Powder coated
3.7	Tank design	Testing pressure - 7.5kgf/cm ² pressure. Working pressure - 5.0kgf/cm ² pressure.
3.8	Electrical heater	1.5 kW Immersion type heater (Optional)
3.9	Tank End covers	GI Powder coated
3.10	Tank Support	MS painted
3.11	Weight of bare tank	70kg
3.12	Weight of tank stand	20kg
4.0	Piping	
4.1	Interconnection pipes	High pressure Steam hose pipe
5.0	Miscellaneous	
5.1	Fasteners	Stainless steel 304



Solar Water Heating System Proposal

**The Green Crown
By TCG, Pune**



About Orb Energy

- ✓ Orb has installed more than 160000 systems & counting...
- ✓ 2 manufacturing plants located in Bangalore (1) Solar PV (2) Solar Water Heating
- ✓ Team of experts in the field of renewable energy from last 2 decades

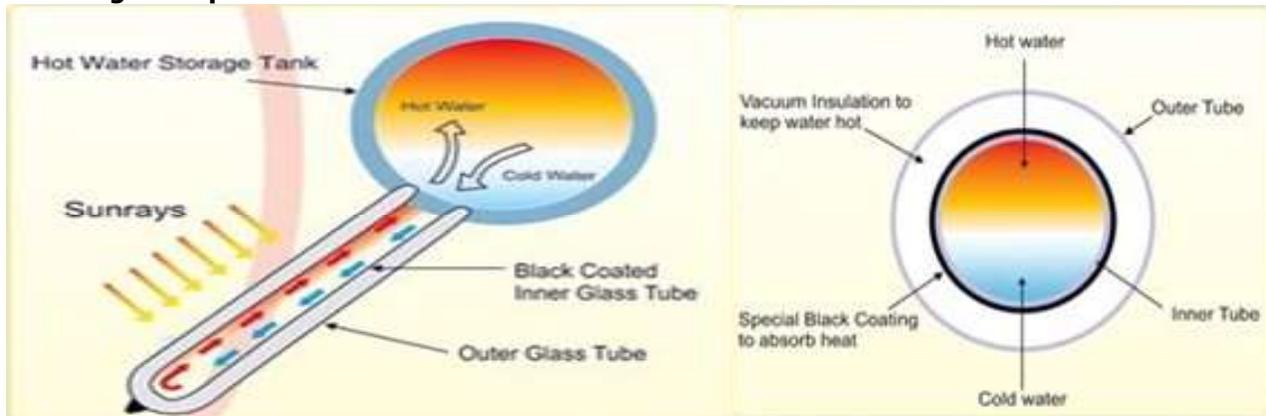
- ✓ We provide end to end solution to customer :

“Concept-Design-Manufacturing-SITC-Value adds-Service”

- ✓ Strong service back up
- ✓ Orb employs 300 people in India
- ✓ Intense experience of handling high rise & large scale townships with turn key solution
- ✓ Solutions we offer : Solar Water Heaters , Heat Pump Water Heater , Solar Photo-voltaic
- ✓ Project focused company who understands customer needs and customizes solution to fit techno- commercial objectives
- ✓ Partial list of customers in Maharashtra :



Working Principle



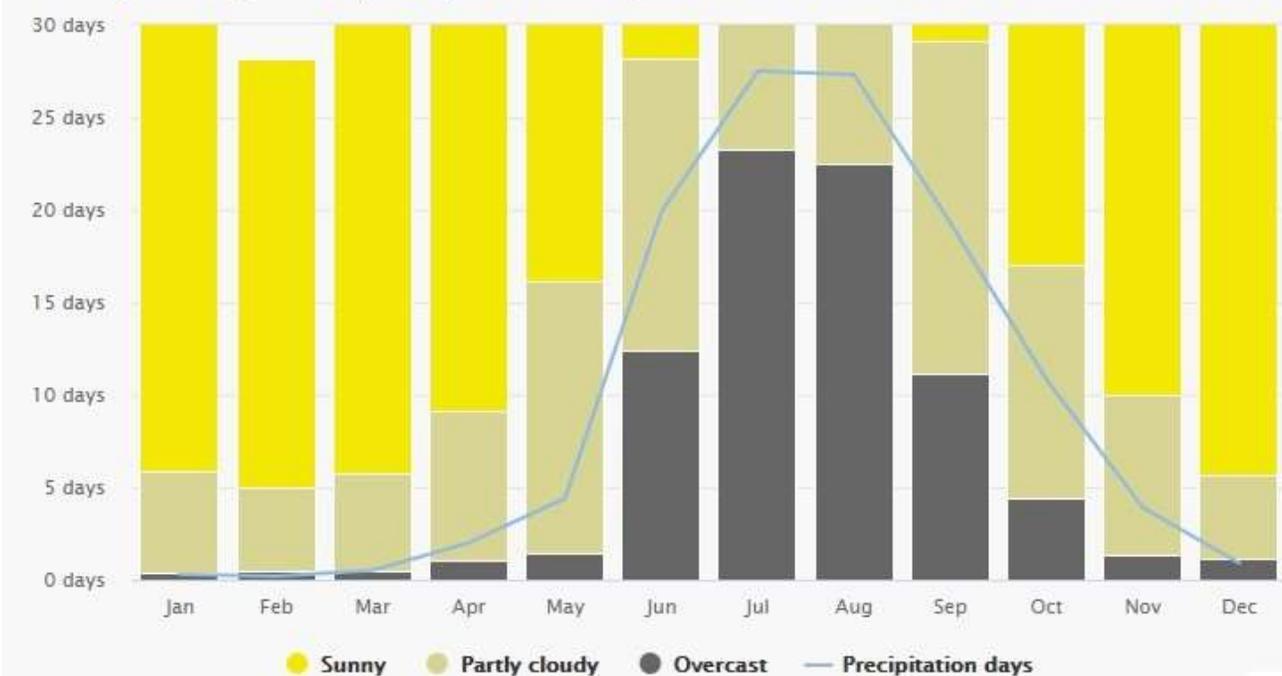
Solar Water Heater (ETC System) works on a simple principle 'Black body heat absorption principle'. The principle says, 'black colour absorbs maximum heat, more than any other colour'. Solar water heating systems using vacuum tubes made of borosilicate glass with special coating to absorb the solar energy are called as Evacuated Tube Collector system (ETC Systems). Vacuum tube, as shown in the sketch, is the main component, which absorbs solar energy. The vacuum tube is an assembly of two concentric, borosilicate glass tubes. Air between the gap of two glass tubes is evacuated. It results in high level of vacuum, which acts as the best insulation to minimize the heat loss from inner tube. The black coating on the inner tube absorbs the solar energy and transfers it to the water. The water on upper side of Vacuum Tube becomes hot and thus lighter, so it starts moving upwards in the tank. At the same time cold water, which is heavy, comes downward from the tank and is stored at the bottom. The phenomenon is called as natural Thermosyphon circulation, which occurs in every tube.



Climate PUNE ,Maharashtra, India, 18.6°N 73.76°E, 570m asl

	January	February	March	April	May	June	July	August	September	October	November	December	Avg
Avg. Temperature (°C)	21.3	23.1	26.3	29	29.6	27.3	24.8	24.5	24.8	25.5	23	21.1	25
Min. Temperature (°C)	12	14	17	21	23	23	22	22	21	20	15	12	18
Max. Temperature (°C)	30.5	32.7	35.7	37.4	36.7	31.7	27.6	27.5	28.9	31.5	30.7	30	32
Precipitation / Rainfall (mm)	0	1	2	13	41	122	211	128	132	82	26	5	

Cloudy, sunny, and precipitation days





System Configuration :

Tower	Pressure Floors	Non Pressure Floors	Flats/ Floor	Pressure System LPD	Non Pressure System LPD	System Capacity Pressure	System Capacity Non Pressure
T1	3	12	4	800	4000	200*4	1000*4
T2	3	18	4	800	4000	200*4	1000*4
T3	3	16	4	800	4000	200*4	1000*4
Total				2400	12000	200*12	1000*12

Pricing:

SI	Item Desc	Unit Rate	Qty	Amount
1	Solar System- 200 LPD FPC CPRC Pressurised System	60000	12	7,20,000
1	Solar System -1000 LPD Modular ETC –GGES	80000	12	9,60,000
2	Labor charges-Unloading , Lifting , Installation , Testing & Commissioning	7000	12	84,000
	Total			17,64,000

GST, Taxes: Extra

Quote Validity : 15 Days

Scope of work : Supply , Installation ,Testing & commissioning

Payment term : Material 50% advance , 50% on Delivery

Labor :100% after installation

Customer Scope : Mathadi , Fabrication if any

Plumbing & Valves : Extra will provide separately

**Warranty terms:**

We offer **Five years manufacturing warranty** on solar water heater

Warranty conditions:

We will repair, or if found necessary, replace a defective component of the solar water heater system for failure due to manufacturing defects.

The "Orb Energy" solar water heater must be installed in accordance with the "Orb Energy" installation instructions.

Wherein, if the failed component of solar water heating system is replaced under warranty, the balance of the original warranty period will remain in effect. The repaired / replaced part of the solar Water Heater does not carry a new warranty.

The warranty only applies to the solar water heater system & therefore does not cover any plumbing or electrical part supplied by the installer / owner and which is not an integral part of solar water heating system. E.g. Gate valve, Electrical Heater, Fuses, De-pressurizer, etc.

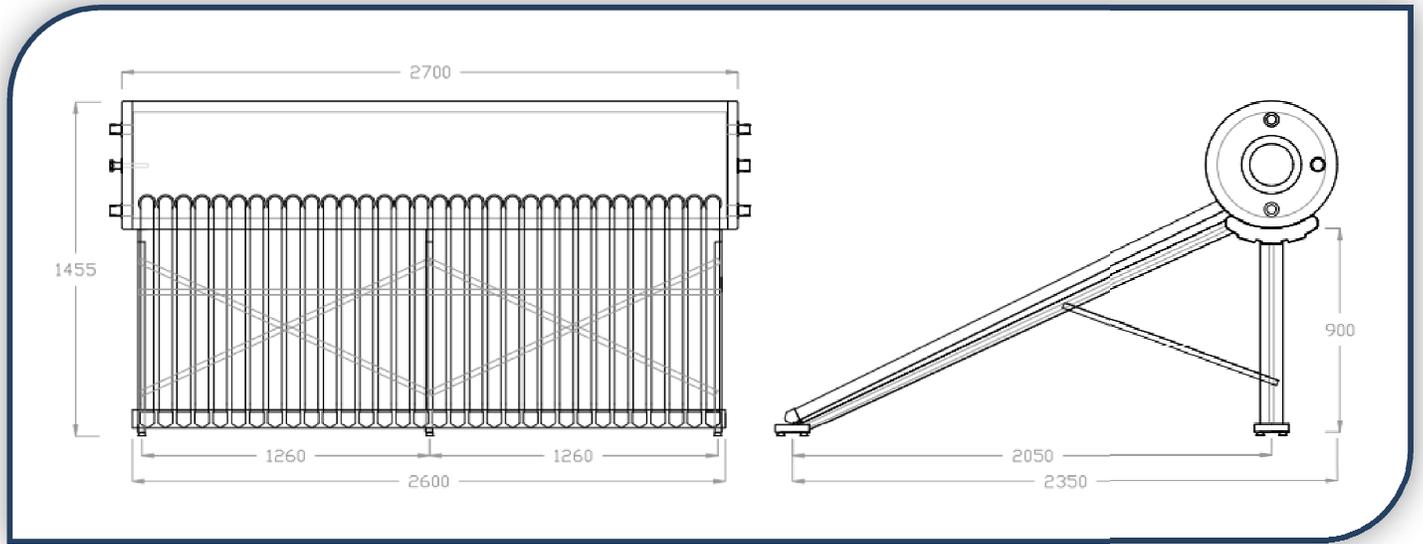
Warranty exclusions:

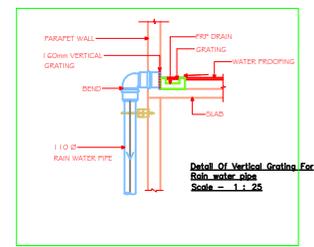
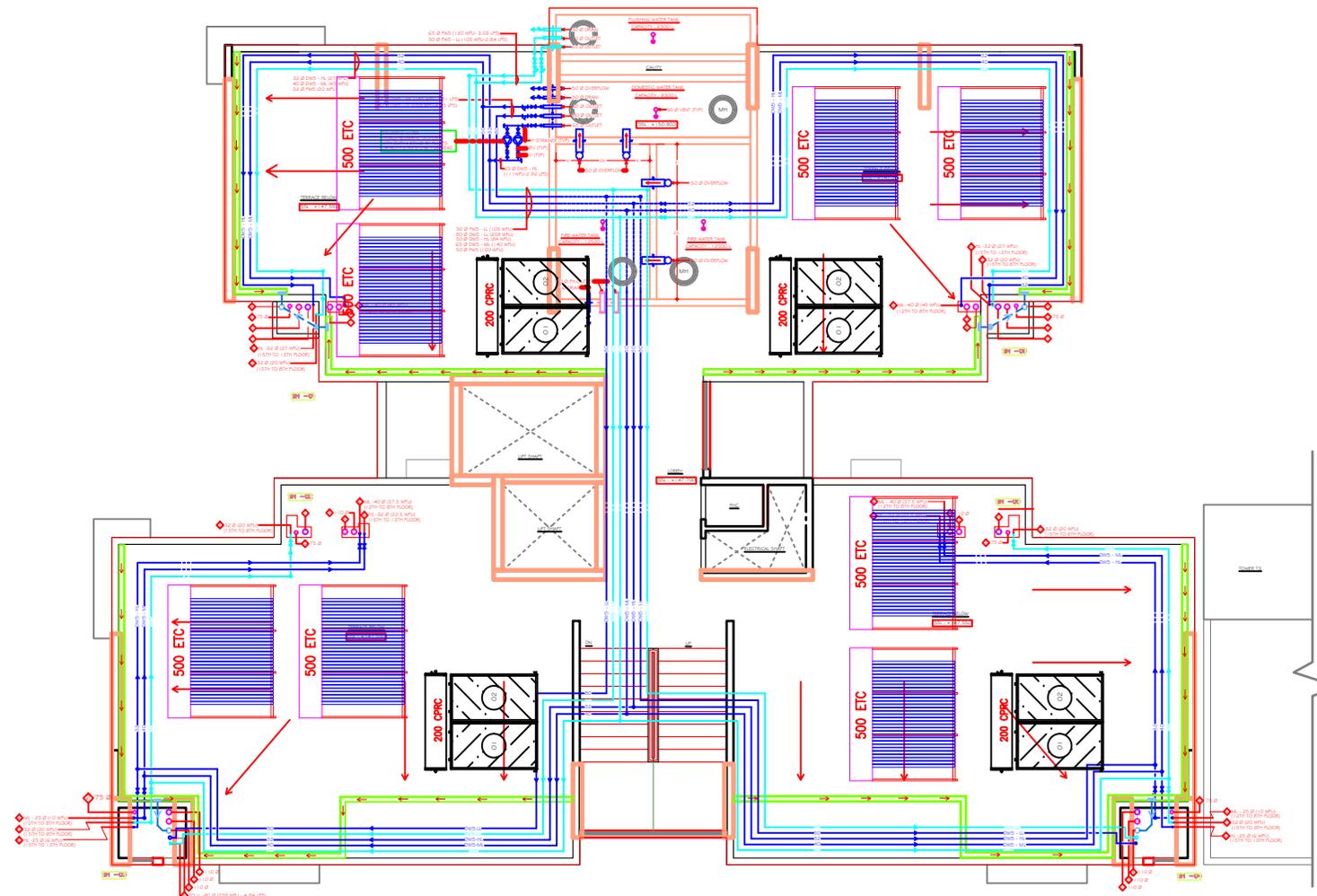
Repair & replacement work will be carried out as set in the above. But the following exclusions may cause the solar water heating system warranty to become VOID and service charges and part replacement will have to be paid if.

- Failure due to incorrect installation.
- Attempt to repair the system by the personnel other than service personnel authorized by Orb Energy.
- Where the solar water heating system or water heater component has failed directly or indirectly as a result of excessive water pressure / evacuation in the system due to non-provision of De-pressurizer / Vacuum breaker.
- Where the solar water heater is installed in a location / position that does not comply with Orb Energy" installation instructions.
- Consequential loss, either directly or indirectly in any form for any reason whatsoever.
- Damage to the Collector / Tank / Air Release cum Vacuum release valve due to scaling, when water is hard. The hardness of the water should not be more than 200 PPM & Chloride content should not be more than 100 PPM
- Breakage of collector glass for any reason (We recommend that the collector glass be covered by your insurance policy).
- Attempt to disturb safety valve from the socket.
- Damage due to freezing, unless fitted with frost valve.
- Any payment is pending.
- Damage to component/s due to atmospheric / environmental conditions.
- Branded bought out components like hot / cold water transfer pumps and other such components as per the spec sheet shall carry the warranty terms of original equipment manufacturer.

Technical Specification:

Inner Tank Details		
Tank size	Diameter	450 +/- 2.5 mm
	Length	2600 +/- 10 mm
Tank material and thickness	Material	Galvanized Steel
	Thickness of Tank	1.5 +/- 0.10 mm
Tank Connection	Outlet-Inlet Barrel Pipe	32 NB - 2 Nos
	Extra Barrel Pipe	32 NB - 2 Nos
	Heating Ele.Sockets	32 NB - 1 Nos
	Sacrification Anode Sockets	15 NB - 1 Nos
	Magnesium Rod	Magnesium Rod
Tank welding type	GTAW	
Testing pressure of the tank	1 BAR	
Evacuated Tube		
Evacuated Tube	Material	Borosilicate 3.3 Glass
	Tube Diameter	58 mm
	Tube Length	2100 mm
	No of Tube	32 Nos
Outer Insulation Details		
Tank Insulation details	Insulation	Plyurathane Foam
	Thickness	50 +/-5 mm
Outer Tank	Material	Galvalume
	Diameter	550 mm
	Length	2700+/- 10 mm
	Thickness	0.5 +/- 0.05 mm
Mounting structure		
Tank Stand	Height	900 +/- 10 mm
	Length	2600 +/- 10 mm
	Width	2050+/- 50 mm
Material of construction	Material	Galvanized Steel
	Main Fram	1.0 +/- 0.10 mm
	Support	1.0 +/- 0.10 mm
Coating of structure	Powder coated	Black structure

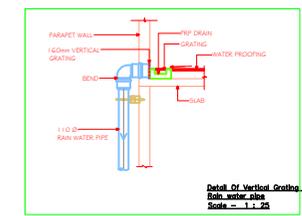
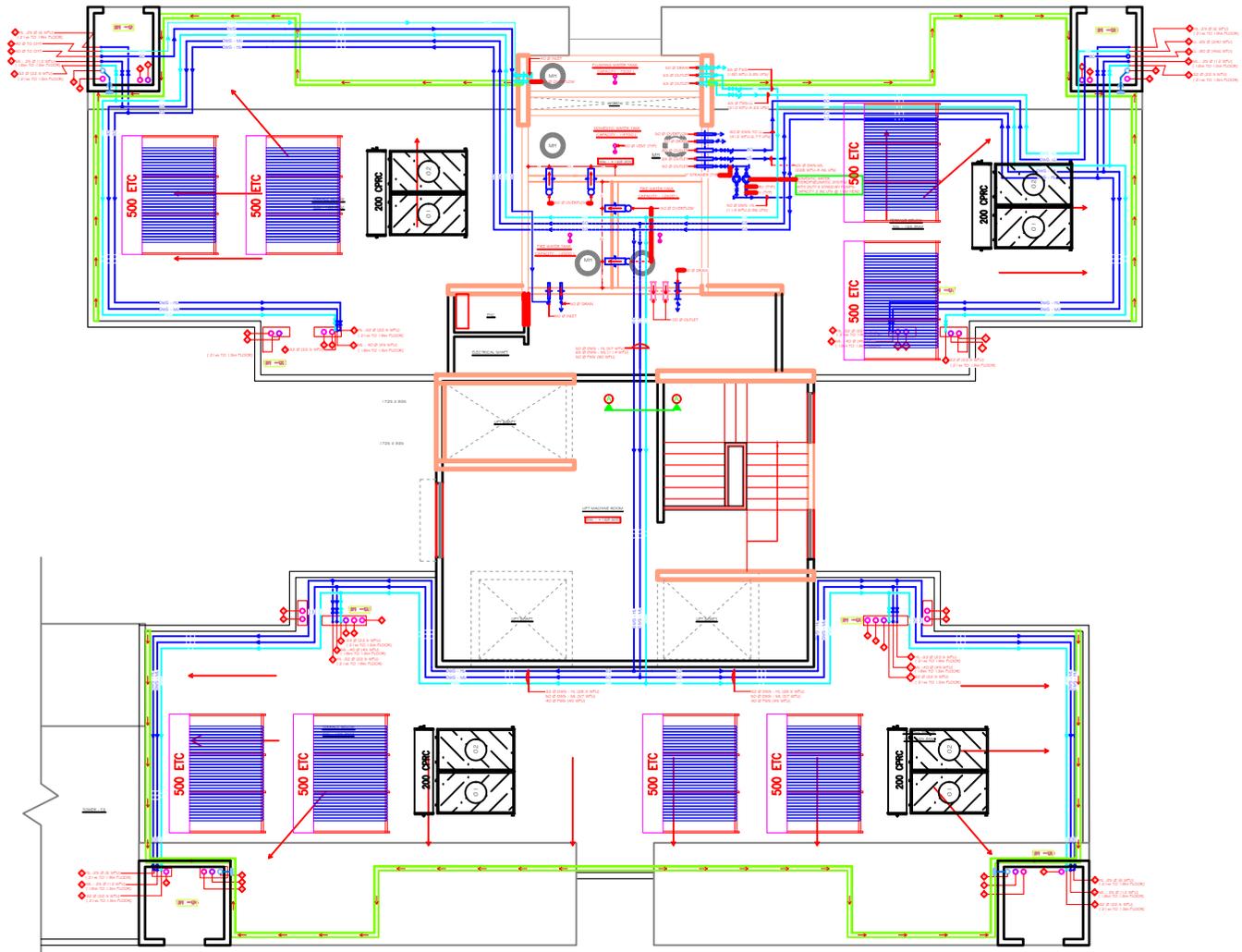




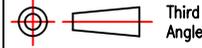
Layout of 1000ETCx4 + 200CIRCx4 on Tower-1

Dwg No.		LYT-345		REV	
Title		Layout Plan for 1000LPD(500ETCx2) x 4Nos + 200CIRC x 4Nos - Tower 1			
Project		THE CROWN GREEN			
Drawn	Date	Name	Sign	 Orb Energy Private limited. No.95, Digital Park Road, 2nd Stage, Yeshwanthpura, Bangalore 560022, India	
Checked	06-12-21	NATESH			
Approved	06-12-21	MFF			
Unless Otherwise Specified Tolerances are Linear - Angular -				Material	-----
				Surface Finish	-----
 Third Angle		All Dimension are in mm		Scale : --	Sheet size - A3
				Sheet 1 of 1	

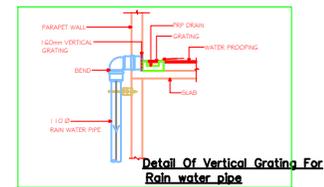
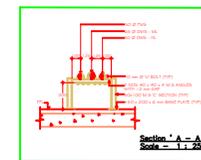
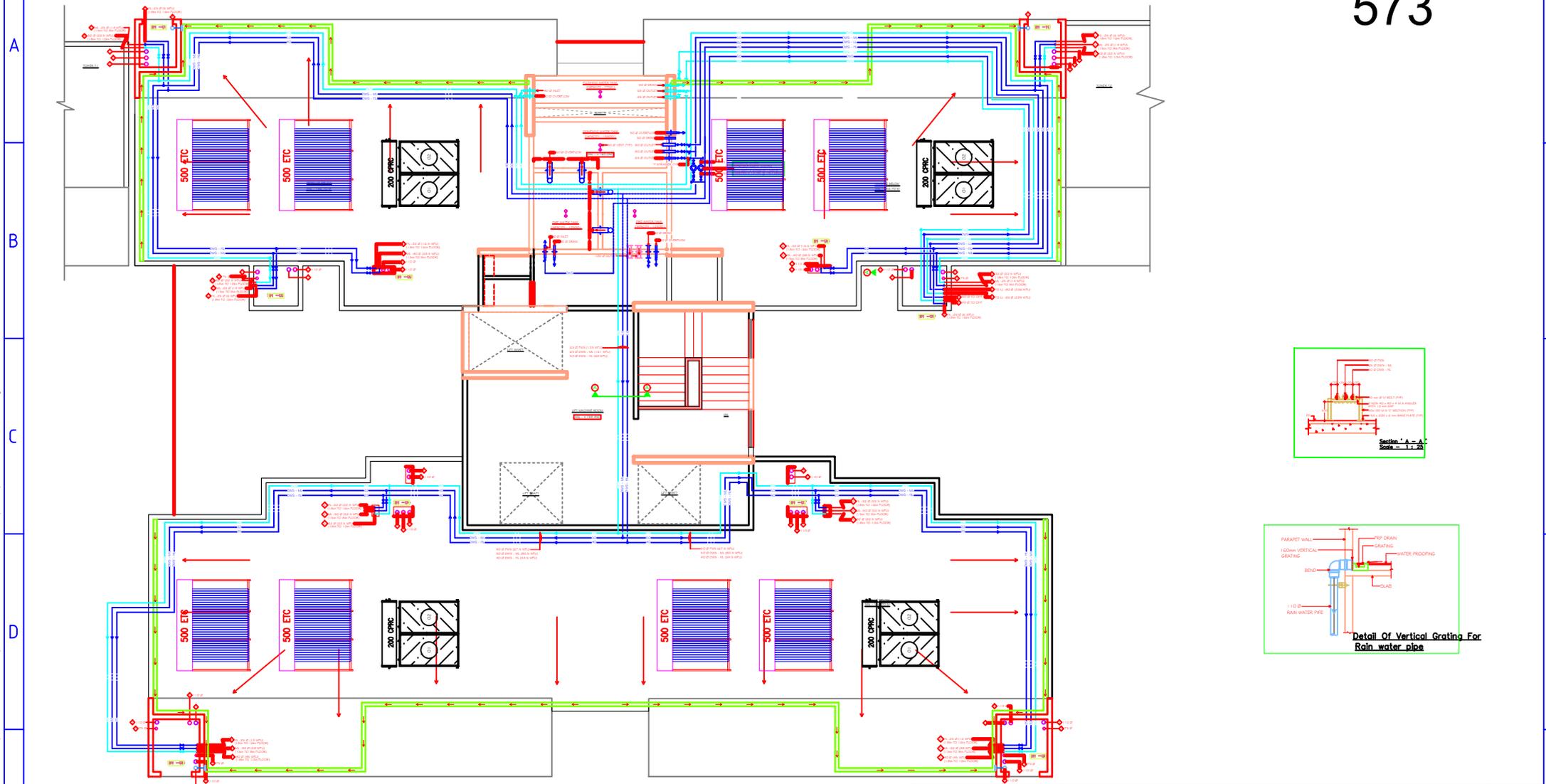
This drawing is the property of Orb energy Pvt. Ltd., and must not be passed on to any person or body without our prior permission in writing.



Layout of 1000ETCx4 + 200CPRCx4 on Tower-2

Dwg No.		LYT-346		REV	
Title		Layout Plan for 1000LPD(500ETCx2) x 4Nos + 200CPRC x 4Nos - Tower 2		0	
Project		THE CROWN GREEN			
Drawn	Date	Name	Sign	 Orb Energy Private limited. No.95, Digital Park Road, 2nd Stage, Yeshwanthpura, Bangalore 560022, India	
Checked	06-12-21	MFF			
Approved	06-12-21	KKY			
Unless Otherwise Specified Tolerances are				Material	----
Linear -		Angular -		Surface Finish	----
 Third Angle		All Dimension are in mm		Scale : --	Sheet size - A3
				Weight :---	Sheet 1 of 1

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Layout of 1000ETC₄ + 200CPRC₄ on Tower-3



Dwg No.		LYT-347		REV
Title		Layout Plan for 1000LPD(500ETC ₂) x 4Nos + 200CPRC x 4Nos - Tower 3		0
Project		THE CROWN GREEN		
Drawn	Date	Name	Sign	 Orb Energy Private limited. No.95, Digital Park Road, 2nd Stage, Yeshwanthpura, Bangalore 560022, India
Checked	06-12-21	MFF		
Approved	06-12-21	KKY		
Unless Otherwise Specified Tolerances are		Material	-----	
Linear -	Angular -	Surface Finish	-----	
 Third Angle		Scale : ---	Sheet size - A3	Weight : ---
All Dimension are in mm				Sheet 1 of 1

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Maharashtra Industrial Development Corporation

Revised Development Control Regulations 2009

SANCTIONED BY THE GOVERNMENT URBAN
DEVELOPMENT DEPARTMENT NOTIFICATION NO.
TPB/4308/465/CR-64/08/UD-11 DATED 31ST AUGUST 2009, CAME
INTO FORCE WITH EFFECT FROM 24TH SEPTEMBER 2009

APPENDIX VIII**Regulations for Installation of Solar Energy Assisted Systems**

(Regulation No. 47 of these Regulations)

1 Definitions

Unless the context otherwise requires, the following definitions shall be applicable for the purpose of this Regulation.

Sr. No.	Title	Description
i)	“Solar Assisted Water Heating System” (SAWHS)	A devise to heat water using solar energy as heat source
ii)	“Auxiliary Back Up”	Electrically operated or fuel fired boilers / systems to heat water coming out from solar water heating system to meet continuous requirement of hot water
iii)	“New Building”	Such buildings of categories specified in Regulation no. 32.2 for which construction plans have been submitted to competent authority for approval
iv)	“Existing Building”	Such buildings which are licensed to perform their respective business

2 Solar Assisted Water Heating Systems (SAWHS): “Buildings of the following categories shall provide the system or the installation having an auxiliary Solar Assisted Water Heating System (SAWHS).

- Hospitals and Nursing Homes.
- Hotels, Lodges and Guesthouses.
- Hostels of Schools, Colleges, Training Centres.
- Barracks of armed forces, paramilitary forces and police.
- Individual residential buildings having more than 150 sq.m plinth area.
- Functional Building of Railway Stations and Airports like waiting rooms, retiring rooms, rest rooms, inspection bungalows and catering units.
- Community Centres, Banquet Halls, Barat Ghars, Kalyan Mandaps (Marriage Halls) and Buildings for similar use “

3 Installation of Solar Assisted Water Heating Systems (SAWHS): The following provisions shall be applicable for all the new buildings of categories mentioned in Clause No.32.2 for installation of Solar Energy Assisted Systems.

Adequate provisions shall be made for installation of SAWHS in the building design itself for an insulated pipeline from the rooftop to various distribution points, within the aforesaid occupancies. The building must have a provision for continuous water supply to the solar water heating system.

In case of hot water requirement, the building should also have open space on the rooftop, which receives direct sunlight. Wherever hot water requirement is continuous, auxiliary heating arrangement either with electric elements or oil of adequate capacity can be provided.

The load bearing capacity of the roof should at least be 50 kg. Per Sqm All new buildings of above said categories must complete installation of solar water heating systems before obtaining necessary permissions to commence their activities.

The capacity of solar water heating system to be installed on the building different categories shall be decided in consultation with the Planning / Local Authority concerned. The recommended minimum capacity shall not be less than 25 litres per day for each bathroom and kitchen subject to the condition that maximum of 50% of the total roof area is provided with the system.

Installation of SAWHS shall conform to BIS (Bureau of Indian Standards) specifications IS 12933. The solar connectors used in the system shall have the BIS certification mark.

Building permissions for all the new constructions / buildings of the aforesaid categories shall be granted only if they have been complied with these provisions.

In case of existing building, the above provisions shall be mandatory at the time of change of use / expansion of use to any of the categories specified in 32.2 above, provided there is already a system or installation for supplying hot water.

- 4 Solar Assisted Electric Equipment (Photo Voltaic Equipment): In addition to the above provisions, buildings of all categories, especially public buildings, large holdings of commercial and residential complexes may provide an auxiliary system of solar electricity for staircase lighting, garden area lighting or any other places wherever feasible within the premises. The installations shall conform to the specifications, to be certified by the registered practitioner in this field or the norms stipulated by the Govt. of Maharashtra or any other authority designated for this purpose such as BIS, etc., from time to time.





TCN/11-0097/2020-2021/0194

July 18, 2020

Certificate of Stability of Structure

Subject: Plot -17, at Rajiv Gandhi Infotech Park, MIDC, Phase II, Hinjewadi, Pune.

Name and Address of the owner	M/s. International Biotech Park Ltd. Genesis Square, Plot 15, Rajiv Gandhi Infotech Park, MIDC Phase - II, Hinjewadi, Pune - 411057.
-------------------------------	--

I hereby certify that the seepage of the ground water in the basement do not endanger the stability of the existing building.

The sumps at the basement is very necessary to maintain this ground water table, which should be retained.

We reconfirm that the captioned building will be safe and stable for the intended purpose.

Achyut Watve
B. E., F. I. E.
Structural Engineer
PMC Lic No 18
For & On behalf of
JW Consultants LLP



JW CONSULTANTS LLP

REGISTERED OFFICE : Sai Radhe, Office No. 201, 2nd floor, Behind Hotel Sheraton Grand, 100-101, Kennedy Road, Pune 411001.
P : 91-2066449100

MUMBAI OFFICE : Ruparel Iris, 6th floor, Near Bigbazar, Tulsi Pipe Rd., Matunga West, Mumbai - 400016. | P : +91-(0)22-2439 7400 / 2439 7401
www.jwconsultants.in

Converted into a Limited Liability Partnership (LLP Identity No AAA-2650) w.e.f 28.10.2010 from JW Consultants (previously Y S Sane Associates) Registration No. MPA9324



Geocon International Pvt. Ltd.

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Mumbai 400 016, India

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F: +91 22 24445370
E: geocon@geoconinternational.com
W: www.geoconinternational.com

**GEOTECHNICAL INVESTIGATION REPORT
PROPOSED RESIDENTIAL BUILDING
HINJEWADI PHASE-2, PUNE**

**Submitted to,
M/S. INTERNATIONAL BIOTECH PARK**

**By,
M/S. DRILLTECH ENGINEERS**

JULY 2011



GEOTECHNICAL INVESTIGATION REPORT
PROPOSED RESIDENTIAL BUILDING,
HINJEWADI PHASE-2, PUNE,
FOR M/S. INTERNATIONAL BIOTECH PARK

Table of Contents

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GEOTECHNICAL INVESTIGATION REPORT
PROPOSED RESIDENTIAL BUILDING,
HINJEWADI PHASE-2, PUNE,
FOR M/S. INTERNATIONAL BIOTECH PARK

1.0 INTRODUCTION

M/s. International Biotech Park plans construction of a residential building in Hinjewadi Phase -2, Pune. The proposed building will be a G+27 storied structure. The work of geotechnical investigation was awarded to M/s. Drilltech Engineers Pvt. Ltd. The field work and laboratory tests for the geotechnical investigation were completed by M/s. Drilltech Engineers in June 2011. This report prepared by Geocon International Pvt. Ltd., presents results of the geotechnical investigation along with foundation recommendations for the proposed building.

2.0 EXPLORATION PROGRAM

2.1 Exploration Scope

Fifteen Boreholes (BH-1 to BH-15) were completed for the project as illustrated on the Borehole Location Plan in the Annexure.



2.2 Subsurface Conditions

Subsurface profile at this site generally consists of fill overlying completely weathered rock underlain by hard Bedrock. Encountered soil/rock layers are described below;

LAYER I: FILL

Fill, consisting mostly of clay with boulders, was encountered in few boreholes. Thickness of fill layer varies between 1.0m and 1.5m.

LAYER II: COMPLETELY WEATHERED BEDROCK (HARD MURRUM)

Completely weathered bedrock was encountered at depths between 0.0m and 1.5m below ground surface. This layer is formed by the complete in-place disintegration of parent bedrock material, but still partially retains the original rock mass structure, and is also locally referred to as hard murrum. SPT tests conducted in this layer encountered refusals. Core recoveries were typically less than 20 percent. The lower boundary of this layer was encountered at depths between 3.0m and 9m below ground surface.



LAYER III: BASALT BEDROCK

Basalt bedrock was encountered at depths between 3.0m and 9m below ground surface in the boreholes. The bedrock was highly weathered to sound. Core Recoveries varied between 20% and 96%, while Rock Quality Designation (RQD) ranged between 0% and 90%. Compressive strength of the rock core samples ranged between 113 kg/cm² and 606 kg/cm². The boreholes were terminated in this bedrock layer at depths between 9.0m and 15.0m below ground surface.

2.3 Ground water Levels

Groundwater accumulation in boreholes was monitored during and after completion of drilling activities. Groundwater was observed in boreholes at depths between 2.0m and 7.0m below ground surface. Seasonal and annual fluctuations in ground water levels can be expected.



3.0 FOUNDATION RECOMMENDATIONS

Completely weathered bedrock (hard murrum) was encountered at depths between 0.0m and 1.5m below ground surface. Proposed building should be supported on raft foundation. Raft foundations for proposed building, supported on this completely weathered bedrock at a minimum depth of 1.5m below ground surface, can be designed for a maximum net allowable bearing capacity of upto 70 t/m²

Maximum settlement of foundations will be less than 40mm. A Modulus of subgrade reaction of 1900 t/m³ can be utilized for design of foundations. Excavation sides should be sloped at a maximum slope of 1:1 (horizontal: vertical) or flatter. Excavations should not be kept exposed for prolonged periods of time prior to pouring of concrete. Continuous and proper dewatering arrangements should be provided and water should not be allowed to accumulate in excavations.

3.1 Foundation Protection

Groundwater samples were collected for chemical analysis from the site. Results of Chemical analysis are enclosed in the Annexure. Based on chemical results, the site falls under Class I for sulphates and chlorides (As per IS456-2000 and as per CIRIA Special Publication No. 31). A moderate exposure condition was assigned to this site. Hence, following precautions shall be taken to protect concrete and reinforcement in foundations;

Type of Cement:	OPC or PPC
Minimum Grade of Reinforced Concrete:	M25
Minimum Cement Content for spread footings:	300 kg/m ³
Maximum Water Cement Ratio:	0.50
Minimum Cover to Reinforcement:	50mm



4.0 FIELD EXPLORATION PROCEDURES

The sub-surface investigation was completed generally as per IS: 1892-1979. The field investigation was carried out using a rotary machine. Casing was used to support sides of borehole until sufficiently stiff strata was encountered. Standard Penetration Tests (i.e. SPT) were carried out in soil in accordance with IS 2131-1981. Using this procedure, a 2" outside diameter split-barrel sampler is driven into the soil by 63.5 kg. weight falling through 75 cm height. After an initial set of 15cm, the number of blows required to drive the sampler an additional 30 cm, is known as the "penetration resistance" or "N value".

When SPT refusal was obtained in hard strata, rock coring was done using diamond bit and double tube core barrel to obtain rock samples. Percent Rock Core Recovery and Rock Quality Designation (%RQD) were determined. $\% RQD = 100 \times \text{Sum of length of rock pieces in cms, each having lengths greater than 10cms} / \text{Total length of core run.}$

Sincerely,

GEOCON INTERNATIONAL PVT. LTD.

J. Wagh

Jaydeep Wagh
B. E., M.S., P.E. (Geotechnical)



REFERENCES

- 1) Foundation Analysis and Design, J.E. Bowles, McGraw Hill Publication, 5th Edition, 1996.
- 2) Canadian Foundation Engineering Manual.
- 3) Soil Mechanics in Engineering Practice, 2nd Edition, Terzaghi K. and Peck R. B., John Wiley and Sons, 1967.
- 4) Foundation Design Manual, N. V. Nayak, 5th Edition, 1996.
- 5) IS:6403-1981, Code of Practice for Design and Construction of Shallow Foundations on Soils.
- 6) IS14593, Code of Practice for Design of Pile Foundations on Rock.



**SAMPLE CALCULATION OF ALLOWABLE BEARING CAPACITY
FOR RAFT FOUNDATIONS ON COMPLETELY WEATHERED BEDROCK**

	GL +0.0m
Layer I, Fill	
Layer II, Completely weathered Bedrock	-1.0m to -1.5m
Layer III, Basalt Bedrock	-3.0 to -9m

(Assuming Completely weathered Bedrock to be a very dense granular soil.)

Net Ultimate Bearing Capacity = $q_u = cN_c + q(N_q - 1) + 0.5 B \gamma N_\gamma s_\gamma$ (Refn. 5, Table 4-1)

Where,

- q = Overburden Pressure (i.e. submerged unit weight x depth of foundation)
- c = Cohesion
- B = Minimum Width of foundation = 10m
- γ' = submerged unit weight of soil = 0.80
- N_c, N_q, N_γ = Terzaghi's Bearing capacity factors
- S_c, s_q, s_γ = Shape factors = conservatively assumed as 1.0, 1.0, and 0.6
- D = Depth of Footing = 1.5m

Minimum SPT N value obtained in boreholes = 50

Corresponding friction angle = 40° (Reference No. 5)

Corresponding $N_c=75, N_q=64, N_\gamma=109$ (Reference 5, IS:6403-1981);

Substituting these values in the above equation;

$$q_{\text{ultimate}} = q_u = [0 \times 75 \times 1.0] + [1.5 \times 0.8 \times (64 - 1) \times 1.0] + [0.5 \times 10 \times 0.8 \times 109 \times 0.6] = 0 + 75 + 250 = 325 \text{ t/m}^2$$

$$q_{\text{safe}} = q_u / F.S. = 325 / 3 = 108 \text{ t/m}^2$$

Restricted to 70 t/m² to limit settlements as shown below.

CALCULATION OF SETTLEMENTS OF FOUNDATIONS (20M X 40M) EXERTING PRESSURE OF 70 T/M2

i) Settlement of CWR from -1.5m to -9.0m

From Reference No. 1:

$$\text{Settlement} = S = q_0 B' \frac{1 - \mu^2}{E_s} m I_s I_f$$

Where,

q_0 = Footing Pressure = 70 t/m²

B' = $B/2$ (Where B is the width of pressure distribution)

μ = Poisson's ratio = 0.3

E = Modulus of Elasticity

I_s = Influence Factor (Obtained from Table 5-2, Reference No. 1)

I_f = Depth Factor (Obtained from Figure 5-7, Reference No. 1)

m = 4 for center of footing

Very conservatively assuming weathered bedrock within the full influence zone of footings:

E value for over-consolidated sand = $105(N) + 4000$ (Reference No. 1)

Therefore, for a SPT N value of 50, $E = 9,250$ t/m²

$L' = 40/2 = 20$, $B' = 20/2 = 10$, $H = 7.5\text{m}$, and $D = 1.5\text{m}$

Therefore, $M = L/B = 2$; and $N = H/B' = 0.75$ and $D/B = 0.075$

Corresponding, $I_s = 0.138$, Conservative $I_f = 1.0$ (From Table 5-2, Reference 1)

$$\text{Settlement of Layer} = S_1 = 70 \times 10 \times \frac{1 - 0.3^2}{9250} \times 4 \times 0.138 \times 1.0 = 0.036\text{m} = 36\text{mm}$$



ii) SETTLEMENT OF BEDROCK BELOW -9.0M

From Reference No. 1:

$$\text{Settlement} = S = q_0 B' \frac{1 - \mu^2}{E_s} m I_s I_f$$

Where,

q_0 = Footing Pressure = 62.1 t/m² (after allowing for pressure dissipation)

B' = $B/2$ (Where B is the width of pressure distribution)

μ = Poisson's ratio = 0.2

E = Modulus of Elasticity

I_s = Influence Factor (Obtained from Table 5-2, Reference No. 1)

I_f = Depth Factor (Obtained from Figure 5-7, Reference No. 1)

m = 4 for center of footing

E value for Basalt Bedrock = 1700,000 t/m² (Reference No. 4)

Using 1/10th of this value for bedrock, $E = 1,70,000$ t/m²

Depth of top of layer below footing = 7.5m

Assuming a 30 degree pressure dissipation,

Width of pressure distribution at top of the layer = 20m + 7.5m = 27.5m

Length of pressure distribution at top of the layer = 40m + 7.5m = 47.5m

$L' = 47.5/2 = 23.75$, $B' = 27.5/2 = 13.75$, $H=40$ m, and $D=7.5$ m

Therefore, $M=L/B=1.72$; and $N=H/B'=2.90$ and $D/B=0.272$

Corresponding, $I_s = 0.434$, Conservative $I_f = 1.0$ (From Table 5-2, Reference 1)

$$\text{Settlement of Layer} = S_2 = 62.1 \times 13.75 \times \frac{1 - 0.2^2}{170,000} \times 4 \times 0.434 \times 1.0 = 0.008\text{m} = 8\text{mm}$$

THEREFORE, TOTAL SETTLEMENT = 36mm + 8mm = 44mm

From IS8009:

Due to Footing Rigidity Factor, Settlement = 0.8 x 44mm = 35mm.

ANNEXURE

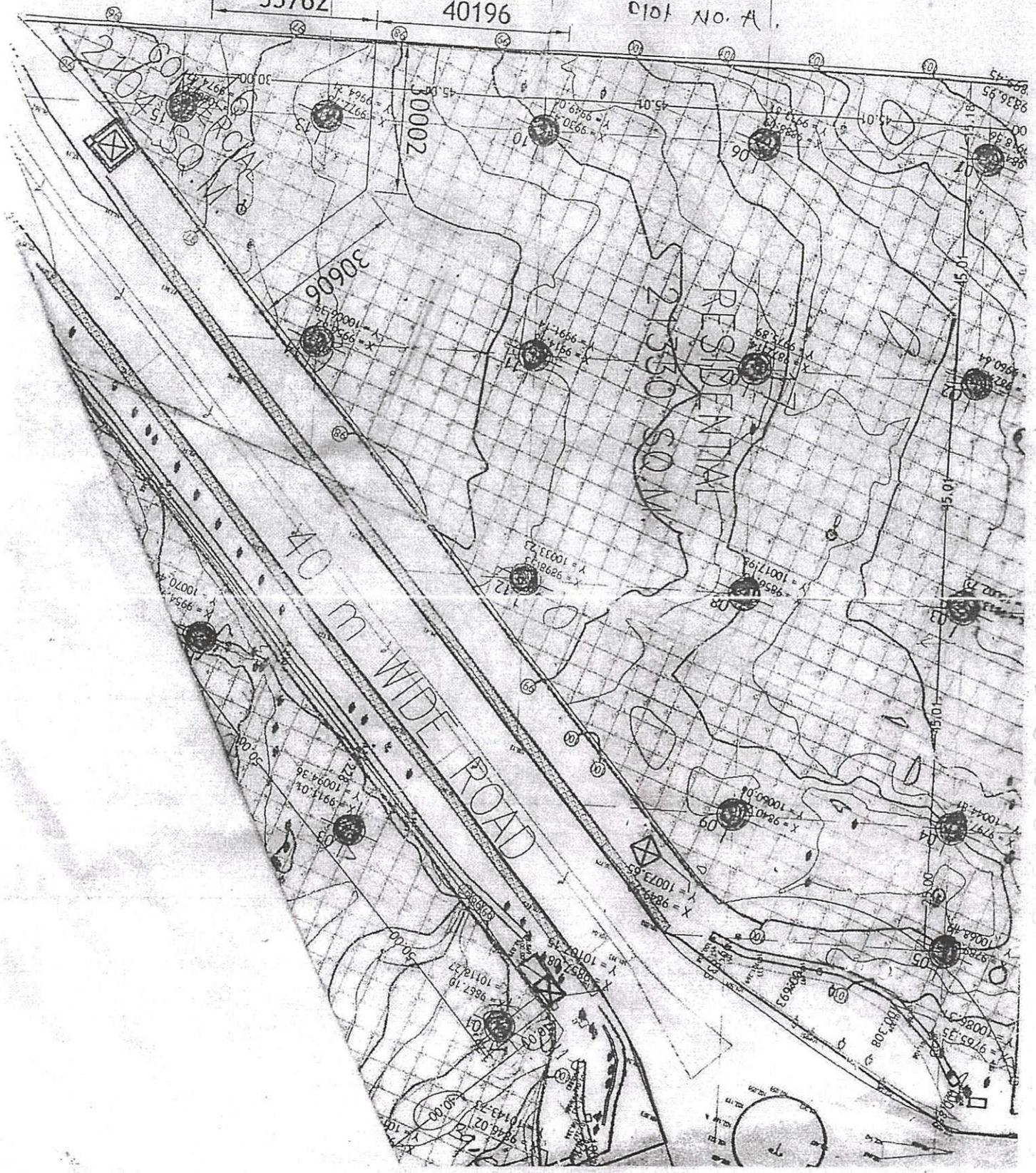
LOCATION PLAN

Plus plot complet
date 9/6/11

Plot No. A.

33762

40196



BOREHOLE LOGS

BORE HOLE NO: BH 01

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJEWADI PHASE -2 ,PUNE.

BORE HOLE NO. : BH 01

DATE : 28/5/2011 TO 30/5/2011

SHEET NO. : 1 OF 1

FINAL DEPTH : 9.00M

WATER LEVEL : WATER LOST

ROCK STARTED : 6.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50	75	100				
1.00	100 MM Ø		Completely Weathered ROCK	1.50	1-3						6%	Nil	
2.00				BASALT BEDROCK	3.00	4-5						23%	Nil
3.00		BASALT BEDROCK		4.50	6-17						46%	13%	
4.00				Gray BASALT	6.00	18-25						83%	66%
5.00		Gray BASALT		7.50	26-34						90%	68%	
6.00				Greyish Black Basalt Rock	9.00	35-41						96%	80%
7.00		Greyish Black Basalt Rock											
8.00													
9.00	NX												
10.00													

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

SCALE : 1:50

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 9.00M BELOW G.L

Prepd. by Mrs. Seema Salunke

Drilltech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 02

CLIENT : INTERNATIONAL BIOTECH PARK
 PROJECT : HINJEWADI PHASE -2 ,PUNE.
 BORE HOLE NO. : BH 02 DATE : 28/5/2011 TO 29/5/2011
 SHEET NO. : 1 OF 1 FINAL DEPTH : 11.00M
 WATER LEVEL : 7.00M ROCK STARTED : 1.50M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	C R %	RQD %	OTHER TESTS	
				DEPTH (m)	TYPE	25	50					75
1.00	100 MM Ø		Completely Weathered ROCK	1.50	1-3				6%	Nil		
2.00												
3.00				3.00	4-6					6%	Nil	
4.00												
5.00				4.50	7-8					10%	Nil	
5.00	▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽		BASALT BEDROCK	5.50	9-10				13%	Nil		
6.00			Greyish Basalt Rock (White patches)	6.50	11-12				40%	40%		
7.00			Greyish Black Basalt Rock	8.00	13-18				73%	60%		
8.00												
9.00			9.50	19-26					83%	52%		
10.00												

SPT N = STANDARD PENETRATION TEST VALUE RQD = ROCK QUALITY DESIGNATION UDS = UNDISTURBED SOIL SAMPLE
 C R = CORE RECOVERY DS = DISTURBED SOIL SAMPLE VST = VANE SHEAR TEST SCALE : 1:50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 11.00M BELOW G.L.

Prepd. by Mrs. Seema Salvi

BORE HOLE NO: BH 02

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJEWADI PHASE -2 PUNE.

BORE HOLE NO. : BH 02

DATE : 28/5/2011 TO 29/5/2011

SHEET NO. : 2 OF 2

FINAL DEPTH : 11.00M

WATER LEVEL : 7.00M

ROCK STARTED : 1.50M

DEPTH (m.)	DIA. OF BORE HOLE	LOG	STRATA DESCRIPTION	SAMPLE				SPT N	CR %	RQD %	OTHER TESTS		
				DEPTH (m)	TYPE	25	50					75	100
11.00	100 MM ϕ	▽▽▽▽	Brownish basalt rock (White patches)	11.00	27-31								
12.00									85%	85%			
13.00													
14.00													
15.00													
16.00													
17.00													
18.00													
19.00													
20.00													

SPT N = STANDARD PENETRATION TEST VALUE

CR = CORE RECOVERY

RQD = ROCK QUALITY DESIGNATION

DS = DISTURBED SOIL SAMPLE

UDS = UNDISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

SCALE : 1: 50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 11.00M BELOW G.L

Prepd. by Mr. S. Seema Sahu

Driltech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 03

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJEWADI PHASE-2, PUNE

BORE HOLE NO. : BH 03

DATE : 31/5/2011

SHEET NO. : 1 OF 1

FINAL DEPTH : 13.00M

WATER LEVEL : 4.50M

ROCK STARTED : 3.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	CR %	RQD %	OTHER TESTS	
				DEPTH (m)	TYPE	25	50	75	100					
1.00	100 MM Ø		Completely Weathered ROCK	1.50	1-3						6%	Nil		
2.00														
3.00					3.00	4-7						10%	Nil	
4.00					4.50	8-10						10%	Nil	
5.00		▽▽▽	Greyish BASALT BEDROCK											
6.00		▽▽▽	Greyish BASALT BEDROCK	6.00	11-12						13%	Nil		
7.00		▽▽▽			7.50	13-17						26%	Nil	
8.00		▽▽▽	Greyish BASALT											
9.00	NX	▽▽▽			9.00	18-20						53%	43%	
10.00		▽▽▽												

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

SCALE : 1: 50

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.00M BELOW G.L.

Prepd. by Mrs. Germa Salvi

BORE HOLE NO: BH 03

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJEWADI PHASE-2 PUNE.

BORE HOLE NO. : BH 03

DATE : 31/5/2011

SHEET NO. : 1 OF 2

FINAL DEPTH : 13.00M

WATER LEVEL : 4.50M

ROCK STARTED : 2.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	CR %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50	75	100				
11.00	100 MM φ	▽▽▽▽	Greyish black BASALT	10.50	21-28	///	///	///	///		83%	66%	
12.00		▽▽▽▽	Greyish green BASALT ROCK	12.00	29-35	///	///	///	///		90%	76%	
13.00		▽▽▽▽	Brownish green BASALT ROCK	13.00	36-41	///	///	///	///		95%	76%	
14.00													
15.00													
16.00													
17.00													
18.00													
19.00													
20.00													

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

SCALE : 1: 50

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.00M BELOW G.L

Prepd. by : Ms. Seema Sawane

BORE HOLE NO: BH 04

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJEWADI PHASE-2, PUNE

BORE HOLE NO. : BH 04

DATE : 31/5/2011 TO 1/6/2011

SHEET NO. : 1 OF 1

FINAL DEPTH : 14.00M

WATER LEVEL : 3.00M

ROCK STARTED : 2.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	C R %	ROD %	OTHER TESTS	
				DEPTH (m)	TYPE	25	50	75	100					
1.00	100 MM φ		Back Filled Material	1.50										
2.00			Completely Weathered rock	2.00	1-3						6%	Nil		
3.00				3.00	4-5							8%	Nil	
4.00				4.50	6-9							10%	Nil	
5.00				6.00	10-14							13%	Nil	
6.00				7.50	15-19							16%	Nil	
8.00			Greyish BASALT ROCK	9.00	20-25						53%	43%		
9.00	NX													
10.00														

SPT N = STANDARD PENETRATION TEST VALUE

ROD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

SCALE : 1: 50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 14.00M BELOW G.L

Prepd. by: Mrs. Seema Salvi

BORE HOLE NO: BH 04

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJEWADI PHASE-2,PUNE.

BORE HOLE NO. : BH 04

DATE : 31/5/2011 TO 1/6/2011

SHEET NO. : 2 OF 2

FINAL DEPTH : 14.00M

WATER LEVEL : 3.00M

ROCK STARTED : 2.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	CR %	RQD %	OTHER TESTS		
				DEPTH (m)	TYPE	25	50	75	100						
11.00	100 MM Ø	▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽	Greyish Green BASALT ROCK	10.50	26 - 34	/ / / /					90%	Nil			
12.00			Greyish Brown BASALT ROCK	12.00	35 - 40									93%	Nil
13.00			Greyish BASALT ROCK	13.50	41 - 47										
14.00				14.00	48									90%	Nil
15.00	NX														
16.00															
17.00															
18.00															
19.00															
20.00															

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

SCALE : 1: 50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 14.00M BELOW G.L

Prepd. by: Miss Seema Sonawane

Drilltech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 05

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 05

DATE : 02/06/2011 TO 03/06/2011

SHEET NO. : 1 OF 2

FINAL DEPTH : 13.50M

WATER LEVEL : 2.00 M

ROCK STARTED : 9.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	CR %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50	75	100				
1.00	100 MM Ø		Back Filled	1.50							Nil	Nil	
2.00			Yellowish Hard Murum										
3.00			Completely Weathered ROCK (Hard MURRUM)	3.00	1 - 2						6%	Nil	
4.00				4.50	3 - 5						10%	Nil	
5.00				6.00	6 - 8						13%	Nil	
6.00				7.50	9 - 10						20%	Nil	
7.00			Greyish BASALT ROCK (White Patches)	9.00	11 - 13						46%	46%	
8.00													
9.00													
10.00													

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

SCALE : 1: 50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.50M BELOW G.L.

Prepd. by: Mrs. Seema Sonawane

Drilltech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 05

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 05

DATE : 02/06/2011 TO 03/06/2011

SHEET NO. : 2 OF 2

FINAL DEPTH : 13.50M

WATER LEVEL : 2.00M

ROCK STARTED : 9.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				BLOWS/15cm	SPT N	CR %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50					
11.00	100 MM Ø	▽▽▽▽	Greyish BASALT ROCK (White Patches)	10.50	14 - 20	[Hatched Area]				83%	80%	
12.00		▽▽▽▽		12.50	21 - 28					86%	83%	
13.00		▽▽▽▽		13.50	29 - 32					86%	86%	
14.00												
15.00												
16.00												
17.00												
18.00												
19.00	NX											
20.00												

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

SCALE : 1: 50

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

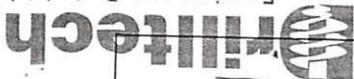
VST = VANE SHEAR TEST

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.50M BELOW G.L

Prepd. by Miss Saama Saware

Biiltech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922



BORE HOLE NO: BH 06

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 06

DATE : 04/06/2011 to 06/06/2011

SHEET NO. : 1 OF 2

FINAL DEPTH : 13.00M

WATER LEVEL : 3.00M

ROCK STARTED : 4.50M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	C R %	RQD %	OTHER TESTS	
				DEPTH (m)	TYPE	BLOWS/15cm						
						25	50	75	100			
1.00	100 MM ϕ											
1.50				1 - 2						6%	Nil	
2.00												
3.00			Completely Weathered ROCK	3 - 6						16%	Nil	
4.00				7 - 12						16%	Nil	
5.00				13 - 16						13%	Nil	
6.00												
7.00			Greyish BASALT ROCK	17 - 23						23%	Nil	
8.00												
9.00	NX		Greyish BASALT ROCK	24 - 30						66%	46%	
10.00												

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

SCALE : 1: 50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.00M BELOW G.L

Prepd. by: Miss.Seema Sonawane

BORE HOLE NO: BH 06

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 06

DATE : 04/06/2011 to 06/06/2011

SHEET NO. : 2 OF 2

FINAL DEPTH : 13.00M

WATER LEVEL : 3.00M

ROCK STARTED : 4.50M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	CR %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	BLOWS/15cm					
				25	50	75	100				
11.00	100 MM ϕ	▽▽▽▽	Greyish Grey BASALT ROCK	10.50	31 - 34	[Hatched]			73%		
12.00		▽▽▽▽		12.00	35 - 40	[Hatched]			83%	80%	
13.00		▽▽▽▽		13.00	41 - 42				60%		
14.00											
15.00											
16.00											
17.00											
18.00											
19.00											
20.00											

SPT N = STANDARD PENETRATION TEST VALUE

CR = CORE RECOVERY

RQD = ROCK QUALITY DESIGNATION

DS = DISTURBED SOIL SAMPLE

UDS = UNDISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

SCALE : 1: 50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.00M BELOW G.L

Prepd. by Miss. Seema Sonawane

BORE HOLE NO: BH 07

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 07

DATE : 03/06/2011 -

SHEET NO. : 1 OF 2

FINAL DEPTH : 13.50M

WATER LEVEL : WATER LOST

ROCK STARTED : 3.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50				
1.00	100 MM ϕ		Completely Weathered ROCK	1.50	1 - 4				6%	Nil	
2.00				3.00	5 - 9				10%	Nil	
3.00				4.50	10 - 11				10%	Nil	
4.00				6.00	12 - 15				20%	Nil	
5.00				7.50	16 - 21				23%	Nil	
6.00				8.00	22 - 28				53%	40%	
7.00			Brownish BASALT ROCK White Patch								
8.00			Greyish BASALT ROCK								
9.00											
10.00											

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

SCALE : 1: 50

C R = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.50M BELOW G.L.

Prepd. by: Mrs. Seema Sonawane

Drilltech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 07

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 07

DATE : 03/06/2011 to06/2011

SHEET NO. : 2 OF 2

FINAL DEPTH : 13.50M

WATER LEVEL : WATER LOST

ROCK STARTED : 3.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50				
11.00	100 MM ϕ	▽▽▽▽	Greyish BASALT ROCK	10.50	29 - 32	///			70%	63%	
12.00		▽▽▽▽		12.00	33 - 42	///			73%	46%	
13.50		▽▽▽▽		13.50	43 - 48	///			86%	80%	
14.00											
15.00											
16.00											
17.00											
18.00											
19.00											
20.00											

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

SCALE : 1: 50

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.50M BELOW G.L.

Prepd. by : Miss. Seema Sonawane

Driltech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 08

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 08

DATE : 02/06/2011

SHEET NO. : 1 OF 2

FINAL DEPTH : 13.60M

WATER LEVEL : 3.50M

ROCK STARTED : 1.50M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50				
1.00	100 MM Ø		Back filled	1.00	-						
2.00			Completely Weathered ROCK (Hard MURRUM)	1.50	1				6%	Nil	
3.00				3.00	2 - 5				10%	Nil	
4.00				4.50	6 - 8				13%	Nil	
5.00				6.00	9 - 17				--		
6.00				7.50	18 - 25				16%	Nil	
7.00			Greyish BASALT BEDROCK	9.00	26 - 32				80%	76%	
8.00											
9.00											
10.00											

SPT N = STANDARD PENETRATION TEST VALUE

CR = CORE RECOVERY

RQD = ROCK QUALITY DESIGNATION

DS = DISTURBED SOIL SAMPLE

UDS = UNDISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

SCALE : 1: 50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.60M BELOW G.L

Prepd. by: Mrs. Seema Sonawane

Griltech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 08

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. :- BH 08

DATE : 02/06/2011 -

SHEET NO. : 2 OF 2

FINAL DEPTH : 13.60M

WATER LEVEL : 3.50M

ROCK STARTED : 1.50M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	C R %	RQD %	OTHER TESTS	
				DEPTH (m)	TYPE	BLOWS/15cm						
						25	50	75	100			
11.00	100 MM Ø	▽▽▽▽	Greyish BASALT BEDROCK	10.50	33 - 38						90%	86%
12.00				12.00	39 - 46						86%	83%
13.60				13.60	47 - 56						93%	90%
14.00												
15.00												
16.00												
17.00												
18.00												
19.00												
20.00												

SPT N = STANDARD PENETRATION TEST VALUE

CR = CORE RECOVERY

RQD = ROCK QUALITY DESIGNATION

DS = DISTURBED SOIL SAMPLE

UDS = UNDISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

SCALE : 1: 50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.50M BELOW G.L

Prepd. by: Miss. Seema Sonawane

Griltech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 09

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 09

DATE : 04/06/2011 - 07/06/2011

SHEET NO. : 1 OF 2

FINAL DEPTH : 15.00M

WATER LEVEL : 3.00M

ROCK STARTED : 3.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				BLOWS/15cm	SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50					
1.00	100 MM Ø		Back filling material	1.50								
2.00			Completely Weathered ROCK	3.00	1 - 3				6%			
3.00				4.50	4 - 6				10%			
4.00				6.00	7 - 9				13%			
5.00			Greyish with white filling rock	7.50	10 - 13				13%			
6.00				9.00	14 - 16				23%	8%		
7.00			Greyish Breccia Rock									
8.00												
9.00												
10.00												

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

SCALE : 1: 50

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 15.00M BELOW G.L

Prepd. by Miss. Seema Sonawane

Dr.itech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 09

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 09

DATE : 04/06/2011 - 07/06/2011

SHEET NO. : 2 OF 2

FINAL DEPTH : 15.00M

WATER LEVEL : 3.00M

ROCK STARTED : 3.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	C R %	RQD %	OTHER TESTS	
				DEPTH (m)	TYPE	25	50					75
11.00	100 MM Ø	▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽	Greyish BASALT ROCK	10.50	17 - 18	█			40%	24%		
12.00				19 - 21	█			66%	53%			
13.00				Reddish with BASALT (Breccia white patch rock)	13.50	22 - 26	█			80%	63%	
15.00					27 - 31	█			83%	83%		
16.00	NX	▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽										
17.00												
18.00												
19.00												
20.00												

SPT N = STANDARD PENETRATION TEST VALUE

CR = CORE RECOVERY

RQD = ROCK QUALITY DESIGNATION

DS = DISTURBED SOIL SAMPLE

UDS = UNDISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

SCALE : 1: 50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 15.00M BELOW G.L

Prepd. by : Miss Seema Sonawane

initech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 10

CLIENT : INTERNATIONAL BIOTECH PARK													
PROJECT : HINJE WADI PHASE 2, PUNE													
BORE HOLE NO. : BH 10						DATE : _____							
SHEET NO. : 1 OF 2						FINAL DEPTH : 10.00M							
WATER LEVEL : WATER LOST						ROCK STARTED : 1.50M							
DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50	75	100				
1.00	100 MM Ø		Completely Weathered ROCK (Hard MURRUM)	1.50	1 - 5						10%	Nil	
2.00				3.00	6 - 9						10%	Nil	
4.00			Brownish Grey BASALT	4.50	10 - 19						20%	Nil	
5.00				6.00	20 - 31						33%	Nil	
7.00				7.50	32 - 43						50%	8%	
8.00			Greyish BASALT ROCK	9.00	44 - 51						60%	34%	
9.00				10.00	52 - 54						80%	80%	
10.00													

SPT N = STANDARD PENETRATION TEST VALUE RQD = ROCK QUALITY DESIGNATION UDS = UNDISTURBED SOIL SAMPLE
 C R = CORE RECOVERY DS = DISTURBED SOIL SAMPLE VST = VANE SHEAR TEST

SCALE : 1: 50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 10.00M BELOW G.L

Prepd. by: *Miss. Sneha Sawane*

BORE HOLE NO: BH 11

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 11

DATE : _____

SHEET NO. : 1 OF 2

FINAL DEPTH : 13.50M

WATER LEVEL : WATER LOST

ROCK STARTED : 9.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50	75	100				
1.00	100 MM ϕ												
1.50				1 - 4									
2.00													
3.00			Completely Weathered ROCK	5 - 6						10%	Nil		
4.00													
4.50				7 - 10						10%	Nil		
5.00													
6.00				11 - 14						Nil	Nil		
7.00													
7.50				15 - 19						20%	Nil		
8.00													
9.00	NX	▽▽▽▽	Yellowish BASALT ROCK	20 - 30						23%	Nil		
10.00		▽▽▽▽	Brownish BASALT ROCK (White patch)										

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

SCALE : 1: 50

C R = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.30M BELOW G.L

Prepd. by: Miss. Seema Sonawane

BORE HOLE NO: BH 11

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 11

DATE : _____

SHEET NO. : 2 OF 2

FINAL DEPTH : 13.30M

WATER LEVEL : WATER LOST

ROCK STARTED : 9.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50				
11.00	100 MM φ	▽▽▽▽		10.50	31 - 43				46%	8%	
12.00		▽▽▽▽	Greyish Brown BASALT ROCK (white patch)	12.00	44 - 50				60%	46%	
13.00		▽▽▽▽		13.30	51 - 57				73%	50%	
14.00											
15.00											
16.00											
17.00											
18.00											
19.00											
20.00											

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

SCALE : 1: 50

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.30M BELOW G.L.

Prepd. by Miss. Seema Sawane

BORE HOLE NO: BH 12

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 12

DATE : 06/06/2011 - 07/06/2011

SHEET NO. : 1 OF 2

FINAL DEPTH : 15.10M

WATER LEVEL : 2.59.1

ROCK STARTED : 7.50M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	C R %	RQD %	OTHER TESTS	
				DEPTH (m)	TYPE	BLOWS/15cm						
						25	50	75	100			
1.00	100 MM ϕ		Completely Weathered ROCK (Hard MURRUM)	1.50	1 - 5						6%	Nil
2.00				3.00	3 - 6						6%	Nil
4.00				4.50	8 - 18						16%	Nil
5.00			Greyish BASALT BEDROCK	6.00	19 - 23						20%	Nil
6.00				7.50	24 - 31						20%	Nil
8.00				9.00	32 - 35						21%	8%
9.00	NX		Greyish BASALT with white filling rock	10.50	36 - 42						56%	40%
10.00												

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

SCALE : 1: 50

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 15.10M BELOW G.L

Prepd. by Miss. Seema Sonawane

BORE HOLE NO: BH 13

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 13

DATE : 06/06/2011 - 08/06/2011

SHEET NO. : 1 OF 2

FINAL DEPTH : 11.50M

WATER LEVEL : WATER LOST

ROCK STARTED : 4.50M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	CR %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50				
1.00	100 MM ϕ			1.50	1						
2.00			Completely Weathered ROCK	3.00	2				13%		
3.00				4.50	3 - 7				20%	8%	
4.00				6.00	8 - 11				16%		
5.00			Greyish BASALT	7.50	12 - 16				20%		
6.00				9.00	17 - 21				46%	40%	
7.00				10.50	22 - 25				73%	100%	
8.00			Reddish with greyish BASALT								
9.00											
10.00											

SPT N = STANDARD PENETRATION TEST VALUE

CR = CORE RECOVERY

RQD = ROCK QUALITY DESIGNATION

DS = DISTURBED SOIL SAMPLE

UDS = UNDISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

SCALE : 1: 50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 11.50M BELOW G.L.

Prepd. by: Miss Seema Sonawane

Drilltech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 13

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 13

DATE : 06/06/2011 - 08/06/2011

SHEET NO. : 2 OF 2

FINAL DEPTH : 11.50M

WATER LEVEL : WATER LOST

ROCK STARTED : 4.50M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE,				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50				
11.00	100 MM ϕ	▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽	Reddish with BASALT ROCK	11.50	26 - 28				70%	70%	
12.00											
13.00											
14.00											
15.00											
16.00											
17.00											
18.00											
19.00											
20.00											

SPT N = STANDARD PENETRATION TEST VALUE

CR = CORE RECOVERY

RQD = ROCK QUALITY DESIGNATION

DS = DISTURBED SOIL SAMPLE

UDS = UNDISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

SCALE : 1:50

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 11.50M BELOW G.L

Prepd. by Miss. Seema Sonawane

Illitech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 14

CLIENT : INTERNATIONAL BIOTECH PARK

PROJECT : HINJE WADI PHASE 2, PUNE

BORE HOLE NO. : BH 14

DATE : 08/06/2011 - 09/06/2011

SHEET NO. : 1 OF 2

FINAL DEPTH : 13.60M

WATER LEVEL : 3.50M

ROCK STARTED : 6.00M

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50	75	100				
1.00	100 MM Ø		Completely Weathered ROCK	1.50	1						8%	Nil	
2.00				3.00	2 - 13						20%	Nil	
3.00				4.50	14 - 22						16%	Nil	
4.00			Highly Weathered Reddish BASALT	6.00	23 - 33						20%	Nil	
5.00				7.50	34 - 43						33%	Nil	
6.00			Reddish & greyish BASALT	9.00	44 - 55						26%	Nil	
7.00				10.50	56 - 59						46%	45%	
8.00													
9.00													
10.00													

SPT N = STANDARD PENETRATION TEST VALUE

RQD = ROCK QUALITY DESIGNATION

UDS = UNDISTURBED SOIL SAMPLE

SCALE : 1: 50

CR = CORE RECOVERY

DS = DISTURBED SOIL SAMPLE

VST = VANE SHEAR TEST

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.60M BELOW G.L

Prepd. by: Miss. Sneha Sawane

Shiltech
Engineers Pvt. Ltd.

Tel.: 2500 4921 / 2500 4922

BORE HOLE NO: BH 15

CLIENT		: INTERNATIONAL BIOTECH PARK									
PROJECT		: HINJE WADI PHASE 2, PUNE									
BORE HOLE NO. : BH 15'					DATE : 07/06/2011 - 09/06/2011						
SHEET NO. : 1 OF 2					FINAL DEPTH : 13.50M						
WATER LEVEL : 3.50M					ROCK STARTED : 7.50M						
DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	25	50				
1.00	100 MM ϕ		Completely Weathered ROCK	1.50	1 - 3				6%	Nil	
2.00				3.00	4 - 7				13%	Nil	
3.00				4.50	8 - 11				10%	Nil	
4.00				6.00	12 - 15				10%	Nil	
5.00				7.50	16 - 20				12%	Nil	
6.00			Greyish BASALT	9.00	21 - 25				33%	17%	
7.00				10.50	26 - 29				73%	100%	
8.00											
9.00											
10.00											
SPT N = STANDARD PENETRATION TEST VALUE		RQD = ROCK QUALITY DESIGNATION		UDS = UNDISTURBED SOIL SAMPLE				SCALE : 1: 50			
C R = CORE RECOVERY		DS = DISTURBED SOIL SAMPLE		VST = VANE SHEAR TEST							
REMARKS : BORE HOLE IS TERMINATED AT DEPTH 13.50M BELOW G.L.										Prepd. by Miss. Seema Sonawane	

LABORATORY TEST RESULTS

ROCK TEST RESULTS

Name of the Client M/s International Biotech Park										Date : 25/6/2011			
Location International Biotech Park Hinjewadi, Pune, Phase-2										Job No.: GSL-689			
Sr. No.	Bore Hole no.	Core No.	Depth	Diameter	Height	H/D	Crushing Load	Point Load Index	UCS	Water absorption	Porosity	Dry density	Remarks
			(m)	(cm)	(cm)		(kg)	(kg/cm ²)	(kg/cm ²)	(%)	(%)	(gm/cc)	
1	BH-1	17	3.50-4.50	5.45	10.32	1.89	5000	---	211.61	1.23	2.72	2.21	---
2	BH-1	41	7.50-9.00	5.42	10.81	1.99	6000	---	259.79	0.92	2.01	2.19	---
3	BH-2	11	5.50-6.50	5.31	8.51	1.60	9500	---	406.44	0.52	1.14	2.19	---
4	BH-2	31	9.50-11.00	5.32	10.58	1.99	7000	---	314.39	0.81	1.76	2.17	---
5	BH-3	12	4.50-6.00	5.30		0.00	775	27.59	---	0.23	0.52	2.24	---
6	BH-3	35	12.00-13.50	5.46	10.78	1.97	10500	---	446.98	0.73	1.61	2.21	---
7	BH-4	25	7.50-9.00	5.45	10.77	1.98	8500	---	363.24	1.19	2.59	2.18	---
8	BH-4	48	12.50-14.00	5.22	10.34	1.98	9000	---	419.47	0.76	1.69	2.22	---
9	BH-5	11	7.50-9.00	5.40	10.75	1.99	7000	---	305.21	0.74	1.62	2.19	---
10	BH-5	31	12.00-13.50	5.38	10.56	1.96	5500	---	240.83	0.79	1.74	2.20	---
11	BH-6	26	7.50-9.00	5.36	10.67	1.99	9000	---	398.29	0.81	1.80	2.22	---
12	BH-6	40	12.00-13.00	5.40	10.78	2.00	9500	---	414.47	0.77	1.72	2.23	---
DRILLTECH ENGINEERS PVT. LTD.													

ROCK TEST RESULTS

Name of the Client **M/s International Biotech Park** Date : **25/6/2011**

Location **International Biotech Park Hinjewadi, Pune, Phase-2.** Job No.: **GSL-689**

Sr. No.	Bore Hole no.	Core No.	Depth	Diameter	Height	H/D	Crushing Load	Point Load Index	UCS	Water absorption	Porosity	Dry density	Remarks
			(m)	(cm)	(cm)		(kg)	(kg/cm ²)	(kg/cm ²)	(%)	(%)	(gm/cc)	
13	BH-7	24	7.50-9.00	5.45	10.32	1.89	5000	---	211.61	1.23	2.72	2.21	---
14	BH-7	46	12.00-13.50	5.42	10.81	1.99	6000	---	259.79	0.92	2.01	2.19	---
15	BH-8	18	6.00-7.50	5.36	---	---	525	18.27	---	0.64	1.43	2.23	---
16	BH-8	26	7.50-9.00	5.31	8.51	1.60	9500	---	406.44	0.52	1.14	2.19	---
17	BH-8	38	12.00-13.50	5.46	8.54	1.56	11000	---	442.25	0.58	1.29	2.22	---
18	BH-8	55	12.00-13.50	5.32	10.58	1.99	7000	---	314.39	0.81	1.76	2.17	---
19	BH-9	22	10.50-12.00	5.30	---	---	775	27.59	---	0.23	0.52	2.24	---
20	BH-9	30	13.50-15.00	5.46	10.78	1.97	10500	---	446.98	0.73	1.61	2.21	---
21	BH-10	15	7.50-9.00	5.45	10.77	1.98	8500	---	363.24	1.19	2.59	2.18	---
22	BH-10	30	12.00-13.50	5.22	10.34	1.98	9000	---	419.47	0.76	1.69	2.22	---
23	BH-11	20	7.50-9.00	5.40	---	---	150	5.14	---	1.89	3.99	2.11	---
24	BH-11	17	9.00-10.00	5.47	---	---	550	18.33	---	0.38	0.84	2.21	---

DRILLTECH ENGINEERS PVT. LTD.

ROCK TEST RESULTS

Name of the Client M/s International Biotech Park											Date : 25/6/2011		
Location International Biotech Park Hinjewadi, Pune, Phase-2.											Job No.: GSL-689		
Sr. No.	Bore Hole no.	Core No.	Depth	Diameter	Height	H/D	Crushing Load	Point Load Index	UCS	Water absorption	Porosity	Dry density	Remarks
			(m)	(cm)	(cm)		(kg)	(kg/cm ²)	(kg/cm ²)	(%)	(%)	(gm/cc)	
25	BH-11	31	12.00-13.50	5.40	9.61	1.78	9000	---	382.31	0.41	0.91	2.22	---
26	BH-11	56	12.00-13.50	5.41	10.8	2.00	8500	---	369.47	1.13	2.49	2.20	---
27	BH-12	34	7.50-9.00	5.32	10.6	1.99	6000	---	269.59	1.21	2.66	2.20	---
28	BH-12	57	13.50-15.10	5.26	10.45	1.99	7000	---	321.53	0.64	1.42	2.22	---
29	BH-13	17	7.50-9.00	5.40	9.56	1.77	7000	---	296.97	0.68	1.50	2.20	---
30	BH-13	26	10.50-11.50	5.32	9.28	1.74	7500	---	326.64	0.60	1.33	2.21	---
31	BH-14	57	7.50-9.00	5.35	10.67	1.99	11500	---	511.04	0.39	0.87	2.23	---
32	BH-14		12.00-13.60	5.47	10.78	1.97	13000	---	551.16	0.41	0.91	2.23	---
33	BH-15	22	10.50-12.00	5.36	10.61	1.98	3500	---	154.69	1.23	2.71	2.20	Broken along vein
34	BH-15	42	12.00-13.50	5.43	9.84	1.81	12000	---	506.33	0.39	0.87	2.23	---

DRILLTECH ENGINEERS PVT. LTD.

Date: 25/6/2011

Project: Laboratory testing for M/s International Biotech Park

Site: International Biotech Park Hinjewadi, Pune, Phase-2

Job No.: GSL -689

CHEMICAL ANALYSIS OF WATER SAMPLE

Bore Hole	BH-1	BH-3	BH-4	BH-5	BH-6
pH value	7.63	7.65	7.66	7.64	7.66
Sulphate as So3 (ppm)	0.031	0.037	0.034	0.030	0.040
Chloride as cl (ppm)	0.089	0.091	0.083	0.072	0.108

Bore Hole	BH-7	BH-9	BH-11	BH-13	BH-14
pH value	7.65	7.65	7.68	7.64	7.65
Sulphate as So3 (ppm)	0.040	0.037	0.039	0.044	0.034
Chloride as cl (ppm)	0.114	0.097	0.076	0.111	0.083



Plot

**APPLICATION FOR
ENVIRONMENTAL CLEARANCE**

**PROPOSED
“CROWN GREEN”
RESIDENTIAL DEVELOPMENT**

IN

**PLOT No. 17
RAJIV GANDHI INFOTECH PARK, MIDC PHASE-II
HINJEWADI, PUNE**

PROJECT PROPONENT

INTERNATIONAL BIOTECH PARK LIMITED (IBPL)

PREPARED BY



ADITYA ENVIRONMENTAL SERVICES PVT. LTD.

107, HIREN LIGHT INDUSTRIAL ESTATE, MOGUL LANE, MAHIM, MUMBAI - 400 016
TEL. NO.: 022 - 24212 7500; E-MAIL: adityaenviro@vsnl.com

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ANNEXURE - II	:	Proposed Area Statement
ANNEXURE - III	:	Geotechnical Investigation report
ANNEXURE - IV	:	Water Supply and Wastewater Management
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APPENDIX - I**FORM - I**

(I) Basic Information:

Sr. No.	Item	Details																											
1.	Name of the Project/s	The Crown Greens – Proposed Residential Development by IBPL at Plot 17, Hinjewadi, Pune.																											
2.	Sr. No. in the Schedule	8(a)																											
3.	Proposed capacity/ area/ length/ tonnage to be handled/ command area/ lease area/ number of wells to be drilled	Total proposed Built up area : 77,889.82 Sq. m.																											
4.	New/ Expansion/ Modernization	New Project. Proposed construction consists of <table border="1"> <tr> <td colspan="3">No. of buildings: 7 nos.</td> </tr> <tr> <td colspan="3">5 Residential Buildings</td> </tr> <tr> <td>T1</td> <td>:</td> <td>G+15</td> </tr> <tr> <td>T2</td> <td>:</td> <td>G+21</td> </tr> <tr> <td>T3</td> <td>:</td> <td>G+21</td> </tr> <tr> <td>T4</td> <td>:</td> <td>G+26</td> </tr> <tr> <td>T5</td> <td>:</td> <td>G+27</td> </tr> <tr> <td colspan="2">1 Convenient Shopping and service apartment</td> <td>G+5</td> </tr> <tr> <td colspan="2">1 Club house</td> <td>G+2</td> </tr> </table>	No. of buildings: 7 nos.			5 Residential Buildings			T1	:	G+15	T2	:	G+21	T3	:	G+21	T4	:	G+26	T5	:	G+27	1 Convenient Shopping and service apartment		G+5	1 Club house		G+2
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1 Club house		G+2																											
5.	Existing Capacity/Area etc.	Total Plot area: 21,330 Sq. m.																											
6.	Category of Project i.e. 'A' or 'B'	B																											
7.	Does it attract the general condition? If yes, please specify	Not Applicable																											
8.	Does it attract the specific condition? If yes, please specify	Not Applicable																											
9.	Location																												
	Plot/Survey/Khasra No.	Plot No. 17 at International Biotech Park Ltd; Rajiv Gandhi Infotech Park, MIDC Phase II																											
	Village	Hinjewadi & Man																											
	Tehsil	Mulshi																											
	District	Pune																											
	State	Maharashtra																											
10.	Nearest railway station/airport with distance in kms	<table border="1"> <tr> <td>Roadway</td> <td>:</td> <td>Approx. 8 km from the Mumbai Pune Expressway</td> </tr> <tr> <td>Railway</td> <td>:</td> <td>Pimpri Railway Station at 10 km approx.</td> </tr> <tr> <td>Airport:</td> <td>:</td> <td>Pune – Lohgaon Airport at approx 30 km</td> </tr> </table>	Roadway	:	Approx. 8 km from the Mumbai Pune Expressway	Railway	:	Pimpri Railway Station at 10 km approx.	Airport:	:	Pune – Lohgaon Airport at approx 30 km																		
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11.	Nearest Town, city, District Headquarters along with distance in kms	Village: Hinjewadi & Man District: Pune																											
12.	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	Village: Panchayat: Mann, Taluka: Mulshi, District: Pune Pin code - 411 057																											
13.	Name of the applicant	International Biotech Park Limited (IBPL)																											

Sr. No.	Item	Details
14.	Registered Address	Ground floor, Genesis Square, Plot – 15, Rajiv Gandhi IT Park, MIDC Phase – 2; Hinjewadi, Pune 411 057
15.	Address for Correspondence	
	Name	Mr. Dinesh Raste
	Designation (Owner/Partner/CEO)	Director
	Address	International Biotech Park Ltd, Ground Floor, Genesis Square Bldg, Plot-15, Rajiv Gandhi IT Park, MIDC Phase-2, Hinjewadi, Pune
	Pin Code	411 057
	Telephone no.	020 - 67903901
	Fax No.	020 - 67903900
16.	Details of Alternative sites examined if any location of these sites should be shown on a toposheet	Not Applicable
17.	Interlinked Projects	Not Applicable
18.	Whether separate application of interlinked project has been submitted?	Not Applicable
19.	If yes, date of submission	Not Applicable
20.	If no, reason	Not Applicable
21.	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. a. The Forest (Conservation) Act, 1980? b. The Wildlife (Protection) Act, 1972? c. The C.R.Z Notification, 1991?	Not Applicable
22.	Whether there is any Government order/Policy relevant/relating to the site?	Not Applicable
23.	Forest land involved (hectares)	Not Applicable
24.	Whether there is any litigation pending against the project and/ or land in which the project is propose to be set up? a. Name of the court b. Case No. c. Orders/directions of the court, if any and its relevance with the proposed project.	Not Applicable

(II) Activity

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

Sr. No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data

Sr. No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data																											
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	No	The proposed construction is in conformity with the Development Plan of MIDC. Please refer ANNEXURE-I for Possession Receipt from MIDC .																											
1.2	Clearance of existing Land, vegetation and building?	Yes	Land: The land is fairly levelled and no major cutting or filling is proposed. Vegetation: There are few trees on the project site. Building: No structure or building present.																											
1.3	Creation of new land uses?	No	The proposal is in conformity with the land use of the area as per the Development Plan of MIDC.																											
1.4	Pre-construction investigation e.g. borehole, soil testing?	Yes	Stratum at foundation depth of 1.5 m consists of boulders or murrum and hard murrum or rock with RQD=0% at depth 4.5 m with foundation width max. 3 m. Please refer ANNEXURE-III for Geotechnical Investigation Report .																											
1.5	Construction works	Yes	Proposed construction consists of <table border="1" style="margin-left: 20px;"> <tr> <td colspan="3">No. of buildings: 7 nos.</td> </tr> <tr> <td colspan="3">5 Residential Buildings</td> </tr> <tr> <td>T1</td> <td>:</td> <td>G+15</td> </tr> <tr> <td>T2</td> <td>:</td> <td>G+21</td> </tr> <tr> <td>T3</td> <td>:</td> <td>G+21</td> </tr> <tr> <td>T4</td> <td>:</td> <td>G+26</td> </tr> <tr> <td>T5</td> <td>:</td> <td>G+27</td> </tr> <tr> <td colspan="2">1 Convenient Shopping and service apartment</td> <td>G+5</td> </tr> <tr> <td colspan="2">1 Club house</td> <td>G+2</td> </tr> </table>	No. of buildings: 7 nos.			5 Residential Buildings			T1	:	G+15	T2	:	G+21	T3	:	G+21	T4	:	G+26	T5	:	G+27	1 Convenient Shopping and service apartment		G+5	1 Club house		G+2
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1.6	Demolition work	No	Not Applicable																											
1.7	Temporary sites used for construction works or housing of construction workers?	No	No labour camp will be provided.																											
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	Proposed construction consists of <table border="1" style="margin-left: 20px;"> <tr> <td colspan="3">No. of buildings: 7 nos</td> </tr> <tr> <td colspan="3">5 Residential Buildings</td> </tr> <tr> <td>T1</td> <td>:</td> <td>G+15</td> </tr> <tr> <td>T2</td> <td>:</td> <td>G+21</td> </tr> <tr> <td>T3</td> <td>:</td> <td>G+21</td> </tr> <tr> <td>T4</td> <td>:</td> <td>G+26</td> </tr> <tr> <td>T5</td> <td>:</td> <td>G+27</td> </tr> <tr> <td colspan="2">1 Convenient Shopping and service apartment</td> <td>G+5</td> </tr> <tr> <td colspan="2">1 Club house</td> <td>G+2</td> </tr> </table>	No. of buildings: 7 nos			5 Residential Buildings			T1	:	G+15	T2	:	G+21	T3	:	G+21	T4	:	G+26	T5	:	G+27	1 Convenient Shopping and service apartment		G+5	1 Club house		G+2
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1.9	Underground works including mining or tunneling?	No	Not Applicable																											
1.10	Reclamation works?	No	Not Applicable																											

Sr. No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
1.11	Dredging?	No	Not Applicable
1.12	Offshore structures?	No	Not Applicable
1.13	Production and manufacturing processes?	No	Not Applicable
1.14	Facilities for storage of goods or materials?	Yes	Temporary sheds will be constructed for storage of construction materials
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	<p>Construction Phase: Temporary sanitation facility will be provided for construction workers. All sub-stratum removed will be used for backfilling in the foundation.</p> <p>Operation Phase: The site will have sewage treatment plants (STP) for treatment & reuse of waste water generated on site. The solid waste generated will be segregated as biodegradable and non-biodegradable waste. The biodegradable waste to be treated by mechanical-composting on site and non-biodegradable waste will be disposed to municipal solid waste management system. Please refer <u>ANNEXURE-IV: Water Supply and Wastewater Management</u> <u>ANNEXURE-V: Solid Waste Management</u></p>
1.16	Facilities for long term housing of operational workers?	Yes	The proposed development is of residential development which will house persons/ staff working/ employed in nearby industries.
1.17	New road, rail or sea traffic during construction or operation?	Yes	<p>Construction Phase: There will be temporary increase in traffic due to transport of construction material.</p> <p>Operation Phase: There will be minor increase due to residents /visitors commuting to the residential areas from outside.</p>
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	Internal roads will be constructed as a part of the project plan.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	Not Applicable
1.20	New or diverted transmission lines or pipelines?	No	Not Applicable

Sr. No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data																		
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	Not Applicable																		
1.22	Stream crossing?	No	Not Applicable																		
1.23	Abstraction or transfers of water from ground or surface waters?	No	Not Applicable																		
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	Not Applicable																		
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	<p>Construction Phase:</p> <ul style="list-style-type: none"> Construction materials will be transported to the site. There will be no labour camp in the premises. <p>Operation Phase:</p> <ul style="list-style-type: none"> There will be minor increase due to Residents /visitors commuting to the residential areas from outside. 																		
1.26	Long-term dismantling or decommissioning or restoration works?	No	Not applicable																		
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	Not Applicable																		
1.28	Influx of people to an area in either temporarily or permanently?	Yes	<p>Construction phase:</p> <p>There will be no labour camp provided in the premises. Temporary and minor influx of construction laborers due to employment opportunities generated during construction phase.</p> <p>Operation Phase:</p> <table border="1"> <tbody> <tr> <td>Residential building</td> <td>:</td> <td>1904</td> </tr> <tr> <td>Service apartment</td> <td>:</td> <td>88</td> </tr> <tr> <td>convenience shops</td> <td>:</td> <td>33</td> </tr> <tr> <td>visitor</td> <td>:</td> <td>199</td> </tr> <tr> <td>Club house and maintenance staff</td> <td>:</td> <td>50</td> </tr> <tr> <td>Total Population</td> <td>:</td> <td>2274</td> </tr> </tbody> </table>	Residential building	:	1904	Service apartment	:	88	convenience shops	:	33	visitor	:	199	Club house and maintenance staff	:	50	Total Population	:	2274
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1.29	Introduction of alien species?	No	Not Applicable																		
1.30	Loss of native species or genetic diversity?	No	Not Applicable																		
1.31	Any other actions?	No	Not Applicable																		

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

Sr. No.	Information/checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	No	The site for the proposed project is located in Rajiv Gandhi Infotech Park, Hinjewadi MIDC, Pune. The proposed development is

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			as per the Development Plan of MIDC.																																																																		
2.2	Water (expected source & competing users)	Yes	<p>Construction Phase : Source: Tankers for construction activity and MIDC for domestic and drinking purpose.</p> <table border="1"> <tr> <td>Total Requirement</td> <td>:</td> <td>54 cmd</td> </tr> <tr> <td>For construction activity</td> <td>:</td> <td>40 cmd</td> </tr> <tr> <td>For domestic & drinking</td> <td>:</td> <td>14 cmd</td> </tr> </table> <p>Operation Phase : Source: MIDC for domestic and drinking purpose and recycled water from STP for flushing and gardening.</p> <p>DRY SEASON:</p> <table border="1"> <tr> <td>Fresh Water</td> <td>:</td> <td>157.50 cmd</td> </tr> <tr> <td>Domestic</td> <td>:</td> <td>141.91 cmd</td> </tr> <tr> <td>Filter back wash</td> <td>:</td> <td>5 cmd</td> </tr> <tr> <td>Swimming pool</td> <td>:</td> <td>10 cmd</td> </tr> <tr> <td>Recycled water</td> <td>:</td> <td>171.65 cmd</td> </tr> <tr> <td>Flushing</td> <td>:</td> <td>93.26 cmd</td> </tr> <tr> <td>HVAC</td> <td>:</td> <td>21 cmd</td> </tr> <tr> <td>Gardening</td> <td>:</td> <td>57.39 cmd</td> </tr> <tr> <td>Total water Required</td> <td></td> <td>329.15 cmd</td> </tr> <tr> <td>Fire fighting</td> <td>:</td> <td>300 m³</td> </tr> </table> <p>WET SEASON:</p> <table border="1"> <tr> <td>Fresh Water</td> <td>:</td> <td>157.50 cmd</td> </tr> <tr> <td>Domestic</td> <td>:</td> <td>141.91 cmd</td> </tr> <tr> <td>Filter back wash</td> <td>:</td> <td>5 cmd</td> </tr> <tr> <td>Swimming pool</td> <td>:</td> <td>10 cmd</td> </tr> <tr> <td>Recycled water</td> <td>:</td> <td>114.26 cmd</td> </tr> <tr> <td>Flushing</td> <td>:</td> <td>93.26 cmd</td> </tr> <tr> <td>HVAC</td> <td>:</td> <td>21 cmd</td> </tr> <tr> <td>Total water Required</td> <td></td> <td>271.76 cmd</td> </tr> <tr> <td>Fire fighting</td> <td>:</td> <td>300 m³</td> </tr> </table>	Total Requirement	:	54 cmd	For construction activity	:	40 cmd	For domestic & drinking	:	14 cmd	Fresh Water	:	157.50 cmd	Domestic	:	141.91 cmd	Filter back wash	:	5 cmd	Swimming pool	:	10 cmd	Recycled water	:	171.65 cmd	Flushing	:	93.26 cmd	HVAC	:	21 cmd	Gardening	:	57.39 cmd	Total water Required		329.15 cmd	Fire fighting	:	300 m ³	Fresh Water	:	157.50 cmd	Domestic	:	141.91 cmd	Filter back wash	:	5 cmd	Swimming pool	:	10 cmd	Recycled water	:	114.26 cmd	Flushing	:	93.26 cmd	HVAC	:	21 cmd	Total water Required		271.76 cmd	Fire fighting	:	300 m ³
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2.3	Minerals (MT)	No	Not Applicable																																																																		
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)	Yes	<p>Raw material requirement for construction:</p> <p style="text-align: center;">Raw material requirement</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>UNIT</th> <th>QUANTITY</th> </tr> </thead> <tbody> <tr> <td>Cement</td> <td>Bags</td> <td>206195</td> </tr> <tr> <td>Steel</td> <td>MT</td> <td>2062</td> </tr> <tr> <td>Metal</td> <td>Cu. ft</td> <td>824781</td> </tr> <tr> <td>Sand</td> <td>Cu. ft</td> <td>164956</td> </tr> <tr> <td>Bricks</td> <td>Nos</td> <td>5773465</td> </tr> </tbody> </table> <p>Material shall be procured from local dealers.</p>	MATERIAL	UNIT	QUANTITY	Cement	Bags	206195	Steel	MT	2062	Metal	Cu. ft	824781	Sand	Cu. ft	164956	Bricks	Nos	5773465																																																
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2.5	Forests and timber (source – MT)	No	Not Applicable																																																																		

Sr. No.	Information/checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data														
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	<p>Power Requirement:</p> <table border="1"> <thead> <tr> <th colspan="2">CONSTRUCTION PHASE</th> </tr> </thead> <tbody> <tr> <td>Source</td> <td>MSEDCL</td> </tr> <tr> <td>Requirement</td> <td>120 KVA</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Operation Phase</th> </tr> </thead> <tbody> <tr> <td>Source</td> <td>MSEDCL</td> </tr> <tr> <td>Maximum Demand</td> <td>3669.0 KVA</td> </tr> <tr> <td>Connected Load</td> <td>5297.75 KVA</td> </tr> </tbody> </table> <p>Power Back up: Source: It is proposed to install Diesel Generator (DG) sets of 2 nos. x 400 KVA for supply of power when grid power is not available or during emergencies like power failures for common utilities and areas. 30% DG Power Back-up will be provided during Operation phase.</p>	CONSTRUCTION PHASE		Source	MSEDCL	Requirement	120 KVA	Operation Phase		Source	MSEDCL	Maximum Demand	3669.0 KVA	Connected Load	5297.75 KVA
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2.7	Any other natural resources (use appropriate standard units)	No	Not Applicable														

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

Sr. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	Not Applicable
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Not Applicable
3.3	Affect the welfare of people e.g. by changing living conditions?	No	Not Applicable
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.	No	Not Applicable
3.5	Any other causes	No	Not Applicable

4. Production of solid wastes during Construction or Operation or Decommissioning (MT/month)

Sr. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data						
4.1	Spoil, overburden or mine wastes	No	Not Applicable						
4.2	Municipal waste (domestic and or commercial wastes)	Yes	<p>Construction Phase: Approximately 1-3 MT/day debris will be generated during construction phase.</p> <p>Operation Phase:</p> <table border="1"> <tr> <td>Total solid waste</td> <td>846.3 kg/day</td> </tr> <tr> <td>Dry Waste</td> <td>423.15 kg/day</td> </tr> <tr> <td>Wet Waste</td> <td>423.15 kg/day</td> </tr> </table>	Total solid waste	846.3 kg/day	Dry Waste	423.15 kg/day	Wet Waste	423.15 kg/day
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4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	No	Not Applicable						
4.4	Other industrial process wastes	No	Not Applicable						
4.5	Surplus product	No	Not Applicable						
4.6	Sewage sludge or other sludge from effluent treatment		<p>Operation Phase:</p> <table border="1"> <tr> <td>Wet Sludge</td> <td>8 Kg (4% of waste water)</td> </tr> <tr> <td>Dry sludge</td> <td>0.2 Kg (2% of Wet sludge)</td> </tr> </table>	Wet Sludge	8 Kg (4% of waste water)	Dry sludge	0.2 Kg (2% of Wet sludge)		
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4.7	Construction or demolition wastes	Yes	Approximately 1-3 MT/day debris will be generated during construction phase.						
4.8	Redundant machinery or equipment	No	Not Applicable						
4.9	Contaminated soils or other materials	No	Not Applicable						
4.10	Agricultural wastes	Yes	Organic wastes will be generated from landscaping and gardening. It will be treated in proposed mechanical composting unit on site and the compost from the same will be used for landscaping.						

5. Release of pollutants or any hazardous, toxic or noxious substances to air (kg/hr)

Sr. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes.	Vehicular pollution during construction and operation phase. Use of DG sets as emergency power back-up will add to slight emission of air pollutants.
5.2	Emissions from production processes	No.	Not applicable.
5.3	Emissions from materials handling including storage or transport	Yes.	During the construction phase, there will be some dust generation due to handling of raw material and movement of vehicles carrying raw material.
5.4	Emissions from construction activities including plant and equipment	Yes.	There will be minor emissions from construction equipment & dust generation during construction activity & raw material handling.
5.5	Dust or odors from handling of materials including construction materials, sewage and waste	Yes.	During construction phase, there will be some dust generation due to handling of raw material and

Sr. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
			movement of vehicles carrying raw material.
5.6	Emissions from incineration of waste	No.	Not applicable.
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No.	Not applicable.
5.8	Emissions from any other sources	No.	Not applicable.

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

Sr. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes.	Construction phase: Noise will be generated from following sources during construction phase: 1. Construction machinery 2. On-going construction activity Operation phase: Potential noise generating sources during operation phase are: 1. DG sets (only in case of power failures) 2. Vehicular traffic
6.2	From industrial or similar processes	No.	Not applicable.
6.3	From construction or demolition	Yes.	Noise will be generated from the construction activity.
6.4	From blasting or piling	No.	Not applicable.
6.5	From construction or operational traffic	Yes.	Construction phase: Noise will be generated due to transport of trucks carrying the raw material/ debris. Operation phase: During operation phase, traffic noise will be generated due to vehicles. However; adequate measures will be taken to curb the noise pollution at the site.
6.6	From lighting or cooling systems	No.	Noise and vibrations generated by lighting systems will be controlled and eliminated by adopting appropriate measures and acoustic treatment.
6.7	From any other sources	No.	Not applicable.

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

Sr. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or	No.	Not applicable.

Environmental Clearance for Proposed Residential Development At Hinjewadi, Pune by IBPL

Sr. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
	spillage of hazardous materials		
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No.	Sewage generated will be treated in the sewage treatment plant of capacity 210 cmd. Treated sewage will be used for flushing and gardening & HVAC system.
7.3	By deposition of pollutants emitted to air into the land or into water	No.	Not applicable.
7.4	From any other sources	No.	Not applicable.
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No.	Not applicable.

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment:

Sr. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	No.	Not applicable.
8.2	From any other causes	No.	Not applicable.
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No.	Please refer ANNEXURE VIII for Structural Seismic Design Certificate

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality:

Sr. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
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Sr. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: - Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) - Housing development - Extractive industries - Supply industries - Other	Yes.	The proposed project is Residential Development at Plot 17, Hinjewadi, Pune. The infrastructure proposed includes: • Provision of STP for treatment and recycling of wastewater generated on site. • Mechanical composting unit for treatment of organic waste generated on site. • Energy efficient electrical installations for conserving electricity. • Tree plantation or landscaping for green belt development. • Rainwater harvesting • For onsite traffic management internal roads, separate entry & exit, adequate parking space etc. will be provided.
9.2	Lead to after-use of the site, which could have an impact on the environment	No.	Not applicable.
9.3	Set a precedent for later developments	Yes	The proposed project is Residential Development at Hinjewadi, Pune. Proposed infrastructure facilities will improve existing conditions and be beneficial for any future infrastructure development in the area & its surroundings.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No.	Not applicable.

(III) Environmental Sensitivity:

Sr. No.	Areas	Name/ Identity	Aerial distance within 15 km of proposed project boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	Not applicable.
2	Areas which are important or sensitive for ecological reasons- wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	River Mula River Pawana	3 km to the South 6 km to the North
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No.	Not applicable.

Environmental Clearance for Proposed Residential Development At Hinjewadi, Pune by IBPL

Sr. No.	Areas	Name/ Identity	Aerial distance within 15 km of proposed project boundary
4	Inland, coastal, marine or underground waters	River Mula, River Pawana	3 km to the South, 6 km to the North
5	State/ National boundaries	No.	Not applicable.
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Mumbai Pune Expressway	8 km to East of proposed site
7	Defense installations	Yes.	High Energy Materials Research Laboratory (HEMRL) is approx. 10 km to South East.
8	Densely populated or built-up area	Yes.	Pune city at distance approx. 5 km South East
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	No.	Not applicable.
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	No.	Not applicable.
11	Areas already subjected to pollution or environmental damage. (Those where existing legal environmental standards are exceeded)	No.	Not applicable.
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	No.	Not applicable.

I hereby given undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance give, if any to the project will be revoked at our risk and cost.

Date:

Place:



Mr. Dinesh Raste
Director

International Biotech Park Ltd,
 Ground Floor, Genesis Square Bldg,
 Plot-15, Rajiv Gandhi IT Park, MIDC
 Phase-2, Hinjewadi, Pune – 411 057

Note:

1. The projects involving clearance under Coastal Regulation Zone Notification, 1991 shall submit with the application a CRZ map duly demarcated by one of the authorized agencies, showing the project activities, w. r. t. CRZ (at the stage of TOR) and the recommendations of the state Coastal Zone Management Authority (at the stage of EC). Simultaneous action shall also be taken to obtain the requisite clearance under the provisions of the CRZ Notification, 1991 for the activities to be located in the CRZ.
2. The projects to be located within 10km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by the Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden thereon (at the stage of EC).
3. All correspondence with the Ministry of Environment & Forests including submission of application for TOR /Environmental Clearance, subsequent clarifications, as may be required from time to time, participation in the EAC Meeting on behalf of the project proponent shall be made by the authorised signatory only. The authorized signatory should also submit a document in support of his claim of being an authorised signatory for the specific project.

APPENDIX - II

FORM - IA

CHECK LIST OF ENVIRONMENTAL IMPACTS**1. LAND ENVIRONMENT:**

- 1.1 Will the existing land use get significantly altered from the project that is not consistent with the surroundings? (Proposed land use must conform to the approved Master Plan / Development Plan of the area. Change of land use if any and the statutory approval from the competent authority are submitted).

Attach Maps of

- (i) Site location,
- (ii) Surrounding features of the proposed site (within 500 meters)
- (iii) Contour plan

The proposed project is residential development located at Plot No. 17 at International Biotech Park Ltd., Rajiv Gandhi Infotech Park, MIDC Hinjewadi Phase II, Pune, Maharashtra

The proposed construction consists of 7 buildings out of which 5 residential buildings of G + 15, G+21, G+21, G+26, G+27, 1 convenient shopping and service apartment will be G+5, 1 club house will be G + 2 floor.

Please refer **ANNEXURE-II** for **Proposed Area Statement**.

Please refer following Plates:

Plate I	:	Map showing surrounding features within 10 Km
Plate II	:	Map showing surrounding features within 500 m
Plate-III	:	Contour plan
Plate-IV	:	Proposed Site Layout

- 1.2 List out all the major project requirements in terms of the land area, built up area, water consumption, power requirement, connectivity, community facilities, parking needs etc.

❖ AREA STATEMENT		
Total Plot Area	:	21,330 Sq.m
Total Built-up area	:	77,889.82 Sq.m

❖ WATER REQUIREMENT		
CONSTRUCTION PHASE		
Source	:	Tankers for construction activity and MIDC for domestic and drinking purpose.
Total Requirement	:	54 cmd
For construction activity	:	40 cmd
For domestic & drinking	:	14 cmd
OPERATION PHASE		
Source	:	MIDC for domestic and drinking purpose Please refer ANNEXURE IV.A Confirmation of water supply letter MIDC and recycled water from STP will be used for flushing, gardening and HVAC system. Permission for the disposal of balance treated sewage in STP which is located at Rajiv Gandhi Infotech Park Phase I. Please refer ANNEXURE IV.B MIDC approved surplus treated sewage disposal letter

DRY SEASON:

Fresh Water	:	157.50 cmd
Domestic	:	141.91 cmd
Filter back wash	:	5 cmd
Swimming pool	:	10 cmd
Recycled water	:	171.65 cmd
Flushing	:	93.26 cmd
HVAC	:	21 cmd
Gardening	:	57.39 cmd
Total water Required		329.15 cmd
Fire fighting	:	300 m ³

WET SEASON:

Fresh Water	:	157.50 cmd
Domestic	:	141.91 cmd
Filter back wash	:	5 cmd
Swimming pool	:	10 cmd
Recycled water	:	114.26 cmd
Flushing	:	93.26 cmd
HVAC	:	21 cmd
Total water Required		271.76 cmd
Fire fighting	:	300 m ³

❖ **POWER REQUIREMENT:****Construction phase:**

- **Source:** MSEDCL
- **Requirement:** 120 KVA

Operation phase:

- **Source:** MSEDCL
- **Maximum Demand:** 3669.0 KVA
- **Connected Load:** 5297.75 KVA

❖ **CONNECTIVITY:**

- **Roadway:** Approx. 8 km from the Mumbai Pune Expressway.
- **Railway :** Pimpri Railway Station located at a distance of about 10 km
- **Airport :** Pune – Lohgaon Airport at approx 30 km

❖ **COMMUNITY FACILITIES:**

The proposed project is in the Rajiv Gandhi InfoTech Park at Hinjewadi, Pune, and amenities/ facilities are provided in the vicinity.

❖ **PARKING FACILITIES:**

Parking as per MIDC - DCR requirements will be provided. Adequate facility will be provided for the parking on ground / L. ground and stilt floor and basements.

Particular	Required	Provided
2-Wheeler	63 nos.	69 nos.
4-Wheeler	696 nos.	699 nos.

- 1.3 **What are the likely impacts of the proposed activity on the existing facilities adjacent to the proposed site? (Such as open spaces, community facilities, details of the existing land use and disturbance to the local ecology).**

Residents in this planned development area will have access to excellent facilities/ amenities and will not create a burden on public facilities (like public toilets or common water connections). The site is in conformity with Development Plan of MIDC. This project will not cause any adverse environmental impacts on the surroundings.

There will be no disturbance to local ecology. The development proposes a green cover, which will enhance the local ecological character of the area.

1.4 Will there be any significant land disturbance resulting in erosion, subsidence & instability? (Details of soil type, slope analysis, vulnerability to subsidence, seismicity etc may be given).

Stratum at foundation depth of 1.5 m on proposed site consists of boulders or murrum and hard murrum or rock with RQD=0% at depth 4.5 m with foundation width max. 3 m.

Please refer **ANNEXURE-III** for details on **Geotechnical Investigation Report**

Seismicity: Pune lies in Zone-III of seismic region and the structural design and construction will be done as per applicable specifications.

Please refer **ANNEXURE VIII – Structural seismic design certificate**

1.5 Will the proposal involve alteration of natural drainage systems? (Give details on a contour map showing the natural drainage near the proposed project site)

Please refer large size **Contour Map** in respect of our plot 17 as **PLATE III**

1.6 What are the quantities of earthwork involved in the construction activity cutting, filling, reclamation etc. (Give details of the quantities of earthwork involved, transport of fill materials from outside the site etc.)

Earthwork will be completely utilized for construction work. The land will be leveled prior to construction of the buildings. All sub-stratum removed will be used for backfilling in the foundation.

1.7 Give details regarding water supply, waste handling etc during the construction period.

Water supply:

It is proposed to source the water from MIDC for fresh water requirement and recycled water from STPs for flushing, gardening & HVAC system.

Waste handling:

Various types of construction debris such as bricks, blocks, steel, formwork, finishing materials, etc. will be generated.

The details are as follows:

- 1.Bricks, metal chips, cut tiles will be used for internal paving.
- 2.The damaged/ cut pieces of steel, glass etc. will be sold to scrap dealer.
- 3.Substratum removed during foundation and excavation will be used for back filling and for making pathways as far as possible.
- 4.Balance construction wastes, if any, will be disposed to MSW site.

1.8 Will the low-lying areas & wetlands get altered? (Provide details of how low lying and wetlands are getting modified from the proposed activity)

Not applicable. The low-lying areas & wetlands will not get altered due to the project.

1.9 Whether construction debris & waste during construction cause health hazard? (Give quantities of various types of wastes generated during construction including the construction labor and the means of disposal)

- Various types of construction debris such as bricks, blocks, steel, formwork, finished materials will be generated.
- The debris will be segregated and stored in separately earmarked area slightly away from construction site.
- Excess waste/ debris/ substratum to be transported outside will be provided with dust covers.

2. WATER ENVIRONMENT:

2.1 Give the total quantity of water requirement for the proposed project with the breakup of requirements for various uses. How will the water requirement be met? State the sources & quantities and furnish a water balance statement.

❖ WATER REQUIREMENT		
CONSTRUCTION PHASE		
Source	:	Tankers for construction activity and MIDC for domestic and drinking purpose.
Total Requirement	:	54 cmd
For construction activity	:	40 cmd
For domestic & drinking	:	14 cmd
OPERATION PHASE		
Source	:	MIDC for domestic and drinking purpose Please refer <u>ANNEXURE IV.A Confirmation of water supply letter MIDC</u> and recycled water from STP will be used for flushing, gardening and HVAC system. Permission for the disposal of balance treated sewage in STP which is located at Rajiv Gandhi Infotech Park Phase I. Please refer <u>ANNEXURE IV.B MIDC approved surplus treated sewage disposal letter</u>

DRY SEASON:

Fresh Water	:	157.50 cmd
Domestic	:	141.91 cmd
Filter back wash	:	5 cmd
Swimming pool	:	10 cmd
Recycled water	:	171.65 cmd
Flushing	:	93.26 cmd
HVAC	:	21 cmd
Gardening	:	57.39 cmd
Total water Required		329.15 cmd
Fire fighting	:	300 m ³

WET SEASON:

Fresh Water	:	157.50 cmd
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Filter back wash	:	5 cmd
Swimming pool	:	10 cmd
Recycled water	:	114.26 cmd
Flushing	:	93.26 cmd

HVAC	:	21 cmd
Total water Required		271.76 cmd
Fire fighting	:	300 m ³

Please refer **ANNEXURE-IV** for details on **Water Supply and Wastewater Management**.

2.2 What is the capacity (dependable flow or yield) of the proposed source of water?

It is proposed to obtain water for domestic use from MIDC. Water requirement will be augmented by use of recycled water from proposed Sewage Treatment Plant for flushing, gardening and HVAC system.

Please refer **ANNEXURE-IV** for details on **Water Supply and Wastewater Management**.

2.3 What is the quality of water required, in case, the supply is not from a municipal source? (Provide physical, chemical, biological characteristics with class of water quality).

Water for domestic use will be sourced from MIDC. Treated water from STP is proposed to be used for flushing, gardening and HVAC system.

Characteristics of treated sewage from proposed STP will be as follows:

Characteristics of treated sewage

Tertiary Treated Effluent	Characteristics
BOD	< 5 mg/lit
pH	7.0 - 7.5
COD	< 30 mg/lit
Total Suspended Solids	< 5 mg/lit
Oil & Grease	Traces

2.4 How much of the water requirement can be met from the recycling of treated wastewater? (Give the details of quantities, sources and usage)

During operation phase, the fresh water (157.50 cmd) will be sourced from MIDC and recycled water (171.65 cmd) will be sourced from STP and used for flushing, gardening and HVAC purpose. The total water requirement will be 329.15 cmd. Permission for the disposal of balance treated sewage in STP which is located at Rajiv Gandhi Infotech Park Phase I.

MIDC approved surplus treated sewage disposal letter is enclosed as **ANNEXURE**

IV.B

Please refer **Annexure-IV** for details on **Water Supply and Wastewater Management**.

2.5 Will there be diversion of water from other users? (Please assess the impacts of the project on other existing uses and quantities of consumption)

Not applicable. The domestic water requirement will be from MIDC. Use of recycled water from proposed STP will further augment the water requirement of flushing, gardening and HVAC purpose.

2.6 What is the incremental pollution load from wastewater generated from the proposed activity? (Give details of the quantities and composition of wastewater generated from the proposed activity)

Total wastewater generation in the proposed activity will be recycled in STP. The recycled water will be reused for flushing, gardening and HVAC system (171.65 cmd). Permission for the disposal of balance treated sewage in STP which is located at Rajiv Gandhi Infotech Park Phase I. **MIDC approved surplus treated sewage disposal letter** is attached herewith as **ANNEXURE IV.B**

Characteristics of sewage at inlet of STP will be follows:

Characteristics of sewage at inlet of STP

Parameters	Characteristics
	Inlet
BOD	200-350 mg/lit
pH	6-8.5
COD	500-700 mg/lit
Total Suspended Solids	200-300 mg/lit
Oil & Grease	Up to 50 mg/lit

2.7 Give details of the water requirements met from water harvesting? Furnish details of the facilities created.

- Rainwater harvesting is proposed as a water conservation measure.
- Roof drainpipes will be designed considering maximum intensity of rainfall.
- Rain water will be collected by down take pipes, proper site grading, storm water drainage channels, catch basins/ pits and piped drainage system, as appropriate.

Please refer **ANNEXURE-VI** for details on **Rain Water Harvesting**.

2.8 What would be the impact of the land use changes occurring due to the proposed project on the runoff characteristics (quantitative as well as qualitative) of the area in the post construction phase on a long term basis? Would it aggravate the problems of flooding or water logging in any way?

There will be no major change in the run-off characteristics. The site will have a well-designed storm water drainage system, which will prevent any flooding.

2.9 What are the impacts of the proposal on the ground water? (Will there be tapping of ground water; give the details of ground water table, recharging capacity, and approvals obtained from competent authority, if any)

Use of ground water is not proposed. During operation phase, a well-designed rainwater harvesting system to recharge ground water will be implemented as a part of the project.

2.10 What precautions/measures are taken to prevent the run-off from construction activities polluting land & aquifers? (Give details of quantities and the measures taken to avoid the adverse impacts)

Construction area will be isolated & care will be taken to divert the run-off to storm water drainage, so possibility of pollution from construction run-off will be prevented.

2.11 How is the storm water from within the site managed?(State the provisions made

to avoid flooding of the area, details of the drainage facilities provided along with a site layout indication contour levels)

- The site will have a well designed storm water drainage system which will prevent any flooding.
- Roof drain pipes will be designed considering maximum intensity of rainfall.
- Rain water harvesting is proposed, in order to conserve water.
- Rain water will be collected by down take pipes, proper site grading, storm water drainage channels, catch basins/ pits and piped drainage system, as appropriate.
- Storm water will be carried up to storm water tank.

2.12 Will the deployment of construction laborers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation)

No. During the construction phase, temporary sanitary facilities for construction labor shall be provided and treatment & disposal of the waste will be by septic tank and soak pits. Also clean drinking water will be provided. It will also be ensured that no accumulation of water will take place.

2.13 What on-site facilities are provided for the collection, treatment & safe disposal of sewage? (Give details of the quantities of wastewater generation, treatment capacities with technology & facilities for recycling and disposal)

1. Waste water will be conveyed to a sewage treatment plant (STP) by a well designed system (MBBR technology).
2. The quantity of waste water generated will be 201.93 cmd.
3. Sewage Treatment Plant with a total capacity of 210 cmd.
4. Tertiary treated waste water from STP will be used for flushing, gardening and HVAC system (171.65 cmd).
5. Permission for the disposal of balance treated sewage in STP which is located at Rajiv Gandhi Infotech Park Phase I.

MIDC approved surplus treated sewage disposal letter is attached herewith as **ANNEXURE IV.B**

Please refer **ANNEXURE-IV** for details on **Water Supply and Wastewater management**.

2.14 Give details of dual plumbing system if treated waste used is used for flushing of toilets or any other use.

For water distribution dual plumbing lines are proposed.

One line to distribute treated water for domestic supply. Another line to distribute treated wastewater for flushing, gardening and HVAC system.

Broad Material Specifications:-

- a) Water from underground tank to respective overhead tanks: G.I. Pipes of required grade.
- b) For distribution from OH tanks: PVC pipes of required grade.
- c) Valves will be of gun metal.
- a) Where necessary air valves, pressure reduction valves, non-return valves will be used.
- b) Rising main and internal distribution system will be of G.I. Pipes heavy class.

3. VEGETATION:

3.1 Is there any threat of the project to the biodiversity? (Give a description of the local ecosystem with it's unique features, if any)

No. Not Applicable

3.2 Will the construction involve extensive clearing or modification of vegetation? (Provide a detailed account of the trees & vegetation affected by the project)

At present, there are 61 trees on the site. Of these 48 trees will be transplanted and 13 trees will be retained and will be unaffected- Forest Department NOC has been obtained for transplantation.

Permission of trees trans plantation received from Forest Department – please refer **ANNEXURE IX**

3.3 What are the measures proposed to be taken to minimize the likely impacts on important site features (Give details of proposal for tree plantation, landscaping, creation of water bodies etc along with a layout plan to an appropriate scale?)

Landscape areas will be created and tree plantation will be carried out at the site as a part of the development.

252 nos. of new trees will be planted as per applicable MIDC DCR.

4. FAUNA:

4.1 Is there likely to be any displacement of fauna- both terrestrial and aquatic or creation of barriers for their movement? Provide the details.

No. The site is located in an Industrial area.

4.2 Any direct or indirect impacts on the avifauna of the area? Provide details.

No.

4.3 Prescribe measures such as corridors, fish ladders etc. to mitigate adverse impacts on fauna

Not applicable.

5. AIR ENVIRONMENT:

5.1 Will the project increase atmospheric concentration of gases & result in heat islands? (Give details of background air quality levels with predicted values based on dispersion models taking into account the increased traffic generation as a result of the proposed constructions)

There will be temporary increase in air pollution (particularly dust levels) due to transport of materials, excavation and land development during the construction phase.

During operation phase, there will be a minor increase in air pollution due to increase in vehicular exhausts generated due to traffic. Due to presence of open spaces and landscaped areas; there will be no heat island effects.

5.2 What are the impacts on generation of dust, smoke, odorous fumes or other hazardous gases? Give details in relation to all the meteorological parameters.

- There will be some increase in the SPM/ RSPM levels during construction phase, which will have a temporary impact.
- During operational phase, vehicular exhausts will be the only source of air pollution.

- 5.3 Will the proposal create shortage of parking space for vehicles? Furnish details of the present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry & exit to the project site.**

Parking will be provided on ground and still floors as per MIDC - DCR requirements.

Particular	Required	Provided
2-Wheeler	63 nos.	69 nos.
4-Wheeler	696 nos.	699 nos.

- 5.4 Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc., with areas under each category.**

Adequate provisions have been made of internal roads for smooth vehicle entry and exit as well as walkways for pedestrian movements. There are existing access roads of 40m width.

- 5.5 Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above.**

No. The internal roads will be designed with adequate width to minimize traffic congestion inside the plot.

- 5.6 What will be the impact of DG sets & other equipment on noise levels & vibration in & ambient air quality around the project site? Provide details.**

DG sets are proposed of capacity 2 nos. x 400 KVA to supply power as the emergency supply system in case of shut down/ break down of main power supply. All DG sets will be housed in noise insulated enclosures designed to meet standards as laid under Environment (Protection) Act. Noise and vibrations from DG sets will be eliminated with vibration mounts and silencers.

6. AESTHETICS:

- 6.1 Will the proposed constructions in any way result in the obstruction of a view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?**

There will be no obstructions in the landscape views due to the project.

- 6.2 Will there be any adverse impacts from new constructions on the existing structures? What are the considerations taken into account?**

No, Not applicable.

- 6.3 Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.**

The entire project is in conformity with DCR of MIDC.

- 6.4 Are there any anthropological or archaeological sites or artifacts nearby? State if any other significant features in the vicinity of the proposed site have been considered.**

No, Not applicable.

7. SOCIOECONOMIC IMPACT:

- 7.1 Will the proposal result in any changes to the demographic structure of local population? Provide the details.**

There will be some change in the demographic structure with the proposed development. There will be temporary increase in the number of people during the construction phase and a marginal influx of people in the local area after

completion of the project.

7.2 Give details of the existing social infrastructure around the proposed project.

The proposed project is in the Rajiv Gandhi InfoTech Park at Hinjewadi, Pune and amenities/ facilities are provided in the vicinity. MIDC Hinjewadi has ultra modern facilities including school, colleges, fire station, hospital etc.

7.3 Will the project cause adverse effects on local communities, disturbance to sacred sites or other cultural values? What are the safeguards proposed?

No. The project will not cause any adverse effects on the local communities or disturb sacred sites or cultural values.

8. BUILDING MATERIAL:

8.1 May involve the use of building materials with high-embodied energy. Are the construction materials produced with energy efficient processes? (Give details of energy conservation measures in the selection of building materials and their energy efficiency)

The project is designed to be energy efficient and special care has been taken in the planning stage to ensure an efficient system. The salient features in the design and planning of the project aimed at energy conservation are:

1. Energy efficient fluorescent tube lights & CFL lamps which give approx. 30% more light output for the same watts consumed and therefore require less nos. of fixtures and corresponding lower point wiring costs.
2. All fluorescent light fixtures will be specified to incorporate electronic chokes, which have less watt-loss, compared to electromagnetic chokes and result in superior operating power factor. Electronic chokes also improve the life of the fluorescent lamps.
3. Bus bars in all distribution panels are specified as copper bus bars to reduce losses and improve reliability.
4. Copper conductor cables will be specified for sizes of 16 mm and below, this will reduce losses and improve reliability.
5. All cables will be de-rated to avoid heating during use. This also indirectly reduces losses and improves reliability.
6. Variable frequency drives will be incorporated on motor feeders, which will save considerable energy.
7. Power factor of the complete electrical system will be maintained close to unity. This will reduce electrical power distribution losses in the installation.
8. An APFC relay based on thyristor switching will be proposed to effect the power factor correction / improvement within a few cycles of deviation from the setting & also to reduce inrush currents.
9. Solar operated pole lights will be proposed to power pathway lights at some strategic locations.
10. Presence sensors & day-light sensors will be provided where ever feasible.

8.2 Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?

Following measures will be taken to minimize the impacts caused by transportation & handling of materials during construction:

1. Transportation of raw material will be done in covered trucks.
2. The movement of these vehicles will be restricted only during non-peak hours.
3. Water will be sprinkled on the site to prevent dust emission.
4. Barricades will be raised along the boundary of the plot to prevent noise pollution.

8.3 Are recycled materials used in roads and structures? State the extent of savings achieved?

Recycled material will be used for concrete & building material. Fly ash bricks will be used for construction of buildings. Recycled water will be used during the operation phase. Bricks, metal, chips, cut tiles will be used for internal paving. Substratum removed during foundation and excavation will be used for plot filling and for making pathways.

8.4 Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.

The various forms of solid waste generated will be collected, handled and disposed off in a manner so as to cause minimal environmental impact. Municipal solid waste will be segregated as dry and wet waste. The wet waste will be used for composting. The dry garbage will be disposed of to the municipal garbage collection system.

- The dried STP sludge will be used as manure for gardening to the extent possible. Rest will be disposed off through municipal contractor.
- Spent activated carbon from the ACF will be given back to the supplier for regeneration and recycling.
- Waste sand from the PSF will be disposed off within the site for ground leveling or as fill material for making pathways or for small construction work
- Waste oil generated from DG set / other machinery overhauling and transformer oil replacement will be sold off to CPCB / MPCB authorized vendors for waste oil

Please refer **ANNEXURE-V** for details on **Solid Waste Management Plan.**

9. ENERGY CONSERVATION:

9.1 Give details of the power requirements, source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up area? How have you tried to minimize energy consumption?

POWER REQUIREMENT :

Construction Phase:

- **Source:** MSEDCL
- **Requirement:** 120 KVA

Operation Phase:

- **Maximum Demand:** 3669.0 KVA
- **Connected Load:** 5297.75 KVA
- **Source:** MSEDCL

Power Back up:

Source: It is proposed to install 2 nos. of Diesel Generating (DG) sets of 400 KVA for supply of power when grid power is not available or during emergencies like power failures for common utilities and areas.

30% DG Power Back-up will be provided during Operation phase.

9.2 What type of, and capacity of, power back-up do you plan to provide?

It is proposed to install Diesel Generating (DG) sets of 2nos. x 400 KVA for supply of power when grid power is not available or during emergencies like power failures for common utilities and areas.

30% DG Power Back-up will be provided during Operation phase.

9.3 What are the characteristics of the glass you plan to use? Provide specifications of its characteristics related to both short wave and long wave radiation?

The specifications including emissivity & thermal characteristics are as follows:

Characteristics of Clear Glass

Frame Type	Glazing Type	U-factor	SHGC	VLT
All frame types	Single Glazing	7.1	0.70	0.56

9.4 What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project.

Not Applicable

9.5 Does the layout of streets & buildings maximize the potential for solar energy devices? Have you considered the use of street lighting, emergency lighting and solar hot water systems for use in the building complex? Substantiate with details.

Use of Solar energy is proposed for street lightening and hot water system.

9.6 Is shading effectively used to reduce cooling/ heating loads? What principles have been used to maximize the shading of Walls on the East and the West and the Roof? How much energy saving has been effected?

Optimum usage of shading shall be considered on the East and West.

9.7 Do the structures use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details. Provide details of the transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions? Are you using CFC and HCFC free chillers? Provide specifications.

The structures use energy efficient lighting & mechanical systems.

Lighting Intensity: For lighting intensity, please refer Item 8.1 of Form-1A.

9.8 What are the likely effects of the building activity in altering the micro-climates? Provide a self assessment on the likely impacts of the proposed construction on creation of heat island & inversion effects?

The proposed plot plan includes sufficient landscapes and open spaces intermediating with the proposed buildings. The project proposes to utilize energy efficient materials in the construction of the buildings (that will emit less energy). All these factors will together check and offset any heat island effects and help in keeping the temperature cool.

9.9 What are the thermal characteristics of the building envelope? (a) roof; (b) external walls; and (c) fenestration? Give details of the material used and the U-values or the R values of the individual components.

- (a)Roof design:** Roof will meet prescriptive requirement as per ECBC by using appropriate thermal insulation material to fulfill requirement.
- (b)Vertical fenestration:** Vertical fenestration will comply with SHGC requirements to meet prescriptive requirement as per ECBC by use of appropriate solar control strategies.
- (c)Glazing:** Tinted glass absorbs a large fraction of the incoming solar radiation through a window. This reduces the solar heat gain coefficient, visible transmittance, and glare.

Following is the Envelope Performance Factor coefficients for building with 24 hour occupancy located in hot humid climate:

Envelope Performance Factor Coefficients

Building Components	U-factor	SHGC
Mass Walls	9.6	-
Roofs	14.11	-
North Windows	-7.29	64.19
Non-North Windows	-6.48	76.83
Skylights	-295.45	893.55

9.10 What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans.

Fire Protection for the proposed site is specified as per MIDC DC rules.

- Fire hydrant system along the buildings.
- Fire over head and underground storage tank.
- Sprinkler system for covered car parking.
- Refuge area is provided in each building after 24m height.
- Roads and open spaces are provided around the building in such a way that fire engine can function easily in case of fire.

9.11 If you are using glass as wall material provides details and specifications including emissive and thermal characteristics.

The specifications including emissivity & thermal characteristics are as follows:

Characteristics of Clear Glass

Frame Type	Glazing Type	U-factor	SHGC	VLT
All frame types	Single Glazing	7.1	070	0.56

9.12 What is the rate of air infiltration into the building? Provide details of how you are mitigating the effects of infiltration.

Not applicable as mechanical ventilation is not proposed.

9.13 To what extent the non-conventional energy technologies are utilized in the overall energy consumption? Provide details of the renewable energy technologies used.

Following non-conventional energy technologies to reduce the overall energy consumption will be adopted:

- Power Capacitors are proposed for common services load power factor correction and to maintain a healthy power situation. This also results in less demand load factor for the project.
- Most of the common area lighting is proposed to work on high energy efficient lamps (CFL) as specified in bureau of energy efficiency and T-5 & T-8 Tube lights, which again results in saving in general consumption.
- Partial external lighting and pavement lighting is proposed on solar. Other lighting is proposed on timer circuits to achieve maximum saving.

10. ENVIRONMENTAL MANAGEMENT PLAN:

Environment Management Plan would consist of all mitigation measures for each item wise activity to be undertaken during the construction, operation and the entire life cycle to minimize adverse environmental impacts as a result of the activities of the project. It would also delineate the environmental monitoring plan for compliance of various environmental regulations. It will state the steps to be taken in case of emergency such as accidents at the site including fire.

Please refer **ANNEXURE-VII** for **Environment Management Plan** shows the stage wise activities that may be potential sources of pollution and the mitigation measures for the same.

ANNEXURES

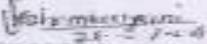
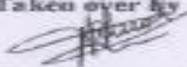
ANNEXURE - I	:	Possession receipt from MIDC
ANNEXURE - II	:	Proposed Area Statement
ANNEXURE - III	:	Geotechnical Investigation report
ANNEXURE - IV	:	Water Supply and Wastewater Management
ANNEXURE - IV. A	:	Potable Water supply letter from MIDC
ANNEXURE - IV. B	:	Permission letter for disposal of surplus treated water from MIDC
ANNEXURE - V	:	Solid Waste Management
ANNEXURE - VI	:	Rain Water Harvesting & Hydro Geological Study Report
ANNEXURE - VII	:	Environmental Management Plan
ANNEXURE - VIII	:	Structural Seismic Design Certificate
ANNEXURE - IX	:	Permission of Trees Transplantation from Forest Dept

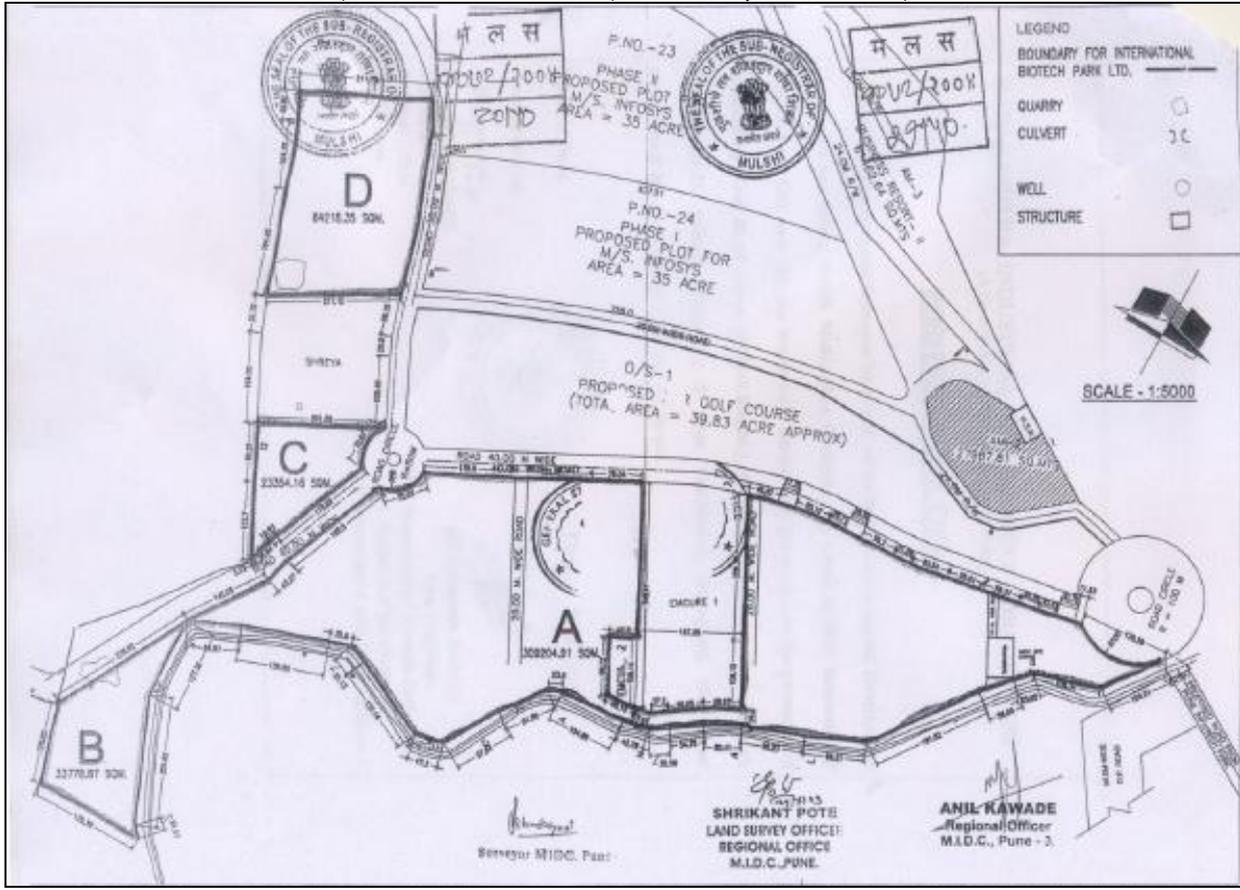
LIST OF ANNEXURES

LIST OF PLATES

Plate - I	:	Map showing surrounding features within 10 km
Plate - II	:	Map showing surrounding features within 500 m

ANNEXURE – I**POSSESSION RECEIPT FROM MIDC**

MAHARASHTRA INDUSTRIAL DEVELOPMENT CORPORATION (A Government of Maharashtra undertaking)		
<u>POSSESSION RECEIPT</u>		
I, Shri. V.V.Kshemkalyani, Surveyor on behalf of the Maharashtra Industrial Development Corporation and Shri Asheesh Mohta, Vice President, on behalf of M/S. International Biotech Park Ltd. have this day respectively handed over and taken over the possession of admeasuring Area 93.37 Acres (377848.05Sq.M.), from Biotech Park in Pune Infotech Park Phase-II, Village: Hinjewadi, & Man Tal:-Mulshi, Dist:-Pune, after actual measurement and demarcation of the plot on the site.		
Place :- Pune.		Date:- 26/07/2004
Handed over by  (V. V. Kshemkalyani) Surveyor, Regional Office MIDC, Pune		Taken over by  (Shri Asheesh Mohta.) Vice President, M/S. International Biotech Park Ltd. (Signature of the allottee or representative with his designation.)



ANNEXURE - II

PROPOSED AREA STATEMENT

Sr.No.	Particular	Area (in sq.m)
1.	Total Plot area	21,330
2.	Deductions	2133
3.	Net plot area	19,197
4.	Permissible FSI	38,394
5.	Proposed Built FSI area	38,207.33
6.	Non FSI area	39,682.48
7.	Total built up area	77,889.82
8.	Ground Coverage (17.55%)	3743.17
9.	RG area other than green belt	2152.87
10.	RG on the ground	3649.49
11.	Amenity area	1177.21
12.	Basement area	19,669.42

ANNEXURE – III**GEOTECHNICAL INVESTIGATION REPORT**

ANNEXURE – IV

WATER SUPPLY AND WASTEWATER MANAGEMENT

1. Construction Phase:

1.1 Water Supply:

During construction phase, water will be supplied by MIDC for drinking and other domestic purposes of the construction laborers and by tankers to be used for construction activity. Total water requirement during the construction phase is about 54 cmd. Water will be utilized for domestic use of construction laborers and for construction activity.

1.2 Waste water generation:

Waste water during the construction phase will be sewage generation, estimated as 11 cmd (80% of water supplied).

Table – 2: Water Requirement and Waste generation during Construction Phase

Sr. No.	Purpose	Source	Quantity (cmd)	Waste water generated (cmd)
1.	Domestic use of construction labor	MIDC	14	11 (@80% of water supply)
2.	Construction activity	Tanker	40	--
Total			54	11

1.3 Waste Water Management

1. Septic tanks and soak pits of adequate size will be provided for treatment and disposal of wastewater.
2. Care will be taken to ensure that the water used for construction purposes does not accumulate on the site to prevent breeding of mosquitoes.

2. Operation Phase:**2.1 Water Supply:**

During operation phase, water supplied by MIDC will be used for domestic purpose and for flushing and gardening treated water from Sewage Treatment Plants (STP) will be used.

2.2 Water requirement:

Water requirement: @115 lpcd (70 liter for domestic purposes and 45 liter for flushing and gardening).

Total water requirement: 329.15 cmd [fresh water from MIDC: 157.50 cmd + Recycled water: 171.65 cmd]

2.3 Wastewater Management:**2.3.1 Sewage Treatment Plant (STP) for Wastewater Management:**

The total wastewater generation will be 201.93 cmd and capacity of STP will be 210 cmd. The scheme proposed for the treatment of sewage in the proposed development is compact and effective Sewage Treatment Plant (STP) using revolutionary 'Moving Bed Bio Reactor' (MBBR) Technology.

The concept underlining the Moving Bed bioreactor is to provide continuously operating bio-film reactor, which is non-clog gable, does not require backwashing and has a very low pressure drop. This is achieved by growing the bio-film on smaller carrier elements that move along with the waste water in the reactor. The air stream constantly keeps the bio media in suspension and at the same time provides the required oxygen to the biomass. The system uses specially designed bio-media, which provides a large surface area for biological growth. The bio-media is made of plastic material, which has a very long life. The media is cylindrical in shape and provides a large surface area in the given volume. The media provides about 800m² effective areas for growth of the bio film per m³ of volume.

The proposed system will consist of the following major stages:

1. Sewage Collection & Pumping System

2. Manual Bar Screen & Grit Chamber
3. Aeration Tank & Tube-deck Settlers
4. Filtration System
5. Disinfection System

1. Sewage collection & pumping system:

Raw sewage will enter the raw sewage sump. Raw sewage transfer pumps will pump the sewage to the STP through the screen and grit removing stages. One pump will be on duty and the other stand by.

2. Manual Bar Screen & Grit Chamber:

A combination of coarse & fine screens will be provided for removal of floating debris from the sewage. The coarse screen will have spacing of 10 mm & will be periodically cleaned. The fine screen will have a spacing of 5 mm and will be periodically cleaned. The outlet from the screen chamber is let into the sewage treatment system.

3. Sewage Treatment System:

The description of the major components of the proposed sewage treatment system is as follows:

A) MBBR Bioreactors-

The MBBR aeration tanks are located next to each other. Each of the tanks will be provided with aeration pipelines at the bottom, which will be in stainless steel & are manifold to cover half the periphery of the tank. Aeration tank is filled with a specific quantity of the bio-media, which is made of plastic material with a specific gravity just below that of water, to enable it to remain in suspension.

The inlet of the aeration tank is on the top with the sewage falling freely into the MBBR tank. The outlet is located on the opposite side, which has a perforated screen mounted on it, which prevents the bio-media from flowing out of the MBBR tank. Both compartments are connected to each other by a fabricated channel, which has perforated sheets on each side. The outlet of the second MBBR is connected to the tube settler unit.

B) Tube Settler Unit

Sewage from aeration tank along with biological stabilized solids will flow by gravity to the compact tube settler unit. The separation of the solid from the sewage is achieved by laminar flow developed by the tubes. Due to this, heavier solids slide down along the inside of the tubes, whereas the clear water rises up and flows out.

The sludge settling at the bottom of the tanks will be transferred from time to time to the sludge holding tank. The clear water from the settling tank will overflow into the filter feed tank.

C) Aeration System

The aeration system consists of two air blowers. One blower will be on duty while the other will be on stand-by. The blowers will be used for aeration inside the MBBR.

4. Filtration System

This consists of a pressure multimedia filter that removes any remaining suspended solids in the treated water so as to ensure its total conformance with the discharge standards set by the regulatory authorities. The filter is to be backwashed at pre-set intervals with water from the treated water tank.

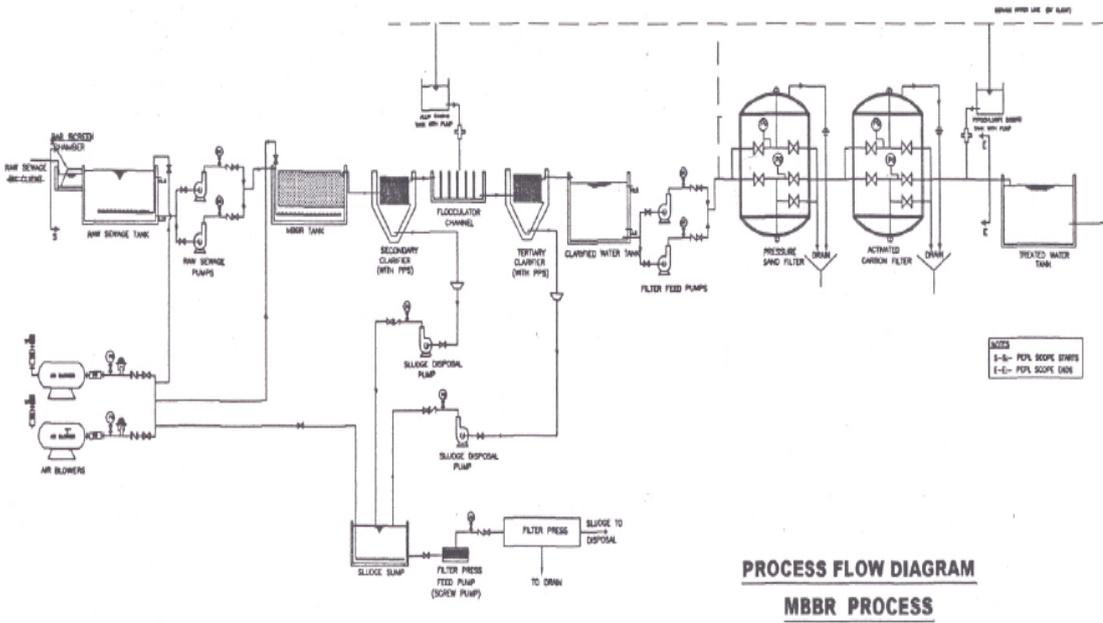
5. Disinfection System

The disinfection system, which comprises of a dosing system, ensures complete removal of any remaining harmful organisms in the water. The water flowing into the polishing filter feed tank is dosed with an oxidant above & then allowed to remain in the tank for a predetermined time so that there is enough contact time for the oxidant to totally disinfect the water.

Sludge: The excess sludge is pumped to the sludge tank from where de-sludging is to be done once every 3-6 months (depending on load factors) by pumping out to tankers and disposal engaging corporation private agencies.

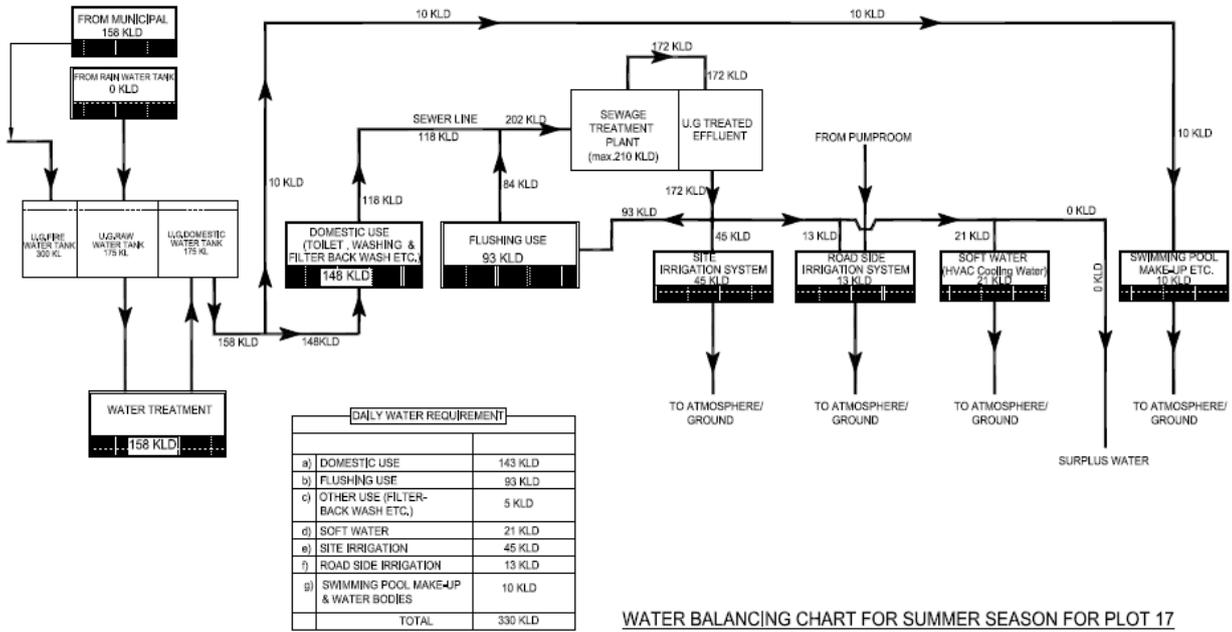
2.3.2 MBBR Flow sheet:

Figure – 1: MBBR Flow sheet

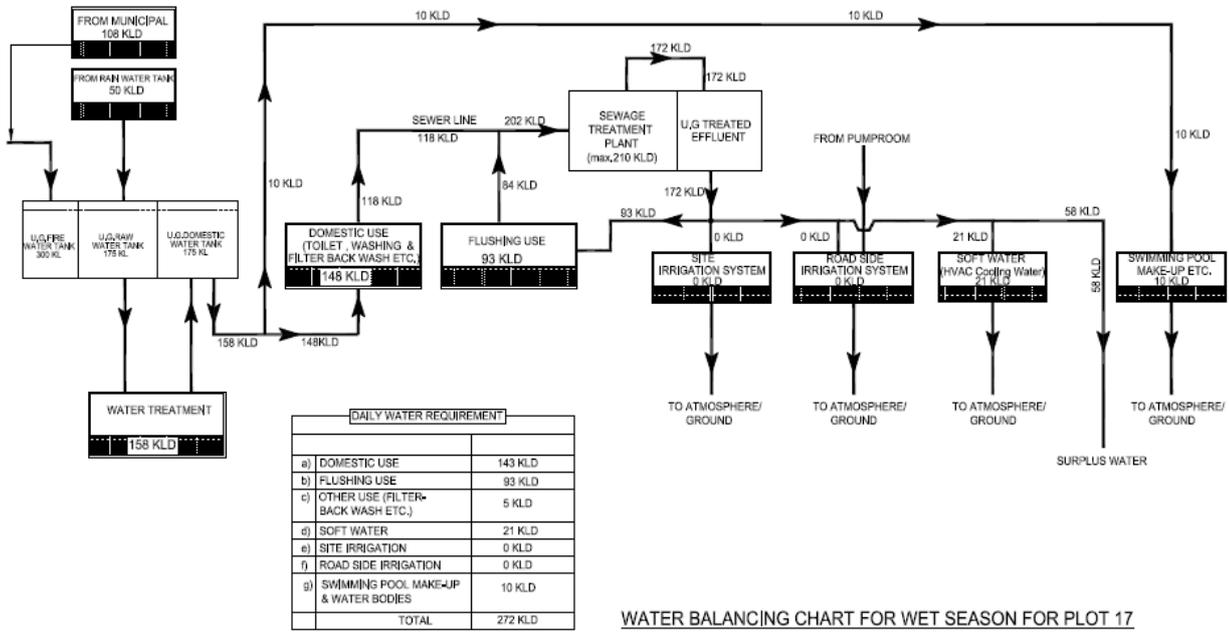


2.4 Water Balance:

Dry Season:



Wet Season:



ANNEXURE IVA. – POTABLE WATER SUPPLY LETTER FROM MIDC

MAHARASHTRA INDUSTRIAL DEVELOPMENT CORPORATION

(A Government of Maharashtra Undertaking)

HEAD OFFICE : "Udyog Sarthi", Mahakali Caves Road,
Andheri (E), Mumbai - 400 093.

FORT BRANCH : Orient House, 5th Floor,
Adi Marjaban Street, Billard Estate, Fort, Mumbai - 38.
Tele : 2687 0027/52/54/73 Fax : (022) 2687 1587
Tele : 2261 6547 Fax : (020) 2261 6548



EE/E&M/ TB/ 3333 /2012

Office of the Executive Engineer

MIDC E&M Division Pune

Date September 28, 2012

To
M/s International Biotech Park Ltd
RGIBP, Hinjewadi, Phase-II
Tal: Mulshi, Distt: Pune

**Sub: Revised Confirmation of Supply of Potable water
for Residential project on Plot 17**

Ref: 1) Your letter No IBPL/SB/MIDC/12-13/76 dt. 08.08.2012
2) MIDC letter No.EE/E & M/Pune/3047/2012 dated 22.08.2012
3) Your revised letter dated IBPL/SB/MIDC/12-13/100, dated 28. 09 2012

Sir,

With reference to your letter under reference, it is to inform you that, MIDC will supply potable water to Plot No 17 in RGIP, Hinjewadi, MIDC Phase -II as required by you as detailed below:

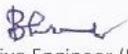
For Plot No 17:

- A) Water for Construction purpose : 54m³/day
B) Water for Residential purpose : 160 m³/day

This letter is issued as per your request vide letter under reference.

Thanking you,

Yours faithfully,


Executive Engineer (E & M)
MIDC E&M Division
MIDC, Pune -19

Copy to Deputy Engineer MIDC E&M SubDivision Chinchawad Pune for information

ANNEXURE IVB. -**PERMISSION LETTER FOR DISPOSAL
OF**

SURPLUS TREATED SEWAGE FROM MIDC

MAHARASHTRA INDUSTRIAL DEVELOPMENT CORPORATION
(A Govt. of Maharashtra Undertaking)

Office :- Kubera Chambers, 3rd floor, Shivajinagar, Pune-05.
Phone / Fax No. 020-25538816 / 25539271.
e-mail : ee@midcindia.org

Letter No. /T.B. /IT/2278/2012

Date:- 20.06.2012.

To,
Authorised Signatory
M/s. International Biotech Park
Rajiv Gandhi InfoTech Park Ph-II
Hinjawadi-Man, Pune-57.

Sub:- Rajiv Gandhi InfoTech Park.....
Approval for treated water disposal at STP.

Ref :- 1. Letter No.IBPL/SB/MIDC/2012-13/0011 dt.13.06.12.
2. Letter No.IBPL/SB/MIDC/2012-13/0012 dt.13.06.12.

Dear Sirs,

With reference to above, you have submitted above two letters and requested to this office to allow IBPL to dispose of the treated sewage to the STP. In this matter it is inform to you that, the disposal of treated sewage from your plots in Rajiv Gandhi InfoTech Park Phase-II to inlet of 04 MLD capacity Sewage Treatment Plant which is in operation at Rajiv Gandhi InfoTech Park Phase-I, is allowed as per standards of Government Norms. The payment of treatment charges and disposal and any other issues etc. as per MIDC policy and prevailing rates shall be binding on you.

Thanking you,

Yours faithfully,

Executive Engineer
MIDC, IT Division,
Shivajinagar, Pune-05.

- Copy submitted to The Chief Engineer (PZ), Pune -03 for information.
- Copy submitted to The Superintending Engineer (II), Chinchwad Pune-19 for information.
- Copy to Deputy Engineer (II) & (III), MIDC, IT Division, Pune-05 for information.
- Copy to Guard file

ANNEXURE – V**SOLID WASTE MANAGEMENT****1. Generation of Solid Waste**

1.1. Construction stage

During the construction stage, construction waste would be generated which would include debris, concrete, steel and other metals, bricks, pallets, packaging and paper products, railings, door and window casings, fixtures, tiles, furnishings etc. Earthwork will include excavation for foundation and basement.

1.2 Operation stage

During operation phase, solid waste will be generated @0.425 Kg/day/Person and @0.225 Kg/day/Person for visitors and others like Drivers/Liftman/servant, etc. Total solid waste generated will be about 0.893 TPD

Table – 4: Solid Waste Generated during Operation Phase

Tower	Dwelling units	Total population	SOLID WASTE			
			Standard (gm)	Total Solid waste generated (kg)	Wet waste generated (kg)	Dry waste generated (kg)
T1	58	261	425	110.93	55.46	55.46
T2	81	364.5	425	154.91	77.46	77.46
T3	81	364.5	425	154.91	77.46	77.46
T4	100	450	425	191.25	95.63	95.63
T5	103	463.5	425	196.99	98.49	98.49
Service Apt	44	88	425	37.40	18.70	18.70
Total	467.00	2101.50	425	893.14	446.57	446.57

2. Collection and Disposal

2.1. Construction stage

For waste generated during the construction phase, gross segregation of the wastes into roadwork materials, structural building material and salvaged building parts would be made. Additional segregation to facilitate reuse/ recycling would be made. Material wastes like bricks, cement etc. will be used as fill material and concrete would be recycled and reused at the site. Adequate facilities for the storage of these waste materials would be made on site.

2.2. Operation stage

Management of solid waste generated during the operation phase would include collection, transportation and disposal in a manner so as to cause minimal environment impact. Waste will be segregated right at the source of waste generation.

Collection of segregated waste would be carried out. Biodegradable waste would be transferred to mechanical composting units within the site for disposal and the compost from the same will be used for landscaping. Non-biodegradable waste will be disposed to municipal solid waste management system and recyclable waste will be disposed by selling to scrap dealers.

The following table gives the overall proposal for the management of solid waste:

Table – 5: Proposed method for Solid Waste Management

Sr. No.	Waste Type	Collection and Storage	Method of Disposal
1.	Bio-degradable waste	Manual collection & storage at ground level.	Treatment in mechanical composting units provided at the ground level within the premises. The manure generated will be used for gardening.

Sr. No.	Waste Type	Collection and Storage	Method of Disposal
2.	Non-biodegradable waste and recyclable waste	Manual collection & storage in closed rooms at ambient temperature.	Disposed to the municipal solid waste management system and recyclable waste will be taken away by private contractor for resale.

2.3 Management of other wastes:

1. The dried STP sludge will be used as manure for gardening to the extent possible. Rest disposed off through municipal contractor.
2. Spent activated carbon from the ACF will be given back to the supplier for regeneration and recycle.
3. Waste sand from the PSF will be disposed off within the site for ground leveling or as fill material for making pathways or for small construction work.
4. Spent ion exchange resins from the softening plant will be given back to the supplier.
5. Waste oil generated from DG set / other machinery overhauling and transformer oil replacement will be sold off to CPCB / MPCB authorized vendors for waste oil.

2.4 Details of Proposed Mechanical-Composting

Mechanical-Composting process and organic waste converter can be used for this purpose.

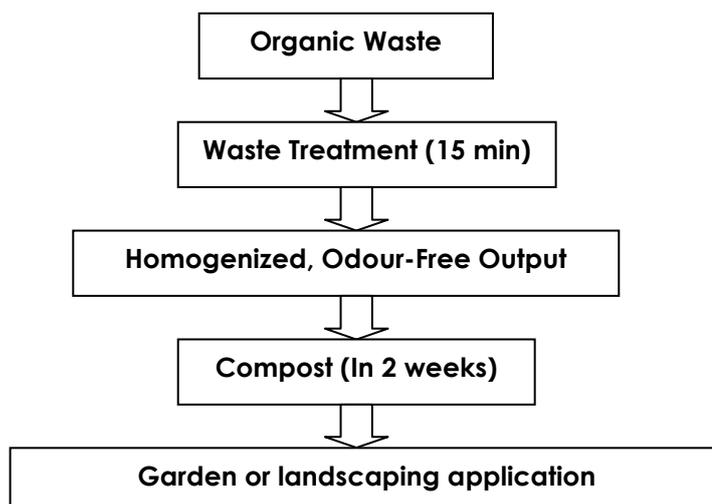
The specifications for the Mechanical-composting are as follows:

- Input: Segregated organic waste
- Model: OWC-60/ OWC-130/ OWC-300
- Capacity: 25 kg/ 50 kg/ 125 kg per batch
- Batch time: 10-15 minutes
- Power: 4 HP/ 8 HP/ 13.5 HP
- Area: 3m x 4m for OWC

2.5 Organic Waste Converter – Waste Flow Chart

The schematic representation for the processes in the organic waste converter i.e. the Waste Flow chart:

Figure - 3: Waste Flow Chart



Solution
Organic Waste Converter



BIO-MECHANICAL PROCESS

SPECIFICATIONS*

- Input : Segregated Organic Waste
- Model : OWC 60 / OWC 130 / OWC 300
- Capacity : 25kg / 50kg / 125kg per batch
- Batch time : 10 to 15 minutes
- Power : 4 HP / 8 HP / 13.5 HP
- Area : 3M x 4M for OWC



HOMOGENIZED
ODOUR-FREE OUTPUT
(in 15 minutes)



COMPOST
(in 2 weeks)

Organic Waste Converter

WASTE FLOW CHART



```

graph TD
    A[Organic Waste] --> B[Waste Treatment  
15 min.]
    B --> C[Homogenized,  
Odour - free output]
    C --> D[Compost  
(In two weeks)]
    D --> E[Kitchen Garden / Landscaping  
Application]
    
```

Waste Generator

- Hotels
- Temples
- Markets
- Hospitals
- Clubs & Resorts
- Slaughter House
- Industrial Canteen
- Institutional Campus
- Building Cluster in lane
- Large Housing Complex

**Together, we can make a difference
for Cleaner, Healthier & Greener living.**



ANNEXURE - VI
RAIN WATER HARVESTING

Planning for Rainwater Harvesting System to be implemented at Plot No.17, in International Biotech Park, at Rajiv Gandhi IT/BT Park, Phase II, MIDC, Hinjewadi, Pune.

Design Considerations:

The system will comprise of:

- Surface (paved or unpaved) water harvesting

1	Total Plot Area	21330 SQ.MT
2	Total Terrace Area	3743.17 Sq. Mt
3	Rainwater Harvested from total terrace area considering 12.5 mm. of rainfall / day (Runoff coefficient 0.95)	$3743.17 \times 0.0125 \times 0.95 = 44.45 \text{ Cu. Mt}$
	Annually rainwater harvested from the terrace area	$3743.17 \times 0.8 \times 0.95 = 2844.80 \text{ Cu. Mt}$
4	Paved / Unpaved / Garden Area Surface Run off	$21330 \text{ Sq. Mtr} - 3743.17 \text{ Sq. Mt} = 17586.83 \text{ Sq. Mtr}$ $17586.83 \times 0.0125 \times 0.5 = 109.91 \text{ Cu. Mt}$
	Annually rainwater harvested from the Surface Runoff	$17586.83 \times 0.8 \times 0.5 = 7034.73 \text{ Cu. Mt}$
	Total Rooftop + Surface Runoff	$44.45 \text{ Cu.mt} + 109.91 \text{ Cu.Mt} = 154.36 \text{ Cu.Mt}$
	Proposed Recharging Pits with borewells alongwith Grease Cum desilting Chamber	8 Nos. <ul style="list-style-type: none"> • Recharging Pit: 4Mt x 4Mt x 3Mt Depth • Grease Cum Desilting Chamber: 2Mt x

		0.9Mt x 2Mt Depth
--	--	-------------------

Planning for Surface Runoff Rainwater Harvesting System :

1. Proposed Recharging Pit with Grease cum Desilting Chamber. Each recharging pit will consist of borewell.
2. Surface runoff water will be diverted from SWD to rainwater harvesting unit. The surface rainwater will pass through grease cum desilting chamber and then transferred to recharging pit with borewell through gravitational force.
3. Proposed filtration of water through Johnson 'V' wire screens, which will be installed on the mouth of the borewell.

Note:

1. We may change to some extent harvesting criteria as per the soil condition to allow max. water to percolate. Variations in designs shall be permissible as per site conditions and design criteria.
2. The location plan of the proposed rainwater harvesting system is hereby enclosed for perusal.
3. Conceptual drawing of rainwater harvesting unit is enclosed for your perusal.
4. The cost of implementation of Rainwater harvesting system will be Rs.28 Lakhs (approx).
5. Annual Maintenance Cost will be Rs.48,000/- (approx).

ANNEXURE-VII

ENVIRONMENTAL MANAGEMENT PLAN**1. OBJECTIVE**

The objective of Environmental Management Plan (EMP) is to formulate measures which will:

1. Mitigate adverse impacts on various environmental components, which have been identified during the rapid environmental impact assessment study.
2. Protect environmental resources where possible.
3. Enhance the value of environmental components where possible.

EMP also includes a monitoring plan to enable evaluation of the success or failure of environmental management measures, and to carry out reorientation of the plan if found necessary.

It is emphasized that many of the protective and enhancement measures can be implemented by adopting suitable planning and design criteria for construction of the project.

2. LAND ENVIRONMENT**2.1. Traffic Management****Construction Phase**

There will be no major impact on the land environment during construction phase as identified during studies. The internal roads will be designed with adequate widths to minimize traffic congestion due to the movement of trucks carrying raw materials required for construction.

Special care will be taken during transportation of construction material like cement, sand, aggregate etc. as considerable quantities of such material would be transported from various material suppliers.

The material will be sourced from the nearest available government approved contractor. Since the road transport is unavoidable, such movement will be carried out during non- peak hours as far as possible.

Operation Phase

The impact on land environment during operation phase will be due to movement of vehicles of residents and users of the hotels, commercial facilities and amenity area.

Precautions to be taken to minimize impacts on land environment will be as follows:

- Development will be as per local guidelines for Residential Development.
- Adequate measures will be taken considering the natural drains by incorporating design elements like steep land landscaping, stabilized slope construction etc.
- There will be minimum amount of cut and fill to reduce disturbance to the existing surface water hydrology
- Natural drain lines which fall in the path of proposed roads will be maintained as far as possible through construction of culverts.
- Adequate provisions will be made through provision of internal roads of minimum 9m width for smooth vehicle entry and exit.
- Walkways will be designed for pedestrian movement wherever suitable.
- Approach road (external road) and internal roads for onsite traffic movement will be planned as per project development.

2.2. Solid Waste Management

Please refer Annexure IV for details on solid waste management.

The salient features of the proposed solid waste management strategy are as follows:

- For waste generated during the construction phase, gross segregation of waste into roadwork materials, structural building material and salvaged building parts will be made. Additional segregation to facilitate reuse/ recycling will be made.
- Material wastes like bricks, cement etc. will be used as fill material and concrete will be recycled and reused at the site.
- Adequate facilities for the storage of these waste materials would be made on site.
- Management of solid waste generated during the operation phase would include collection, transportation and disposal in a manner so as to cause minimal environmental impact.
- It will be made mandatory for waste to be segregated right at the source of waste generation. Collection of segregated waste would be made from the residential areas, resorts, hotels and commercial and amenity areas.
- There would be manual collection & storage of biodegradable waste in AC rooms at the ground level; and Reusable and recyclable waste would be manually collected and stored in closed rooms at ambient temperatures.
- Biodegradable waste from residential buildings, commercial blocks and club house would be transferred to mechanical composting units within the site for disposal. Compost from the same will be used for landscaping.
- Reusable and recyclable waste will be disposed by selling to scrap dealers and private contractor for resale.
- Non-degradable waste will be transferred to municipal solid waste management system.

3. AIR POLLUTION

3.1. Construction Phase

a) Mobile source emissions

1. Transportation of raw materials required for construction will be carried out during non-peak hours.
2. Idling of delivery trucks or other equipment will not be permitted during unloading or when not in active use.
3. To minimize dust emissions due to trucks carrying cement, gravel, sand to site, ready mix concrete carried in enclosed container will be used which is a better option as compared to on site batch mixing.
4. Dust covers will be provided on trucks used for transportation of materials prone to fugitive dust emissions.
5. Covering scaffolding and cleaning of vehicles which can reduce dust and vapor emissions will be used.

b) Stationary source emissions

1. Most of the machinery related to construction will be located close to construction area for ease of handling.
2. Machinery such as conveyers and mixers will be screened with sheets of suitable material to reduce transport of suspended particulate matter and noise.
3. All stationary construction equipment will be located as far away as possible from sensitive receptor locations in order to allow maximum dispersion of emitted pollutants.
4. Areas prone to fugitive dust emissions due to activities such as excavation, grading sites and routes of delivery vehicles across patches of exposed earth, will be frequently water sprinkled to prevent re-entrainment of dust.

5. Hosing down road surfaces especially if they are unfinished surfaces also helps to prevent fugitive dust emissions.
6. Other measures include appropriate containment around bulk storage tanks and materials stores to prevent spillages entering watercourses.
7. Apart from these, equipment/ machines and vehicles will be always kept in good state of repair to minimize emissions. Construction areas will be enclosed, wherever possible.

3.2. Operation Phase

1. Plantation along the roadside helps to reduce effects of air/ noise pollution. A row of trees will be planted along the plot periphery to screen the site from air/ noise pollution.
2. Regular maintenance and upkeep of the internal road within project will ensure smooth traffic flow and will help to reduce air pollution.
3. As per the project analysis, the impact of proposed project would be positive when proper traffic flow is maintained. The entrance/ exit to the site will be maintained so that there are no obstructions to traffic flow as also road side parking will be avoided.

4. NOISE POLLUTION

4.1. Construction Phase

1. Construction contract specifications will specify use of equipment generating noise of not greater than 90 dB (A).
2. Contract specifications for construction will stipulate levels of maximum noise generation in various zones based on CPCB Noise Standards.
3. High noise generating construction activities like, compacting etc. will be carried out only during day time.
4. Workers working near high noise construction machinery will be provided with ear muffs/ ear plugs.
5. Provision of temporary barricading around site.

4.2. Operation Phase

During operation phase it is important to maintain the noise levels within the plot for the safety and better health of residents and users. The various precautions to be taken to maintain acceptable noise level within the project area are as under:

1. Buffer in form of wall or tree plantation will be provided along the main roads
2. Green belt would be essential adjacent to sensitive locations like reserve forest areas, lakes etc.
3. Smooth flow of traffic will be ensured on the internal road to avoid idling of vehicles.

5. WATER ENVIRONMENT

5.1. Construction Phase

1. Construction area will be isolated and care will be taken to divert the run-off to storm water drainage, so possibility of pollution from construction run-off is prevented. Also, subsurface work will be carried out only during non-monsoon period.
2. Precaution will be taken to ascertain that no waste material like cement, paint and solid material like iron rods and any other material is dumped into storm water system.
3. No accumulation of stagnant water will be allowed to prevent breeding of mosquitoes.

5.2. Operation Phase

1. Adequate measures will be taken considering the natural drains by incorporating landscape design elements like steep land landscaping, stabilized slope construction etc.
2. A well engineered storm water drainage system will be provided as a part of this development. Storm water will be either collected in underground tank or discharged to re-charge pits to augment the ground water.
3. A well designed rain water harvesting system will be implemented as a part of the project. The harvested water will be utilized for ground water recharge. Thus, there will be beneficial impact on the ground water table.
4. The daily water requirement would be met from MIDC. After the analysis of the site, it is recommended that the project proponent installs scientifically designed rain water harvesting system and sewage treatment plants with facilities to recycle sewage to reduce load on natural water sources.
5. Existing natural drainage lines on site will be maintained as far as possible.

6. GUIDELINES FOR BIO-AESTHETIC MANAGEMENT

6.1. Protection of trees on site

Protection of existing trees within the plot which would not be affected by the proposed layout will be the first priority during construction. The precautions to be taken are as under:

1. The detailed design of the proposed development will be in accordance with the Development Control Regulations. Care will be taken to maintain the form such that the aesthetics of the region is maintained and the skyline is not modified.
2. Precaution would be taken while transporting construction material to the site to prevent accidental damage or spillage.
3. The work force will be briefed about importance of preserving and protection of exiting trees before starting the construction work.
4. Trees propagation/ plantation will be initiated by project proponent from project initiation stage for better results.
5. Specifically, large and healthy trees will be given maximum weight age in tree protection than giving importance to merely the number of trees, as is not possible to avail such full grown and mature trees in short span of time with any efforts and cost.
6. The existing trees will be removed only when it is a must and all other options are thoroughly considered and exhausted.
7. The proposal would take into consideration the surrounding lake and forest ecosystems and provide a buffer zone around these areas in order to cut off the disturbances of the activities that are likely to come up due to the new development.
8. Proposed green belt will consist of trees planted at the rate as specified in the Policy. The trees would be the fruit bearing type and native species suiting the local climate as far as possible.

It is recommended that tall trees will be planted to form an avenue along roads and to buffer the vehicular noise and dense canopy trees will be planted on the periphery of the plot to form a screen to reduce impact of air/ noise pollution on the surrounding lake and forest area.

7. SOCIO-ECONOMIC ENVIRONMENT

The proposed construction project does not involve displacement of local residents. The project lies in a rural setting at about 50 km from the urban settlement at Pune. At present it is totally undeveloped. Basic infrastructure facilities like water supply, sanitation, drainage etc. will be provided as part of the proposed project. Villages existing within the project demarcation area will be kept untouched and care would be taken to cause minimum disturbance to these sites.

Thus, there would not be any adverse impact on local population; rather the settlements in the vicinity of the proposed project would be benefited because of the facilities provided by project construction.

Public health & safety will be the priority of the project.

7.1. Construction Phase

The health and safety of the workers for the construction project will be ensured by:

1. Proper instructions about personnel safety will be given to all the labour working on the site by project manager before commencement of work.
2. The labourers will also be guided about the measures to be taken during emergency and accident like fire etc.
3. Safety equipment like gloves, helmet, mufflers etc. which will be made mandatory to use for all labourers on site.
4. Proper sanitation and water supply facilities will be provided to the labourers during construction phase.
5. Insurance cover will be provided to the workers working at site.

7.2. Operation Phase

During operation phase, precautions will be taken to ensure the health and safety of the local residents and the users.

Fire fighting system comprising of smoke detectors and well designed hydrants will be provided in each building. Fire water tanks with storage capacity as recommended will be provided. Maintenance of the systems will be carried out regularly to ensure proper functioning during emergencies.

Periodic inspection and maintenance of all water storage tanks will be carried out at regular intervals to prevent outbreak of waterborne diseases.

8. ENVIRONMENTAL MANAGEMENT PLAN- ORGANIZATION & IMPLEMENTATION

During construction phase, contractors as well as site-in-charge will be responsible for implementing all the mitigation measures recommended.

Planting of trees on open spaces and road-side will be initiated during construction phase itself. In operational phase, the work will be continued along with post-monitoring of planted area.

An officer will be appointed by the project proponents to ensure monitoring and inspection during construction period.

The following tables give the mitigation measure to be undertaken during construction & operational phase respectively with the agency responsible for implementation.

Table 1: Mitigation Measures during Construction Phase

Sr. No.	Affected Environmental Parameters	Likely adverse impacts in absence of mitigation measures	Nature of impact	Proposed Mitigation Measures	
				Action to be taken	Implementing Agency
1.	Land Environment	<ul style="list-style-type: none"> ▪ Generation of solid waste and debris ▪ Aesthetically unpleasant ▪ Health problems of labourers 	Temporary	<ul style="list-style-type: none"> ▪ Segregation to facilitate reuse/ recycling ▪ Construction material waste like bricks, cement etc. will be used as fill material ▪ Recyclable wastes will be segregated and sent for recycling. ▪ Adequate facilities for the storage of these waste materials on site 	Contractor
2.	Air Quality	<ul style="list-style-type: none"> ▪ Traffic congestion ▪ Increase in air pollution (Increase in levels of NOx, SPM, Dust hazards) ▪ Risks of accidents 	Significant but Temporary	<ul style="list-style-type: none"> ▪ Idling of the trucks and dumpers on the roads will not be allowed ▪ Raw materials will be procured from the nearest material supplier ▪ Material will be brought in batches so that there is no sudden increase of traffic volume at one particular 	Project manager & Contractor

Sr. No.	Affected Environmental Parameters	Likely adverse impacts in absence of mitigation measures	Nature of impact	Proposed Mitigation Measures	
				Action to be taken	Implementing Agency
				<p>time.</p> <ul style="list-style-type: none"> ▪ On-site use of concrete batching plant ▪ Use of dust covers over construction material during transportation ▪ Keeping all stationary equipment downwind ▪ Stabilization of dust prone areas by sprinkling water 	
3.	Noise Quality	<ul style="list-style-type: none"> ▪ Increase in noise levels causing nuisance to lake and forest ecosystems 	Significant but temporary	<ul style="list-style-type: none"> ▪ Prohibition for use of equipment emitting noise of greater than 90 dB (A) for 8 hour operation ▪ Prohibition of noise causing construction activities during night time ▪ Provide workers on machinery with ear muffs/ ear plugs ▪ Provision of temporary barricading around site 	Contractor

Sr. No.	Affected Environmental Parameters	Likely adverse impacts in absence of mitigation measures	Nature of impact	Proposed Measures	Mitigation
				Action to be taken	Implementing Agency
4.	Water Environment	<ul style="list-style-type: none"> ▪ Increase in turbidity and suspended solids due to soil erosion ▪ Blocking of natural drains due to deposition of construction materials 	Significant and temporary	<ul style="list-style-type: none"> ▪ Construction work to be carried out before monsoons and erosion protection measures to be taken. ▪ Construction materials to be stored in enclosures ▪ Measures to divert run-off to storm water drainage and prevent pollution from construction run-off ▪ Cleaning of drains on regular basis to avoid blockage ▪ No accumulation of stagnant water 	Contractor
5.	Other Impacts	<ul style="list-style-type: none"> ▪ Soil erosion, additional exposure to noise/air pollution. 	Significant and permanent	<ul style="list-style-type: none"> ▪ Construction of necessary scaffolding and retaining structure for protection from waste material and water. ▪ Tree plantation to enhance bio aesthetic value. 	Contractor

Sr. No.	Affected Environmental Parameters	Likely adverse impacts in absence of mitigation measures	Nature of impact	Proposed Mitigation Measures	
				Action to be taken	Implementing Agency
				<ul style="list-style-type: none"> Guidelines for planting saplings of trees to be strictly followed 	

Table 2: Mitigation Measures during Operation Phase

Sr. No.	Affected Environmental Parameters	Likely adverse impacts in absence of mitigation measures	Nature of Impact	Proposed Mitigation Measures	
				Action to be taken	Implementing agency
1.	Land Environment	<ul style="list-style-type: none"> Change in land use pattern due to induced development 	Significant and permanent if not controlled	<ul style="list-style-type: none"> Controlled and planned development 	Project Proponent
		<ul style="list-style-type: none"> Contamination of soil by fuel and lubricants from construction equipments and vehicles Increased solid waste generation in area If not managed properly will affect the health of local residents Aesthetically unpleasant 	Significant and Temporary	<ul style="list-style-type: none"> Avoiding spillage of oil and fuel to prevent seepage into ground Waste management practices like waste segregation at source, recycling and reuse, mechanical composting etc. will be adopted Provision of mechanical composting units within the site Regular collection of non- 	Project Proponent

Sr. No.	Affected Environmental Parameters	Likely adverse impacts in absence of mitigation measures	Nature of Impact	Proposed Measures	Mitigation
				Action to be taken	Implementing agency
				degradable solid waste from the site. ▪ Provision of well engineered landfill site.	
2.	Water Environment	▪ Water shortage within the area ▪ Water flooding during rainy season ▪ Increase in turbidity of water ▪ Reduced runoff due to increased paved areas	Significant and permanent	▪ Blockage of natural drains to be avoided and cleaning and maintenance to be carried out ▪ Regular maintenance of storm water drains, cleaning and effective soil erosion measures. ▪ Water harvesting to recharge ground water ▪ Prevent pollution from run-off ▪ Incorporating appropriate landscape design elements ▪ Rain water harvesting system will be installed. ▪ Sewage treatment plants to recycle domestic sewage and reuse for	Project Proponent

Sr. No.	Affected Environmental Parameters	Likely adverse impacts in absence of mitigation measures	Nature of Impact	Proposed Measures		Mitigation
				Action to be taken	Implementing agency	
				toilet flushing/ gardening, AC cooling etc.		
3.	Biodiversity	▪Disturbance due to noise generating activities and increased vehicular traffic	Significant and permanent	▪ Provision of green belt and buffer zone		Project Proponent
4.	Public Health and Safety	▪Health problems to people staying within the plot.	Moderate and Permanent	<ul style="list-style-type: none"> ▪ Road side plantation and its maintenance to prevent air/ noise pollution within site. ▪ Adequate parking facility. ▪ Provision of adequate road safety like signage-posts/ road-crossings etc. ▪ Fire fighting / Disaster Management Plan provisions for buildings. 		Project Proponent

Updated and enhanced budgetary for Environmental Management Plan at Crown Greens “Residential Development” at Plot No. 17, in International Biotech Park Limited, at Rajiv Gandhi IT/BT Park, Phase II, MIDC, Hinjewadi, Pune.

I. Construction Phase

Environment Protection Measure	Capital Cost (Rs. In Lakhs)	Recurring Cost Per Annum (Rs. In Lakhs)
Debris/Top soil Management	30	Nil
Transplantation of trees	15	1.0
Toilets for labour + drinking water + first aid arrangement	10	0.5
TOTAL	55	1.5

II. Operation Phase

Environment Protection Measures	Capital cost (Rs. In Lakhs)	Recurring cost (Rs. In Lakhs)
Sewage Treatment Plant	160	22.5
Solid Waste Management	27	5.0
Rain Water Harvesting	40	0.50
Green Belt	50	4.0
Energy Saving features + solar water heater/solar power	65	3.5
Fire fighting	624	40
Safety Measures	15	1.5
Total	981	77

ANNEXURE – VIII

STRUCTURAL SEISMIC DESIGN CERTIFICATE



TCN/2012-2013/0065

April 12, 2012

**CERTIFICATE
TO WHOMSOEVER IT MAY CONCERN**

Subject : Proposed Residential Development at Plot No.17, MIDC - Phase II,
International Bio-Tech Park, Hinjewadi, Pune.

This is to certify that proposed building at Plot No.17, MIDC - Phase II, International Bio-Tech Park, Hinjewadi, Pune have been designed by us and the same are based on following Indian standard codes of practice & shall render the buildings safe & stable for intended purpose.

1. IS - 456 - 2000 - Code of Practice for Plain & Reinforced Concrete Structure.
2. IS - 875 - 1987 - Code of Practice for Design Loads.
3. IS - 1893 - 2002 - Criteria for Earthquake Resistant Design of Structure.

For JW CONSULTANTS LLP

**ACHYUT WATVE
DESIGNATED PARTNER &
STRUCTURAL ENGINEER
PMC LIC No. 18**

JW CONSULTANTS LLP
Formerly Y S Sane Associates

DESIGN & ADMIN OFFICE : Sai Chambers, 16, Pune-Mumbai Rd., Wakdevadi, Pune - 411 001 | P : +91-(0)20-6644 9700 | F : +91-(0)20-6644 9299
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REGISTERED OFFICE : "Maitra", 1219, Shivaji Nagar, Pune - 411 004 | P : +91-(0)20-2552 1273 / 4
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Converted into a Limited Liability Partnership (LLP Identify No AAH-2650) w.e.f 28.10.2010 from JW Consultants (previously Y S Sane Associates) Registration No. MP469124

ANNEXURE – IX

PERMISSION OF TREES TRANSPLANTATION FROM FOREST DEPT

N.O.C Of Land

वन परिक्षेत्र अधिकारी पौड, यांचे मु.पो.पौड, ता.मुळशी जि.पुणे ४१२ १०८ यांचे कार्यालय:

विषय - मौजे हिंजवडी ता. मुळशी येथील प्लॉट नं. ७ व १७ इंटरनॅशनल बायोटेक पार्क फेज-२ मधील झाडांना पुर्नरोपन करणेस मंजूरी बाबत..

क्रमांक - अ/जमिन/३८/ १८२ /सन १२-१३

पौड - ४१२ १०८ दि. १८/०५/२०१२

प्रति,

इंटरनॅशनल बायोटेक पार्क,
प्लॉट नं. १५ फेज-२ हिंजवडी,
पुणे-५७

संदर्भ- १) आपले दिनांक ०९/०४/२०१२ चे अर्ज...

२) वनपाल कोळवण यांचेकडील जा.पत्र क्र. ११ दि १८/४/२०१२

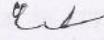
आपलेकडील वरील संदर्भिय अर्जान्वये वनपाल कोळवण यांनी प्रकरणी आवश्यक ती चौकशी करुन अहवाल या कार्यालयास सादर केलेला आहे. त्यानुसार खालील नमूद केलेल्या वृक्ष प्रजातींना प्लॉट नं. ७ व १७ चे क्षेत्रामध्ये पुर्नरोपनास अर्तीच्या अधिन राहून परवानगी देण्यात येत आहे.

N.O.C Of Land

प्लॉट क्रमांक १७

प्रजाती	संख्या	प्रजाती	संख्या	प्रजाती	संख्या
कडुनिंब	०४	ऐन	२२	पळस	०२
भोकर	०१	मोई	०३	बेहडा	०२
आसाना	०२	मोगीर	०२	सायर	०२
दहिवन	०१	बारतोडी	०१		

१. पुर्नरोपनास परवानगी दिलेल्या झाडांचे वर नमूद केलेल्या क्षेत्रामध्ये पुर्नरोपन करण्यात यावे.
२. झाडे पुर्नरोपन करण्यात आल्यानंतर तसा अहवाल या कार्यालयास सादर करावा लागेल.
३. पुर्नरोपन केलेल्या झाडाचे संरक्षण व संवर्धन करण्याची जाबाबदारी पुर्नतः इंटरनेशनल बायोटेक पार्क, पुणे, यांची राहिल.


वन परिक्षेत्र अधिकारी
पौड.

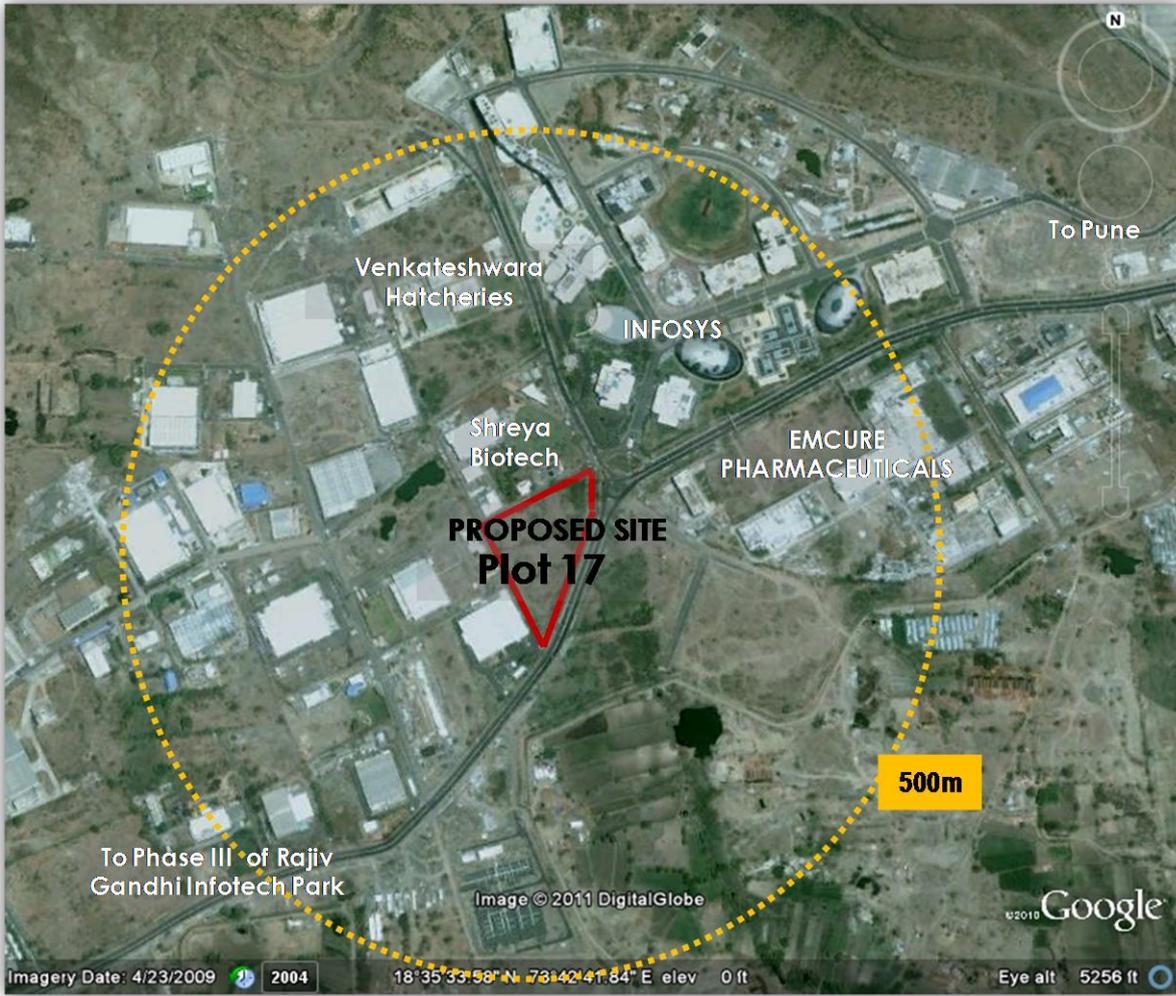
प्रत- वनपाल कोळवण यांना माहिती साठी रवाना.

PLATES

Plate I: Map showing surrounding features within 10 kms



Plate II: Plate I: Map showing surrounding features within 500 m



Consolidated Statement on various Environmental Aspects for Construction Projects		
Sr.No.	Particular	Commitment On
1	Name of Project	The Crown Greens - Residential Development by IBPL at Hinjewadi, Pune.
2	Name, contact number & address of Proponent	<ul style="list-style-type: none"> • Name : Mr. Dinesh Raste, Director • Address: International Biotech Park Ltd. Ground floor, Genesis square Plot-15, Rajiv Gandhi IT Park, MIDC Phase, 2-Hinjewadi, Pune-411057. • Tel no. : 020-67903901 • Mobile No : 9860799304 • Email : dinesh.raste@tcgre.com
3	Name, contact number & address of Consultant	<ul style="list-style-type: none"> • Name : Mr. Rajiv Aundhe, Director • Address: Aditya Environmental Services Pvt. Ltd. 107, Hiren Light Industrial Estate, Moghul Lane, Mahim Mumbai - 400016 • Tel no. : 022-42127500 & 42127505 • Mobile No : 9821513367 • Email : rajiv@aespl.co.in
4	Accreditation of consultant (NABET Accreditation)	67
5	Type of project: Housing project / Industrial Estate /SRA scheme / MHADA /Township or others	Housing project
6	Location of the project	Plot No. 17 at International Biotech Park Ltd., Rajiv Gandhi Infotech Park, MIDC Hinjewadi Phase II, Pune, Maharashtra
7	Whether in Corporation / Municipal / other area	Maharashtra Industrial Development Corporation (MIDC).
8	Applicability of DCR	MIDC DCR
9	Note on the initiated Work (if applicable)	<ul style="list-style-type: none"> • Total Constructed Work (FSI and Non FSI): NA • Date & area details in the necessary approvals issued by the competent authority (attach scan copies) ---

10	LOI/NOC from MHADA/ Other approvals if applicable	Date & construction area details in the approved letter : Not applicable																											
11	Total Plot Area Deductions Net Plot Area	21,330 sq m. 2,133 sq.m 19,197 sq.m																											
12	Permissible FSI (including TDR etc.)	38,394 sq m.																											
13	Proposed Built-up Area (FSI & Non-FSI)	FSI area: 38,207.33 sq m. Non FSI area: 39,682.48 sq m. Total Built up area: 77,889.82 sq m.																											
14	Ground coverage Percentage (%) (Note : percentage of plot not open to sky)	17.55% (3743.17 sq m.)																											
15	Estimated cost of the project	INR 104,00,00,000/- (INR One Hundred and four Crores only)																											
16	No. of buildings & its configuration	<table border="1"> <tr> <td colspan="3">No. of buildings: 7 nos.</td> </tr> <tr> <td colspan="3">5 Residential Buildings</td> </tr> <tr> <td>T1</td> <td>:</td> <td>G+15</td> </tr> <tr> <td>T2</td> <td>:</td> <td>G+21</td> </tr> <tr> <td>T3</td> <td>:</td> <td>G+21</td> </tr> <tr> <td>T4</td> <td>:</td> <td>G+26</td> </tr> <tr> <td>T5</td> <td>:</td> <td>G+27</td> </tr> <tr> <td colspan="2">1 Convenient Shopping and service apartment</td> <td>G+5</td> </tr> <tr> <td colspan="2">1 Club house</td> <td>G+2</td> </tr> </table>	No. of buildings: 7 nos.			5 Residential Buildings			T1	:	G+15	T2	:	G+21	T3	:	G+21	T4	:	G+26	T5	:	G+27	1 Convenient Shopping and service apartment		G+5	1 Club house		G+2
No. of buildings: 7 nos.																													
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T1	:	G+15																											
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T4	:	G+26																											
T5	:	G+27																											
1 Convenient Shopping and service apartment		G+5																											
1 Club house		G+2																											
17	No. of tenants & shops	423 tenants, 44 service apartments & 32 shops																											
18	No. of expected residents /users	1904 (Residential building) + 88 (Service apartment) + 33 (convenience shops) + 199 (visitor) + 50 (Club house and Maintenance staff) = 2274 max																											
19	Tenant density hectare	300 max permitted (to be provided 243)																											

20	Height of the building (s)	5 Residential Buildings	Building configuration	Height in (m)
		T1	G+15	53.65m
		T2	G+21	71.95m
		T3	G+21	71.95m
		T4	G+26	87.2m
		T5	G+27	90.25m
		1 Convenient Shopping and service apartment	G+5	27.0m
		1 Club house	G+2	15.0m
21	Right of the way (width of the road from the nearest Fire station to the proposed building (s))	40m		
22	Turning radius for easy access of Fire Tender movement from all around the building excluding the width for the plantation	12.5 m		
23	Existing structure	Land is vacant		
24	Details of demolish with waste Disposal (if applicable)	Not applicable		
25	Total Water Requirement	<p>Dry Season:</p> <ul style="list-style-type: none"> • Fresh Water : 157.50 cmd Source: MIDC • Recycled Water:- 171.65cmd • Total Water Requirement:- 329.15 cmd • Swimming pool makeup (CMD):- 10 cmd • Fire fighting (CMD):- 300 m3 <p>Wet Season:</p> <ul style="list-style-type: none"> • Fresh Water : 157.50 cmd Source : MIDC&Rain • Recycled Water:- 114.26 cmd • Total Water Requirement:- 271.76 cmd • Swimming pool makeup (CMD):- 10 cmd • Fire fighting (CMD):- 300 m3 		

26	Rain Water Harvesting (RWH)	<ul style="list-style-type: none"> • Level of Ground Water Table : 3 to 4 m (Soil Investigation Report Was Done In Monsoon) • Size and no of RWH tank (s) and Quantity: One Tank of 40 m³ • Location of RWH Tanks: Along main UG Water tank • Size, nos of recharge pits and Quantity Length:- 4 m Width of pit:- 4 m Depth of pit:- 3 m Volume: 48 cu.m. Recharge pits: 8 nos. <p>Budgetary allocation (Capital cost and O&M cost)</p> <table border="1" data-bbox="603 607 1362 846"> <thead> <tr> <th></th> <th>Capital cost (Rs in lakhs)</th> <th>O&M cost (Rs in lakhs)</th> </tr> </thead> <tbody> <tr> <td>Rainwater harvesting</td> <td>40</td> <td>0.50</td> </tr> </tbody> </table>		Capital cost (Rs in lakhs)	O&M cost (Rs in lakhs)	Rainwater harvesting	40	0.50
	Capital cost (Rs in lakhs)	O&M cost (Rs in lakhs)						
Rainwater harvesting	40	0.50						
27	UGT Tanks	Location (s) of the UGT Tanks In the extended basement away from STP area (East of Tower T1)						
28	Storm Water Drainage	<ul style="list-style-type: none"> • Natural water drainage pattern North to south • Quantity of storm water 154.36 Cu. Mt – assumed at rainfall intensity of 50mm/hour • Size of SWD sized as per design max rainfall intensity of 50 mm/hour 						
29	Sewage and Waste water	<p>I. Sewage generation (cmd) :-201.93 cmd II. STP technology:- MBBR Technology III. Capacity of STP:- 210 cmd IV. Location of STP :- UG - south of Tower 1 IV. DG sets (during emergency):- 30% back up will be provided (100% to common & Services Areas). V. Budgetary allocation (Capital cost and O&M cost):-</p> <table border="1" data-bbox="603 1547 1318 1738"> <thead> <tr> <th></th> <th>Capital cost (Rs. in lakhs)</th> <th>O&M cost (Rs.in lakhs)</th> </tr> </thead> <tbody> <tr> <td>Sewage treatment plant</td> <td>Rs. 160 lakhs</td> <td>Rs 22.5 lakhs</td> </tr> </tbody> </table>		Capital cost (Rs. in lakhs)	O&M cost (Rs.in lakhs)	Sewage treatment plant	Rs. 160 lakhs	Rs 22.5 lakhs
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Sewage treatment plant	Rs. 160 lakhs	Rs 22.5 lakhs						
30	Solid waste Management	<p>Waste generation in Pre Construction and Construction phase:</p> <ul style="list-style-type: none"> • Waste Generation :- Debris – 1-3 MT/day • Quantity of Top soil to be preserved : 3520 cum • Disposal of construction way debris : used for filling the plot and maintaining natural slopes <p>Waste Generation in Operation Phase:</p>						

		<ul style="list-style-type: none"> • Dry waste Kg/day:- 423.2 • Wet waste Kg/day:- 423.2 • E- waste (kg/month) : Not applicable • Hazardous waste (kg/month): Not applicable • Biomedical Waste (kg/month) : Not applicable • STP Sludge (Dry sludge) Kg/day : 0.2 TPD <p>Mode of Disposal of Waste :-</p> <ul style="list-style-type: none"> • Dry waste: - segregation and sale of recyclables, inerts to approved landfill site. • Wet waste :- biodegradable waste to compost • E- waste : Not applicable • Hazardous waste : Not applicable • Biomedical Waste : Not applicable • STP Sludge (Dry sludge) : mix with wet waste and convert that into compost <p>Area Requirement : Location and Total area provided for the treatment and storage of solid waste : 500 sft – utility area</p> <p>Budgetary allocation (Capital cost and O&M cost)</p> <table border="1" data-bbox="603 931 1422 1122"> <thead> <tr> <th></th> <th>Capital cost (Rs in lakhs)</th> <th>O & M cost (Rs in lakhs)</th> </tr> </thead> <tbody> <tr> <td>Solid waste management</td> <td>27 lacs</td> <td>5.0 lacs</td> </tr> </tbody> </table>		Capital cost (Rs in lakhs)	O & M cost (Rs in lakhs)	Solid waste management	27 lacs	5.0 lacs
	Capital cost (Rs in lakhs)	O & M cost (Rs in lakhs)						
Solid waste management	27 lacs	5.0 lacs						
31	Green Belt Development	<p>Total RG area :</p> <ol style="list-style-type: none"> 1. RG area other than greenbelt (please specify for playground etc) (sq. m.):- 2152.87 sq m. 2. RG area under Green Belt <ul style="list-style-type: none"> • RG on the ground (sq.m): 3694.49 sq.m. • RG on the podium (sq.m): 0 3. Plantation <ul style="list-style-type: none"> • Number & list of Tree species to be planted in the ground RG: 252 nos + 61 existing trees to be retained = 313 nos. Tree species for plantation: kindly refer <u>Annexure X</u> • Tree species Existing & to be retained: kindly refer <u>Annexure X</u> • Number & list of Shrub & bushes species to be planted in the podium RG : 1000 Species considered <table border="1" data-bbox="627 1865 1342 2007"> <thead> <tr> <th>Sr. No.</th> <th>Scientific name</th> <th>Common name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><i>Caesalpinia pulcherrima</i></td> <td>White Gulmohor</td> </tr> </tbody> </table> 	Sr. No.	Scientific name	Common name	1	<i>Caesalpinia pulcherrima</i>	White Gulmohor
Sr. No.	Scientific name	Common name						
1	<i>Caesalpinia pulcherrima</i>	White Gulmohor						

		2	<i>Clerodendrum inerme</i>	Kadumendi
		3	<i>Clerodendrum infortunatum</i>	-
		4	<i>Duranta repens</i>	-
		5	<i>Hibiscus rosa-sinensis</i>	Chinese Hibiscus
		6	<i>Lawsonia inermis</i>	Henna
		7	<i>Nerium indicum</i>	Pink Oleander
		8	<i>Nyctanthus arbor-tristis</i>	Parijatak
		9	<i>Tecoma stans</i>	Tecoma

- **Number & list of tree species to be planted around the border of nallah/stream/pond (if any) : NOT APPLICABLE**
- **Number, size age and species of trees to be cut or transplanted :**
Existing trees 61 nos.
Trees to be transplanted 48 nos.
Trees to be retained 13 Nos.
Trees to be cut : NIL
Total no. of trees to be planted: 252 nos
- **NOC for the tree cutting/transplantation / compensatory plantation if any : NOC obtained from Forest Department**

IV. Budgetary allocation (Capital cost and O&M cost)

	Capital cost (Rs in lakhs)	O&M cost (Rs in lakhs)
Green belt	50	4.0

32	Energy	<p>Power supply :</p> <ul style="list-style-type: none"> • Maximum Demand: 3669.0 KVA • Connected Load: 5297.75 KVA • Source : MSEDCL <p>Energy saving by non-conventional method :</p> <ul style="list-style-type: none"> • Energy Saving Measure : as below + solar water heater/solar lighting on podium • Detailed calculations & % of saving We propose to install solar water heating panels and supply hot water to bathrooms in complex. Also solar based lighting will be provided in garden pathways. <p>Energy saving can be achieved due to following:</p> <ol style="list-style-type: none"> 1. Use of CFL lamps instead of GLS lamps for flats 2. Use of CFL lamps instead of GLS lamps for common area lights 3. Use of T5 lamps instead of Normal Fluorescent lamps in basements 4. Using electronic ballast for discharge lamps <p>Energy saving by using 13 watt CFL lamps as against 60 W incandescent lamps for houses</p> <ul style="list-style-type: none"> • Compliances of the ECBC Guidelines : (Yes/No) (if yes, then submit compliance in Tabular form) : <p>Budgetary allocation (Capital cost and O&M cost)</p> <table border="1" data-bbox="603 1021 1337 1285"> <thead> <tr> <th></th> <th>Capital cost (Rs in lakhs)</th> <th>O&M cost (Rs in lakhs)</th> </tr> </thead> <tbody> <tr> <td>Energy Saving Devices + Solar Heater/ lighting</td> <td>65</td> <td>3.5</td> </tr> </tbody> </table> <p>DG Set: Number and capacity of DG sets to be used 2 nos. x 400 KVA Type of fuel used : HSD</p>		Capital cost (Rs in lakhs)	O&M cost (Rs in lakhs)	Energy Saving Devices + Solar Heater/ lighting	65	3.5						
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Energy Saving Devices + Solar Heater/ lighting	65	3.5												
33	Environmental Management plan Budgetary Allocation	<p>Construction phase (with Break-up)-</p> <table border="1" data-bbox="603 1581 1318 2018"> <thead> <tr> <th>Environment Protection Measure</th> <th>Capital Cost (Rs. in lakhs)</th> <th>Recurring Cost per annum (Rs. in lakhs)</th> </tr> </thead> <tbody> <tr> <td>Debris/Top soil Management</td> <td>30</td> <td>Nil</td> </tr> <tr> <td>Transplantation of trees</td> <td>15</td> <td>1.0</td> </tr> <tr> <td>Toilets for labour + drinking water + first aid arrangement</td> <td>10</td> <td>0.5</td> </tr> </tbody> </table>	Environment Protection Measure	Capital Cost (Rs. in lakhs)	Recurring Cost per annum (Rs. in lakhs)	Debris/Top soil Management	30	Nil	Transplantation of trees	15	1.0	Toilets for labour + drinking water + first aid arrangement	10	0.5
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		<ul style="list-style-type: none"> • Quantum and generation of Corpus fund and commitment:- NA • Responsibility for further O &M : Society will undertake responsibility for O & M 																													
34	Traffic Management	<p>Nos. of the junction to the main road & design of confluence: 1No.</p> <p>Parking Details :</p> <ul style="list-style-type: none"> • Number & area of basement: 2 nos. & 17922.78 sq.m • Number & area of podium : Nil • Open parking: 158 cars (Surface Parking) • Covered parking: 541 Cars – 19243.91 Sq.m (Basement+Stilts) • Total parking area: 21218.91 sq.m (Basement+Stilts+Surface Parking) • Area per car : • Basement 34.59 sq.m./car (17922.78sq.m./518 cars) • Overall Covered 35.57 sq.m. Per car • 2-Wheeler :- 63 nos. required & 69 nos. provided • 4-Wheeler :- 696 nos. required & 699 nos. provided • Public Transport: Bus siding provided <p>Width of all Internal roads: - 9.0</p>																													
35	CRZ/RRZ clearance obtain ,if any	Not Applicable																													
36	Distance from Protected Areas / Critically Polluted areas / Eco-sensitive	Not Applicable																													

areas/ boundaries		inter-State		
CHECKLIST FOR OTHER NECESSARY APPROVALS				
		Status of the approval	Name of the competent Authority	Date of the issued letter
37	CFO NOC for the above building structures	To be applied	Chief Fire Officer, MIDC	CFO letter vide no. MIDC/FIRE/1112/16.08.2012
38	HRC NOC for the above said building structure(s) if applicable	NA	NA	NA
39	NOC for the above said building structure (s) from the aviation authority if applicable	In process	Indian Air Force	--
40	Consent for water for the above said details	Water assured by MIDC	MIDC	MIDC letter no. EE/E & M/Pune/2503/2012 dtd. 26.6.2012 MIDC letter no. EE/E & M/ Pune/ 3047/ 2012 dtd. 22.08.2012
41	Consent for drainage for the above said details	by MIDC	MIDC	MIDC Letter No./T.B/IT/2278/2012 dtd. 20.06.2012
42	Consent for electric supply for the proposed demand	To be applied	MSEDCL	--
43	Precertification for Green Building from Indian Green Building Council & other recognized institutes (if applicable)	Building not proposed for Green Certification	NA	NA
44	Court Order (if applicable)	NA	NA	NA
45	Other approvals (if	NA	NA	NA

any)			
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Declaration

I hereby declare that no work has been initiated for the said project.

Date:-

Name & Signature

Of the project proponent

AM Kante



Name & Signature

of the consultant



Summary of Project Proposals

1	Plot area	21,330 sq m.																													
2	Total built up area	77,889.82 sq m.																													
3	FSI consumed	38,207.33 sq m.																													
4	Nos. of building	<table border="1"> <tr> <td colspan="3">No. of buildings: 7 nos.</td> </tr> <tr> <td colspan="3">5 Residential Buildings</td> </tr> <tr> <td>T1</td> <td></td> <td>G+15</td> </tr> <tr> <td>T2</td> <td></td> <td>G+21</td> </tr> <tr> <td>T3</td> <td></td> <td>G+21</td> </tr> <tr> <td>T4</td> <td></td> <td>G+26</td> </tr> <tr> <td>T5</td> <td></td> <td>G+27</td> </tr> <tr> <td colspan="2">1 Convenient Shopping and service apartment</td> <td>G+5</td> </tr> <tr> <td colspan="2">1 Club house</td> <td>G+2</td> </tr> </table>			No. of buildings: 7 nos.			5 Residential Buildings			T1		G+15	T2		G+21	T3		G+21	T4		G+26	T5		G+27	1 Convenient Shopping and service apartment		G+5	1 Club house		G+2
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6	Area and nos. of the basement	2 nos. & 19,669.42 sq.m		
7	Area and nos. of podium	NA		
8	Area of amenity space	1177.21 sq m.		
9	Nos. of phases for project execution	2 phases		
10	Expected nos. of residents /users	2274		



INTERNATIONAL BIOTECH PARK

International Biotech Park Limited

Genesis Square, Ground Floor, Plot No. 15 International Biotech Park, Rajiv Gandhi Infotech
Biotech Park Phase 2, Hinjewadi, Pune 411057. Phone +91 20 67903900

10th October 2012

The Member Secretary
Maharashtra State Level Expert Appraisal Committee (SLEAC)
15th floor, New Administration Buildings,
Mantralaya, Mumbai

Subject: Submission of compliance in respect of Residential Development on Plot 17 in International Biotech Park Ltd; at Rajiv Gandhi IT/BT Park, Phase II, Hinjewadi, MIDC, Pune.

Ref: 60th SEAC Agenda, Item No.32; dated 28th August 2012

Respected Sir,

We are grateful to Hon. Committee for the patient hearing and recommending the proposal for grant of Environmental Clearance. As desired we are submitting herewith the compliance of directions given by the Hon. Committee as under:

1. The Chief Fire Officer has issued the height NOC for 70 mtrs and same is attached herewith (Annexure I). We hereby undertake to construct above 70 mts only after obtaining the NOC from Chief Fire Officer.
2. The **consent** for required quantity of water from the competent Authority i.e MIDC has been obtained and attached herewith (Annexure II).
3. Detailed water balance for dry and wet season is attached (Annexure III).
4. The number of Lifts have been calculated as per the NBC norms, the detailed calculations are attached herewith (Annexure IV).
5. We are submitting the point wise compliance to ECBC guidelines herewith (Annexure V)
6. We have increased the O&M of EMP and attached herewith the revised EMP (Annexure VI)
7. Aviation height NOC in Pune is given by Indian Air force from their Delhi office. IAF has already given NOC for height of 100 mtrs to residential projects within our vicinity. We have already submitted our application and a copy of the same is enclosed herewith as

Regd. Office: 5th Floor, Metropolitan Building, Block E, Bandra Kurla Complex, Bandra (East),
Mumbai 400051 Phone: + 91 22 6747 9999, Fax: +91 22 6677 2575 www.tcgre.com

Annexure VII. We hereby undertake to construct above 70 mts only after obtaining the NOC from Indian Air Force.

8. We commit to plant 252 nos. of new trees on ground and retain 13 nos of existing trees as required. We are enclosing herewith the green belt development plan on ground and podium with trees species marked in different colour as Annexure VIII. Also, we are submitting herewith tree transplantation plan with details of species age with their height and location as Annexure IX.
9. As desired; we are submitting herewith the details of plantation on top of stilt podium (1000) plants as Annexure X. We commit to avoid monoculture, uniform plantation and shall use only local species. Also we agree to restrict the number of palm trees and minimize the horticulture species like Coconut, Amla, Mango trees.

We hope that the above meets your satisfaction and request you to grant us the Environmental Clearance at the earliest and oblige.

Thanking you,

Yours Faithfully,
For International Biotech Park Ltd;


Authorized Signatory

