Minutes of the 1st Goa State Expert Appraisal Committee (Goa-SEAC) meeting held on 5th January 2011 at 10.00 a.m. in the Conference Room of the Goa State Pollution Control Board (GSPCB), Patto, Panaji.

The first meeting of the Goa-SEAC was held on 5th January 2011 at the Conference room of the GSPCB under the Chairmanship of Dr. S. P. Fondekar, Chairman, Goa-SEAC. The list of members is annexed at "Annexure – 1", while the list of Project Proponents (PP) who made the presentation on the respective project proposal is annexed at "Annexure – 2".

At the outset, Chairman, Goa-SEAC welcomed and complemented all the members for attending the first meeting. Subsequently and with due permission from the Chairman, Dr. Mohan R. Girap, Secretary, Goa-SEAC requested all the members to introduce themselves as the Committee is officially meeting for the first time since it has been notified by the Ministry of Environment & Forests (MoEF) in April 2010. Further, he appraised the members on two important issues namely – (a) salient features of the Environment Impact Assessment (EIA) Notification, 2006 and the mandate as well as objectives for the constitution of the State Environment Impact Assessment Authority (SEIAA) & State Expert Appraisal Committee (SEAC) in respective States and (b) Modus operandi to scrutinize project proposal seeking prior Environmental Clearance (EC) for construction-related projects, with the help of powerpoint presentations *(.ppt*). He also informed that the Goa-SEAC, currently being operated from the O/o the Department of Science, Technology & Environment (DST&E), Saligao, has received seven proposals (07) from various project proponents which has been 'screened' (in the absence of issuance of any guidelines, till date, by the MoEF as regard to its sub-categorization into B1 and B2) under category 8(a) (B2) – i.e. Building and Construction projects with built-up area ≥ 20000 sq. m. and < 1,50,000 sq. m.

The details of the proposals received are as under:-

1. Goa Cricket Association (GCA) for the proposed construction of international cricket stadium in Acoi village near Thivim, Bardez taluka, North Goa.

2. M/s Alcon Constructions (Goa) Pvt. Ltd., Panaji for the proposed construction of 250-bedded Hospital-cum-hotel in Taleigao, Tiswadi taluka, North Goa.

3. M/s Rockfirst Real Estate Ltd., Mumbai for the proposed construction of residential apartment in Reis-Magos, Alto-Betim, Bardez taluka, North Goa.

4. M/s Nitin Developers Pvt. Ltd., Panaji for the proposed extension of a construction of residential complex in Socorro village, Bardez taluka, North Goa.

5. M/s Buildmore Infrastructure (India) Pvt. Ltd., Panaji for the proposed residential-cum-commercial complex in Khorlim village near Mapusa, Bardez taluka, North Goa.

6. M/s Gera Developments Pvt. Ltd., Pune for the proposed construction of premium housing and commercial development in Khandola village, Ponda taluka, North Goa.

7. M/s K. Raheja Universal Pvt. Ltd., Mumbai for the proposed construction of residential complex in Carmona village, Salcete taluka, South Goa.

Further, Chairman, Goa-SEAC requested respective Project Proponents to make presentation in response to their application seeking prior EC for the proposed construction activity / developmental project. Subsequently, based on the clarification sought from respective project proponents vis-à-vis detailed in-depth deliberations on all the project activities, independently, and also taking into account overall picture at the project site during site-inspection, following common recommendations are suggested:

1. Nutrient-rich top soil excavated during the construction phase be separately dumped/stored within the project area and be utilized during landscape development instead of using the same as filling material/reclamation. Accordingly, PP should estimate approximate tonnage / volume of top soil required to be excavated along with the plan indicating the location where such topsoil is proposed to be stockpiled as well as indicate/furnish proposed plan for its utilization towards landscaping.

2. The PP should use Ready-Mixed Concrete (RMC) to minimize air / water / land pollution and water usage during the construction phase.

3. The Project Proponent (PP) should necessarily explore the possibility of energy conservation by tapping solar-based or hybrid energy sources towards power requirement.

4. PP should adopt roof-top rainwater harvesting / conservation measures in the form of storing the harvested water so as to optimally utilize the water availability by constructing sumps for collection of rainwater or by collecting water in large polythene tanks thereby saving on utilization of tap water. Accordingly, PP should furnish approximate quantity of the water proposed to be stored / conserved which should be proportionate with the available rainfall within the developmental area. This should be in addition to structures, proposed if any, namely recharge-pits which would recharge the groundwater aquifers. Thus, PP should submit a plan demarcating the areas for water storage / bore well location & groundwater recharge structures / STP installation, etc.

5. PP should make provision for corpus fund for post-project operation and maintenance (O & M), by establishing a registered society / association so as to make maintenance activity self-sustainable.

6. As a Corporate Social Responsibility (CSR), the PP should establish / assist in establishing a non-project based infrastructure facility for nearby society / community / local authority and set-up a precedent for other competitors so as to achieve bottom-top approach.

7. PP should prioritize the issues related to health and hygiene in complying with the matters related to waste disposal & treatment / air & water pollution / waste-water management.

8. PP should not disturb the natural drainage and as far as possible maintain the original topography while designing for landscape development by planting local site-specific plant species and which are not alien to the local environment. No any varieties of acacia be used either as avenue plantations or as live-fencing.

9. PP should clarify any issue related to public objections, if any, and should not conceal the scientific facts in light of the proposed developmental activity vis-à-vis its landuse categorization/zoning.

10. PP should also submit Half-yearly compliance report(s) in hard as well as soft copy format to the O/o the Goa-SEAC for the period upto project completion so as to enable project monitoring during the construction phase.

Project-wise comments are listed as under:-

A. **Goa Cricket Association (GCA)** has proposed to construct international cricket stadium in 32 acres (i.e. 1,30,328 sq. m.) of land in Acoi village near Thivim in Bardez taluka of North Goa district.

Location details – Survey Nos. 404P, 403/1P, 405/P, 408/P431/1P, 432/2P, 431/3 to 29, 431/30P, 432/2P, 432/2 to 20, 430/1A, 430/1A-12, 430/1A1, 430/1B, 430/1

Total built-up area – 45,087 sq. m. (about 35%)

Total parking area – 24,911 sq. m.

Proposed ground coverage – 32,183 sq. m. (22%)

Total green area – 1,00,352.56 sq. m.(77%)

Estimated cost – 160 crores

Seating capacity – 46, 575 seats

Total parking (open and enclosed) – 668 cars, 198 two-wheelers.

Water requirement – 1221 KLD – during Games
493 KLD – during normal days – to be provided through PWD (PHE) as well as bore wells.

Total waste-water generated –1050 KLD to be treated using 1260 KLD Sewage Treatment Plant (STP) working on SAFF (Submerged Aerated Fixed Film) technology which will generate 840 KLD of treated water to be used for flushing and landscape.
Rainwater harvesting (RWH) initiative – (1) 32 rainwater harvesting pits are proposed for artificial rainwater recharge. (2) Desilting tanks and Recharge wells are proposed.

Power requirement – 3223 KVA to be sourced through Electricity Department and is supported with 3 DG sets of 1250 KVA each capacity are proposed.

Solid waste generated – 6835 kg./day (during games)
- 963 kg/day (during normal days)

The Committee observed that -

1. The importance as well as priority objective of constructing another stadium in Thivim (North Goa), in addition to one at Fatorda (South Goa), was deliberated in detail. Accordingly, the modus operandi to upgrade / modify the existing facility at Fatorda stadium was put forth so as to minimize the financial liability, resource utilization & its limitations, post-project management, etc., keeping in view the limited utility (i.e. 3 – 4 matches a year) of the proposed facility.

2. The matter related to utilization of the stadium/facility during normal periods (i.e. non-game periods) was also discussed in light of the investment of huge capital cost, project maintenance vis-a-vis corporate-social responsibility / community entrepreneurship initiatives, etc.

3. It is informed that the matter pertaining the “issuance of approval for diversion of forest land” to the Directorate of Sports and Youth Affairs granted under the Forest (Conservation) act, 1980 has been stayed by the Ministry of Environment & Forests (MoEF) pursuant to Writ Petition No. 321/2010 and PIL W. P. No. 14/2010 filed in the Hon’ble High Court of Goa at Bombay by M/s Goa Foundation.

4. The possibility of widening the State Highway – the only approach road to the proposed project site be taken on priority so as not to disturb daily vehicular movement. Further, an alternate exit-road / secondary road need to

be constructed along the north-east periphery of the plot boundary to minimize traffic congestion.

5. Geotechnical soil analysis may please be carried out to ascertain the soil characteristics as well as groundwater status and its recharge potential. It is not advisable to solely opt for recharging of groundwater through recharge-pits, instead make a provision for optimum utilization/storage of rainwater to be used in fair-weather season.

6. Location-specific details of the proposed bore well as well as 32 numbers of rainwater harvesting pits, superimposed on the contour map of the proposed plot area, be furnished.

7. PP should make a provision for exclusive fire-escape routes / staircase to avoid stampede during such eventualities. The PP should submit 'Stability' as well as 'Fire Safety' Certificates as per the conceptual plan proposed.

8. It is advisable to construct composting pits within the project site to treat the biodegradable waste – bio-composting technique and utilize the manure to maintain the green-field area.

9. As far as possible, Sodium Hypochloride treatment proposed for 'Chlorination' during the tertiary treatment of raw wastewater should be avoided.

Comment – In response to sr. no. (3) above, the proposal may be considered subject to compliance to the High Court directives in the matter related to aforesaid PIL and/or MoEF response in the matter. Further, PP may be requested to comply with other observation as mentioned above.

B. **M/s Alcon Constructions (Goa) Pvt. Ltd**., has proposed to construct a 250-bedded hospital-cum-hotel (42 rooms) comprising of G + 5 upper floors and 1 basement in 11,988.67 sq. m. of land in Taleigao village of Tiswadi taluka of North Goa district.
Location details – Survey Nos. 112/1, 112/1 (Part)

Total plot area – 11,988.67 sq. m. (effective – 10,245.53 sq. m.)

Total built-up area – 27,958.90 sq. m. (upto 5^{th} floor)

Proposed open space – 1,542.38 sq. m. (15.05%)

Proposed ground coverage – 3,618 sq. m. (35.32%)
Proposed FAR – 21,837.64 sq. m.

About 30,393 m^3 of earth would be removed/excavated.

Raft foundation is proposed with safe bearing capacity at site of 10 T/sq.mt.

Heating Ventilation Air Conditioning (HVAC) system is proposed.

Internal road with 10 m. width and parking space proposed for 420 nos. (*Details not mentioned*)

Intermediate STP with Moving Bed Bio-Reactor (MBBR) technology is proposed – part treated sewage to transfer to authorized STP to St. Inez – total treated sewage is 235 cmd, 209 cmd to be reused for gardening, flushing, AC-cooling, while 26 cmd to be disposed into municipal sewers.

Water requirement – 9 cmd (Construction) and 452 cmd (operation)

Total waste-water generated – 1.6 (Construction) 247 cmd (Operation)
60 trees are proposed to be planted.

Power requirement – 25 KW (Construction) sourced from Goa Electricity Dept.)

780 KW (Operation)
- Back-up power through diesel generator of 750 KVA.

Solid waste generated – 1 – 3 MT/d (Construction)
Operation phase - 63 kg/d – Biomedical
- 570 kg./d – domestic waste.
Organic Waste Converter (OWC) is proposed to be installed treat and dispose-off biodegradable waste.

The Committee observed that -

1. The priority / importance / objective of constructing proposed hospital in the vicinity of already existing hospital was discussed in light of its location which is very near to a St. Inez nallah as well as in close proximity to city's only sewage treatment plant.

2. The proposed land appears to be abandoned filled-up area (i.e. waste dumping site) and as such almost 5 to 6 m of top material is organic-rich fertile soil and should be utilized for landscaping development in non-construction areas.

3. The PP must ensure that the effluents / waste water in the adjoining St. Inez nallah should not infiltrate within the project site and contaminate the groundwater quality as E. Coli concentration and Fe content is reported to be higher in the bore-well water. Accordingly, PP should indicate the modus operandi / technological intervention to be adopted to tackle high bacteriological concentration in water, as it is likely to contaminate operation theatre (OT) and other sensitive zones. In addition, the PP should necessarily widen the approach road to the proposed site.

4. The proposed site, being very low-lying area, bears a sandy aquifer regime and as such, it is advisable to built individual sump rather than soak pits to treat waste-water effectively.

Comment – The proposal may be considered subject to submission of the undertaking in response to the compliance to afore-mentioned observations.

C. **M/s RockFirst Real Estate Ltd**., has proposed to construct residential apartment "Ashoka Beleza" comprising of G + 3 storied complex (A + B + C) in 29,120.13 sq. m. of land in Alto-Betim village of Bardez taluka in North Goa district.

Location details – Plot Nos. 136 to 154 of Survey Nos.57/1 of Reis-Magos village
Total Ground coverage area – 8,751 sq. m.
Green cover area – 20,368 sq. m.
Built-up area – 22,279.67 sq. m.
Total construction built-up area – 32,452.52 sq. m.

Total occupancy – 652 nos. (max.)

About 80,134 m^3 of earth would be removed / excavated.

Geotechnical soil investigation (enclosure – 1) as carried out through 17 boreholes with permanent benchmark of +50mt. No groundwater table was encountered.
Spread foundation is proposed at an average depth of 1.5 m. This foundation has a safe bearing capacity of 40 T/sq.mt. (with total settlement of 9 mm). California Bearing Ratio (CBR) of 6 is proposed for construction design. Retaining walls with weep holes with gravel filters are proposed.

Estimated cost – 125 crores.

Water requirement – During construction : 42 m^3/d
$12m^3$/d for workers from local authority
20 to 30 m^3/d for construction through tankers.
- During operation : 150 m^3/d
$60m^3$/d for domestic use

$30m^3$/d for flushing
$60m^3$/d for gardening

50 trees are proposed to be planted in lieu of 46 trees for which permission is sought.

Power requirement – 75 kVA (Construction) - from Goa Electricity Dept.
3828 KW (from GED) during Operation.
Back-up power through four diesel generator 2 nos. of 750 kVA and 2 nos. of 500 kVA.

Solid waste generated – 291 kg/d – (Dry garbage – 89 kg. & Wet garbage – 203 kg. / d)
Vessel composting is proposed to manage wet garbage (i.e. biodegradable). STP using Moving Bed Bio Reactor (MBBR) technology is proposed to be provided. (Technical details of the proposed STP may please be furnished). Dry sludge to be used as manure for plants.

RWH is proposed.

EMP for HW management is enclosed as Enclosure – 3.

Disaster Management Plan enclosed as Enclosure - 4

The Committee observed that -

1. The proposed project "A" appears to be an extension of the ongoing work, being developed, within two adjacent plots namely – 'B' and 'C' and is seeking prior Environmental Clearance (EC) from the Goa-SEIAA, as the built-up area, taken together, exceeds 20,000 sq. m. as per the EIA Notification, 2006.

2. Almost 30% of the total plot area has been developed and as a result, appreciable proportion of naturally grown vegetation has been lost along the hill-slopes.

3. It is advisable to re-design the rainwater-storage tanks proposed in the already developed area (i.e. B & C portion) so as to account for suitable water storage, as one of the rainwater harvesting measures.

4. The PP, during the presentation has ensured that as a matter of Corporate Social Responsibility (CSR), it would set-up sufficient numbers of composting units in Reis-Magos village to treat and dispose-off biodegradable waste. This should be done in close association with the village community / panchayats and should be collectively managed.

Comment – As appreciable green cover has already been lost owing to the developmental activity / construction on 'B' and 'C' plots, may like to take suitable decision so as to consider recommendation for the developmental activity on "A" plot, which is in contiguous to 'B' and 'C'. <u>However, the Committee defers the project proposal</u>.

D. **M/s Nitin Developers Pvt. Ltd.,** proposes to construct residential complex in 22,896.38 sq. m. of land in Soccorro village in Bardez taluka of North Goa district.

Location details – Survey Nos. 402/2, 404/5 and 402/2-C of Soccorro village

FAR (permissible) – 18,317.10 sq. m.
(proposed) – 17,072.69 sq. m.

Coverage (permissible) – 9,124.15 sq. m.
(proposed) – 7,048.11 sq. m.

Total parking provided for 275 cars

Total occupancy (optimum) – 746 persons

Water requirement – About 125 m^3 per day (sump of 1,00,000 liters capacity is proposed) to be tapped from P.W.D.

Total waste-water generated – 98,000 liters per day. Sewage Treatment Plant (STP) is to be provided with generation of sewage sludge of 1.5 m^3 per day - Part of this is proposed to be re-circulated and part to be disposed-off to STP through transport trucks.

Total solid waste generated – 500 kgs. per day (max.)
RWH is proposed for both, as storage (02 tanks) as well as groundwater recharge (02 pits). Further, it is to be integrated with storm-water drainage. Wells existing on site to be used for plantations and would be recharged.

Power requirement – Not provided. However, CFL to be utilized. Solar energy for garden lights and water heating system proposed.

The Committee observed that -

1. The PP is seeking prior EC from the Goa-SEIAA for the extension of the ongoing construction / development as the built-up area, with the proposed extension, exceeds 20,000 sq. m. as per the EIA Notification, 2006.

2. Almost 40% of the total plot area has been developed and as a result, appreciable proportion of naturally grown vegetation has been lost along the moderate to steep sloping hill-slopes thereby disturbing the natural drainage, green cover.

3. The proposed extension would further degrade the ecological set-up of the area as the proposed construction-activity would invariably require cutting of trees (loss of green cover) hill-slope cutting (slope instability and disturbance to natural drainage).

4. There exists a nallah along the northern boundary of the plot which may get affected / flooded / silted / diverted during monsoon owing to large-scale storm-water movement / soil erosion.

Comment – As appreciable green cover has already been lost owing to the developmental activity / construction on already developed plot (part), may like to take suitable decision while considering the proposed extension activity. However, the Committee defers the project proposal.

E. **M/s Buildmore Infrastructure India Pvt. Ltd**., proposes to construct residential building-cum-commercial complex in 9,416 sq. m. of land in Khorlim village in Bardez taluka of North Goa district.

Location details – Survey Nos. 5/1 and 5/2 of P. T. sheet no. 144 of Khorlim village.

Total built-up area – 27,267.49 sq. m.

Proposed open space – 1521 sq. m. (more than 15%)

Proposed coverage – 3185 sq. m. (less than 40%)

FAR consumed – 18,826 sq. m.

Expected total occupancy – 1509 (combined)

Geotechnical soil investigation as carried out through 03 boreholes (max. depth – 12 m.). Groundwater is encountered at about 2.5 m. below ground level.

About 16,000 m^3 of earth would be removed / excavated.

Spread foundation is proposed at an average depth of 1.5 m. – 2.5 m. with a net allowable bearing capacity of 17 to 35T/sq.m. (with max. settlement between 30 mm – 70 mm.). Alternatively, Raft foundation is proposed at 1.5 m. depth with net allowable bearing capacity of 12T/sq. m.

Heating Ventilation Air Conditioning (HVAC) system is proposed.

Water requirement – During Construction phase - 9 cmd (2 for domestic use and 7 for
construction purpose)
During operational phase - 147 cmd (79.6 through PWD supply, 67.4 through recycled water)

Total waste-water generated – 122 cmd. Out of which 117 cmd is expected to be generated as treated water. Sewage Treatm,ent Plant (STP) of treating capacity of 130 cmd based on Moving Bed Bio-Reactor (MBBR) technology is proposed – Treated water (about 67.4 cmd) to be utilized for landscaping and flushing and remaining (49.8 cmd) to be discharged into municipal sewer. STP would generate about 5 kg./day of sludge, which is proposed to be landfilled.

Power requirement (to be sourced from Goa Electricity Dept.)
– Construction phase – 200 KVA
- Operation phase – 5 KVA
Back-up power through DG sets of 250 KVA capacity.

Solid waste generated – 1 – 3 MT./day (During construction)
- 491 kg/day (on Operation)
Organic Waste Converter (OWC) is proposed for biodegradable waste.

The Committee observed that -

1. The PP should opt for additional provision towards storage of optimum quantity of rainwater to be utilized during fair-weather season, considering the post-project usage of water.

2. The bore well drilled to carry out geotechnical soil investigation be recharged suitably and be utilized in case of need-based urgency.

Comment – The proposal may be considered subject to submission of the undertaking in response to the compliance to afore-mentioned observations. The Committee recommends the proposal.

F. **M/s Gera Developments Pvt. Ltd**., proposes to carry out premium housing and commercial development in net plot area of 1,21,383.27 sq. m. in village Khandola in Ponda taluka of North Goa district.

Location details – Survey No. 33 of village Khandola.

Proposed open space – 41,949.52 sq. m.
Proposed coverage – 22,497.16 sq. m. (18.53%)
FAR consumed – 0.69% (permissible is 0.80%)
Permissible FSI – 97,106.62 sq. m. (80%)

Expected total occupancy – About 750 (Annexure – IV)
Parking provided for 1013 vehicles.

Out of 414 trees existing on site and project proposes to maintain the maximum number.

Geotechnical investigation was carried out by College of Engineering, Pune and the inference was made through 16 boreholes (max. depth – 10 m.). No Groundwater is encountered upto the depth of 10 m. below GL.

Isolated type of foundation is proposed at an average depth of 2.5 m. below GL with a net allowable bearing capacity of 27 T/sq.mt. (with max. settlement upto 25 mm).

Water requirement – During Construction phase – 50 cmd (5 cmd for domestic & 45 cmd for construction purpose)

- During operational phase - 212 cmd (90 cmd through PWD supply, 122 cmd through recycled water)

There is a single seasonal nallah passing through the proposed site.

Total waste-water generated – about 4 cmd during construction phase.

STP of treating capacity of 130 cmd based with SAFF technology is proposed – Treated water (about 122 cmd) to be utilized for landscaping and flushing. Dual plumbing system is proposed for PWD water supply and use of treated waste-water.

The project proponent proposes RWH for effective recharge of GW through construction of

1. Pond with recharge bore of 45,000 liters capacity
2. Tank of 70,000 liters capacity (Zone C) and 66,000 liters for Zone F.

Power requirement (to be sourced from Goa Electricity Dept.)

Construction phase – 50 KW
Operation phase – 2037 KVA

Back-up power through two DG sets of 40 KVA and 82.5 KVA capacities.

Energy efficient electrical and Heating Ventilation Air Conditioning (HVAC) system is proposed towards energy conservation.

Solid waste generated – 1 – 3 MT./day (during Construction)
1468 kg/day (on Operation) – to be vermicomposted.

About 10 kg/day sludge generated from STP is to be composted on-site.

Environment Management Plan (EMP) enclosed as Annexure VI.

The Committee observed that -

1. The PP proposes to develop the project site in three phases (Phase – I, II and III). However, currently seeking prior Environmental Clearance (EC) for constructional activity for Phase-I and II as combined. Phase-III is proposed to be developed later in light of the amendment to be made in the permissible FAR, to be considered by the TCP.

2. Members opined that the project site needs to be visited for understanding the on-site land use/cover vis-à-vis the proposed developmental activity.

3. The PP although, has submitted the 'Sanad', however, it needs to submit the sale deed / power of attorney indicating the ownership status of the said plot area.

4. Geotechnical report (Annexure – III) enclosed with the proposal does not mention about (a) bore hole location and (b) soil profile. As such, it needs to be re-submitted, preferably superimposed on suitable contour map of the proposed plot area.

5. Contour map of the area provided is not to a suitable scale in light of the effective gradient and contour interval vis-à-vis land development.

6. Total waste-water generation during the operation phase needs to be indicated along with the modus operandi to treat / dispose-off the same.

7. The PP should opt for additional provision towards storage of optimum quantity of rainwater to be utilized during fair-weather season, considering the post-project

usage of water. Accordingly, PP should indicate the site-specific locations of storage tanks, recharge pond, existing water body, as applicable, without affecting the natural drainage / storm water flow.

Comment – The proposal to develop the plot as Phase-I and II only may be considered subject to the compliance to the afore-mentioned observations. The Committee recommends the proposal only for the proposed activity in Phase-I & II.

G. **M/s K. Raheja Universal Pvt. Ltd.,** proposes to construct a residential project "Raheja Chrysalis" in a plot area of 88,868 sq. m. in Carmona village of Salcete taluka of South Goa district.

Location details: Survey Nos. 64/1 and 67/1 of Carmona village.

Effective plot area – 87,250 sq. m.
Built-up area – 35, 629 sq. m.
Total construction area – 57,006 sq. m.
Proposed open space – 47,478 sq. m. (about 54%)

Expected total occupancy – About 262 + 511 persons from commercial shops

Parking provided for 25 Equivalent Car Space (ECS) on surface (i.e. open parking) and 35 ECS in garage (i.e. covered parking).

The proposed plot has a maximum elevation difference of 6 m. with no natural watercourse passing through the site. Groundwater is encountered at a depth of 3 – 5 m.

Excavation will be carried out for foundation of buildings and one basement.

Water requirement – 268 m^3 (216 – fresh water & 52 recycled water) per day to be sourced through municipal supply. (*provisional NOC has been issued by PWD, Margao*)

Total waste-water generated – about 58 m^3 per day which is proposed to be transferred to STP of 65 KLD capacity (output is expected to be 52 KLD – 28 KLD for flushing and 24 KLD for green area) to be installed on -site. Dual plumbing system is proposed for PWD water supply and use of treated waste-water. Sludge to be used as manure for green area development.
Solid waste generated – 213 kg. / day (Construction)
(on Operation) – 105 kg./ day + 108 kg./day (variable) from visitors and club entry – comprising of organic / inorganic waste.

Power requirement is about 1247 KW to be sourced from Goa Electricity Dept. Back-up power through DG set (05 nos.) of total capacity 1867.5 KVA is proposed. Air-cooling of the DG sets are proposed instead of traditional water cooling.

Solar water heating system is proposed to be provided for hot-water supply. Feasibility for installation of solar photovoltaic cells for street lighting is proposed to be assessed.

Central air-conditioning system using water-cooled centrifugal chillers is proposed to be installed.

Storm Water Management Plan (SWMP) is proposed to be developed.

Environment Management Plan (EMP) enclosed.

The Committee observed that -

1. NE portion of the proposed plot area has been classified as No Development Zone (NDZ) and as such, top soil excavated from the remaining plot, during construction, be utilized for proposed landscape development (i.e. landscaping) within the NDZ area.

2. Members opined that the project site needs to be visited for understanding the on-site land use/cover vis-à-vis the proposed developmental activity as well as CRZ applicability.

3. The PP should submit the geotechnical soil analysis report so as to understand the soil profile & its characteristics, foundation details, hydro-geological status.

4. It is advisable that the water / power requirement, generation of optimum solid waste / sewage / waste water as well as methodology to be adopted to treat/dispose-off be indicated separately as (a) during construction, including excavation debris, if any and (b) on operationalization of the project.

5. The PP should submit the details of the Sewage Treatment Plant (STP) proposed to be installed along with the methodology to be adopted to teat wet garbage on-site

6. Total waste-water generation during the operation phase needs to be indicated along with the modus operandi to treat / dispose-off the same.

7. The PP should opt for additional provision towards storage of optimum quantity of rainwater to be utilized during fair-weather season, considering the post-project usage of water.

Comment – The proposal may be considered to issue prior Environmental Clearance (EC) subject to submission of the compliance to the afore-mentioned observations. The Committee recommends the proposal.

The meeting ended with vote of thanks to the Chair.

Mr. S. M. Sawant

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Mrs. A. A. B. Barreto

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Dr. A. G. Dessai

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Dr. Savita S. Kerkar

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Dr. Purnanand Sawoikar

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Mr. Antonio Jaimes Afonso

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Dr. Mohan R. Girap
Secretary, Goa-SEAC

Dr. S. P. Fondekar
Chairman, Goa-SEAC

Date: 20th January 2011
Place: Saligao, Panaji.

ANNEXURE – 1

List of members who attended the first Goa-SEAC meeting

1. Dr. S. P. Fondekar, Ex-Dy. Director, NIO, D'paula. – **Chairman**
2. Prof. A. G. Dessai, Head, Dept. of Earth Sciences, Goa University, - *Member*
3. Mr. Sadanand M. Rao Sawant, R/o Porvorim. - *Member*
4. Dr. Purnanand P. Savoikar, Head, Dept. of Civil Eng., Govt. Polytechnic, Mayem. - *Member*
5. Dr. (Mrs.) Savita S. Kerkar, Reader, Dept. of Marine Biotechnology, Goa University - *Member*
6. Prof. Antonio Jaime C. Afonso, R/o St. Istevam. - *Member*
7. Mrs. A. A. B. Barreto, Ex-Head, Dept. of Food Technology, Govt. Polytechnic, Panaji. - *Member*
8. Dr. Mohan R. Girap, Proj. Sci. (Geology), Goa State Council of Science & Technology (GSCST), Saligao. - *Secretary*

ANNEXURE – 2

List of Project Proponents (PP) / participants at the first Goa-SEAC meeting

Sr. No.	Name of the participant	Particulars of the Project Proponent	Particulars of the Project Consultant	Project details
1	Mr. Vinaykumar Sawant (*Consultant*)	Goa Cricket Association	M/s Sawant Associates, Panaji.	International cricket stadium at Acoi village in Thivim, Bardez taluka.
2	Mr. Ashok Kadali (*Consultant*)	M/s Alcon Constructions (Goa) Pvt. Ltd.,	M/s Aditya Environmental Services Pvt. Ltd., Mumbai	Hospital-cum-hotel at St. Inez, Tiswadi taluka.
3	Mrs. Deepa Tamhane-Karnik (*Consultant*)	M/s RockFirst Real Estate Ltd., Mumbai,	M/s Ultra-Tech – Consultants, Pune	Residential appartments at Alto-Batim, Bardez taluka.
4	Mr.Rohan Gambit *(Project Proponent)*	M/s Buildmore Infrastructure India,	M/s Aditya Environmental Services Pvt. Ltd., Mumbai.	Commercial-cum-residential complex at Khorlim, Bardez taluka
5	Ms. Sunaina Gera *(Project Proponent)*	M/s Gera Developers Pvt. Ltd., Pune,		Premium Housing and commercial development at Khandola village, Ponda taluka
6	Mr. Sunil Dhond Mr. Kamlesh Rajani Mr. K. P. Das Mr. R. L. Meena *(Consultant)*	M/s Raheja Universal, Mumbai,	M/s J. M. EnviroNet (P) Ltd., Mumbai	Residential complex at Carmona village, Salcete taluka.