9/12/17

Validity expires on 28/11/2024

सत्यमेव जयते

Proceedings of the State Environment Impact Assessment Authority Kerala

Present: Prof. (Dr.) K.P. Joy, Chairman, Dr. J. Subhashini, Member & Sri. James Varghese I.A.S Member Secretary.

Sub: SEIAA- Environmental Clearance for the proposed INKID MSME of building Project in Sy.No. 266/5 at Angamaly Village and Aluva Taluk, Ernakulam District, Kerala by Sri. Prem Kumar Sankara Panicker, Chief Engineer, for M/s INKID LTD.- Granted-Orders issued

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State Environment Impact Assessment Authority, Kerala

No. 1093/EC/ SEIAA/KL/2017 **dated, Thiruvananthapuram 29/11/2017**

Ref: 1. Application dated 27-02-2017 from Mr. Prem Kumar Sankara Panickar C E,(Projects) M/s INKID Limited, Door No. 7/473ZA – 5 & 6,2nd Floor, Ajiyal Complex Kakkanad, Cochin, Pin: 682030

2. Minutes of the 71st meeting of SEAC held on 20th & 21st April 2017.
3. Minutes of the 73rd meeting of SEAC held on 30th and 31st May 2017.
4. Minutes of the 72nd meeting of SEIAA held on 01h August 2017
5. Affidavit received on 31/10/2017 from Sri. Prem Sankara Panicker C E projects, INKID Ltd Kakkanad , Cochin

ENVIRONMENTAL CLEARANCE NO.97/2017

Sri. Prem Kumar Sankara Panicker, Chief Engineer, for M/s INKID LTD.. Vide his application dated 27-02-2017 has sought Environmental Clearance under EIA Notification, 2006 for the proposed INKID MSME building Project in Sy.No. 266/5 at Angamaly Village and Aluva Taluk, Ernakulam District, Kerala It is interalia, noted that the project comes under the Category B, 8(a) of Schedule of EIA Notification 2006.

Details of the project as reported by the applicant are as follows;

Development of the proposed INKID MSME building Project in Sy. Nos 266/5 at Angamaly Village and Aluva Taluk, Ernakulam District, Kerala. The height of the proposed building is 35 m and the proposed to develop a total built-up area of about 81217.68 Sq. The proposed project site falls within Latitude 10°10'58.13"N to Longitude 76°22'17.96"E. The proposed plot is located to the south west of TELK, Angamaly (on NH-47) within the INKEL compound. INKEL Tower I & II dedicated for green industries that already exist in this compound. The new infrastructure is proposed to be constructed to the north of the existing INKEL Tower I.

BASIC INFORMATION OF BUILDING PROJECT

(To be filled in by the Project Proponent)

PART A

1.	File No	F. No.- 1093/EC/SEIAA/2017	
2.	Name /Title of the project	Prior Environmental Clearance For The Proposed Building Space For Micro, Small & Medium Enterprises (MSME) By INKID At Angamaly	
3.	Name and address of project proponent.	Mr. Prem Kumar Sankara Panickar INKID Limited, Door No. 7/473ZA – 5 & 6, 2nd Floor, Ajiyal Complex, Kakkanad, Cochin, Pin: 682030	
4.	Owner of the land	INKEL-KSIDC Projects Limited	Angamaly
5.	Survey Nos. District/Taluk/ and Village etc.	Location	266/5
		Plot/Survey/Khasra No.	Angamaly
		Village	Aluva
		Tehsil	Ernakulam
		District	Kerala
		State	Angamaly
6.	Date of submission of Application	27/02/2017	
7.	Total Built up Area	81217.68 Sq. Mt	
8.	No of apartments	NA	
9.	Height of the building	35.34 m	

10.	Brief description of the project.	INKID (INKEL & KSIDC joint venture) proposed to develop an infrastructure facility for leasing out to non-polluting Green and White industries (MSME). The proposed plot is located to the south west of TELK, Angamaly (on NH-47) within the INKEL compound.
11.	Is it a new Project or expansion/modification of an existing project?	New
12.	Details of the Project Cost	126.96 Core
13.	Distance from nearby habitation	The proposed plot is located to the south west of Transformers and Electricals Kerala Ltd (TELK), Angamaly (on NH-47) within the INKEL compound. The proposed plot for the development is an declared Industrial Area by Govt. of Kerala via GO(P) No 130/2011/ID dated 23rd May 2011
14.	Distance from nearby forest, if applicable	NA
15.	Distance from protected area, Wildlife Sanctuary, National Park etc.	NA
16.	Distance from nearby streams/rivers/ National Highway Roads and Airport	The proposed plot for the development is connected to NH 47 through a 12 m dedicated road constructed in line with the approval from Government of Kerala with direct access to NH 47 for entry and exit to INKEL compound.
17.	Is ESA applicable? If so distance from ESA limit	Nil
Impact on Water		
18.	Details of water requirement per day in KLD	• Domestic water demand -163 KLD (at maximum occupancy) • Irrigation demand -59 KLD (treated water will be used)
19.	Water source/sources.	Bore Well
20.	Details of water requirements met from water	• A rain water harvesting cum percolation pond of capacity 17 lakh liters is already constructed at the North -West side of the plot in order to capture the storm water so that the surface

	harvesting.	runoff water shall be directed into that. • In addition, the plot shall have exclusive rainwater harvesting cum percolation tank (5 Nos) for harvesting rain water from the roof top. The over flow from the RWH tank will be also connected to this RWH pond • Treated water available from STP will be reused for landscaping
21.	What are the impacts of the proposal on the ground water?	As per the "*Ground water information booklet of Ernakulam District*" published by Central Ground Water Board during 2013, the Net Annual ground water availability of Angamaly area is 51.18 MCM (Million Cubic Meter) and this area is categorized as "safe" in concern of future GW development.
	Waste Management	
22.	1.Explain the facilities for Liquid waste Management	The liquid waste generated will be treated in proposed STP and the treated water meeting the standards as specified in IS 10500 will reused for flushing and gardening. Since the excess treated water after reuse is not expecting no incremental pollution load is anticipated.
	2.Solid Waste Management	The management of solid waste will be in compliance with municipal solid waste (management and handling) rules 2016 .The requirement for storage facilities and transportation will be based on the quantum of waste generated. **Segregation and storage of solid waste generated** The garbage will be segregated as • Biodegradable waste to be stored in green color bins • Recyclable waste in white bins • Other waste in black bins **Collection and Transportation** The organic waste generated shall be collected on a daily basis while the collection of the dry waste will be need based. These will be store in secondary storage area. **Sorting and recycling** The waste received at the secondary storage area has to be sorted into • Recyclable • Non-recyclable and inert waste. **Treatment and Disposal** • Recyclable waste and E waste to be sent to authorized parties' • Waste vegetables, uncooked food materials and non-veg waste to be sent for Bio degradation and slurry will be send

<table>
<tr><td></td><td></td><td>to STP.
• Other organic waste like dead leaves etc. can be sent for compositing the compost can be used for the gardening
• Non compostable non-recyclable waste may be sent for incineration
• Leftover cooked food will be discharge in the biogas plant
<u>Facilities proposed within the site for the disposal of the solid waste generated</u>
The facilities proposed within the site for the disposal of the solid waste generated are shown in Table
<table>
<tr><th>Sl. No</th><th>Type of facility</th><th>Number</th><th>Remark</th></tr>
<tr><td>1</td><td>Biogas Plant</td><td>1</td><td>As per requirement</td></tr>
<tr><td>2</td><td>Recycling waste store</td><td>1</td><td>As per requirement</td></tr>
<tr><td>3</td><td>Composting unit</td><td>1</td><td>As per requirement</td></tr>
</table>
</td></tr>
<tr><td></td><td>1.E-Waste Management</td><td>E waste generated will be stored and will be transferred to certified E waste disposing centers under the scope of each building operators</td></tr>
<tr><td></td><td>2.Facilities for Sewage Treatment Plant</td><td>A Sewage Treatment Plant (STP) is proposed in order to treat total sewage generated. The sewage and sullage generated from the various building units, and canteen are transported to the sewage treatment plant through sewage network. Outlet from the STP will be collected in the treated water collection tank for reuse.</td></tr>
<tr><td>23.</td><td>How much of the water requirement can be met from the recycling of treated waste water? (Facilities for liquid waste treatment)</td><td>Treated water will be used Irrigation demand (59 KLD) and rest will be recharged to ground</td></tr>
<tr><td>24.</td><td>What is the incremental pollution load from waste water generated from the proposed activities?</td><td>The total quantity sewage generated is 130 KLD .This will be treated in proposed STP and the treated water meeting the standards as specified in IS 10500 will reused for flushing and gardening. Since the excess treated water after reuse is not expecting no incremental pollution load is anticipated.</td></tr>
</table>

25.	How is the storm water from within the site managed?	Storm water generated from the entire plot will be diverted to the main rain water harvesting pond at the northern end of the plot and this will be used for ground water recharge.
26.	Willthe deployment of construction labourersparticularly in thepeak period lead to unsanitary conditions around the project site (Justify with proper explanation)	The construction workers would be accommodated offsite. They would be present only during the daytime. Sanitary toilets which is connected to sanitary septic tank and soak pit will be provided in the site and the labor camp.
27.	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)	During the construction period adequate no of toilets will be provided for male & female with adequate water supply. It would be a better option to provide portable toilets at the construction site and the night soil from these to be disposed through designated septic tanks at any place instead of constructing septic tanks at site. During the operational phase modular type STP of capacity 100 KLD with provision for augmentation will be provided for the proposed in the project. It is estimated that total waste water of an amount of 130 KLD will be generated under maximum occupancy condition and an amount of 104 KLD treated water with inland irrigation surface water standard is expecting, which will be reused for non-portable purpose (flushing, gardening etc.). STP of the type MBBR/SBR of sufficient capacity will be provided
28.	Give details of dual plumbing system if treated waste is used for flushing of toilets or any other use.	There would be separate lines for Drinking water and Non Drinking Water.
	Waste Management	
29.	Details of power requirement and	The source of electricity for this proposed building is Kerala State Electricity Board (KSEB).The following electrical

	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?	facilities have been proposed: • Power during construction: 30 kW/day (KSEB);temporary connection • Power during operation: Approx 5.5 MVA from nearby 110Kv station at Kaariyad • Power backup mechanism as per the requirement will be provided This is a standard building where space will be leased out to clients. The client has to do task lighting based on his requirements. Common spaces would be illuminated with LED or CFL. The prospective lessees would be advised to follow ECBC guidelines for energy efficiency. They will be encouraged to use CFC and HCFC free chillers. The standard design factory provides building space built as per NBC guidelines. Provisions are given for admitting daylight and skylight wherever possible. It is left to the leases to have their own requirements regarding lighting, ventilation and air conditioning. Clerestory windows are provided to give deep penetration of daylight. This will reduce lighting energy consumption during day time.
30.	What type of, and capacity of power back-up to you plan to provide?	It proposed to use DG back up of capacity 625 KVA
31.	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?	Plain float glass/toughened glass will provided. Also glass usage for more that 20% of the build-up area is limited.
32.	What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project	The building is designed for and intended to house non-polluting industries. Hence there is design limitation to incorporate passive solar features. Solar heating of building envelope is minimized by providing shading. Roof top solar panels of 50 KW capacity to meet power requirements of streetlights, internal common area lighting, and to some lighting requirements for industrial space.
33.	Does the layout of streets & buildings maximize the potential for solar	The building is designed for and intended to house non-polluting industries. Hence there is design limitation to incorporate passive solar features. Solar heating of building envelope is minimized by providing shading.

<table>
<tr><td></td><td>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</td><td>Roof top solar panels of 50 KW capacity to meet power requirements of streetlights, internal common area lighting, and to some lighting requirements for industrial space.</td></tr>
<tr><td>34.</td><td>Is the 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?</td><td>• Projections, shades and louvers would be provided to reduce direct solar heating. It is estimated that the proposed shading system saves 10-15 % of total energy conception and to admit airflow.
• Open area would be planted with trees so as to shade paved areas and external walls.
• Roofs will be provided with a layer of material with high solar reflectance and low thermal conductivity (Acrylic, silicone, or urethanes coatings) more over solar panels provided on the building top will also gave shade to roof.</td></tr>
<tr><td>35.</td><td>Do the structure use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details. Provide details of transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions? Are you using CFC and HCFC free chillers? Provide specifications.</td><td>No air conditioning is envisaged for the proposed building
<table><tr><th>Electrical Item with Details</th><th>Details</th></tr><tr><td>Transformer</td><td>Efficiency - 90%</td></tr><tr><td>Lighting</td><td>Target lighting will be provided ?</td></tr><tr><td>Air conditioning load assumption</td><td>Not provided</td></tr></table></td></tr>
</table>

<table>
<tr><td>36.</td><td>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?</td><td>The project site covers 50 percentages with footprints of buildings and roads which are likely to contribute to heat island effect. Building roof will be painted with white heat reflecting coating . Paved areas will be shaded by trees and would reduce heat island effect considerably .The following measures would be taken up to minimize the heat island effect:
• Open area would be planted with trees to shade paved areas and external walls.
• Roofs will be coated with a layer of material with high solar reflectance and low thermal conductivity (acrylic, silicone, and urethanes coatings)</td></tr>
<tr><td>37.</td><td>What are the thermal characteristics of the building envelope? (a) roof (b) external walls; and (c) fenestration? Give details of the materials used.</td><td>The thermal characteristics of the building materials provided is given below in Table
<table>
<tr><th>Sl. No</th><th>Item</th><th>Provided Building Material</th><th>Thermal Characteristics of Provided building Materials (U value in W/m^2°C)</th></tr>
<tr><td>1</td><td>Roof</td><td>Roofing Poured concrete 6” thk</td><td>0.75</td></tr>
<tr><td>2</td><td>External Wall</td><td>102mm brick with 13mm plaster, no insulation</td><td>1.37</td></tr>
<tr><td>3</td><td>Fenestration</td><td>Clear glass(Plain glass)</td><td>0.5</td></tr>
</table></td></tr>
<tr><td>38.</td><td>What is the rate of air non-conventional energy technologies are utilized in the overall energy consumption? Provide details of the renewable energy technologies used.</td><td>Roof top solar panels of 50 KW capacity to meet power requirements of streetlights, internal common area lighting, and to some lighting requirements for industrial space.</td></tr>
<tr><td>39.</td><td>Details of renewable energy</td><td>Roof top solar panels of 50 KW capacity to meet power requirements of streetlights, internal common area lighting, and</td></tr>
</table>

<table>
<tr><td></td><td>(non – conventional) used.</td><td>to some lighting requirements for industrial space.</td></tr>
<tr><td colspan="3">Impact on Air Environment</td></tr>
<tr><td>40.</td><td>What are the mitigation measures on generation of dust, smoke , odours, fumes or hazardous gases</td><td>Dust will be generated during construction phase and it may harmfully affect the activities of existing buildings within the plot depending on the proximity and wind direction at particular time. Temporary fencing with tall nets or tin sheets between the existing activity area and construction sites will be provided in order to eliminate above problem. This temporary fencing will also limit the transmission of odorous fumes, smoke etc from the vehicle during construction phase. The dust generation during construction phase will also be suppressed by spraying water at regular interval during dry season.
During the operational phase emission of smoke, dust etc. from the vehicle will be a problem which will be minimized by providing proper vegetative cover along parking area and circulation area.</td></tr>
<tr><td>41.</td><td>Details of internal traffic management of the site.</td><td>The movement and parking of vehicles within the campus will be restricted to parking zones close to the entry and exit points. Pedestrian and vehicle movements are prioritized in such a way that crossings are designed accordingly.</td></tr>
<tr><td>42.</td><td>Details of noise from traffic, machines and vibrator and mitigation measures</td><td>The proposed development will enhance the traffic noise and vibrations in the site surroundings. The significant sources for noise and vibration and migration measures proposed are presented in Table
<table>
<tr><td>Construction Phase</td><td>Noise would be generated from construction machineries</td><td>Low amplitude displacement machineries would be used.
All the machines would comply with the norms set by CPCB.
Machines will be maintained periodically to meet CPCB standard
Appropriate fencing will be provided between construction site and existing activity area to reduce the propagation of sound</td></tr>
<tr><td rowspan="2">Operation Phase</td><td>Noise would be generated from DG sets</td><td>DG sets would be incompliance for acoustics and air quality.
Low sulphur diesel would be used in DG</td></tr>
<tr><td>Noise would be generated from</td><td>Multilevel vegetation cover incorporating trees and shrubs to</td></tr>
</table></td></tr>
</table>

			traffic	cutoff the noise propagation to activity areas will be provided.
43.	Air quality monitoring in detail	Ambient Air quality of the site was monitored at three locations. The quality of the ambient air is well within the limits of NAAQ set by Central Pollution Control Board		
44.	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.	A dedicated road has been constructed in line with the approval from Government of Kerala with direct access to NH 47 for entry and exit to INKEL Towers. This will reduce any stress on existing transport network due to increased traffic to the project site during construction and operation phase. Restricted access would be provided to ensure only visitors to INKEL Tower. Parking spaces has been provided for the proposed project as per the NBC Guidelines.		
45.	Provide details of the movement patterns with internal roads, bicycles tracks, Pedestrian pathways, footpaths etc., with areas under each category	The movement and parking of vehicles within the campus will be restricted to parking zones close to the entry and exit points. Pedestrian and vehicle movements are prioritized in such a way that crossings are designed accordingly. The site plan indicating the parking cum circulation plan is already submitted		
46.	Will there be significant increase in traffic noise & vibrations? Give details of	The proposed development will enhance the traffic noise and vibrations in the site surroundings. The significant sources for noise and vibration and migration measures proposed are presented in Table		

	the sources and the measures proposed for mitigation of the above.	**Construction Phase**	Noise would be generated from construction machineries	Low amplitude displacement machineries would be used. All the machines would comply with the norms set by CPCB. Machines will be maintained periodically to meet CPCB standard Appropriate fencing will be provided between construction site and existing activity area to reduce the propagation of sound
		Operation Phase	Noise would be generated from DG sets	DG sets would be incompliance for acoustics and air quality. Low sulphur diesel would be used in DG
			Noise would be generated from traffic	Multilevel vegetation cover incorporating trees and shrubs to cutoff the noise propagation to activity areas will be provided.
47.	What will be impact of DG sets & other equipments on noise levels & vibration in & ambient air quality around the project site? Provide details	There would be increased noise levels and degradation of air quality due to the operation of DG sets and equipments. The following mitigation measures will have to be adopted to reduce the impact on noise levels and ambient air quality: • Diesel generator should have noise control measures to meet the noise standards set by Central Pollution Control Board (75 dB (A) at 1 m from the enclosure surface for generators with integral acoustic enclosure. • Acoustic enclosure for generators without integral acoustic enclosure shall be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on the higher side at 0.5 m from the enclosure). • Workers shall not be exposed to sound pressure level of more than 85 – 90 DB for more than eight hours a day and shall be provided with ear plugs. • Noise quality monitoring shall be conducted as per Environmental Monitoring Plan to detect noise pollution. • Noise level of vehicles used for construction activities should meet the noise standards set by Central Pollution Control Board (maximum 80 dB (A). • Construction contract shall clearly specify the use of equipment emitting noise of not greater than 90 dB (A) for the eight hour operation shift. •		

Socio – Economic Aspects		
48.	Will the proposal result in any change to the demographic structure of local population ? Provide the details.	Changes in demographic structure will be very less due to the project implementation. However, a local and regional economic development is anticipated as the project t will lead to increased commercial activities in the project region to support the employment labour requirements during construction and operation phase of project. There would be an increase in traffic to this site. However adequate traffic management measures would be adopted.
49.	Give details of the existing social infrastructure around the proposed project	The INKEL complex is proposed in Railway Station Ward (Ward no-28) of Angamaly Municipality. The development is an interlinked project of INKEL Tower-I&II. As per administrative jurisdiction the site falls within Angamaly village of Aluva taluk in Ernakulam district. The site comes within the boundary of Angamaly Assembly Constituency and Mukundapuram Parliament Constituency. The project location, micro and macro socio-economics, social desirability and demand for space from various sectors and services justifies the suitability of the site in hosting an industrial complex especially for non-polluting green category industrial units. The INKEL and KSIDC have around 50 acres of land in Champannur Industrial Area which is being planned as an integrated development Area. At present about 50 industrial units function in the area and the proposed Standard Design Modules developed by INKEL will attract new non-polluting industrial ventures. The proximity of the site to Angamaly Railway station (0.7 km), Vallarppadam Container Terminal (35 km) and International Airport (6 km) provides the logistics support to the venture. A dedicated road of length 800 m and 12 m wide provides connectivity with the main trunk road, NH-66 (old NH-47) The other industrial areas in Ernakulam district are located in Edayar, Mazhavannur, Nellad, Kalamassery, Vazhakulam and Keenpuram areas. The pollution issues, non availability of land, proximity to thickly populated residential areas, inadequate supporting infrastructures are a bane to many of these industrial areas and here the multi storied standard design modules of INKEL at Champannur stands apart and is supposed to play a pivotal role in attracting prospective investors. The other notable features of the project are less polluted environment, strategic connectivity, centralized data connectivity, advanced fire protection system, dedicated power and water supply system, amble parking space, 80-100 Kva power provision for every 5000 sq.ft. and single window clearance.

Surroundings: The Chambannur Industrial Area is bordered by Parakadavu GP in the West; Nedumbassery GP in the South; Nazrath (Ward No. 22) in the East and Manjali Thodu in the North.

Demography: The Angamaly Municipality is included in the urban agglomeration of Kochi (Census 2011). As per 2001 census report the population of Angamaly is 33409 with a density of 1183.03 persons per sq.km. According to 2011 census data the population of Angamaly municipality is 33465 with 16547 males and 16918 females. The decadal growth rate of population for the period 2001-2011 is 0.167. The important demographic indicators are given below. Population of Angamaly Municipality (28.24 sq.km.), Census 2011 & 2001

The important demographic indicators of Angamaly municipality

Year	Total Population			0-6 years			SC	ST	Sex Ratio	IL	No of HHs	Pop Density	Decadal Growth Rate
	T	M	F	T	M	F							
2011	33465	16547	16918	2887	1454	1433	1419	68	1022	3967	8405	1158	0.167
2001	33409	16444	16965	3759	1935	1824	1447	19	1032	5413	7556	1183	

T-Total, M-Male, F-Female, HHs-Households, IL-illiterates

50.	Will the project cause adverse effects on local communities, disturbances to sacred sites or other cultural values? What are the safeguards proposed?	Apart from the general socio-economic disturbances, the construction of the proposed Business Park will not have any adverse impact on the socio-economic and cultural scenario of the area. In the locality there exist a number of industrial units, which requires no special concern. However, during the construction phase large number of workers will stay up to the completion of the construction. The proponent have to insist upon the contractor to arrange properly maintained construction camp for the wellbeing of the workers with all facilities .Otherwise it will make disturbance to employees and staffs who are engaged in the same. However, after the implementation of the project the floating population will increase and will have its positive and

		negative influences on the public utilities, physical and natural resources of the area in particular and region in general. As mentioned earlier in the locality there exist a number of industrial units. In the construction period, huge machineries' for various purposes, vehicles for bringing materials and others are to be used without any discrimination. Continuous sounds and dust from machineries and vehicle will cause to health hazards to employees and staffs .The remedial measures to the problems are listed below. • In construction period, low amplitude displacement machineries would be used. • All the machines that are used in construction period would keep the norms set by Central Pollution Control Board. • Periodic maintenance of machineries is essential to meet the CPCB standard • Appropriate fencing with GI or Trafford sheet are to be provided between construction site and existing activity area to reduce the propagation of sound. • Restrict the vehicle ,which runs without covering the goods properly • Adequate zebra lines and speed breakers are to be established in the premises • Properly maintained construction camp will be arranged for the wellbeing of the workers with scientific disposal of solid wastes, sewage and sewerage
	Building materials	
51.	May involve the use of building materials with high – embodied energy. Are the constructio n materials produced with energy efficient process? (Give details of energy	From the economical point of view and also unavailability of the energy efficient material source conventional building materials are proposed in the construction. However practices are made to use maximum natural day light and natural air condition in the building. The following measures would be adopted as energy conservation measures in the selection of building materials: • Locally available materials would be utilized for construction purposes. Thus embodied energy can be minimized. • Fly ash containing cement would be used for construction. • PCC cement bricks would be used for construction. • Locally available aggregates would be utilized for construction.

	conservation measures in the selection of building materials and their energy efficiency)	• Glass with low SHGC and high U value is proposed for fenestration
52.	a) Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?	• The site shall be isolated with tall nets or tin sheets to obstruct noise and dust. • All construction materials will be properly covered during transportation. • Water would be sprinkled periodically to subside the generated dust. • Adequate traffic management measures shall be adopted to monitor the movement of men, vehicles and materials within the project site. • Noise sources would be isolated and would be enclosed with noise absorbing covers/ barriers. • Personnel protective gears would be provided to workers. • Machinery of optimum capacity will be employed and low amplitude operation would be preferred to reduce noise pollution. • Men and material transportation would be confined to the non-peak hours • The vehicle used in the site will be fitted with speed breaker
53.	Are recycled materials used in roads and structures? State the extent of savings achieved	Construction waste of inorganic origin would be used in the foundation of roads and walkways. This can reduce import of base materials for laying roads.
54.	Give details of the methods of collection, segregation & disposal of the garbage	The management practice od solid watse will be in compliance with municipal solid waste (management and handling) rules 2016 .The requirement for storage facilities and transportation will be based on the quantum of waste generated.

	generated during the operation phases of the project.	**Segregation and storage of solid waste generated** The garbage will be segregated as • Biodegradable waste to be stored in green color bins • Recyclable waste in white bins • Other waste in black bins **Collection and Transportation** The organic waste generated shall be collected on a daily basis while the collection of the dry waste will be need based. These will be store in secondary storage area. **Sorting and recycling** The waste received at the secondary storage area has to be sorted into • Recyclable • Non-recyclable and inert waste. **Treatment and Disposal** • Recyclable waste and E waste to be sent to authorized parties' • Waste vegetables, uncooked food materials and non-veg waste to be sent for Bio degradation and slurry will be send to STP. • Other organic waste like dead leaves etc. can be sent for compositing the compost can be used for the gardening • Non compostable non-recyclable incinerable waste may be sent for incineration • Leftover cooked food will be discharge in the biogas plant **Facilities proposed within the site for the disposal of the solid waste generated** The facilities proposed within the site for the disposal of the solid waste generated are shown in Table

Sl No	Type of facility	Number	Remark
1	Biogas Plant	1	As per requirement
2	Recycling waste store	1	As per requirement
3	Composting unit	1	As per requirement

	Risk Management	
55.	Are there sufficient measures proposed for risk hazards in case of emergency such as accident at	**Managed in 3 phases** • Pre Disaster phase - prevention, mitigation and preparedness. • Disaster response phase / during disaster. • Post Disaster phase – recovery (rehabilitation and reconstruction) **Pre-Disaster Phase (Phase of Planning)** • Building design precaution. • Provision for circuit breaker

	the site during construction & post construction phase.	• Provision for Fire hazard resistant system • Development and execution of evacuation plan. Displaying of the same in the building premises • Training for the inhabitants • Constitution of a Disaster/ Emergency Management Cell(EMC) **Disaster response phase / during disaster** During minor disaster • The facilities within the plot will be used .The disaster management committee will head the rescue services during the disaster During Major disaster • If the disaster management committee itself could not manage the disaster, they will inform to District disaster management committee, Fire and Rescue Centre, Water Authority, KSEB as per the requirement and they will take over the management of disaster . **Post disaster phase** • After disaster, the emergency period will be declared within the plot. • The emergency period depends on the extent of disaster and the rehabilitation time requirement. • The activities within the buildings will be restarted after the withdrawal of the emergency notification
56.	Storage of explosives/hazardous substance in detail	NA
57.	What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans	Components of Emergency Plan • Structural components like shear walls, braced frames, moment resisting frames etc., are recommended for each buildings within the park in tune with seismic resistant criteria. • Provision for circuit breaker. • Well planned circulation for movement with common assembling point provision • Sufficient emergency exit at necessary points. • Provision for Fire hazard resistant system • Conduction of Mock Drills • Provision for maintaining inventory of Raw materials
	Aesthetics	
58.	Will the proposed constructions in any way result in the obstruction of a	Being the site located in an industrial area and not having any peculiar scenic amenity of landscapes, there will not be obstruction due to this project.

	view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?	
59.	Will there be any adverse impacts from new constructions on the existing structures? What are considerations taken into account?	No adverse impact on existing structures would be resulted as the exiting building is located at 30 m and there is no heavy construction activities required for the present project which could have impact on existing structure. Also Temporary fencing with tall nets or tin sheets between the existing activity area and construction sites will be provided. This temporary fencing will also limit the transmission of odorous fumes, smoke etc from the vehicle during construction phase.
60.	Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.	There are no specific local considerations or urban form or urban design, the proposed building is designed in line with the construction pattern of existing INKEL Tower 1&2 located nearby. The guidelines specified in NBC and KMBR in terms of ground coverage, FAR, setback distance, building height, fire and safety and structural design would be strictly followed
61.	Are there any anthropological or archaeological sites or artefacts nearby? State if any other significant features in the vicinity of the proposed site have been considered	No
62.	Details of CSR activity and the amount set apart	INKEL-KSIDC Projects Limited is a special purpose company formed by INKEL and KSIDC. This company which was formed in 2010 has been incurring losses. However the holding company INKEL which has been making profit has undertaken activities under CSR in Thiruvananthapuram and Palakkad districts which has benefitted a large number of common people. INKEL will do similar projects elsewhere as well during the current financial year and have set apart approximately Rs 25 Lakhs for the purpose.

63.	Details of NABET approved EIA Consultant engaged-Their name, address and accreditation details	**Name of consultant:** KITCO Ltd. **Address for correspondences**: KITCO Limited, Femith's, P B No 4407, Puthiya Road, NH ByPAss, Vennala, Kochi -682028 **Contact details**: e mail- mail@kitco.in, ph:0484-4129000 **NABET approval letter** : Letter No: NABET/EIA/338/IA-017 dated 13th November 2013 and Letter No: NABET/EIA/SA/338 dated 23rd December 2015
64.	Details of Authorized Signatory and address for correspondence	Mr. Prem Kumar Sankara Panickar INKID Limited, Door No. 7/473ZA – 5 & 6, 2nd Floor, Ajiyal Complex, Kakkanad, Cochin, Pin: 682030
	Summary and Conclusion	
65.	a)Overall justification for implementation of the project.	In order to support MSME
66.	b)Explanation of how adverse impact have been mitigated.	The project has long term and short term impact on the human resources and economy of the state. The adverse impacts without EMP increase storm water runoff, discharge of effluents and treated effluent from STP. All the adverse impacts are mitigated to acceptable limits with proper EMP.

2. The proposal was placed in the 71st meeting of SEAC held on 20th & 21st April 2017 and decided to defer the item for field inspection. The committee also directed the proponent to submit the site plan (drawn in scale) showing all internal roads and parking area. The site inspection was conducted by the Sub Committee consisting of Dr KG Padma Kumar and Sri S Ajayakumar on 03/05/2017and the report as follows

The proposal is for the development of building space for MSME by INKID at Angamaly. The proposal abuts a road starting from NH 66 having sufficient width. Existing two towers are located on the other side of the road. The proponent who are the owners of these building also reported that these two building are self-standing as far as parking, water , sewage and solid waste requirements and will not depend upon the proposed building for these facilities. They have constructed a large rainwater storage tank, apart from rain water storage from roof top. There is abundant scope for further development of this water body as a perpetual water harvesting structure . This shall be made explicit

The building has adequate parking and facilities for sewage, water and MRF. However, SEAC may ask them for an enhanced storage of rain water which can be used by existing buildings also in case of emergency.

3. The proposal was considered in the 73rd meeting of SEAC held on 30th and 31st May 2017. The proposal was appraised by SEAC considering Form I, Form IA, Conceptual plan, field visit report and all other documents and details provided by the proponent. The committee verified the additional documents submitted by the proponent and found satisfactory. The Committee decided to **Recommend for issuance of EC** subject to the general conditions in addition to the following specific conditions.

1. *The rainwater storage pond shall be enhanced to a minimum capacity to hold 3000 KL.*
2. *The split up details of the C.S.R commitment of Rs.25 lakhs as mentioned in the basic details should be submitted.*

The proponent agreed to set apart Rs.25 lakh over a period of 3 years towards the CSR activities for the welfare of the local community in consultation with the local Panchayat.

4. The Authority considered the proposal in its 72nd meeting held on 01 August2017. Authority accepted the recommendation of SEAC and decided to issue EC subject to general condition in addition to the following specific conditions.

1.The rainwater storage pond shall be enhanced to a minimum capacity to hold 3000 KL.
2. The split up details of the C.S.R commitment of Rs.25 lakhs as mentioned in the basic details should be submitted.

A notarised affidavit for the commitment of CSR activities and agreeing all the general and specific conditions should be submitted .The proponent has submitted an affidavit vide reference 5th cited satisfying the above conditions.

5. Environmental Clearance as per the EIA notification 2006 is therefore granted to the proposed INKID MSME building Project in Sy. Nos. 266/5 at Angamaly Village and Aluva Taluk, Ernakulum District, Kerala. by Sri. Mr. Prem Kumar Sankara Panickar INKID Limited, Door No. 7/473ZA – 5 & 6, 2nd Floor, Ajiyal Complex, Kakkanad, Cochin, Pin: 682030 Kerala subject to the specific conditions mentioned in para 3 above, the usual general conditions for projects other than mining appended here and the following green conditions should be strictly adhered to.

Green Conditions.

1. Adequate rain water harvesting facilities shall be arranged for.
2. Technology and capacity of the STP to be indicated with discharge point (if any) of the treated effluent.
3. Effluent water not conforming to specifications shall not be let out to water bodies.
4. Maximum reuse of grey water for toilet flushing and gardening and construction work shall be ensured.
5. Dual plumbing for flushing shall be done.

6. Provisions for disposal of e-wastes, solid wastes, non-biodegradables and separate parking facility for the buildings shall be provided.
7. Generation of solar energy to be mandatory for own use and/or to be provided to the grid.
8. There shall be no compromise on safety conditions and facilities to be provided by the project proponent, which shall be ensured for occupation, regularisation or consent to operate.

6. The clearance will also be subject to full and effective implementation of all the undertakings given in the application form, all the environmental impact mitigation and management measures undertaken by the project proponent in the documents submitted to SEIAA, and the mitigation measures and waste management proposal as assured in the Form -1 and Form-1A, Environment Management Plan as submitted. The assurances and clarifications given by the proponent in the application and related documents will be deemed to be part of these proceedings as conditions as undertaken by the proponent, as if incorporated herein.

7. Validity of the Environmental Clearance will be seven years from the date of issuance of E.C, subject to inspection by SEIAA on annual basis and compliance of the conditions, subject to earlier review of E.C in case of violation or non-compliance of any of the conditions stipulated herein or genuine complaints from residents within the scrutiny area of the project.

8. Compliance of the conditions herein will be monitored by the State Environment Impact Assessment Authority or its agencies and also by the Regional Office of the Ministry of Environment and Forests, Govt. of India, Bangalore.

i. Necessary assistance for entry and inspection by the concerned officials and staff should be provided by the project proponents.
ii. Instances of violation if any shall be reported to the District Collector,Ernakulam to take legal action under the Environment (Protection) Act 1986.
iii. The given address for correspondence with the authorized signatory of the project is, Sri. by Sri. Mr. Prem Kumar Sankara Panickar INKID Limited, Door No. 7/473ZA – 5 & 6, 2nd Floor, Ajiyal Complex, Kakkanad, Cochin, Pin: 682030

Sd/-
JAMES VARGHESE.I.A.S,
Member Secretary (SEIAA)

To,

Sri. . Mr. Prem Kumar Sankara Panickar
INKID Limited,
Door No. 7/473ZA – 5 & 6,
2nd Floor, Ajiyal Complex,
Kakkanad, Cochin, Pin: 682030

Copy to:

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4th Floor, E&F Wing, II Block, Koramangala, Bangalore-560034
2. The Additional Chief Secretary to Government, Environment Department
3. The District Collector, Ernakulam
4. The District Town Planner, Ernakulam
5. The Tahsildhar, Taluk Ernakulam
6. The Member Secretary, Kerala State Pollution Control Board
7. The Secretary, Cochin Corporation Office, Cochin Kerala – 680 001
8. Chairman, SEIAA, Kerala
9. Website
10. Stock file
11. O/c

Forwarded /By Order

Administrator (SEIAA)

GENERAL CONDITIONS *(for projects other than mining)*

(i) Rain Water Harvesting capacity should be installed as per the prevailing provisions of KMBR / KPBR, unless otherwise specified elsewhere.

(ii) Environment Monitoring Cell as agreed under the affidavit filed by the proponent should be formed and made functional.

(iii) Suitable avenue trees should be planted along either side of the tarred road and open parking areas, if any, inclusive of approach road and internal roads.

(iv) The project shall incorporate devices for solar energy generation and utilization to the maximum possible extent with the possibility of contributing the same to the national grid in future.

(v) Safety measures should be implemented as per the Fire and Safety Regulations.

(vi) STP should be installed and made functional as per KSPCB guidelines including that for solid waste management.

(vii) The conditions specified in the Companies Act, 2013 should be observed for Corporate Social Responsibility.

(viii) The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project.

(ix) Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating activity.

(x) All other statutory clearances should be obtained, as applicable, by project proponents from the respective competent authorities including that for blasting and storage of explosives.

(xi) In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Authority.

(xii) The Authority reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.

(xiii) The stipulations by Statutory Authorities under different Acts and Notifications should be complied with, including the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.

(xiv) The environmental safeguards contained in the EIA Report should be implemented in letter and spirit.

(xv) Provision should be made for supply of kerosene or cooking gas and pressure cooker to the labourers during construction phase.

(xvi) Officials from the Regional of MOEF, Banglore who would be monitoring the implementation of environmental safeguards should be given full co-operation, facilities and documents/data by the project proponents during their inspection. A complete set of all the documents submitted to MoEF should be forwarded to the CCF, Regional Office of MOEF, Bangalore.

(xvii) These stipulations would be enforces among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control Pollution) at 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.

(xviii) Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.

(xix) Any appeal against this Environmental Clearance shall lie with the National Environment Appellate Authority, if preferred, within a period of 30 days as prescribed under section 11 of the National Environment Appellate Act, 1997.

(xx) The project proponent should advertise in at least two local newspapers widely circulated in the region, one of which (both the advertisement and the newspaper) shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the Department of Environment and Climate Change, Govt. of Kerala and may also be seen on the website of the Authority at www.seiaakerala.org. The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same signed in all pages should be forwarded to the office of this Authority as confirmation.

(xxi) A copy of the clearance letter shall be sent by the proponent to concerned GramaPanchayat/ District Panchayat/ Municipality/Corporation/Urban Local Body and also to the Local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The Environmental Clearance shall also be put on the website of the company by the proponent.

(xxii) The proponent shall submit half yearly reports on the status of compliance of the stipulated EC conditions including results of monitored data **(both in hard copies as well as by e-mail)** and upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the respective Regional Office of MoEF, Govt. of India and also to the Directorate of Environment and Climate Change, Govt. of Kerala.

(xxiii) The details of Environmental Clearance should be prominently displayed in a metallic board of 3 ft x 3 ft with green background and yellow letters of Times New Roman font of size of not less than 40.

(xxiv) The proponent should provide notarized affidavit *(indicating the number and date of Environmental Clearance proceedings)* that all the conditions stipulated in the EC shall be scrupulously followed.

SPECIFIC CONDITIONS

I. Construction Phase

i. "Consent for Establishment" shall be obtained from Kerala State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.

ii. All required sanitary and hygienic measures should be in place before starting construction activities and to be maintained throughout the construction phase.

iii. A First Aid Room will be provided in the project both during construction and operation of the project.

iv. Adequate drinking water and sanitary facilities should be provided for construction workers at the site, Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.

v. All the topsoil excavated during construction activities should be stored for use in horticulture/landscape development within the project site.

vi. Disposal of muck during construction phase should not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.

vii. Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.

viii. Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate watercourses and the dump sites for such material must be secured so that they should not leach into the ground water.

ix. Any hazardous waste generated during construction phase, should be disposed off as per applicable rules and norms with necessary approval of the Kerala State Pollution Control Board.

x. The diesel generator sets to be during construction phase should be low sulphur diesel type and should conform to Environment (Protection) Rules prescribed for air and noise emission standards.

xi. The diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from Chief Controller of Explosives shall be taken.

xii. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to the applicable air and noise emission standards and should be operated only during non-peak hours.

xiii. Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/KSPCB.

xiv. Fly ash should be used as building material in construction as per the provisions of Fly Ash Notification of September, 1999 and amended as on 27th August 2003. (The above condition is applicable Power Stations).

xv. Ready mixed concrete must be used in building construction.

xvi. Storm water control and its re-use per CGWB and BIS standards for various applications.

xvii. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.

xviii. Permission to draw ground shall be obtained from the Computer Authority prior to construction/operation of the project.

xix. Separation of grey and black water should be done by the use of dual plumbing line for separation of grey and black water.

xx. Fixtures for showers, toilet flushing and drinking should be of low flow either by use of aerators or pressure reducing devices or sensor based control.

xxi. Use of glass may be reduced by upto 40% to reduce the electricity consumption and load on airconditioning. If necessary, use high quality double glass with special reflective coating in windows.

xxii. Roof should meet prespective requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfil requirement.

xxiii. Opaque wall should meet perspective requirement as per energy Conservation Building Code which is proposed to be mandatory for all airconditioned spaces while it is aspirational for non-airconditioned spaces by use of appropriate thermal insulation material to fulfil requirement.

xxiv. The approval of the competent authority shall be obtained for structural safety of the buildings due to earthquake, adequacy of fire fighting equipments, etc. as per National, Building Code including protection measures from lightening etc.

xxv. Regular supervision of the above and other measures for monitoring should be in place all through the construction phase, so as to avoid disturbance to the surroundings.

xxvi. Under the provisions of Environment (Protection) Act, 1986, legal action shall be initiated against the protect proponent if it was found that construction of the project has been started without obtaining environmental clearance.

II. **Operation Phase**

i. The installation of the Sewage Treatment Plant (STP) should be certified by an independent expert and a report in this regard should be submitted to the Ministry before the project is commissioned for operation. Treated affluent emanating from STP shall be recycled / reused to the maximum extent possible. Treatment of 100% grey water by decentralised treatment should be done. Discharge of unused treated affluent shall conform to the norms and standards of the Kerala State Pollution Control Board. Necessary measures should be made to mitigate the odour problem from STP.

ii. The solid waste generated should be properly collected and segregated. Wet garbage should be composted and dry/inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable material.

iii. Diesel power generating sets proposed as source of back up power for elevators and common area illumination during operation phase should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use low sulphur diesel. The location of the DG sets may be decided with in consultation with Kerala State pollution Control Board.

iv. Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations.

v. The green belt of the adequate width and density preferably with local species along the periphery of the plot shall be raised so as to provide protection against particulates and noise.

vi. Weep holes in the compound walls shall be provided to ensure natural drainage of rain water in the catchment area during the monsoon period.

vii. Rain water harvesting for roof run-off and surface run-off, as plan submitted should be implemented. Before recharging the surface run off, pre-treatment must be done to remove suspended matter, oil and grease. The borewell for rainwater recharging should be kept at least 5 mts. Above the highest ground water table.

viii. The ground water level and its quality should be monitored regularly in consultation with Central Ground Water Authority.

ix. Traffic congestion near the entry and exit points from the roads adjoining the purposed project site must be avoided. Parking should be fully internalized and no public space should be utilized.

x. A Report on the energy conservation measures confirming to energy conservation norms finalise by Bureau of Energy Efficiency should be prepared incorporating details about building materials & technology, R & U Factors etc and submit to the Ministry in three months time.

xi. Energy conservation measures like installation of CFLs/TFLs for the lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Use CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/rules of the regulatory authority to avoid mercury contamination. Use of solar panels may be done to the extent possible.

xii. Adequate measures should be taken to prevent odour problem from solid waste processing plant and STP.

xiii. The building should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.

III Post Operational Phase

Environmental Monitoring Committee with defined functions and responsibility should foresee post operational environmental problems e.g. development of slums near the site, increase in traffic congestion, power failure, increase in noise level, natural calamities, and increase in suspended particulate matter etc. solve the problem immediately with mitigation measures

For Member Secretary, SEIAA