EE- ENERGY EFFICIENCY

EE1 ZONING OF LIGHTING SOURCES / EQUIPMENTS

1. Number of areas which have individual switches **(01 mark)**

Individually Switched Space	Area

$100m^2$ >
Total Area

Total Floor area =

% Individually =

Switched (100m >)

Attachment

Plans of lighting zones controlled by individual switches ☐ annexure no:

2. Lighting Control - with Sensors **(01 mark)**

Sensor System ☐ Yes ☐ No

Attachment

1. A detail electrical layout with sensors covered by automatic control ☐ annexure no:

2. Specifications of the Self-sensitive control system for electrical lighting control ☐ annexure no:

.....

Seal and Signature

EE2 ELECTRICITY SUB METERING

	(01 Mark)	**(01 Mark)**
Place of sub meter	**Energy Consumption (KVA)**	**Connected to the EMS/ BMS or not**

Attachment

1. Specifications of electricity sub meters ☐ Annexure no:
2. Location map of proposed sub meters and meters service stations ☐ Annexure no:

……

Seal and Signature

EE3 RENEWABLE ENERGY

Total energy demand of the building

Equipment	Energy Consumption Per Unit	No. of Equipment	No. of hours in operation (per day)	Total energy consumption
Total Consumption for a day				

X Total plot coverage of the building

Area of the Solar Panel =

No. of Solar Panels =

Y Total Solar area =

Percentage % = $\frac{Y}{X} \times 100\% =$

X. Total Energy Demand (Calculated in EE_2) =

Solar Panel (Power) =

No. of Solar Panels Installed =

Y. Total Solar Power =

Percentage % = $\frac{Y}{X} \times 100\% =$

Total solar panels cover shall be 20% of the building plot coverage or 40% of the Electricity contract demand shall be met by solar panels. ☐ **(02 Marks)**

Total solar panels cover shall be 40% of the building plot coverage or 60% of the Electricity contract demand shall be met by solar panels. ☐ **(04 Marks)**

Total solar panels cover shall be 60% of the building plot coverage or 80% of the Electricity contract demand shall be met by solar panels. ☐ **(06 Marks)**

Total solar panels cover shall be 80% of the building plot coverage or 100% of the Electricity contract demand shall be met by solar panels. ☐ **(08 Marks)**

Attachment

Plans and elevations of the places allocated for renewable energy equipment ☐ annexure no:

.....

Seal and Signature

EE4 HIGH PERFORMANCE ENERGY EFFICIENCY

Total energy demand of the building
building for 200 days 8 hours = Kwh /m^2 / Year

Total building area = m^2

Equipment	Energy Consumption Per Unit	No. of Units	No. of hours in operation	Total energy consumption (per day)
Total Consumption for a day				

For 200 days =

For 1 m^2 =

150kWh/ m^2 /year > BEI > 130kWh/ m^2 /year ☐ **(01 mark)**

130kWh/ m^2 /year > BEI > 110kWh/ m^2 /year ☐ **(03 marks)**

110kWh/ m^2 /year > BEI > 90kWh/ m^2 /year ☐ **(05 marks)**

Attachment

If any ☐ annexure no:

……

Seal and Signature

EE5 EFFICIENCY OF ELECTRIC ILLUMINATION

1. Indoor Lights

Indoor Light Fitting	Energy Consumption	No. of Fittings	Total energy Use
Total Energy Use			

Indoor lighting power density (X) = $\frac{\text{Total energy use}}{\text{Total building area } (m^2)}$

If,

$X < 10W/m^2$ **(01 mark)**

2. Outdoor Lights (Lighting Power > 70W)

Outdoor Light Fitting	Power	Efficiency (lm/W)

If,

Efficiency >=80 lm/W **(01 mark)**

Attachment

Specification of light fittings exceeding 70W ☐ annexure no:

Detailed plans, specifications & methodology for the installation of indoor and outdoor lighting ☐ annexure no:

.....

Seal and Signature

EE6 POWER FACTOR CORRECTION

Three phase Electricity Usage (Ampere) =

Power factor correction accuracy of controller device =

If, PFC accuracy between 0.98 – 1.0 **(02 marks)**

Attachment

Specification of Power Factor Correction devices proposed to be installed ☐ annexure no:

.....

Seal and Signature

EE7 IMPROVEMENT AND OPERATION OF ENERGY EFFICIENCY

Professionals involved	Qualifications	Seal and signature

(04 Marks)

Attachment

certificates and appointment letters ☐ annexure no:

Report and related documents proposed improvement of the energy system and its performance ☐ annexure no:

.....

Seal and Signature

EE8 SUSTAINABLE MAINTENANCE

Minimum of 50% of the building maintenance crew shall be mobilized in the site 3 months prior to the completion of construction and they shall participate in testing the building energy consuming equipment/ devices. ☐ (01 Mark)

Allocation of a separate office building for maintenance work and necessary maintenance equipment shall be provided. ☐ (01 Mark)

Attachments

1. Consultant's recommendation (With staff requirement) ☐ annexure no:
2. Client's consent to recruit recommended staff and allocate funds for maintenance for 3 years. ☐ annexure no:
3. Location of the maintenance office in the plan ☐ annexure no:

.....

Seal and Signature

SM SUSTAINABLE LAND MANAGEMENT AND PLANNING

SM1 SITE SELECTION

01. If the construction site is providing and important as environmental services, economic services such as agricultural land or forest, under forest department. (02 Marks)

(i)	Prime Agricultural Land	☐ Yes	☐ No
(ii)	Forest under the Department of Forest	☐	☐
(iii)	Declared Wildlife area / or a buffer Zone	☐	☐
(iv)	Is the site in a Wetland	☐	☐
	If yes category of the Wetland		
	- Already declared Wetland Wildlife Sanctuary	☐	☐
	- Environment protection Area	☐	☐
	- Deep marsh Area	☐	☐
	- Critical flood detention Area	☐	☐
	Significant biodiversity value	☐	☐
	- Agricultural area	☐	☐
(v)	Any special threatened species	☐	☐
	(Flora / Fauna)		
	If any		
(vi)	Any endemic Species	☐	☐
	If any		

02. Use of lands not within a at natural disaster risk/zones. If constructing in a risk area clearance shall be obtained by the relevant agencies for appropriate construction and installation. ☐ (02 Marks)

Attachment

Location plan of the site, Approved survey plan ☐ annexure no:

Footprint of the proposed building, building location, distances to the border, natural lakes, rivers,water streams, and the sea closed proximity to the site, etc. Shall be clearly marked on the site plan. ☐ annexure no:

.....

Seal and Signature

SM2 ABANDONED (BROWN FIELD) SITE REDEVELOPMENT

(i) Existing Buildings and Structures in the site ☐ Yes ☐ No

- Present use _____
- Building type _____
- Used materials _____
- Condition _____

10% - 50% of the total land area has been re-developed	☐	(01 Mark)
51% - 69% of the total land area has been re-developed	☐	(02 Marks)
70% or above of the total land area has been re- developed	☐	(03 Marks)

Attachment

Sketch Mark Used/ Developed Percentage	☐	annexure no:
Short report on the prior use o the land and certified test report done measure the level of soil pollution.	☐	annexure no:
Removal of contaminated soil and other proposed measures, including Environmental Assessment report.	☐	annexure no:

.....

Seal and Signature

SM3 DEVELOPMENT DENSITY AND COMMUNITY COORDINATION

Name 10 public amenities within 1Km from the site (01 Mark)

i.

ii.

iii.

iv.

v.

vi.

vii.

viii.

ix.

x.

Attachment

Mark the location in a google map with 1km radius circle (Showing public amenities)	☐	annexure no:
Detailed layout of the site shall be provided with the location of the building, basic amenities, pedestrian pathways, roads, underground services, bridges etc.	☐	annexure no:
Calculate Total land area and density	☐	annexure no:

.....

Seal and Signature

SM4 PREPARATION OF ENVIRONMENTAL MANAGEMENT AND ENVIRONMENTAL SAFEGUARD PLAN

Preparation of Environmental Management Plan and Environmental safeguard plan with guidelines to follow during the building construction and usage (marks will be doubled if the contractor is ISO 14001 certified) (02 Marks)

Attachment

Environment Management Plan and safeguard plan prepared in relation to the project	☐	annexure no:
ISO 14001 Certificate / client consent to award the contract for an ISO 14001 Certified contractor	☐	annexure no:

.....

Seal and Signature

SM5 LAYING AND IMPROVEMENT OF GREEN GROUND COVER

Open areas shall be kept as declared by Urban Development Authority or Local Authority. 70% of these open areas shall be of green covers which 40% of it consisting of endemic and indigenous plants. When there is no sufficient space to have a green cover on the ground. Vertical and roof gardens shall be encouraged. (02 Marks)

Attachment

Total Open Space (According to the UDA requirement)	☐	annexure no:
Green Cover Percentage (can consider horizontal or vertical area)	☐	annexure no:
Endemic and Indigenous vegetation cover ratio should be reflected in the Landscape plan	☐	annexure no:
Landscape layout with the footprint of the proposed building. Lengths from building to the boundaries of then proposed site. Soft and hard landscape design	☐	annexure no:
List of names of proposed plants, planting schedule and planting pallet	☐	annexure no:

.....

Seal and Signature

SM6 MITIGATION OF CONSTRUCTION POLLUTION

Following requirements shall be fulfilled by complying engineering actions specified by CIDA for mitigation of sedimentation and erosion. (01 Mark)

Construction pollution	Method for reduce pollution (documents attached)	Annexure no:
Soil erosion caused by the rainwater runoff		
Silt deposition in the canals		
Spread of dust and air		
Noise pollution		

Attachment

Plan/ proposal for control sedimentation and erosion ☐ annexure:

.....

Seal and Signature

SM7 QUALITY ASSURANCE IN THE BUILDING CONSTRUCTION

- The quality of the construction work shall be achieved for each and every building feature as per specifications published bn CIDA.

- All consultants, contractors, building owner, and sub-contractors shall be aware of quality assessment and construction quality of buildings.

- Construction shall be monitored by a qualified person and contractor and subcontractors shall adopt the CIDA publication.

(01 Mark)

Attachment

Report on proposed plan to comply with the relevant CIDA publication ☐ annexure:

SM8 WORKERS FACILITIES

Worker's facilities	Method of providing facility	Annexure no:
Preparation and implementation of site facilities plan for site workers.		
Following objectives shall be achieved by the facility plan		
Providing suitable accommodation for construction workers within the site or temporarily lease premises closer to the site.		
Providing septic tanks to prevent pollution caused by sewer mixing to the rainwater drain.		
Preventing site pollution, air pollution by introducing proper garbage disposal system and preventing open burning of garbage		
Providing health and sanitary facilities for site workers and safety facilities to maintain safety.		
Preventing mosquito breeding at site by avoiding water stagnate in the site.		

Attachment

The layout of the location of the staff and workers' facilities, including health and sanitation ☐ Annexure:

.....

Seal and Signature

SM9 MINIMIZING THE USE OF PRIVATE VEHICLES AND ENCOURAGING PUBLIC TRANSPORT USEAGE

Attachment

A map of existing or proposed public transport nodes (bus stops, railway stations) within 250m radius to the site **(01 mark)** ☐ Annexure no:

green vehicle parking percentage = $\frac{\text{Green vehicle parking area}}{\text{Total parking area}}$ x 100%

Attachment

Layout indicating green vehicle parking areas, charging centers distance from the elevator (**01 mark)** ☐ Annexure no:

Number of minimum parking spaces ☐ Annexure no:

Proposal for parking allocated for 5% of the long-term residents ☐ Annexure no:

…….

Seal and Signature

SM10 PARKING CAPACITY

$$\text{Parking percentage of pool vehicles (X\%)} = \frac{\text{Pool vehicle parking areas}}{\text{Total parking area}} \times 100\%$$

if (X%) >= 2% (01 mark) ☐

if (X%) >= 5% (02 marks) ☐

Attachments

Layout of parking facilities allocated for carpools and vanpools and calculation of percentage to obtain marks ☐ Annexure no:

……

Seal and Signature

SM11 RAINWATER DRAINGE PLAN – QUNATITY AND QUALITY CONTROL

Rain Water Drainage Plan **(02 Marks)** ☐ Annexure no:

Average rainfall of the area absorption capacity of soil per $1m^2$ -

Total land area -

Free land area after construction -

Therefore, rain water overflow after construction -

…….

Seal and Signature

SM12 GREEN COVERS AND ROOFS

1.

Percentage of green cover on hard landscape areas = $\frac{\text{Proposed green cover areas}}{\text{Hard landscape areas}}$ x 100%

(01 mark)

2.

Use of Roofs Covers/ Canopies (01 Mark)

a. Minimum 75% of the total roof area with shallow and sharply angled roof canopies with Solar Reflectance Index (SRI) 78% and 29% respectively.

b. For green roof and other roofs,

$$\frac{\text{Solar reflective index rainwater}}{0.75} + \frac{\text{area of green roofs}}{0.5} > \text{Total area of the roofs}$$

c. Minimum 50% of the of the roof area shall be covered with plants. Suitable plans for roof gardens shall be used.

Attachments

Site layout with proposed green cover plan and the hard landscape plan shown with the roof plan drawn to scale	☐	Annexure no:
Cross section of the green roof drawn to scale	☐	Annexure no:
List of Names of proposed plants, planting schedule and planting pallet Elaboarting the features of the pants, height, form etc.	☐	Annexure no

……..……..

Seal and Signature

SM13 USER MANNUAL FOR BUILDING USERS

(01 mark)

Attachment

Sample user manual for the building ☐ Annexure no:

…….……

Seal and Signature

MR BUILDING MATERIAL AND RESOURCES

MR1 RE-USE AND SELECTION OF MATERIALS

Reused Item	No.	Unit Rate	Total Cost

Total Cost for reused items =

Percentage of reused material (x%) = $\frac{\text{Cost of reused materials}}{\text{Total material cost}} \times 100\%$

If X% >= 2% (01 mark)

If X% >= 5% (02 mark)

Attachment

List of Materials proposed to be re-used in the project ☐ Annexure no:

Estimated cost of the proposed re-used materials ☐ Annexure no:

Estimated cost of the building materials proposed to be re-used in the project ☐ Annexure no:

.....

Seal and Signature

MR2 MATERIAL CONTAINING RECYCLED SUBSTANCE

$$\text{Percentage of recycled content material (Z\%)} = \frac{\text{Cost of recycled materials (X)}}{\text{Total material cost (Y)}} \times 100\%$$

Cost of recycled content materials according to the BOQ (X) =

Total material cost according to the BOQ (Y) =

Percentage of recycled content material (Z =X/Y * 100%) =

If Z% >= 2% (01 mark)

If Z% >= 5% (02 mark)

Attachment

Document of items content of recycled material	☐	Annexure no:
Percentage of the recycled material before construction and after construction of the building	☐	Annexure no:
Content of the sources of recycled materials and suppliers' details	☐	Annexure no:
A document stating estimated cost of the materials used in the project against estimated cost of recycled material.	☐	Annexure no:

.....

Seal and Signature

MR3 RE-USE OF EXISTING BUILDING

$$\text{Percentage of reused area (Z\%)} = \frac{\text{reused building area (X)}}{\text{Total area of the proposed building (Y)}} \times 100\%$$

Reused building area (X) =

Total area of the proposed building (Y) =

Percentage of reused area (Z) (X/Y *100%) =

If Z% 30% - 49% (01 mark)
If Z% 50% - 59% (02 mark)

Attachments

Plans of existing building used for development project with reused parts shows in different colors. ☐ Annexure no:

…….……

Seal and Signature

MR4 REGIONALLY AVAILABLE MATERIALS FOR BUILDING CONSTRUCTION

Percentage of regionally available materials(Z%) (within 20km) = $\frac{\text{Cost of regionally available materials(X)}}{\text{Total cost for the materials (Y)}}$ x 100%

Cost of regionally available materials (X) =

Total cost for the materials (Y) =

Percentage of regionally available materials (X/Y *100%) =

If Z% >= 10% (01 mark)

If Z% >= 20% (02 mark)

If Z% >= 30% (03 mark)

Materials 200 Km area	Quantity / Units	Unit Rate	Total Cost

Attachment

List and details of local raw materials and materials used in this project ☐ Annexure no:

Provide Name of the Product and Production Cost
The distance to the manufacture from project site ☐ Annexure no:

Estimated total cost of the materials ☐ Annexure no:

Percentage of the cost of proposal local materials from total cost of the material ☐ Annexure no:

.....

Seal and Signature

MR5 SUSTAINABLE TIMBER

Attachments

A consent letter with classification of timber used for the project by timber cooperation ☐ Annexure no:

Timber Class (Green Classification)	**Quantity**	**Certificate Obtained from Timber Corporation (Annexure No)**	
Class 01			**(01 mark)**
Class 02			**(02 mark)**
Class 03			**(03 mark)**

……..……

Seal and Signature

MR6 USE OF HIGH VALUE GREEN BUILDING MATERIALS

Total material cost (X) = Annexure no:

Cost of materials with >= 2.5 green value (Y) =

Percentage (Y/X *100%) =

Use of materials with >= 2.5 green value 20% - 40% of total material cost (01mark)

Use of materials with >= 2.5 green value 40% - 60% of total material cost (02mark)

Use of materials with >= 2.5 green value >= 60% of total material cost (03mark)

Attachments

List of materials >= 2.5 green value ☐ Annexure no:

Documents to support calculation of green value with the following content, Description of materials, Energy consumption and CO2 emission, Chemical reaction and raw material content, Maintenance requirements, Emission of chemicals during usage and Final value ☐ Annexure no:

.....

Seal and Signature

MR7 CONSTRUCTION WASTE MANAGEMENT

$$\text{Percentage of recycled non hazardous construction waste } (X\%) = \frac{\text{Recycled nonhazardous construction waste/ salvage materials (Quantity)}}{\text{Total nonhazardous construction waste (Quantity)}} \times 100\%$$

If X% >= 25% (01 mark)

If X% >= 50% (02 mark)

Attachments

Table of nonhazardous materials proposed to convert in to salvage materials/ for recycle ☐ Annexure no:

…….……

Seal and Signature

MR8 REFREGERENTS AND CLEAN AGENTS

Agent	Global Warming Index

1. **2000 > Global Warming Index >700 (01 mark)**
2. **Global Warming Index < 700 (02 mark)**

Attachments

Specifications of proposed Refrigerants and /or Refrigerants and clean agents presently used. ☐ Annexure no:

……

Seal and Signature

EQ QUALITY OF INTERNAL ENVIRONMENT OF THE BUILDING

EQ1 MONITORING AND CONTROLLING OF CO_2

(02 mark)

Attachment

Layout which shows CO_2 sensor locations ☐ Annexure no:

Specifications of CO_2 sensor equipment install to monitor CO_2 content ☐ Annexure no:

…….……

Seal and Signature

EQ2 INDOOR AIR POLLUTANTS

Material	VOC value

Attachments

Consent letter on not using materials with urea and formaldehyde for building construction (01 mark) ☐ Annexure no:

Proposed low VOC product list & specifications (01 Mark) ☐ Annexure no:

…….……

Seal and Signature

EQ3 DESIGN AND INSTALLATION OF OPTIMUM TEMPERATURE CONTROL UNITS

Attachments (02 Marks)

Relevant ASHRAE standards according to the space & use	☐	Annexure no:
Details of the design use to maintain ASHRAE standards 55-2004 levels	☐	Annexure no:

…….

Seal and Signature

EQ4 AIR CHANGE EFFECTIVENESS

Attachments (01 Mark)

Summary report of the system used to optimize the air quality of each space ☐ Annexure no:

Design of the ventilation system to achieve marks ☐ Annexure no:

…….……

Seal and Signature

EQ5 DAY LIGHT

Percentage of building area covered from day light (X%) = $\frac{\text{Total area use day light}}{\text{Total building area}}$ X 100%

If X% >= 30% (01 mark)

If X% >= 50% (02 mark)

Attachments

Summary report and design drawings of the light intake into the building
Include glare control strategy.

☐ Annexure no:

.....

Seal and Signature

EQ6 CONTROLLING THE GLARE OF INTAKE SUNLIGHT

Cutting off uncomfortable glare on external glass facia of the building by using blinds or covers

1. Avoiding of direct sunlight flow to the internal spaces of the building and maintaining the lux level at less than 2000 ☐

2. Avoiding of direct sunlight flow to the building user by maintaining the light direction angle at 15 – 60 degrees. (Suita ble trees can be planted to cut off the direct sunlight flow to the building) ☐

3. Avoiding direct sunlight and obtaining a minimum of lux level >= 2% of 75 % of the total building area ☐

Attachment (01 Mark)

Specifications of daylight control system ☐ Annexure No:

A summary report confirming on daylight intake when the daylight glare control system is activated. ☐ Annexure No:

.....

Seal and Signature

EQ7 ELECTRICAL LIGHTING LEVEL

Attachment (01 Mark)

Lighting level standards according to the standards of sustainable energy authority	☐	Annexure no:
Layouts with lighting levels and brief description on lighting design	☐	Annexure no:

.....

Seal and Signature

EQ8 INTERNAL AND EXTERNAL VIEWS

$$\text{Percentage of view paths (X\%)} = \frac{\text{Area allocated for view paths}}{\text{Total area of walls}} \times 100\%$$

If X% >= 60% (01 mark)

Attachments

Floor layout marked with external views	☐	Annexure no:
Internal arrangement of the building with external framed view	☐	Annexure no:

.....

Seal and Signature

EQ9 INTERNAL NOICE LEVEL

Attachment (01 mark)

Standards according to the use of space	☐	Annexure no:
A detail report indicating the internal noise level according to GVB4/16 CIBSE Guide B4: noise and vibration control for building services system.	☐	Annexure no:

…….

Seal and Signature

WE WATER EFFICIENCY

WE1 RAINWATER HARVESTING

$$\text{Percentage of rainwater collection (X\%)} = \frac{\text{Total rainwater collection}}{\text{Total water requirement of the building}} \times 100\%$$

If X% >= 5% (01 mark)

If X% >= 10% (02 mark)

Attachments

Calculation of the total water requirement for each function of the building	☐	Annexure no:
Methodology of rainwater collection system	☐	Annexure no:
Rainwater collection capacity	☐	Annexure no:
Usage of collected rainwater in the building	☐	Annexure no:

.....

Seal and Signature

WE2 WASTEWATER RECYCLING AND EFFICIENT USE

$$\text{Percentage of reusing recycled water (X\%)} = \frac{\text{Recycled/ disposed water volume}}{\text{Total wastewater volume}} \times 100\%$$

If X% >= 10% (01 mark)

If X% >= 30% (02 mark)

If X% >= 50% (03 mark)

Refined >= 50% of the total wastewater volume and disposed to the environment (04 marks)

Attachments

A technical report on wastewater treatment, recycling system, storage facilities and distribution system	☐	Annexure no:
Initial calculation of proposed water purification and recycling percentage	☐	Annexure no:

.....

Seal and Signature

WE3 WATER METERING AND WATER LEAKS IDENTIFICATION SYSTEM

Attachment

Installing sub gauges for water management and supervision systems for rented spaces in the same premises	☐	Annexure no: (01 Mark)
Link sub metering to limit water leakage and wastage by positioning of EMS system	☐	Annexure no: (01 Mark)
Water sub metering layout	☐	Annexure no: (01 Mark)

…….……

Seal and Signature

WE4 WATER EFFICIENT EQUIPMENT

$$\text{Percentage of using water efficient compartments (X\%)} = \frac{\text{Total saving due to "efficient" equipment (A)}}{\text{Total water use with non-efficient fittings (B)}} \times 100\%$$

Equipment	**Saving due to efficient Equipment (A)**	**Water use of the non- efficient fitting (B)**

If X% >= 30% (01 mark)

If X% >= 50% (02 mark)

Attachments

Specification of the automatic and sensor control accessories with saving percentages	☐	Annexure no:
Short explanation on achievement of system requirement	☐	Annexure no:
A report on proposed equipment	☐	Annexure no:

……

Seal and Signature

IN GREEN INNOVATION

IN1 UTILIZATION OF INNOVATIONS

Attachments (05 Marks)

Project report with certification for innovation	☐	Annexure no:
Innovative proposals with detail drawings	☐	Annexure no:

.....

Seal and Signature

SC SOCIO CULTURAL COMPATIBILITY

SC1 DESIGN AND BUILDING OF SOCIALLY AND CULTURALLY COMPATIBLE BUILDINGS

Attachments (02 Marks)

Drawings conferming that the design is compatible with social and cultural characteristics of the context	☐	Annexure no:
Photographs of surrounding context	☐	Annexure no:
Certified document to confirm that the design is done accordance with regulations of the declared zone (Approved plans/ documents)	☐	Annexure no:

.....

Seal and Signature