GUIDE TO

EFFECTIVE DOCUMENTATION

A **GRIHA Council** Publication

First Edition 2024

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PREFACE

We're pleased to introduce the "Guide to Effective Documentation" manual, developed by the GRIHA Council as part of the GRIHA Technical Manual series. In the green building industry, where accurate documentation is key to establishing credibility, this manual serves as a valuable resource for consultants, engineers, architects, and other stakeholders involved in the GRIHA rating process.

The GRIHA rating system requires detailed documentation to demonstrate that projects have implemented all necessary measures to reduce their environmental impact. This manual offers comprehensive guidance on best practices for submitting these documents, helping project teams understand why GRIHA Council requires specific documents. By clarifying these aspects, the manual ensures a smoother evaluation process and assists GRIHA-certified evaluators in their assessments. It covers key topics such as:

1. Why effective documentation is important.
2. The relevance of each type of document.
3. What is to be highlighted in a document
4. How to perform calculations.
5. Types of documents to include (though this list is not exhaustive).

You'll also find examples from a standout project team that has demonstrated exceptional documentation practices and achieved a high rating.
We have a firm commitment to maintaining the highest standards of credibility. In January 2023, we introduced a policy to reinforce this commitment after identifying some instances where documents submitted for evaluation did not meet our expectations.

By working together, we can ensure that we consistently uphold best practices, promote transparency, and foster a culture of integrity, honesty, and care in everything we do. This approach will help us avoid any unintended missteps and keep our focus on truly sustainable practices that benefit the environment.

Growing Together, Side by Side

Together, let us uphold the highest standards of construction excellence and foster a culture of safety and innovation on every site.

Sanjay Seth
Vice President &
Chief Executive Officer

DEVELOPMENT TEAM

Shabnam Bassi
Deputy Chief Executive Officer
& Secretary

Akash Deep
Deputy General Manager
& Treasurer

Anupam Buttan
Senior Manager

Ankit Bhalla
Manager

Shaily Mahera
Manager

Arjun C Babu
Deputy Manager

Veena N
Senior Project Officer

B Vignesh
Assistant Project Officer

Table of Contents

ACKNOWLEDGEMENT

Know the Team

Client

Utkarsh Small Finance Bank Ltd.

DISCLAIMER

*This **Guide to Effective Documentation Manual** is intended solely for reference purposes. It does not represent the final or comprehensive guidelines for project documentation.*

*The project team is refer to the various **detailed GRIHA rating variant manuals** to obtain a complete and accurate understanding of the requirements and standards applicable to the project.*

*****This "Guide to Effective Documentation" acts as base manual for reference purposes and must not be considered as the final documentation for a project. Project specific documentation will vary from project to project while keeping this as base.

ZERO TOLERANCE POLICY

The GRIHA (Green Rating for Integrated Habitat Assessment) Council has introduced a Zero Tolerance Policy aimed at enhancing the integrity and transparency of the documentation process within its certification framework. The introduction of this Zero Tolerance Policy reflects GRIHA Council's commitment to sustainability and ethical practices in the built environment. By ensuring rigorous documentation standards, GRIHA aims to promote trust and accountability within the certification process.

Recently, the GRIHA Council has observed that some project teams have resorted to dishonest and fraudulent methods to comply with the GRIHA rating criteria. Instances of forged document submissions have been detected during the verification process, where accredited labs confirmed these documents were falsified. This constitutes forgery and represents significant misconduct by the project teams, leading to severe consequences.

The GRIHA Council is introducing the following penalties under its 'Zero-Tolerance Policy' to prevent fraudulent submissions. Upon verifying if any false or forged documents are submitted by the project teams, the following penalties will be enforced:

- A penalty fee equivalent to twice the certification fee will be imposed on the project teams/clients.
- If the criteria pertain to a mandatory compliance requirement, project teams/clients may resubmit the documents upon payment of a penalty fee.
- If the criteria pertain to a non-mandatory compliance requirement, no points will be awarded for that criterion. However, the evaluated rating will be released upon payment of a penalty fee.
- The deadline for fulfilling the penal provisions is one month from the date of notification to the project teams/clients. Failure to comply within this period will result in the cancellation of the rating and forfeiture of the registration fee and any other charges paid to the GRIHA Council.

In the pursuit of sustainable building practices, GRIHA stands as a vital framework guiding project teams towards environmental excellence. As we prepare this manual to assist the project team involved in the GRIHA documentation process, it is essential to emphasize the significance of good documentation practices. Proper documentation not only streamlines the evaluation process but also ensures that claims made during the assessment are credible, transparent, and aligned with GRIHA's appraisal requirements.

Advantages of good documentation

- **Aids in faster closure of projects which would increase the client confidence in the consultants.**
- **Reduces the time taken by evaluators for completing the review.**
- **Reduces the iterations or multiple submission of documents that may be required.**

A well-structured documentation, clearly articulates the project team's objectives for each criterion and detailing how their strategies align with GRIHA's requirements. Accompanying this with narrative, CAD drawings etc. play a crucial role in visually substantiating claims made in the documentation. They provide a clear representation of design intent, ensuring that calculations and narratives are in line with the appraisal requirement. Furthermore, quantifying performance through calculations is vital; it transforms subjective claims into objective metrics that demonstrate compliance with GRIHA standards.

Supporting documents, such as technical specification sheets, purchase orders, test reports, and simulation results for energy and daylight, further enhance the credibility of the submission. These documents provide the necessary data to substantiate claims made in the narrative and calculations, ensuring that all aspects of the project are backed by solid evidence. This guidebook aims to equip you with the knowledge and tools to navigate the GRIHA documentation process effectively, ultimately contributing to the creation of sustainable habitats that align with our collective environmental goals.

Understanding the Key Components of GRIHA Document Submission

The GRIHA rating variant is structured into various parameters, which are organized into different sections and sub-sections. These sub-sections are referred to as criteria. Each criterion includes its intent, appraisal the requirements for evaluation and compliance. In the context of submitting documents for the GRIHA certification, a comprehensive understanding of each criterion's Intent, Appraisal, and Compliance is imperative. Each of these elements are important to comprehend and demonstrate project teams commitment to sustainable practices.

Intent

Refers to the purpose or reason why the particular criterion has been included to be part of the rating.

Appraisal

Enlists the criterion requirements. It explains what needs to be demonstrated under a particular criterion to attain points under the rating.

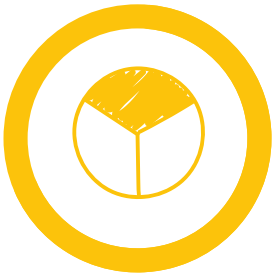
Compliance

Enlists the supporting documents that are required to prove that the project is in line with the appraisal requirements.

Types of Appraisals

Types of appraisals helps in categorizing the criteria based on their **importance and applicability to a project**. These classifications help **streamline the assessment process** and guide projects in achieving sustainable design and construction practices.

These appraisals are essential and must be fulfilled for a project to qualify for GRIHA rating. They ensure conformity with various Government standards, National and International standards.



C

In partly mandatory appraisal, some points are mandatory while others are optional or can be attempted for additional points

As the name suggests, these appraisals are optional and can be attempted for additional points.The more optional appraisals a team attempts, it showcases the extra mile they've made to demonstrate their commitment to sustainability.

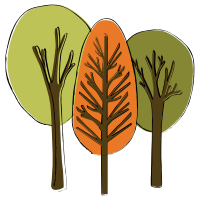
C

Certain appraisals may not apply to a particular project due to its typology, usage, site conditions etc. Such appraisals comes with an applicability check.

Understanding Applicability check through some examples

Non-applicability clauses in GRIHA allow projects to exclude certain appraisals that are not relevant to their specific context. Here are a few examples to illustrate this:

1



If there are no existing mature trees on site at the time of site allotment.

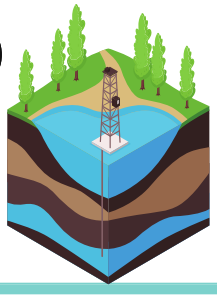
In order to claim non-applicability, the project team is required to submit initial site survey plan. This document along with date stamped photographs will help verify the conditions of the site prior to commencement of any construction activity.

2

If the topsoil is not fertile before commencement of construction activities and can't be made fertile through organic means.

In order to claim non-applicability, the project team is required to submit topsoil test report to assess the various parameters depicting the soil fertility. Incase its a redevelopment project, date-stamped photographs and initial site survey plan are required to demonstrate compliance.

3



If the ground water table is high and ground water recharging is not feasible.

In order to claim non-applicability, the project team is required to submit extract from CGWB norms confirming the high water table in that particular project locality or Geotechnical investigation report indicating water table level.

Narrative

Narrative

The narrative is a crucial part of GRIHA documentation. It strengthens the credibility of the submission by justifying strategies and demonstrating alignment with appraisal requirements.. A well-structured narrative ensures transparency by detailing calculations, methodologies, and design decisions, making it easier for *evaluators to assess compliance.Far from being just an add-on, a strong narrative gives clarity in vision, specifies the number of points attempted, and enhances the clarity, This streamlined approach significantly reduces the time required for the review process, benefiting all stakeholders involved in the project as they work towards achieving GRIHA certification.

Supporting Assessment and Verification

A well-structured narrative enables GRIHA evaluators to assess the project effectively by organizing and linking various documents. It simplifies navigation through extensive documentation, ensuring that relevant sections are easily accessible. Highlighting key details helps prevent crucial information from being overlooked during the review process.

Facilitating Communication

The narrative serves as a communication tool among project team and GRIHA Council. It ensures a unified understanding of the project's sustainability goals for each appraisal.

Holistic Overview

The narrative providesThe narrative offers a clear description of the project's objectives, strategies, and outcomes, placing the technical documentation in context. It helps reviewers understand the project's intent and design philosophy, clarifies discrepancies in technical submissions, and illustrates how various elements align to meet GRIHA compliance.

*****Evaluators: Evaluators are working professionals with extensive knowledge of the GRIHA rating. They are chosen after passing an examination that focuses on specific aspects of the GRIHA rating system. The purpose of having third-party evaluators is to ensure transparency and uphold an unbiased approach in the project evaluation process.

Points to remember while writing a narrative

01 Describe the project strategy or approach in alignment with the criterion requirements and specify any cross-references to other criteria if applicable.

02 List all documents submitted under a criterion in the online panel, such as Excel sheets, photographs, technical sheets, and other relevant documents.

03 Include excerpts of supporting documents or calculations where necessary.

Sample Documentation : 1

Site Selection

Project Name	Utkarsh Small Finance Bank Ltd.
Project Code	19GR0053
Site Area	7,205.18 sqm
Built up area	17,250 sqm
Typology	Commercial
Occupancy	1,726
Max. points	1
Attempted points	1
Not applicable points	0

- The project is located in Varanasi, Uttar Pradesh.
- The project has been constructed as per the approved sanctioned drawings which are in conformity with the development plan/master plan/URDPFI guidelines.
- Project has complied with all statutory norms as stipulated in the building bye law.
- The project has obtained all necessary NOCs from concerned departments and has obtained occupancy certificate
- The following documents have been enclosed to demonstrate compliance
    - Approved site plan
    - Occupancy Certificate
    - Water NOC
    - Fire NOC

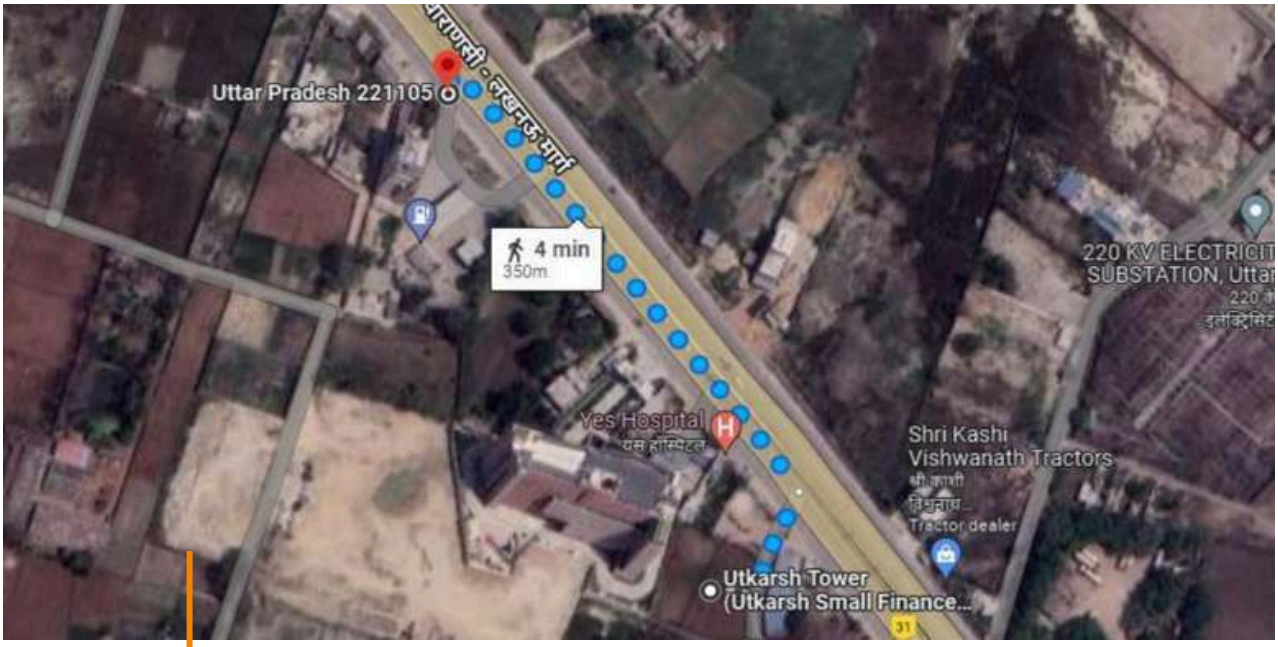
- At least 5 basic services are in house or at 500 m walking distance from the main entrance of project

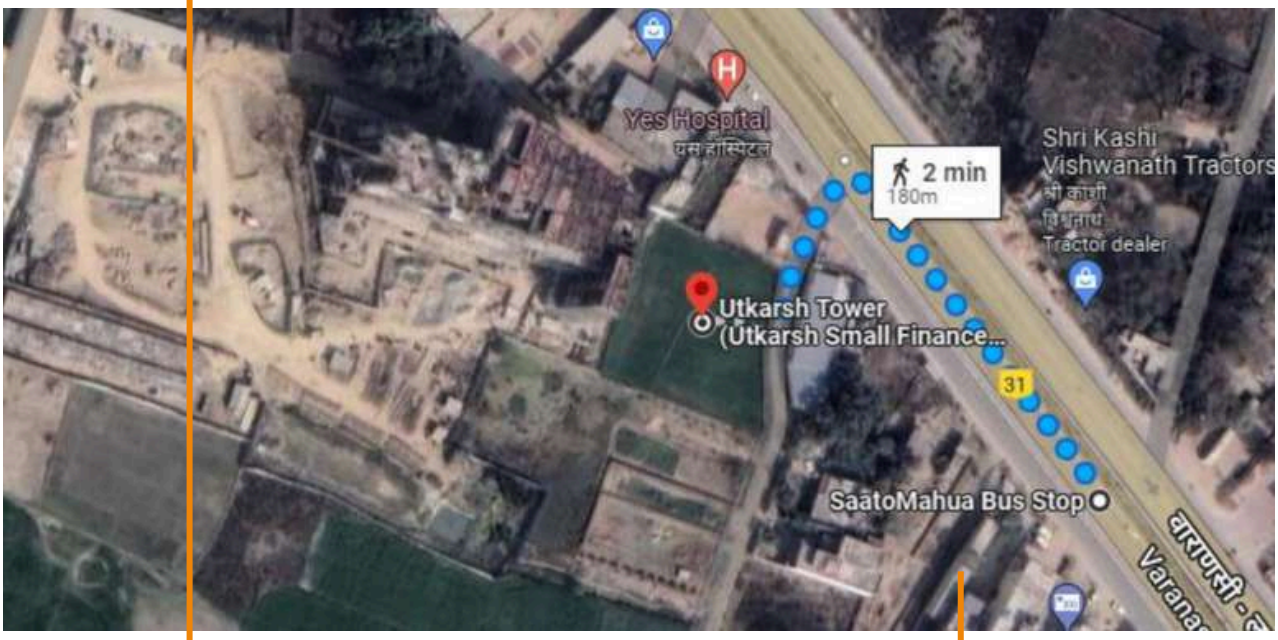
Sl No	Type of amenity	Distance from site entrance
1	Healthcare/ Pharmacy	350 m
2	Bus stop	180 m
3	Grocery Store	350 m
4	Restaurant	In house, 3rd Floor
5	Bank/ATM	In house, Ground floor

Extract of narrative submitted by the Project team for 'site selection'.

The above narrative clearly mentions the basic details of the project, its alignment with the appraisal requirement and clearly enlisting the supporting documents submitted in the online panel.

Sample Documentation : 1





*Google Earth image indicating location of nearby amenities submitted as part of the narrative in support of it.

Sample Documentation : 1

***Photographs depicting the amenities located from the main entrance of the project. Grocery store (left) and photograph of the bus stop (right).**

*Likewise screenshots of Google maps and photographs of the all the 5 basic amenities that are claimed by the project team have to be submitted to demonstrate compliance.

Sample Documentation : 2

Design to mitigate UHIE

Project Name	Utkarsh Small Finance Bank Ltd.
Project Code	19GR0053
Site Area	7,205.18 sqm
Built up area	17,250 sqm
Typology	Commercial
Occupancy	1,726
Max. points	2
Attempted points	2
Not applicable points	0

- The project is using mixed strategies to mitigate the Urban Heat Island Effect.
- The extract of the calculation below indicates that **59.3 %** of the total site surface visible to sky (including the roofs but not the landscape area) are covered with high SRI tiles (SRI >0.5) on roof and non-roof areas are shaded by trees and cantilevered roofs.

Table 1: UHIE/Roof, Nonroof area calculation	
Site area (sq.m.)	7205.84
Landscape area (sq.m.)	1838.64
Net site area	**5367.20**
Total area under :	
a.Area shaded with trees (sq.m.)	994.40
b.Non roof area, shaded under cantilevered roof (sq.m.)	468.70
c.Building roof area under high SRI tiles (sq.m.)	1496.33
d.Building roof area under Solar PV (sq.m.)	224.37
Total treated area (sq.m.)	**3183.80**
Percentage treated area (%)	**59.3%**

The following documents have been attached to demonstrate compliance:

1. Landscape plan and site plan highlighting various surface finishes
2. Purchase order and technical specification sheet of high SRI tiles used on terrace
3. Photographs of treated areas (roof and tree shade area)
4. Calculation for tree canopy area
5. Detailed calculation in excel sheet

Extract of narrative submitted by the Project team to demonstrate reduction in UHIE

- The narrative above outlines the different strategies implemented on-site to reduce Urban Heat Island Effect (UHIE).
- It includes a consolidated calculation showing the treated areas and their percentages relative to the total treated area.
- It lists the supporting documents submitted through the online panel, such as specification sheets, purchase orders, detailed calculations, and photographs, to demonstrate compliance.

Sample Documentation : 2

Photograph indicating the installation of high SRI tiles on the terrace areas submitted submitted in support of the narrative.

Sample Documentation : 2

Photograph indicating the terrace area shaded by solar PV panels submitted in support of the narrative.

Sample Documentation : 3

Smart metering and monitoring

Project Name	Utkarsh Small Finance Bank Ltd.
Project Code	19GR0053
Site Area	7,205.18 sqm
Built up area	17,250 sqm
Typology	Commercial
Occupancy	1,726
Max. points	8
Attempted points	5
Not applicable points	0

Basic Metering

To comply with the mandatory requirements the following basic meters have been installed:

- **Energy Meters**
  - Utility Grid
  - DG Set
  - On site Renewable Energy System
- **Water Meters**
  - Bore Well
  - Treated Water outlet from STP

Sub -Metering/Extended metering

- **Energy Meters**
  - Lighting indoor and outdoor
  - Central HVAC and /or distributed units
  - Chillers (BTU meters)
  - Basement Lighting
  - UPS
  - Lighting
- **Water Meters**
  - Irrigation
  - STP/WTP/ETP
  - Cooling Tower

Smart metering and monitoring system capable tracking energy and water consumption through a web hosted portal and capable of the following:

- Hourly data reporting in near-real-time (no more than 15-minute delay)
- Energy mix breakdown and consumption patterns.
- Water consumption patterns from various sources.
- Ability to set energy & water consumption targets, alarms and pricing.
- Ability to compare historical trends and benchmark data.
- Real time monitoring with user interface which operates even in mobile devices.

Extract of narrative submitted by the Project team indicating location and type of meters installed in the project

- The narrative above clearly enlists the different types of energy and water meters installed in the project under various categories.

- This gives a clear idea to the evaluator on the various meters installed in the project, this will in turn help in saving time as the evaluator will now only need to verify the locations of these meters against the submitted Single Line Diagrams (SLD's).

Sample Documentation : 4

Photographs from clockwise direction indicating the installation of digital meters for utility grid, DG set and On-site renewable energy system submitted in support of the narrative.

Sample Documentation : 4

Photographs indicating the installation of digital water meters at the necessary point sources in the project submitted in support of the narrative.

Possible errors in the narrative

- Possible inconsistencies between the number of points attempted on the online panel and what is stated in the narrative.
- Inconsistency in the area / project specific details mentioned in the narrative from the actual site specifications.
- Documents listed in the narrative may have been overlooked and not uploaded to the panel or vice versa.

Drawings

Drawings

Drawings are crucial for GRIHA document submissions as they provide an accurate representation of the building's design, layout, construction elements, and the location of various systems installed on-site. This makes it easier for evaluators to understand and verify the claims in the documentation.

The following types of drawings are typically expected in GRIHA evaluation:

- Good for construction drawings
- Landscape drawings
- Site plan drawings
- Site Plumbing layouts
- External and internal lighting layouts
- Floor plans
- HVAC fresh air layout
- Wet riser diagram
- Rainwater harvesting detail drawings
- Elevation and section drawings, including door/window schedules
- Electrical Single-line diagram drawings

Area verification

Accurate verification of project areas is essential for assessing elements such as virtual boundaries, landscaping areas, building footprints, and terrace areas.

Design

Drawings provide valuable insight into the design, including the number of floors, building morphology, fenestration details, and other architectural elements. They help third-party evaluators gain a comprehensive understanding of the project.

Location & Identification

In certain strategies, it is necessary to specify the exact locations within the project where specific actions are implemented.

Points to remember while making drawings

01 The drawings should be complete and readable, with appropriate legends and a clear north orientation demarcated.

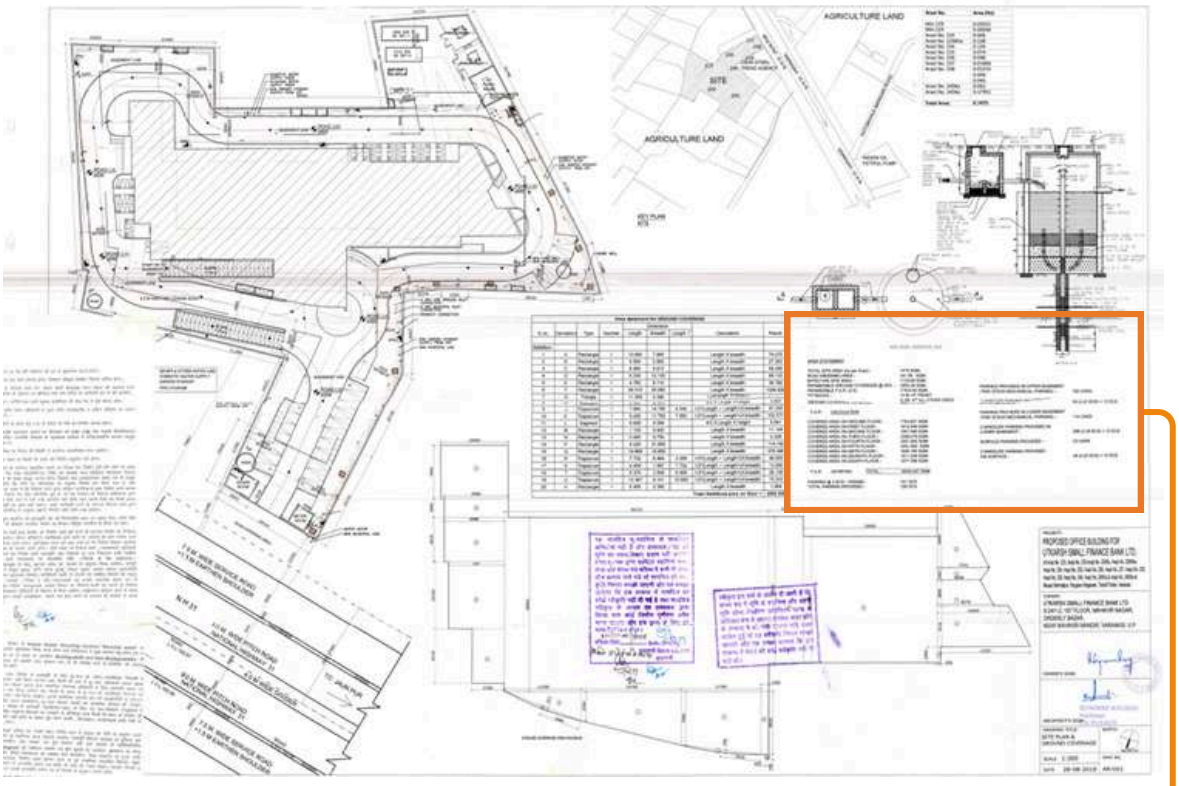
02 Ensure the drawing units are set correctly before starting the work.

03 Different layers must be used to distinguish various finishes or components in the drawings.

04 To verify the areas, provide clear hatching or polylines with corresponding legends for each.

05 It is recommended that all the supporting drawings are submitted in CAD format.

Sample Documentation : 1



AREA STATEMENT

TOTAL SITE AREA (As per Arazi) -	7475 SQM.
ROAD WIDENING AREA -	341.56 SQM.
EFFECTIVE SITE AREA -	7133.60 SQM.
PERMISSIBLE GROUND COVERAGE @ 40% -	2853.38 SQM.
PERMISSIBLE F.A.R. (2.5)-	17833.60 SQM..
SETBACKS -	12 M. AT FRONT & 9M. AT ALL OTHER SIDES
GROUND COVERAGE ACHIEVED	

F.A.R. CALCULATION

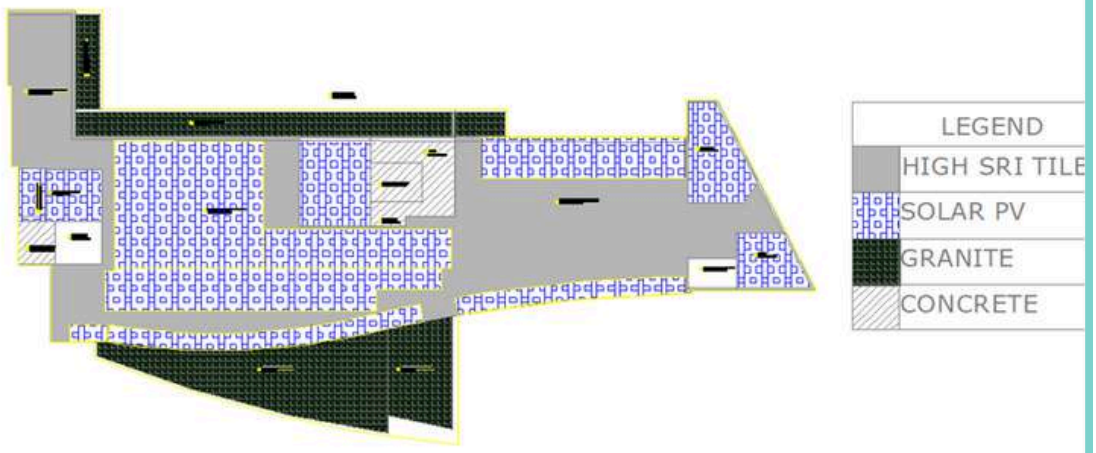
COVERED AREA ON GROUND FLOOR -	1783.621 SQM.
COVERED AREA ON FIRST FLOOR -	1614.548 SQM.
COVERED AREA ON SECOND FLOOR -	1947.006 SQM.
COVERED AREA ON THIRD FLOOR -	2088.079 SQM.
COVERED AREA ON FOURTH FLOOR -	2051.692 SQM.
COVERED AREA ON FIFTH FLOOR -	2051.692 SQM.
COVERED AREA ON SIXTH FLOOR -	1800.165 SQM.
COVERED AREA ON SEVENTH FLOOR -	1611.248 SQM.
COVERED AREA ON EIGHTH FLOOR -	1577.398 SQM.
F.A.R. ACHIEVED TOTAL -	16525.447 SQM
PARKING @ 2 ECS / 100SQM -	331 ECS
TOTAL PARKING PROVIDED -	335 ECS

SECTION A-A

PARKING PROVIDED IN UPPER BASEMENT (TWO STACK MECHANICAL PARKING) -	102 CARS
2 WHEELER PARKING PROVIDED IN UPPER BASEMENT -	50 (0.25 ECS) = 12 ECS
PARKING PROVIDED IN LOWER BASEMENT (TWO STACK MECHANICAL PARKING) -	114 CARS
2 WHEELER PARKING PROVIDED IN LOWER BASEMENT -	288 (0.25 ECS) = 72 ECS
SURFACE PARKING PROVIDED -	23 CARS
2 WHEELER PARKING PROVIDED ON SURFACE -	48 (0.25 ECS) = 12 ECS

Approval drawing indicating the permission acquired to construct the proposed number of the floors along with the BUA.

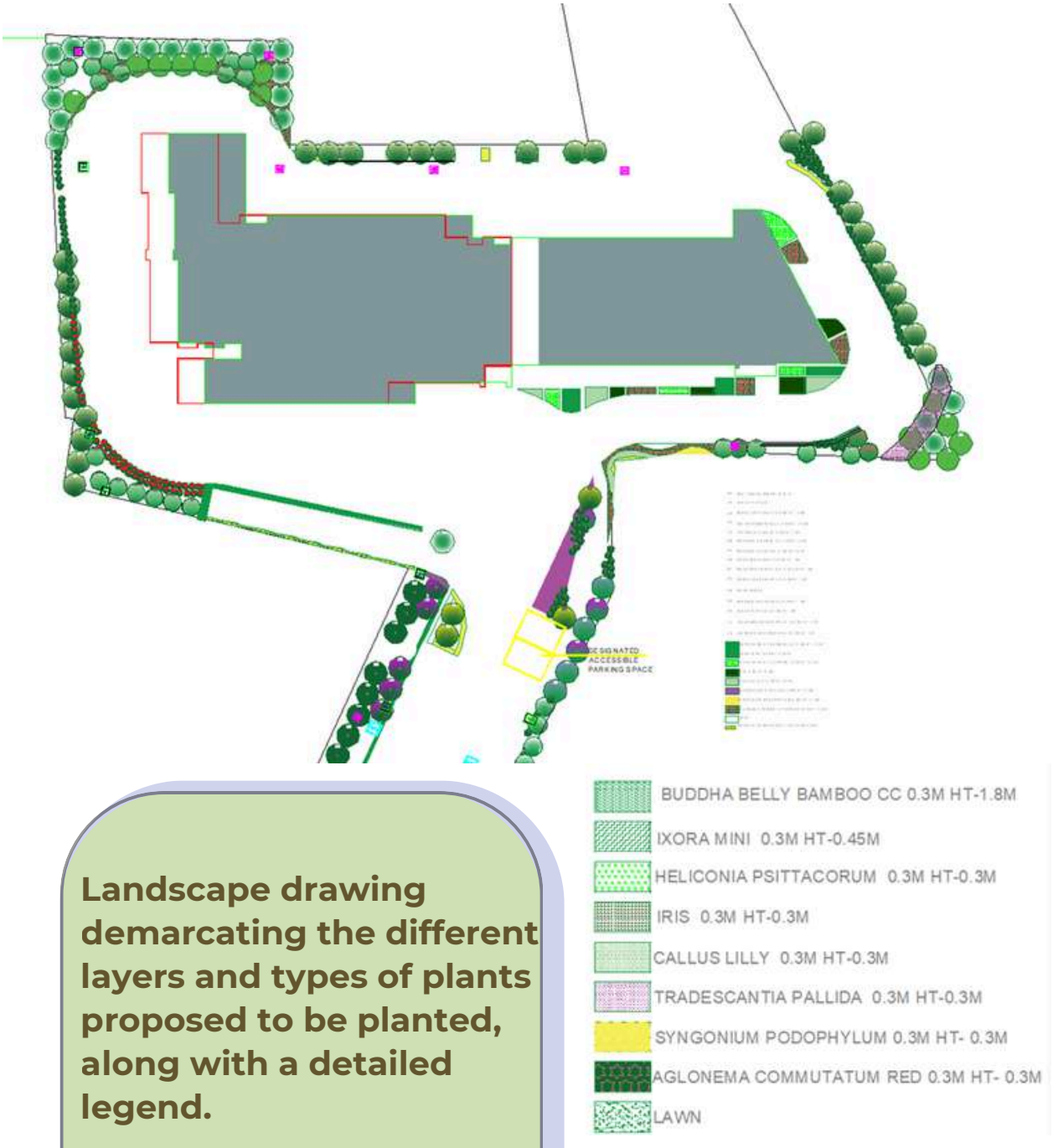
Sample Documentation : 2



TERRACE PLAN WITH FINISHES TYPE AND INSTALLED SOLAR PV

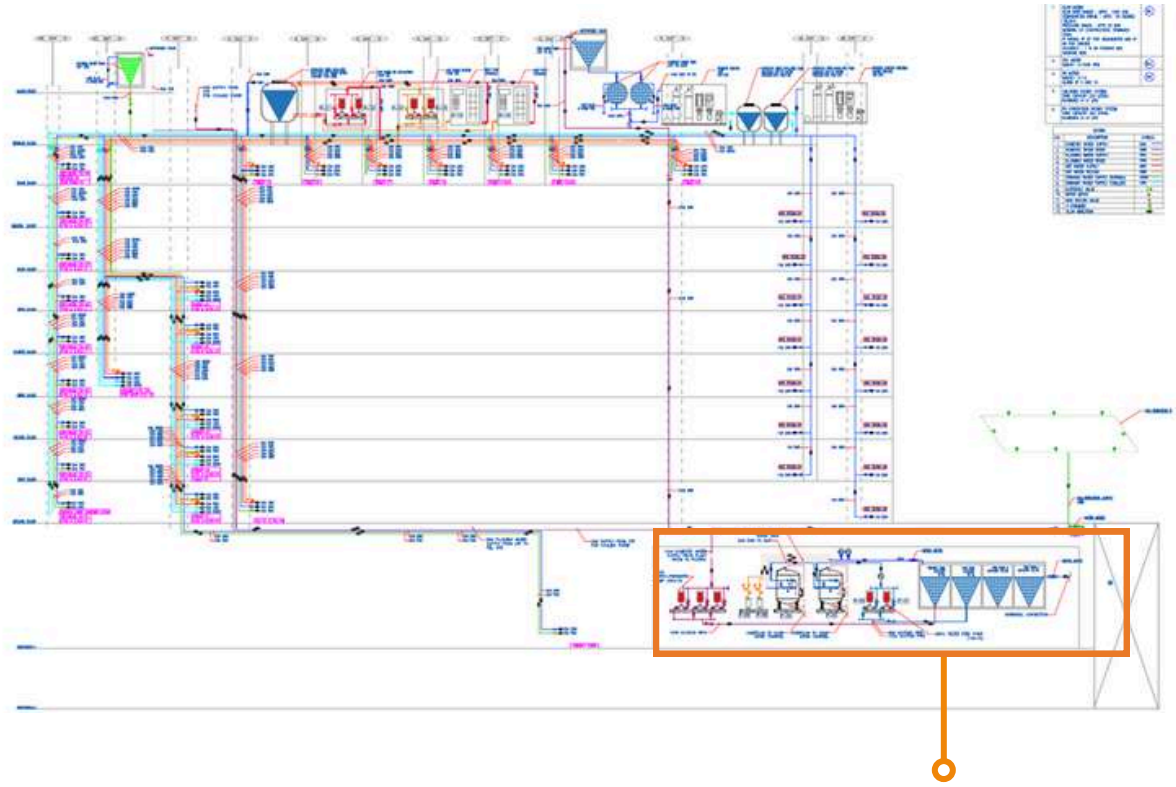
Terrace plan demarcating the various areas where different strategies are used for mitigating UHIE.

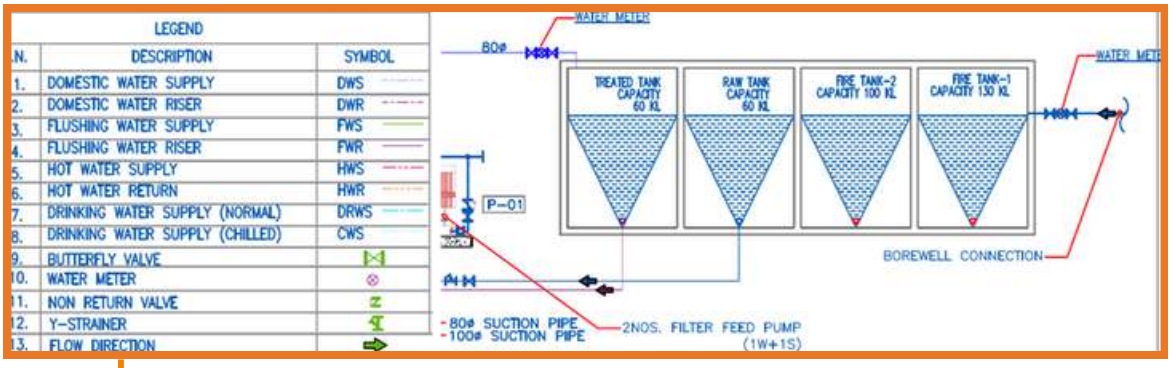
Sample Documentation : 3



Landscape drawing demarcating the different layers and types of plants proposed to be planted, along with a detailed legend.

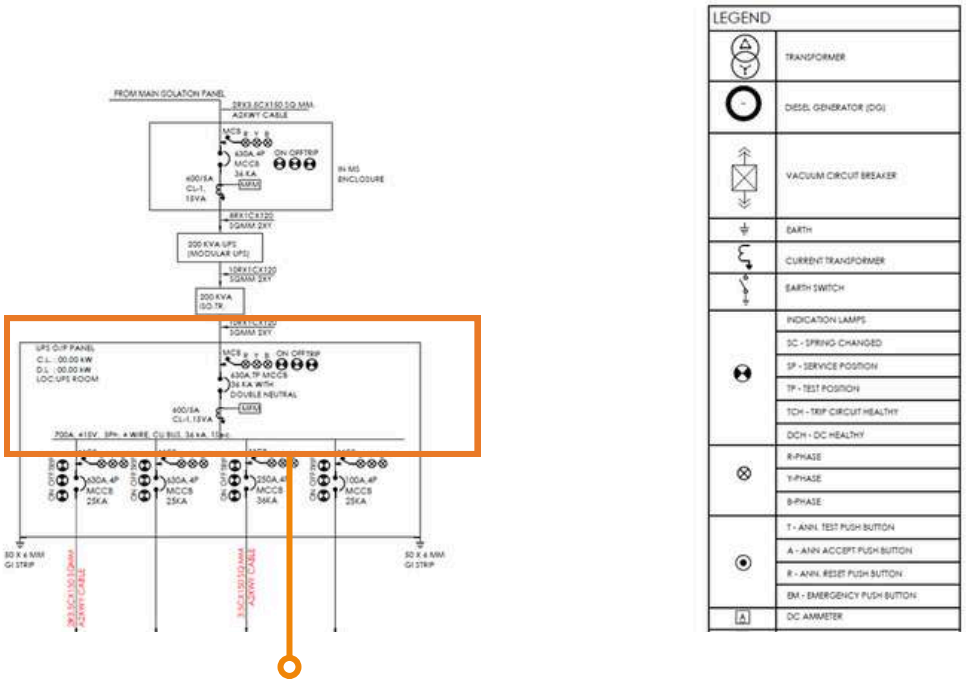
Sample Documentation : 4

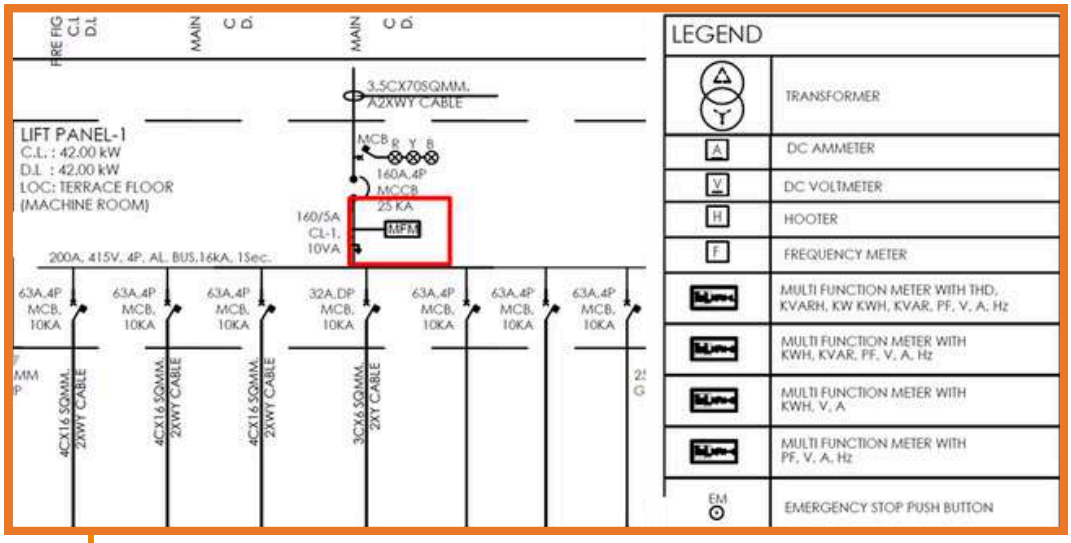




Water riser diagram demarcating the various plumbing lines and meters along with a detailed legend.

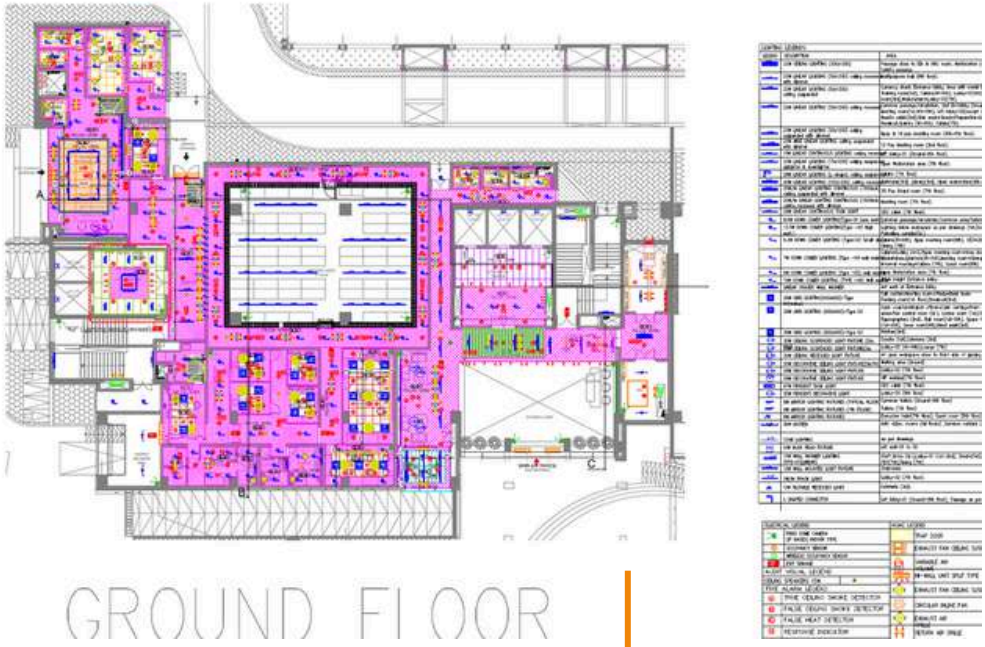
Sample Documentation : 5





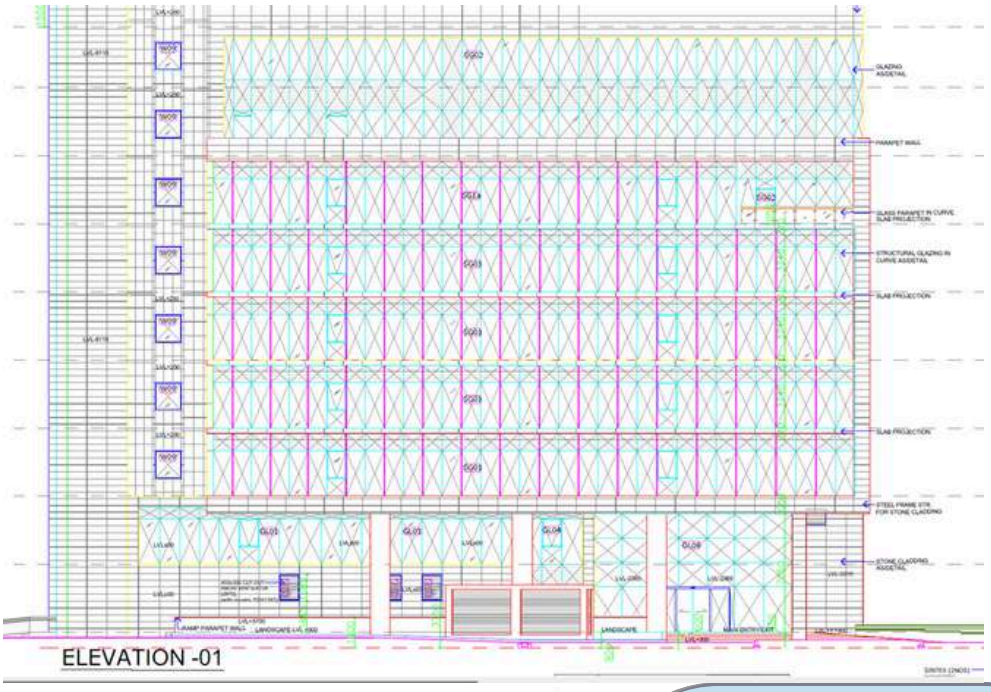
SLD diagram demarcating the electrical lines and meters along with a detailed legend.

Sample Documentation : 6



Interior lighting layout, floor wise, along with detailed fixtures legend.

Sample Documentation : 7



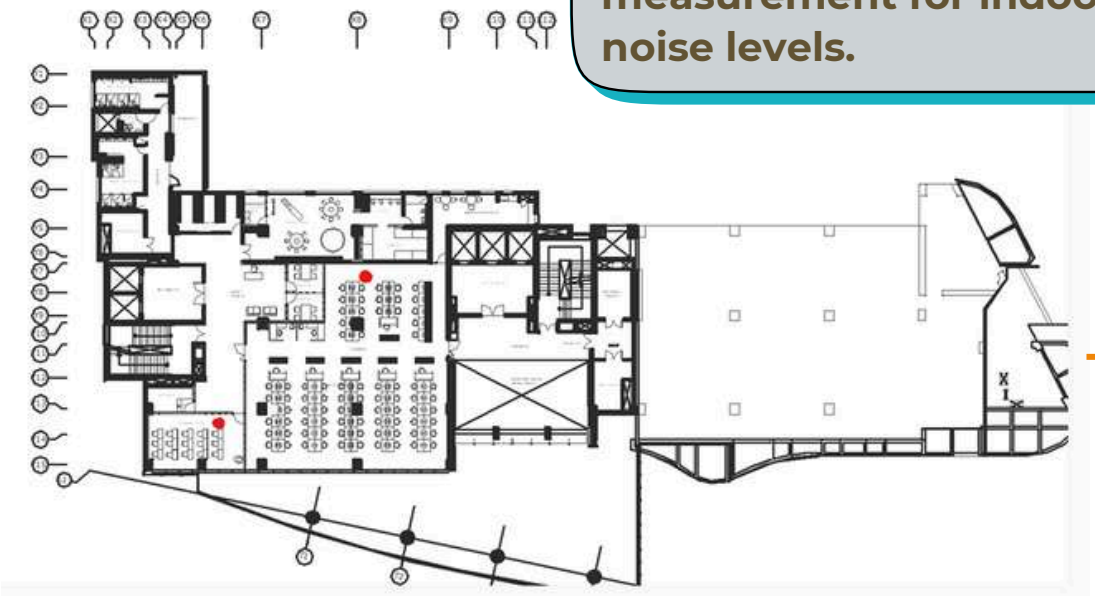
CIVIL OPENING SCHEDULE - FIFTH FLOOR				
01. DOORS				
NO.	WIDTH	SILL	LINTEL	LOCATION
D02	1500	—	2400	Lobby of Ele. & AHU room
D03	1050	—	2400	Differently abled Toilet
D05	900	—	2400	Pantry & Store room
D6a	900	—	2400	Toi.'s Entry (Toi. no-13)
D06	750	—	2400	Toi.'s Entry (Toi.no-14)
D06a	600	—	2400	Janitor Closet
FD01	1630	—	2400	Staircases Entry/Exit
FD02	1630	—	2400	Ele & AHU Room
SD03	600	600	2100	Service shaft-01
02. VENTILATORS				
V02	1500	2100	2700	Rear side Toilets & Pantry
V03	2400	2100	2700	Male & Female Toi. 13
		2100	2700	
03. WINDOWS				
W01	3500	1050	2700	Office Space
W03	2510	1050	2700	Office Space
W07	2400	1050	2700	2m wide corridor
W08	1850	1050	2700	2m wide corridor
W09	1650	1050	2700	Office Space
W12	1000	1050	2700	Office Space

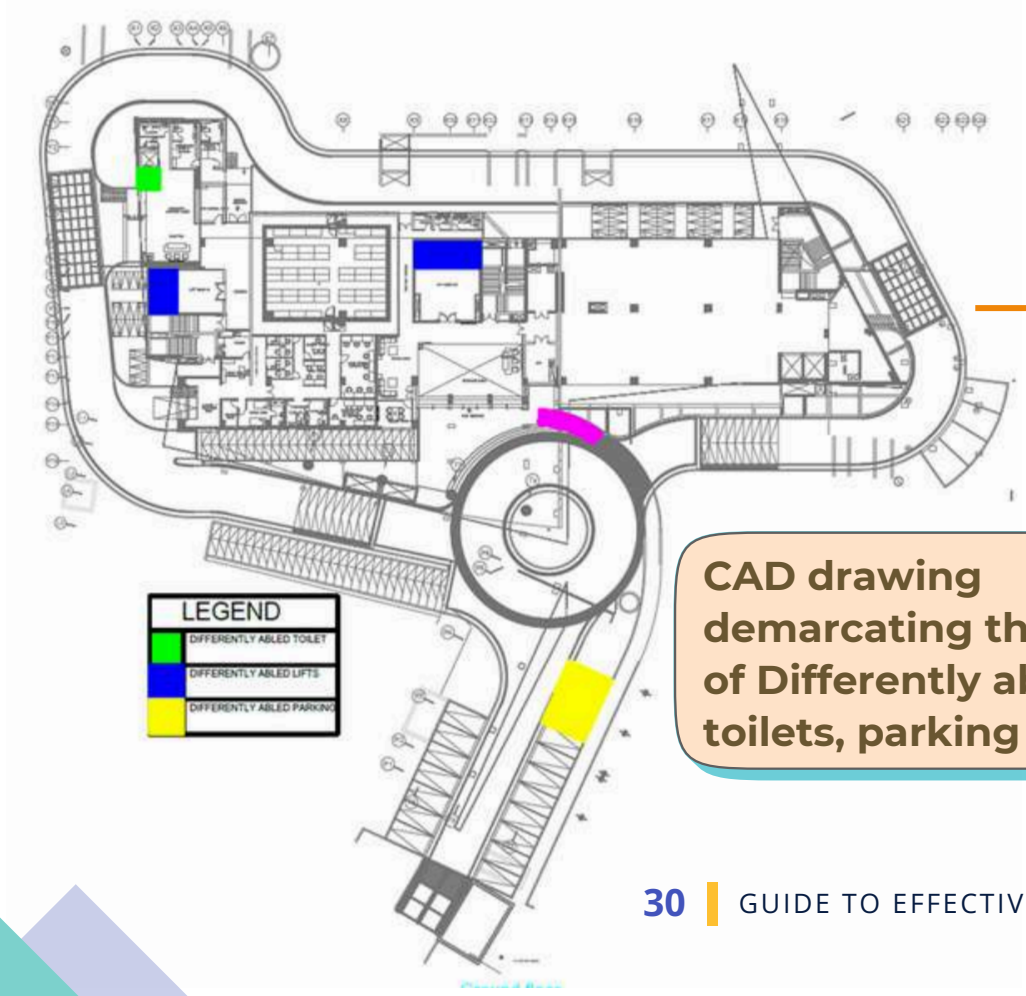
Detailed *CAD drawing of the building elevation drawing indicating the legends of door & window schedules.

*Elevation drawings of all orientations in AutoCAD format are required to be submitted.

Sample Documentation : 8

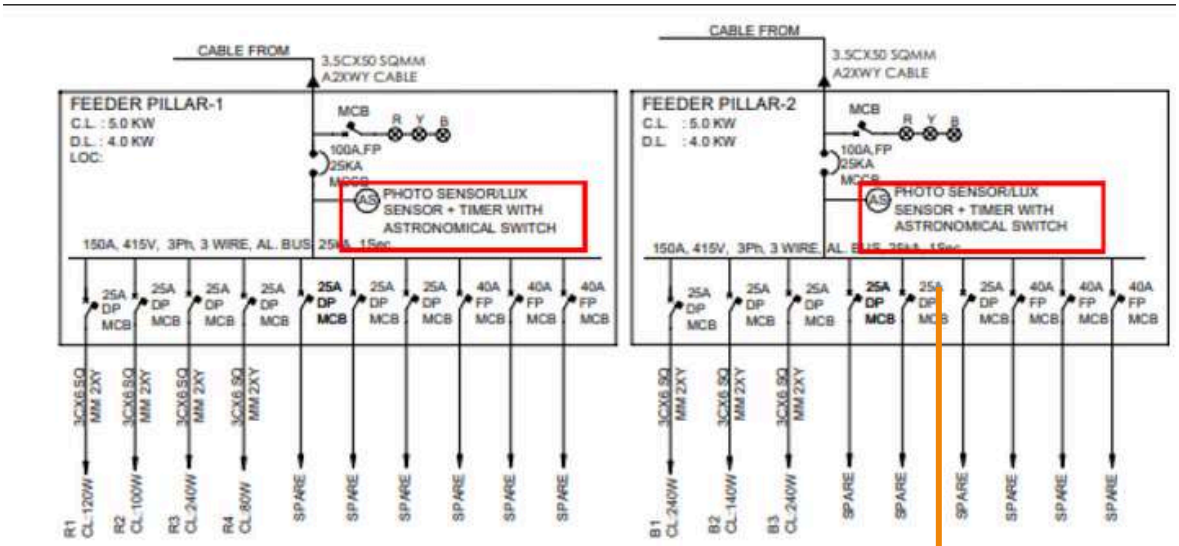
CAD drawing demarcating the location of measurement for indoor noise levels.





CAD drawing demarcating the location of Differently abled (DA) toilets, parking and lifts.

Sample Documentation : 9



SLD drawing demarcating the location of Astronomical timer switch

Possible errors in the drawing

- Drawings may be submitted in PDF format, making it difficult to verify areas and other details.
- Absence of legends in the drawings leads to difficulty in interpreting drawings by the evaluator.
- Files may sometimes be corrupted or have missing links.
- There could be overlapping areas, potentially leading to double counting.
- Blocks and hatches might be exploded in the drawings, may cause the file size to become too large to view.

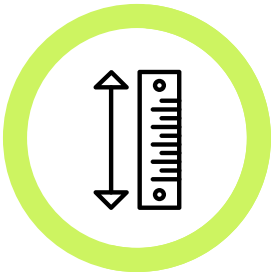
Calculations

Calculations

Calculations play a crucial role in the submission of documents for GRIHA rating, as they provide a clear and quantifiable assessment of a building's performance in various sustainability aspects. Accurate calculations ensure that the project's adherence to GRIHA's benchmarks is transparently demonstrated, facilitating a thorough evaluation of energy efficiency, water conservation, and waste management practices. Moreover, these calculations serve as a foundation for justifying design choices and material selections, helping to identify areas for improvement.

Justify

Use calculations to justify the impact of the design, providing evidence to support the narrative statement. This also helps in awarding points based on the appraisal criteria and point distribution slabs.



Quantify

Based on the building's unique design, occupancy, and typology, the impact of sustainable measures implemented by the team can be accurately assessed.

Points to remember while submitting calculations

01 Calculations help in quantifying the building performance after adopting various sustainability strategies.

02 It is recommended to use the in built calculator in the online panel to the extent possible.

03 The values and areas used in the calculations should correspond with the numbers specified in the specification sheet or supporting drawings.

04 Providing backend excel sheet calculations for the values used in the online calculator can help the evaluator understand the rationale behind the consolidated numbers displayed in the online panel.

Sample Documentation : 1

Fields highlighted in grey are the parameters that needs to be fed in the online calculator

Calculation for percentage hard paved area treated on site

Site Area (sq.m) *	7205.84
Landscape Area (sq.m) *	1838.64
Net Site Area	5367.2
Total area under *:	
Soft Paving (sq.m)	0
Paving with vegetated roof/trees/Solar Panels (sq.m)	1687.47
Paved area with SRI>0.5 (sq.m)	0
Building roof area under Terrace Garden/High SRI finished/China Mosaic (sq.m)	1496.33
Total treated area (sq.m)	3183.8
* The areas entered above should not overlap.	
Percentage treated araea (%)	59.32

Save

Exit Calculator

Screenshot of the online calculator demonstrating the percentage area treated. This value will determine the points attempted for this criterion.

Sample Documentation : 1

*Excel reference calculation submitted by project team for percentage of hard paved area treated on site

S.No.	Spaces	Area(Sq.m)
1	Total Site boundary	7205.84
2	Building Footprint	2241.61
3	Building Ground Coverage	1772.91
4	Total ground coverage	1834.60
5	Total hard paved area	3113.45
6	Total soft scape/Landscape	1838.64
	Non Roof	**4902.54**
	Softscape	**1838.64**
1	Total trees area	994.40
2	Shrubs area	155.52
3	Plants area	414.29
4	Grass pavers area(100%)	274.43
	Hardscape	**3063.89**
1	Area of services area	510.04
2	Area of boundary wall	106.31
3	Two wheeler Parking area	144.80
4	Road and Ramp area (excluding building footprint)	1998.04
5	50% of Grass pavers area/Visitors four wheeler parking	0.00
6	Granite pavement	304.70
	Building footprint/Roof	**2303.302**
1	Building footprint	2241.61
2	Area of guard room	31.34
3	Area of meter room	30.35

Site area (sq.m.)	7205.84
Landscape area (sq.m.)	1838.64
Net site area	**5367.20**
Total area under :	
a.Area shaded with trees (sq.m.)	994.40
b.Non roof area, shaded under cantilevered roof (sq.m.)	468.70
c.Building roof area under high SRI tiles (sq.m.)	1496.33
d.Building roof area under Solar PV (sq.m.)	224.37
Total treated area (sq.m.)	**3183.80**
Percentage treated area (%)	**59.3%**

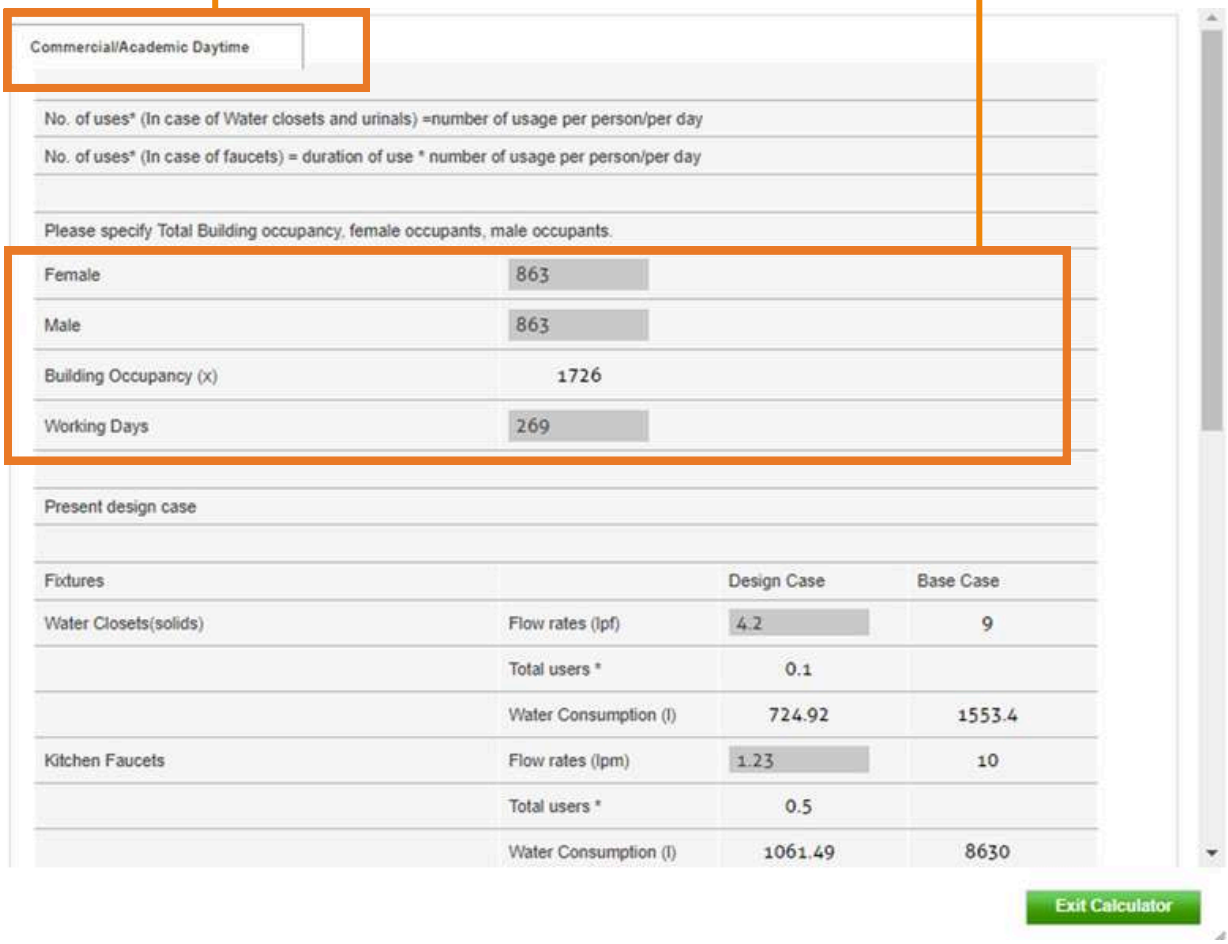
*The values indicated against each surface finishes will be verified with the supporting AutoCAD drawings submitted in the documentation.

Sample Documentation : 2

Extract of online calculator for percentage water reduction in building

This field indicates the typology of the project

Fields highlighted in grey are the parameters that needs to be fed in the online calculator



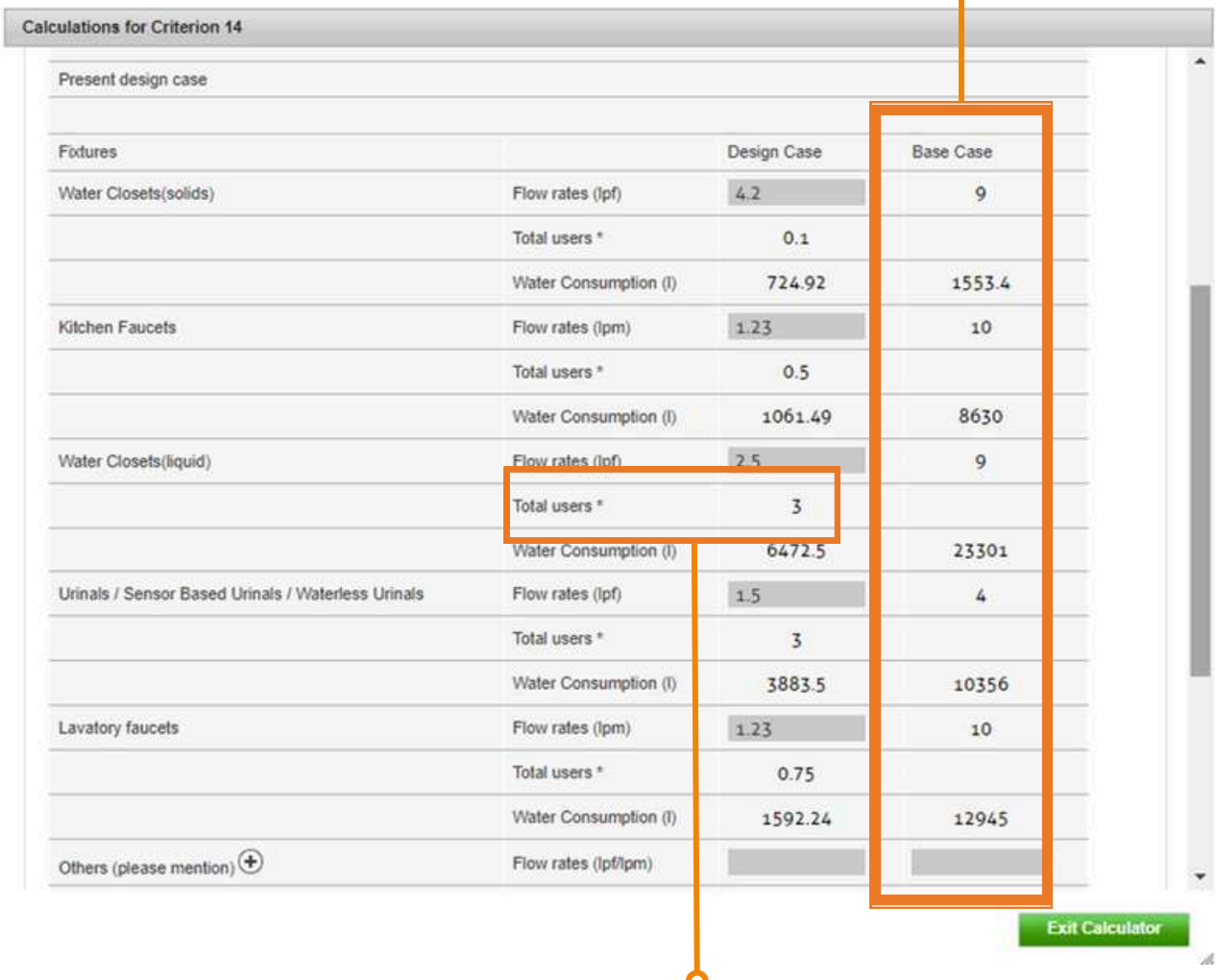
Commercial/Academic Daytime

No. of uses* (In case of Water closets and urinals) =number of usage per person/per day			
No. of uses* (In case of faucets) = duration of use * number of usage per person/per day			
Please specify Total Building occupancy, female occupants, male occupants.			
Female	863		
Male	863		
Building Occupancy (x)	1726		
Working Days	269		
Present design case			
Fixtures		Design Case	Base Case
Water Closets(solids)	Flow rates (lpf)	4.2	9
	Total users *	0.1	
	Water Consumption (l)	724.92	1553.4
Kitchen Faucets	Flow rates (lpm)	1.23	10
	Total users *	0.5	
	Water Consumption (l)	1061.49	8630

Exit Calculator

Sample Documentation : 2

Base case parameters are pre fed in the calculator based on the typology of the project



Calculations for Criterion 14

Present design case

Fixtures		Design Case	Base Case
Water Closets(solids)	Flow rates (lpf)	4.2	9
	Total users *	0.1	
	Water Consumption (l)	724.92	1553.4
Kitchen Faucets	Flow rates (lpm)	1.23	10
	Total users *	0.5	
	Water Consumption (l)	1061.49	8630
Water Closets(liquid)	Flow rates (lpf)	2.5	9
	Total users *	3	
	Water Consumption (l)	6472.5	23301
Urinals / Sensor Based Urinals / Waterless Urinals	Flow rates (lpf)	1.5	4
	Total users *	3	
	Water Consumption (l)	3883.5	10356
Lavatory faucets	Flow rates (lpm)	1.23	10
	Total users *	0.75	
	Water Consumption (l)	1592.24	12945
Others (please mention) ⊕	Flow rates (lpf/lpm)		

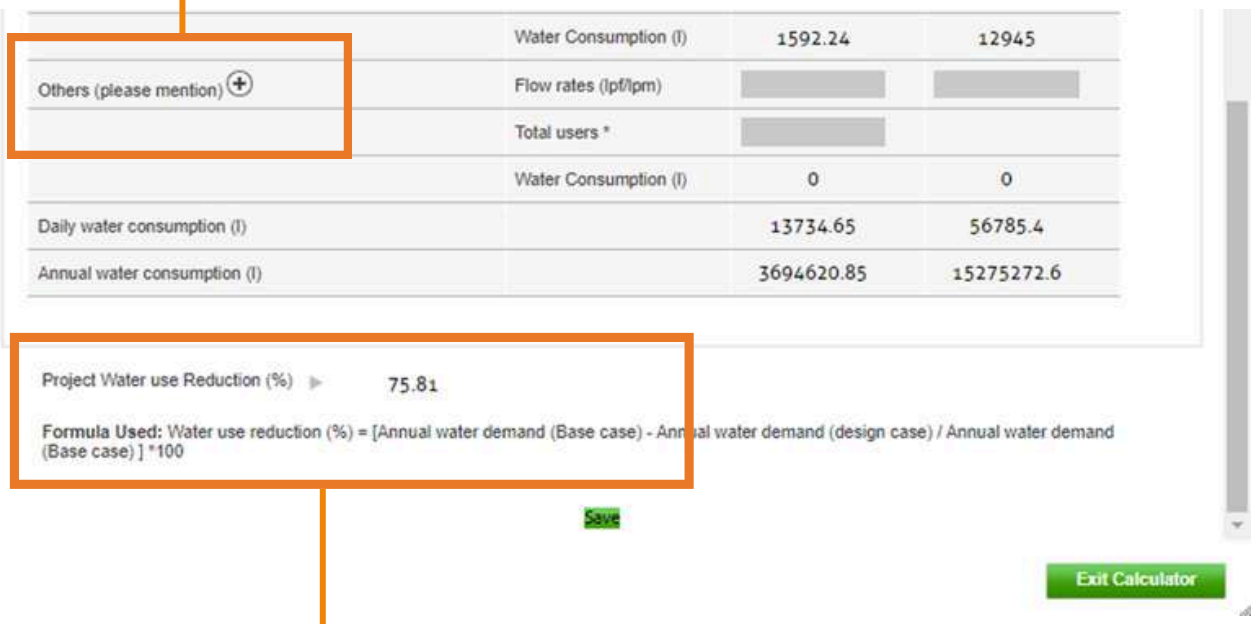
Exit Calculator

This number is prefed based on the typology of the project

Sample Documentation : 2

Extract of the online calculator for percentage water reduction in the building

Fixtures that are not listed in the online calculator may be added under this category



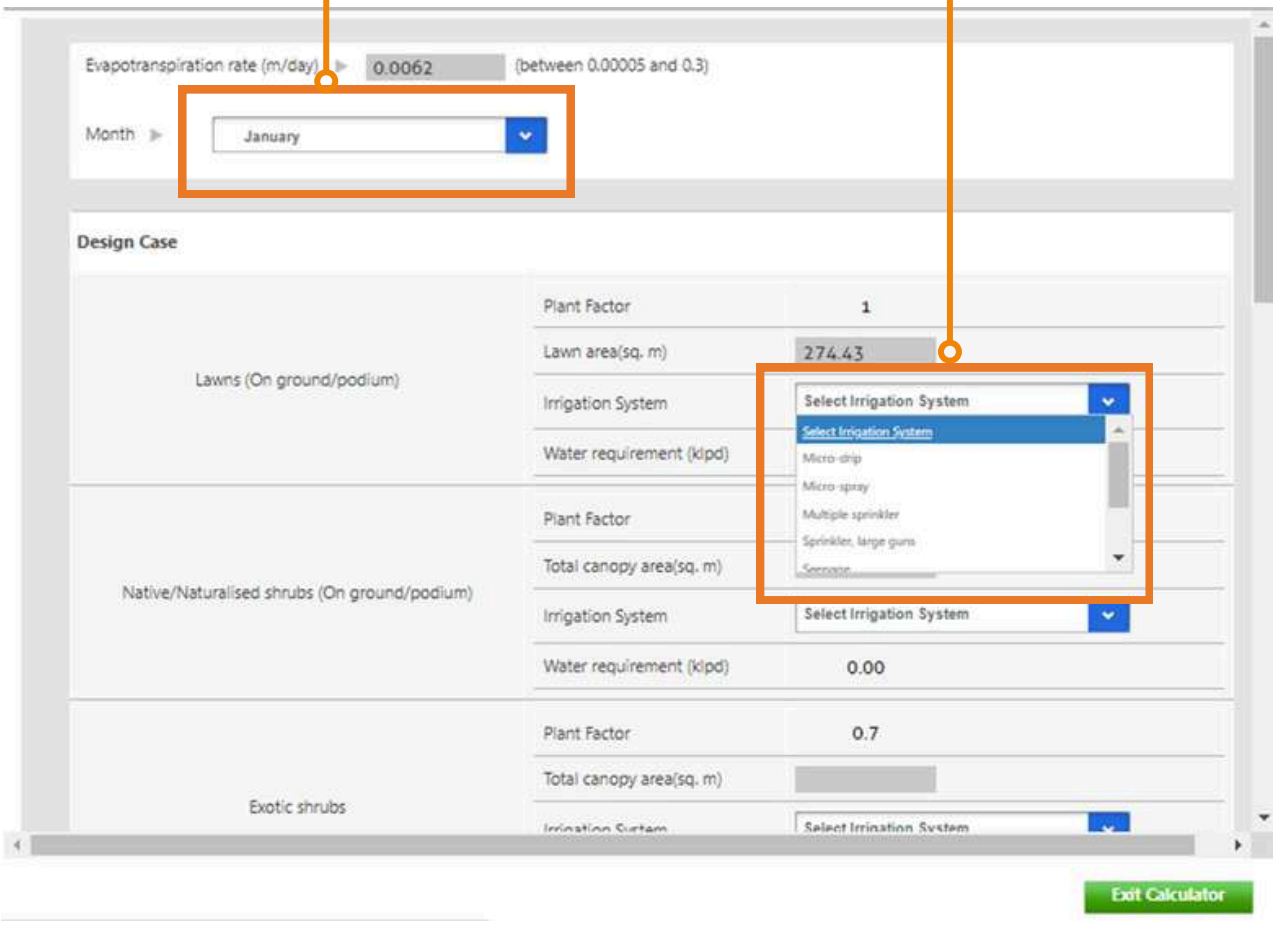
Screenshot of the online calculator demonstrating the percentage reduction in building water demand

Sample Documentation : 3

Extract of the online calculator for percentage water reduction in landscape design

Dropdown in the online calculator to select a month for showcasing landscape water demand

Dropdown in the online calculator to select the type of irrigation system

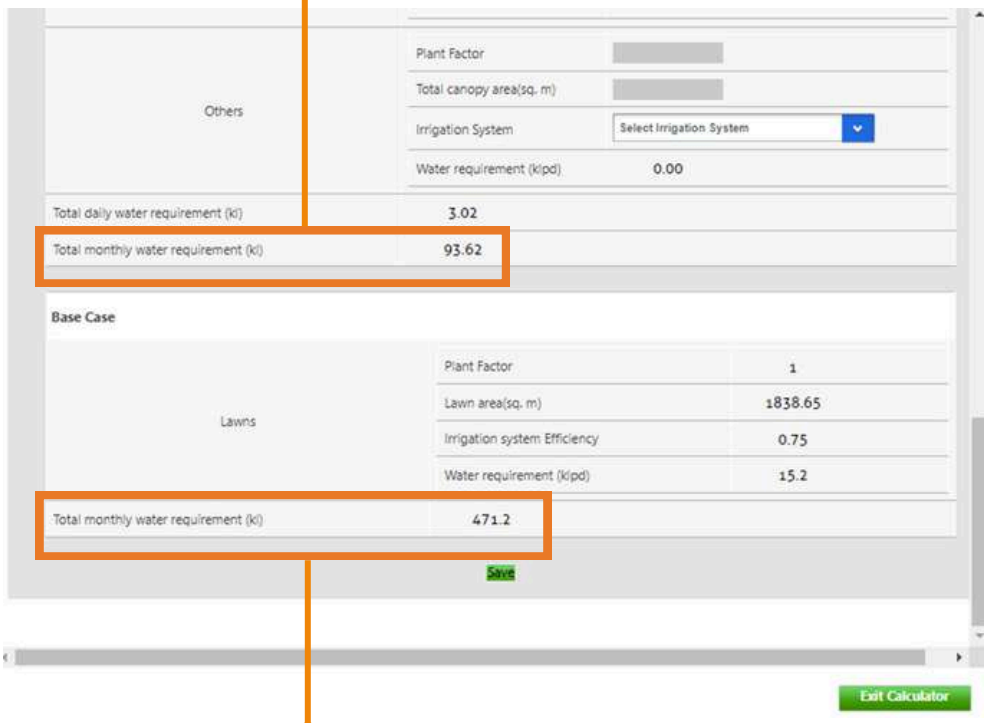


Sample Documentation : 3

Fields highlighted in grey are parameters that needs to be fed in the online calculator

Sample Documentation : 3

Field indicating design case landscape water requirement for the month of *January



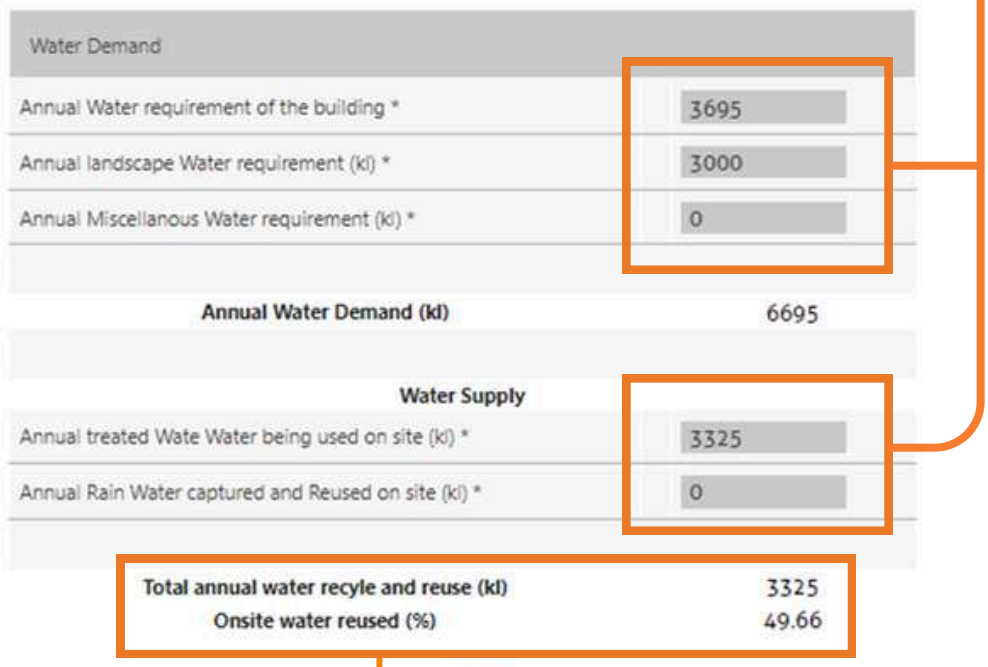
Field indicating base case landscape water requirement for the month of January

*The same step must be carried out for every month to calculate the total annual landscape water demand.

Sample Documentation : 4

Extract of the online calculator for percentage of water reused in the project

Fields highlighted in grey are the parameters that needs to be fed in the online calculator as per the water balance chart



Water Demand	
Annual Water requirement of the building *	3695
Annual landscape Water requirement (kl) *	3000
Annual Miscellanous Water requirement (kl) *	0
Annual Water Demand (kl)	6695
Water Supply	
Annual treated Wate Water being used on site (kl) *	3325
Annual Rain Water captured and Reused on site (kl) *	0
Total annual water recyle and reuse (kl)	3325
Onsite water reused (%)	49.66

Save

Screenshot of the online calculator demonstrating the percentage of water reused in building

Possible errors in the calculation

- The area-specific numbers used in the online calculations may not align with the measured areas from the submitted CAD drawings.
- The project team may sometimes overlook submitting back end calculations for the consolidated numbers utilized in the online calculator.
- The project teams may sometimes submit two calculations in the form of online calculator and excel sheet calculations. Confusion can arise if these two calculations do not match.
- The units utilized in the calculation might not be consistent.
- Use of incorrect formulas in the excel sheet calculators.
- Typo errors in calculations: mistakes that occur due to incorrect data entry or misinterpretation of numbers. These errors can arise from transposed numbers, misplaced decimals or incorrect entry of digits.

Technical Specification Sheet

Technical Specification sheet

The technical specification sheet is a crucial component of GRIHA documentation submission as it provides detailed information about the materials, systems, and technologies used in a project. This document highlights why specific materials are energy-efficient or environmentally friendly compared to their counterparts in the market.

Transparency

It ensures that all aspects of the project's design and construction are clearly documented, allowing for a transparent assessment of sustainability measures.

Compliance Verification

These approved values help in assessing whether the products/materials meet the standards set by GRIHA, ensuring their compliance with the required environmental and sustainability benchmarks.

Performance Standards

Technical specification sheets provide tested values or properties of products/materials, which are essential for assessing their environmental performance and sustainability.

Points to remember while submitting Technical Specification sheet

01 | Ensure that the that the make, model name / number is a part of the submitted technical specification sheet.

02 | Ensure each technical sheet includes the necessary specifications related to the product and criterion requirements.

03 | Highlight the relevant sections in the specification sheets so that the same can be easily identified by the evaluators.

Way of Submitting technical details of material / system installed

The technical specification sheet of various materials / systems can be submitted using the following types of documents.

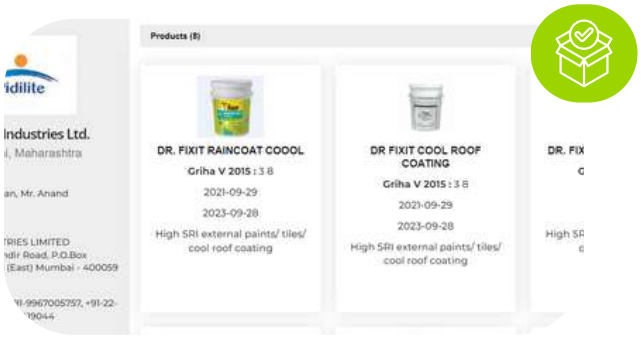
TECHNICAL SPECIFICATION SHEETS

Technical Properties	Test Standard	Specification
Temperature Range - Max. Surface Temp	Test according to EN 14706 , EN 14707 & EN 14304	+105° C
Temperature Range - Max. Temp. for Flat Surface	Test according to EN 14706 , EN 14707 & EN 14304	+85° C
Max. Surface Temp	Test according to EN 14706 , EN 14707 & EN 14304	-50°C
Thermal Conductivity 0°C	Test according to EN ISO 8497 for Tube / EN 12667 for Sheet	0.035 W/M K
Thermal Conductivity 20°C	Test according to EN ISO 8497 for Tube / EN 12667 for Sheet	0.037 W/M K
Thermal Conductivity 40 °C	Test according to EN ISO 8497 for Tube / EN 12667 for Sheet	0.039 W/M K
Water Vapour Permeability	Test according to EN 13469 for Tube and EN 12086 for Sheet	(MOISTURE DIFFUSION RESISTANCE FACTOR) MU > 7000
Water Absorption - By volume	Test according to ASTM C209	0.1 % AVERAGE,0.5 % MAXIMUM
Fire Propagation	Surface Spread Of Flame acc to BS 476 Part 7 : 1997, Fire Propagation Index acc to BS 476 Part 6: 1989)"	CLASS1 THE FLAME SPREAD AFTER 1.5& 10 MIN MUST BE<165MM TOTAL INDEX PERFORMANCE(I)<12 SUB INDEX(I)<6
Fire Performance	As per building regulations (England & Wales)	CLASS O FIRE CATEGORY /UL 94-HB,V-0,FM APPROVED
Reaction to Fire	Surface Spread Of Flame acc to BS 476 Part 7 : 1997, Fire Propagation Index acc to BS 476 Part 6: 1989)	SELF-EXTINGUISHING, DOES NOT SPREAD FLAME, DOES NOT DRIP.
Resistance to	Building Material	VERY GOOD
Resistance to	Ozone	VERY GOOD
Rating		ZERO

WEBSITE SCREENSHOTS

PRODUCT BROCHURES

GRIHA PRODUCT CERTIFICATE



GRIHA PRODUCT CATALOGUE

- *The catalogue serves as a guide for **identifying materials, systems, and technologies** that align with GRIHA's sustainability criteria. It helps stakeholders make informed choices that can enhance the sustainability rating of their projects.*
- *Products listed in the **catalogue have been evaluated against GRIHA's benchmarks,** ensuring they meet specific environmental and performance standards.*

Web link to access the GRIHA product catalogue:
https://www.grihaindia.org/productscatalogu;

Sample Documentation : 1

INDIAN Transformers and Electricals Pvt. Ltd. Gurgaon

ITE INDIAN TRANSFORMERS GURGAON

An ISO 9001 :2015 UNIT

38 K.M. STONE, NH - 8, BEHRAMPUR ROAD,
SECTOR - 34, GURGAON - 122004

COPPER WOUND DISTRIBUTION TRANSFORMER

3 PHASE TRANSFORMER

STANDARD		IS 1180(Pt.-1)	ENERGY EFFICIENCY LEVEL		2
KVA		1250	MAX TOTAL LOSSES AT 50% RATED LOAD	W	3300
VOLTS AT NO LOAD	HV	11000	MAX TOTAL LOSSES AT 100% RATED LOAD	W	9200
	LV	415			
BIL	HV	75KVP/28KV	TYPE OF COOLING		ONAN
	LV	- /3KV	TEMP RISE	OIL °C	40
AMPERES	HV	65.61		WDG °C	45
	LV	1739	MASS OF CORE & WDG.	kg	2640
FREQUENCY	Hz	50	MASS OF OIL	kg	1390
VECTOR GROUP		Dyn 11	TOTAL MASS	kg	5740
IMPEDANCE VOLT %		5.0	VOL OF OIL	Ltrs.	1640
TAPPINGS		OLTC	MONTH & YEAR OF MFG.		2021
FOR HV VARIATION			SERIAL NO.		ITE/G/

1.25 % STEPS FROM -15 % TO +5 %

CUSTOMER

ORDER NUMBER

MADE IN INDIA

Technical specification of transformer highlighting its total load losses at 50% and 100%

Sample Documentation : 2

Highlighting conductivity values / resistance values of insulation materials required to meet ECBC standards.

armacell

ARMACELL INDIA PRIVATE LIMITED,
GATE No 744,745 VILLAGE LONIKAND NAGAR ROAD,
PUNE 412216, INDIA
Email:India.Office@armacell.com
Tele. No:(0091)-020-66782000
Telefax No:(0091)-020-66782020
GSTIN: 27AAFCA1528D1Z4
PAN No: AAFCA1528D
CIN No. U24293PN2005FTC131939

INVOICE NO : 2891081547
DATE: 16.08.2021

ITEM CODE	DESCRIPTION OF ITEM CODE
ICOFA32500701	COA-32MM/E

CERTIFICATE OF CONFIRMATION

This is to certify that Armacell makes insulation supplied is having following technical properties:

Technical Properties	Test Standard	Specification
Temperature Range - Max. Surface Temp	Test according to EN 14706 , EN 14707 & EN 14304	+105° C
Temperature Range - Max. Temp. for Flat Surface	Test according to EN 14706 , EN 14707 & EN 14304	+85° C
Min. Surface Temp	Test according to EN 14706 , EN 14707 & EN 14304	-50°C
Thermal Conductivity 0°C	Test according to EN ISO 8497 for Tube / EN 12667 for Sheet	0.035 W/M K
Thermal Conductivity 20°C	Test according to EN ISO 8497 for Tube / EN 12667 for Sheet	0.037 W/M K
Thermal Conductivity 40 °C	Test according to EN ISO 8497 for Tube / EN 12667 for Sheet	0.039 W/M K
Water Vapour Permeability	Test according to EN 13469 for Tube and EN 12086 for Sheet	(MOISTURE DIFFUSION RESISTANCE FACTOR) MU > 7000
Water Absorption - By volume	Test according to ASTM C209	0.3 % AVERAGE,0.5 % MAXIMUM
Fire Propagation	Surface Spread Of Flame acc to BS 476 Part 7 : 1997, Fire Propagation Index acc to BS 476 Part 6: 1989)"	CLASS1:THE FLAME SPREAD AFTER 1.5&10 MIN MUST BE<165MM.TOTAL INDEX PERFORMANCE(I)<12 SUB INDEX(II)<6
Fire Performance	As per building regulations (England & Wales)	CLASS O FIRE CATEGORY :UL 94-HB,V-0,FM APPROVED
Reaction to Fire	Surface Spread Of Flame acc to BS 476 Part 7 : 1997, Fire Propagation Index acc to BS 476 Part 6: 1989)	SELF-EXTINGUISHING, DOES NOT SPREAD FLAME, DOES NOT DRIP.
Resistance to	Building Material	VERY GOOD
ODP Rating		ZERO
GWP Rating		ZERO
Health Aspects		DUST & FIBRE FREE
Dimensions		STANDARD TUBE LENGTH-2.0M,CONTINUOUS SHEET WIDTH-1.0MOR 1.2M
Density (Foam + Covering)		40-55 KG/M3
Artificial Weathering - UV Testing	(Test according to EN ISO 4892-2 Method A)	NA
Antimicrobial Properties	DIN EN ISO 846 METHOD A.	NA
Antimicrobial Properties	DIN EN ISO 846 METHOD C.	NA
Covering Material		NA

Technical specifications of insulation material highlighting its ODP and GWP parameters

Sample Documentation : 3

ensavior xylem Let's Solve Water

TAG		SECONDARY WATER PUMP
Brand / Manufacturer		Bell & Gossett / Xylem (Formerly Known as ITT)
Authorised Distributor		Ensavior Technologies Pvt Ltd
Type		End Suction split case type (Close Coupled)
Flowrate	GPM	480
Head	Mtr	35
Qty		3
Pump Model		1532, 3AC
Pump Efficiency	%	79.89
BHP		17.49
Motor Power	HP	20
Liquid handled		Water
No. of Stages		Single
Type of Motor		TEFC
Motor Make		Xylem (OEM) Branded
No. of Poles		2
Electrical Characteristics		415 volt/50 hz/3 ph
Motor Efficiency class		IE3
Class of insulation		F
Protection of motor		IP55
PN Rating		12
Sealing Arrangement		Mechanical seal
Impeller Material		SS
Casing material		Cast Iron
Shaft material		High tensile strength steel
Base frame		Yes

Technical specifications of motors highlighting its efficiency and class.

Sample Documentation : 4

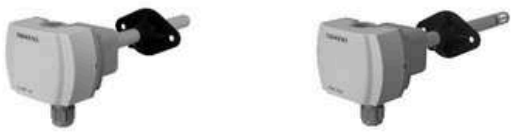
Neutrals

GLASS DETAILS			LIGHT FACTORS			ENERGY FACTORS		
COLOUR SHADE	BRAND	CODE	TRANSMISSION (%)	REFLECTION (%) EXTERNAL	REFLECTION (%) INTERNAL	SOLAR FACTOR SHGC / SF	SHADING CO-EFFICIENT SC	U-VALUE (W/Sq.m K)
Single Glazed Unit (6mm thick, coating face 2)								
Sparkling Ice	Antelio Plus	ST 167	67	19	19	0.68	0.78	5.6
Dew Drop	Cool-Lite	ST 150	51	18	17	0.56	0.64	5.6
Graphite	Cool-Lite	ST 136	37	22	18	0.43	0.50	5.5
Platinum	Cool-Lite	ST 108	9	43	34	0.14	0.16	3.6
Clear	Evo Plus	ET II 135	34	23	8	0.34	0.39	3.9
Clear Cosmos	Evo	ET II 125	28	28	9	0.29	0.34	3.8
Clear	Horizon	SCN 145	45	22	4	0.44	0.51	4.9
Double Glazed Unit (outer: 6mm with coating Face 2 - 12mm Air Gap - inner 6mm Clear)								
Sparkling Ice	Antelio Plus	ST 167	60	22	23	0.60	0.68	2.8
Dew Drop	Cool-Lite	ST 150	46	20	22	0.47	0.54	2.8
Graphite	Cool-Lite	ST 136	34	23	23	0.35	0.40	2.7
Sterling Silver	Cool-Lite	ST 120	18	32	30	0.21	0.25	2.6
Platinum	Cool-Lite	ST 108	8	43	36	0.10	0.11	1.9
Clear	Evo-Lite	ET II 150	45	15	17	0.42	0.48	2.6
Clear	Evo Plus	ET II 135	31	24	14	0.28	0.32	2.1
Clear Cosmos	Evo	ET II 125	25	29	15	0.23	0.27	2.0
Clear	Horizon	SCN 145	40	24	12	0.37	0.42	2.5
Pristine White	Planitherm	PLTT	75	12	12	0.57	0.66	1.8
Winter Mist	Nano	KT 164	57	14	10	0.47	0.54	1.9
Moonshine	Nano	KT 155	47	17	11	0.38	0.43	1.9
Icy Menthol	Nano	KT II 140	37	23	12	0.29	0.33	1.8
Zephyr	Nano	KT II 130	31	22	14	0.25	0.29	1.8
Clear	Harmony	Harmony II	24	23	16	0.21	0.24	1.7
	Blu De	Blu De II	46	31	24	0.30	0.35	1.9
Chroma	Nano Silver	KS II 146	42	33	19	0.29	0.34	1.6
Shine	Nano Silver	KS II 138	36	38	20	0.26	0.30	1.6
Clear	Nano Silver Plus	KS II 130	30	43	19	0.22	0.25	1.6
	Envision Plus	SKN II 176	69	13	15	0.37	0.43	1.5
Lumina	Envision Plus	SKN II 165	60	16	18	0.34	0.39	1.5
Magma	Envision	SKN II 154	51	18	22	0.28	0.33	1.5
Iris	Envision	SKN II 144	41	20	15	0.24	0.27	1.6
N	Equinox	Equinox II N	30	13	10	0.19	0.22	1.6
Clear	Quartz	Quartz II	40	11	11	0.25	0.29	1.6
	Xtreme	XT II 70/33	69	11	13	0.33	0.38	1.5
	Xtreme	XT II 60/28	60	14	17	0.28	0.33	1.5
	Xtreme	XT II 50/22	46	16	18	0.22	0.25	1.5

Technical specifications of glazing unit highlighting its SHGC, VLT, U-value and model number

Sample Documentation : 5

SIEMENS



Duct air quality sensors QPM11x4

- **Maintenance-free CO_2 sensing element based on optical infrared absorption measurement (NDIR = non dispersive infrared)**
- **No recalibrations required**

Use

In air ducts of ventilation and air conditioning plant to enhance room comfort and to optimize energy consumption by providing demand-controlled ventilation. The sensor acquires CO_2 concentrations and temperature.

Important! The sensors may not be deployed as safety devices, e.g. as gas or smoke warning devices!

Type summary

Type	*Order number*	*Designation*
QPM1104	S55720-S455	Duct sensor CO_2
QPM1164	S55720-S456	Duct sensor CO_2/T

The sensor is supplied complete with mounting flange and cable entry gland M16.

Engineering notes

The sensor must be powered by a transformer for safety extra low-voltage (SELV) with separate windings, suited for 100 % duty.

Cable routing and cable selection: On applications with EMC problems, use shielded cables. For secondary power lines and signal lines, use twisted-pair cables.

Mounting notes

Mounting location and orientation: To ensure degree of protection IP54, the sensor must be fitted with the cable entry pointing downward.

Technical specification of sensors highlighting its model name and monitoring capabilities

Sample Documentation : 6

Conforms to ISI/IGBC & GRIHA Specifications

BISON
ACRYLIC INTERIOR EMULSION

Berger

Product Description
Bison Emulsion is an acrylic based matt finish interior emulsion. The product is an ideal choice for price conscious customer. It has twice the durability of a distemper and is suitable for a wide variety of surfaces. It is formulated with special colour fast pigments with excellent anti-fading properties.

Recommended Use
Sand-cement plaster surface, asbestos, brickwork, concrete block and fiberboard

Colour Range
10,000 shades

Finish
HIGH
MEDIUM
SMOOTH ✓
MATT ✓
Smooth and stylish matt finish

Toxicity
NO ADDED LEAD, MERCURY AND CHROMIUM
VOC – 50 gm/L
Dry film is non- toxic, with no added lead and arsenic

Coverage
130-150 sqft/lt/2 coats
(Coverage may depend on factors like surface conditions, surface preparation, application skill, weather conditions, dilution etc.)

Recommended Undercoats
Primer: For wall/ plastered surfaces – BP Cement Primer WT (Alkali Resistant)
Putty: For wall/ plastered surfaces – Bison Wall Putty / Happy Wall Putty

Number of Coats:
2 coats of emulsion for re- painting provided the colour is same.
3 coats of emulsion if fresh painting is required to give a rich matt look.

Application Method
Brush / Roller / Spray

Recommended Thinner / Cleaner
Potable water

Dilution Ratio
For Brush application: 500 ml of water/ L of emulsion
In case of N base shades, no dilution is advised to ensure proper colour depth.

Drying Time
SD: 15 - 25 min depending on weather conditions **HD:** 6 - 8 hours

Product Attributes

Value for money
Better finish than distemper at almost the same cost

Coverage
Spreads twice as much as distemper thereby covers twice the wall space

XP Advanced Range
Bison XP Advanced gives better whiteness, lower smell and higher coverage compared to regular Bison emulsion

Anti- fungal
Resists growth of algae, fungus and moulds

Green Pro Certified
Validates our effort in striving towards cleaner, more sustainable future

Technical specification sheet of interior paint highlighting its VOC content

Sample Documentation : 7

DIGITAL FLOW METER

ASTER TECHNOLOGIES

Our digital flow meter necessarily has a flow sensor with a magnetic multi-bladed spinning rotor (impeller) mounted inside at right angles to the flow. The rotational speed of the impeller is proportional to the velocity of fluid. The pulse generated is transmitted and converted into a volumetric measurement. Our digital flow meters are individually calibrated to give reliable flow measurement.

KEY ATTRIBUTES

- Digital Flow Meter measuring flow rate from 0.05 m³/hr to 500 m³/hr
- Optional computer interface with RS 485 or 4-20mA output
- DUAL SENSOR, dual line, single meter

INDICATOR FT- 650

Physical dimensions	105 x 105 x 120mm
Cut-out size	92 x 92mm
Enclosure	Abs weather proof IP-65
Mounting	Field / Panel
Supply power	230 VA.C./ 110 VA.C./ 24 V (200mA) D.C.
Max. Total Count	0-999999.9 m³ / 0-9999999 litres
Accuracy	± 2% FSD
Alarms/Control Relay	One. 5 A @ 230 V AC
Calibration/set point	Using front panel keypad
Input	From sensor
Output	Relay output for batch quantity 4-20 mA (optional) RS 485 (optional)

OUR METER FUNCTIONS AS

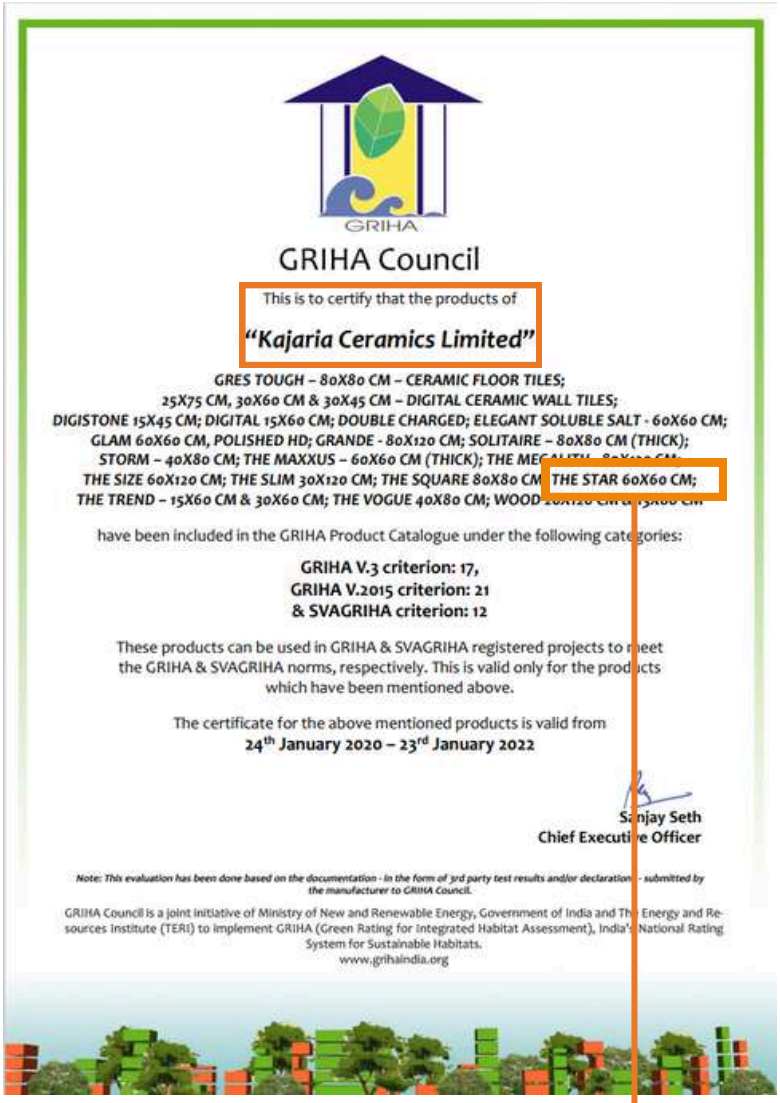
- BATCHER & TOTALISER
  Relay gets energized after a fixed quantity of water passes through the sensor. The batcher has an auto reset, manual reset and dual relay operation facility. Batch quantity counts downwards till zero value
- FLOW COMPARATOR
  The meter is supplied with two sensors for RO permeate and inlet/ reject line. The meter displays both the flow rates and also calculates percentage recovery.
- The setting is done on PERCENTAGE RECOVERY
  If plant recovery is increased by the client to get more permeate, plant will trip thereby safeguarding expensive membranes
- RATE SWITCH MODE
  The relay is programmed to energize whenever actual Flow falls below the set value.
  Display shows 'LOW FLOW RATE'
- PULSER
  Meter can be configured to suit any metering/dosing pump Chemical dosing can be done online proportional to flow.
- OPTIONAL DATA LOGGER
  The flow meter is available with data logger option where flow rate & total flow with date & time is stored in a 2GB Memory card

APPLICATIONS

Beverage | Water treatment | Pharma & Chemical | Dairy Plant | Bottling | Boiler | Cooling Tower

Technical specification sheet of digital water meter highlighting its capabilities

Sample Documentation : 8



GRIHA Council

This is to certify that the products of

"Kajaria Ceramics Limited"

GRES TOUGH – 80X80 CM – CERAMIC FLOOR TILES;
25X75 CM, 30X60 CM & 30X45 CM – DIGITAL CERAMIC WALL TILES;
DIGISTONE 15X45 CM; DIGITAL 15X60 CM; DOUBLE CHARGED; ELEGANT SOLUBLE SALT - 60X60 CM;
GLAM 60X60 CM, POLISHED HD; GRANDE - 80X120 CM; SOLITAIRE – 80X80 CM (THICK);
STORM – 40X80 CM; THE MAXXUS – 60X60 CM (THICK); THE MEGALITH –
THE SIZE 60X120 CM; THE SLIM 30X120 CM; THE SQUARE 80X80 CM; THE STAR 60X60 CM;
THE TREND – 15X60 CM & 30X60 CM; THE VOGUE 40X80 CM; WOOD –

have been included in the GRIHA Product Catalogue under the following categories:

GRIHA V.3 criterion: 17,
GRIHA V.2015 criterion: 21
& SVAGRIHA criterion: 12

These products can be used in GRIHA & SVAGRIHA registered projects to meet the GRIHA & SVAGRIHA norms, respectively. This is valid only for the products which have been mentioned above.

The certificate for the above mentioned products is valid from
24th January 2020 – 23rd January 2022

Sanjay Seth
Chief Executive Officer

Note: This evaluation has been done based on the documentation - in the form of 3rd party test results and/or declaration - submitted by the manufacturer to GRIHA Council.

GRIHA Council is a joint initiative of Ministry of New and Renewable Energy, Government of India and The Energy and Resources Institute (TERI) to implement GRIHA (Green Rating for Integrated Habitat Assessment), India's National Rating System for Sustainable Habitats.
www.grihaindia.org

GRIHA Product certificate highlighting the enlisted *product installed/procured on site along with model name.

*Material / system highlighted in the GRIHA product certificate should match with the model name mentioned in the purchase order

Sample Documentation : 9

ENVIRONMENTAL PRODUCT DECLARATION
as per ISO 14025 and EN 15804+A2

Owner of the Declaration	dormakaba International Holding GmbH
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DOR-20210278-CBA1-EN
Issue date	22.10.2021
Valid to	15.08.2026

ALT 100
dormakaba

www.ibu-epd.com | https://epd-online.com

dormakaba

General Information

dormakaba

Programme holder
IBU – Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Declaration number
EPD-DOR-20210278-CBA1-EN

This declaration is based on the product category rules:
Room partition systems, 01.2019
(PCR checked and approved by the SVR)

Issue date
22.10.2021

Valid to
15.08.2026

Dipl. Ing. Hans Peters
(chairman of Institut Bauen und Umwelt e.V.)

Dr. Alexander Röder
(Managing Director Institut Bauen und Umwelt e.V.)

ALT 100

Owner of the declaration
dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

Declared product / declared unit
1 specific Room Partition System (1 system with a size of 9 m²)

Scope:
This EPD refers to the specific Room Partition System: ALT 100. This system is manufactured by dormakaba.

The system componets are: base profiles, seals and accessories. Panes are not included in this EPD.

The year of data collection is 2020.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.
The EPD was created according to the specifications of *EN 15804+A2*. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard *EN 15804* serves as the core PCR

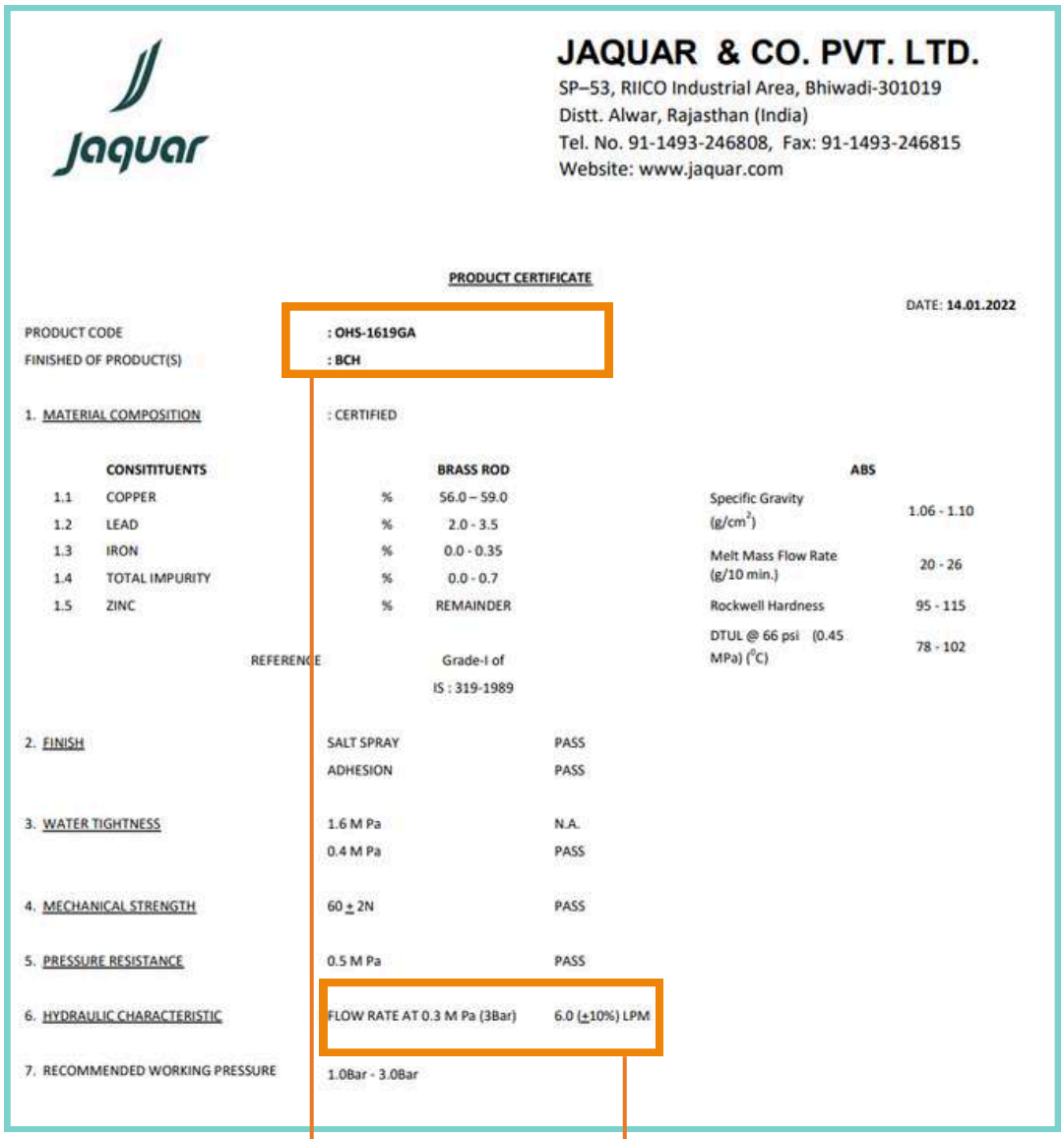
Independent verification of the declaration and data according to *ISO 14025:2010*

☐ internally ☒ externally

Dr.-Ing. Wolfram Trinius
(independent verifier)

EPD declaration sheet highlighting the EPD number of the material.

Sample Documentation : 10



JAQUAR & CO. PVT. LTD.
SP–53, RIICO Industrial Area, Bhiwadi-301019
Distt. Alwar, Rajasthan (India)
Tel. No. 91-1493-246808, Fax: 91-1493-246815
Website: www.jaquar.com

PRODUCT CERTIFICATE

DATE: **14.01.2022**

PRODUCT CODE : **OHS-1619GA**
FINISHED OF PRODUCT(S) : **BCH**

1. MATERIAL COMPOSITION : CERTIFIED

	CONSITITUENTS		BRASS ROD
1.1	COPPER	%	56.0 – 59.0
1.2	LEAD	%	2.0 - 3.5
1.3	IRON	%	0.0 - 0.35
1.4	TOTAL IMPURITY	%	0.0 - 0.7
1.5	ZINC	%	REMAINDER
	REFERENCE		Grade-I of IS : 319-1989

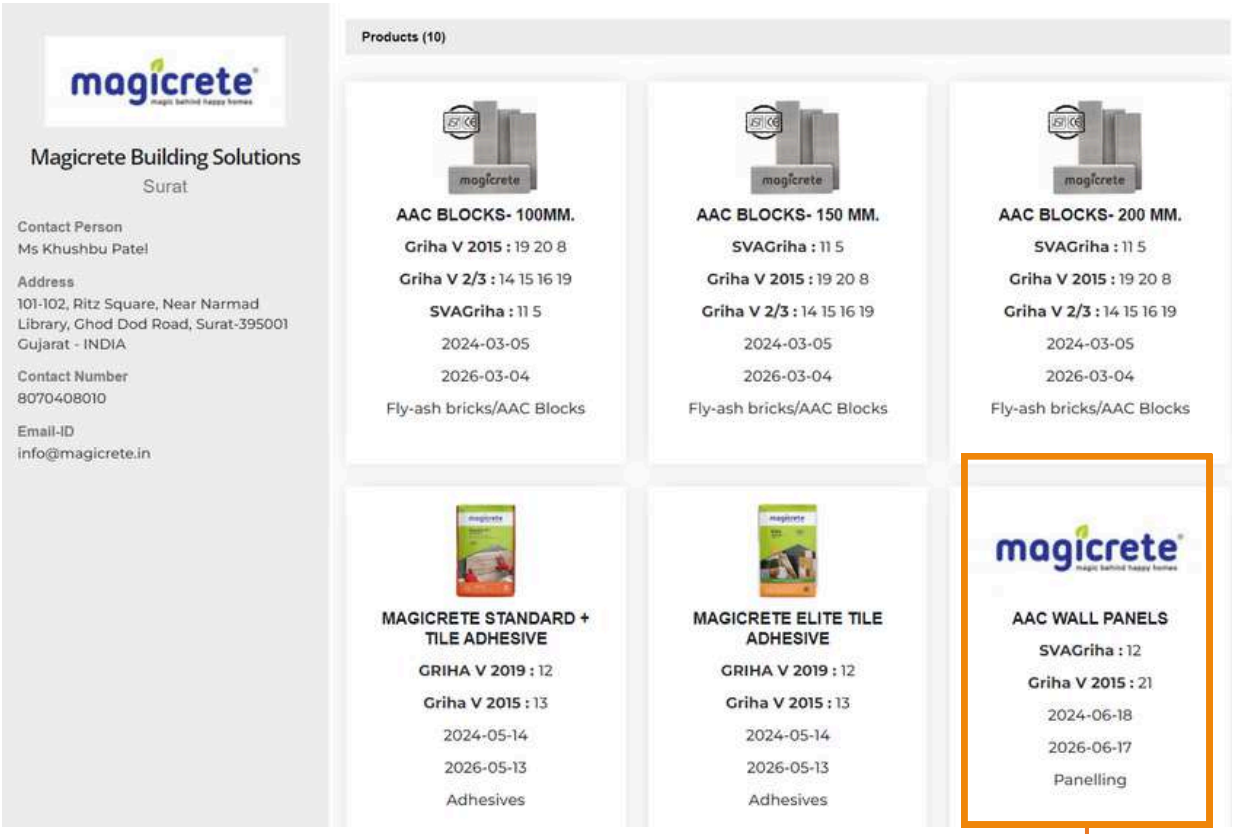
ABS	
Specific Gravity (g/cm^3)	1.06 - 1.10
Melt Mass Flow Rate (g/10 min.)	20 - 26
Rockwell Hardness	95 - 115
DTUL @ 66 psi (0.45 MPa) (^0C)	78 - 102

2. FINISH	SALT SPRAY		PASS
	ADHESION		PASS
3. WATER TIGHTNESS	1.6 M Pa		N.A.
	0.4 M Pa		PASS
4. MECHANICAL STRENGTH	60 ± 2N		PASS
5. PRESSURE RESISTANCE	0.5 M Pa		PASS
6. HYDRAULIC CHARACTERISTIC	FLOW RATE AT 0.3 M Pa (3Bar)		6.0 (±10%) LPM
7. RECOMMENDED WORKING PRESSURE	1.0Bar - 3.0Bar		

Technical specification sheet of fixture indicating the flow rate, at 3 bar pressure and model name

*Model name and product code indicated in the technical specification sheet/test report should match with the purchase order.

Sample Documentation : 11



magicrete

Magicrete Building Solutions

Surat

Contact Person
Ms Khushbu Patel

Address
101-102, Ritz Square, Near Narmad Library, Ghod Dod Road, Surat-395001 Gujarat - INDIA

Contact Number
8070408010

Email-ID
info@magicrete.in

Products (10)

AAC BLOCKS- 100MM.
Griha V 2015 : 19 20 8
Griha V 2/3 : 14 15 16 19
SVAGriha : 11 5
2024-03-05
2026-03-04
Fly-ash bricks/AAC Blocks

AAC BLOCKS- 150 MM.
SVAGriha : 11 5
Griha V 2015 : 19 20 8
Griha V 2/3 : 14 15 16 19
2024-03-05
2026-03-04
Fly-ash bricks/AAC Blocks

AAC BLOCKS- 200 MM.
SVAGriha : 11 5
Griha V 2015 : 19 20 8
Griha V 2/3 : 14 15 16 19
2024-03-05
2026-03-04
Fly-ash bricks/AAC Blocks

MAGICRETE STANDARD + TILE ADHESIVE
GRIHA V 2019 : 12
Griha V 2015 : 13
2024-05-14
2026-05-13
Adhesives

MAGICRETE ELITE TILE ADHESIVE
GRIHA V 2019 : 12
Griha V 2015 : 13
2024-05-14
2026-05-13
Adhesives

magicrete

AAC WALL PANELS
SVAGriha : 12
Griha V 2015 : 21
2024-06-18
2026-06-17
Panelling

Screenshot from the GRIHA Product catalogue highlighting the enlisted *product installed/procured on site and the product name.

*Material / system highlighted in the GRIHA product catalogue should match with the model name mentioned in the purchase order

Sample Documentation : 12

GREEN SEAL

Environmental Certification

Presented to

JOHNSONDIVERSEY, INC.

Green Seal, Inc. certifies that the following products comply with or exceed Green Seal's Environmental Standard for General-Purpose, Bathroom, and Glass Cleaners Used for Industrial and Institutional Purposes (GS-37) and are licensed to use the Green Seal Certification Mark:

Johnson Wax Professional Stride-Citrus Neutral Cleaner

~~Johnson Wax Professional Stride-Floral Neutral Cleaner~~

Johnson Wax Professional Crew Bathroom Cleaner & Scale Remover

~~Johnson Wax Professional General Purpose Cleaner~~

Johnson Wax Professional Glance Non-Ammoniated Glass Cleaner

(Specific pack sizes listed in certification letter)

Certified this 3rd day of October, 2003.

Mark T. Petruzzi, Vice President of Certification

Environmental certification for green cleaning product from Green seal.

Sample Documentation : 13

Diversey

TASKI R7

Floor Cleaner Concentrate

TASKI

TASKI R7 is an effective floor cleaner. It can be used for both wet mopping as well as scrubbing with a machine.

Features and Benefits

- Concentrated for economy of use.
  When used as recommended (for normal soiling), **TASKI R7** will cost less than **Rs. 2/- per litre** of user solution.
- Can be used for manual cleaning as well as machine cleaning.
- Pleasant Room Care fragrance.
- Colour and alpha-numeric codes to prevent application mistakes.
- Neutral Cleaner

Use Overview

Directions for use

Recommended dilution is:

Normal soiling : 20 mL in 1 litre of water.
Heavy soiling : 50 mL in 1 litre of water.

For wet mopping, take the solution in bucket and mop, taking care to rinse the mop frequently.
Alternatively, scrub the floor using either a scrubber-drier (like TASKI combimat 500E) or a scrubber (like TASKI ergodisc).
Pick up the dirty solution using a wet vacuum cleaner.

Technical data*

Description	
Colour	Green
Appearance	Clear liquid
pH (1% solution)	7 - 8
Density @ 25°C	0.95 - 1.07 gm/cm³

Packaging
2 X 5 litre

* The above data is typical of normal production and should not be taken as a specification

Safe Handling and Storage Information

TASKI R7 is neutral cleaner in RTU concentration. For sensitive skin, gloves are recommended. In case of eye contact, rinse immediately with plenty of water and seek medical advice.
Store in a cool, dry cleaner away from direct sunlight.

Technical specification of green house keeping chemical.

Possible errors in the technical specification sheet

- A manufacturer declaration letter may be submitted in place of the technical sheet.

- Occurrences where only portions of specification sheets are submitted may lead to the absence of key information

  For example 1 model number and other technical details of the material/system installed might be missing.

- The technical specification sheets provided may lack the specific details necessary to meet GRIHA criteria requirements, presenting irrelevant information that does not align with the specific requirements outlined by GRIHA.

  For example 1 the paint might be low VOC , however information regarding the exact VOC content of a paint might be absent in the technical specification sheet.

  For example 2 submitting compressive strength report of an AAC block instead of a technical specification sheet / batch mix report of an AAC block to indicate its fly ash content.

- The GRIHA product certificate may have expired and may not fall within the project's registration period.

Purchase Order

Purchase Order

In the GRIHA rating system, the submission of Purchase Orders (POs) or any other proof of purchase such as tax Invoices, delivery challans or material receipt notes of goods or services are crucial to demonstrate that a particular product / system has been used/installed in the project.

Proof of Procurement

They serve as formal evidence of materials and services purchased.

Transparency and Auditing

They enhance transparency in procurement, facilitating audits and ensuring accountability.

Alignment with other documents

Ensures accurate cross-verification of the claims made in other document submissions.

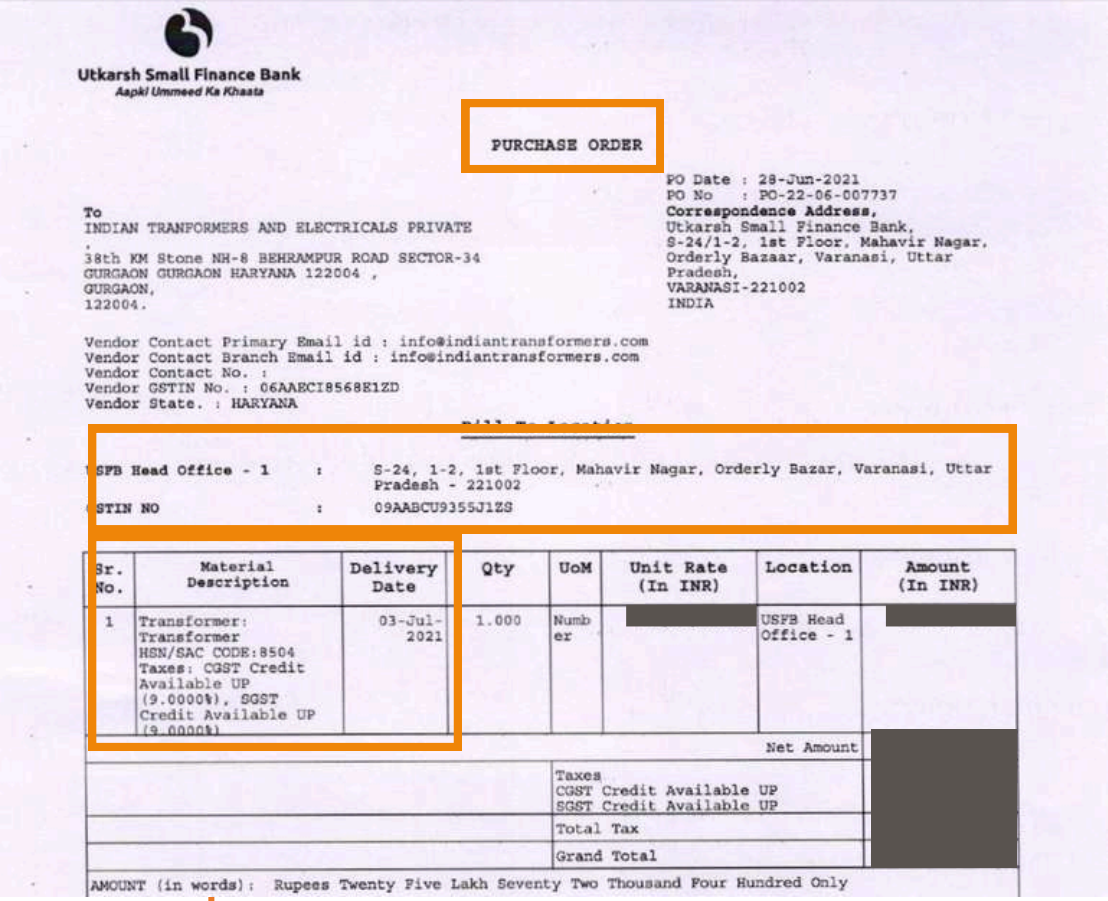
Points to remember while submitting purchase orders

01 Must include all product names enlisted in other supporting documents, such as the narrative and technical specification sheet.

02 The model names should match those highlighted in the technical specification sheet.

03 Must include details such as the authorized signature, delivery address, and date for verification.

Sample Documentation : 1



Utkarsh Small Finance Bank
Aapki Ummeed Ka Khaata

PURCHASE ORDER

PO Date : 28-Jun-2021
PO No : PO-22-06-007737
Correspondence Address,
Utkarsh Small Finance Bank,
S-24/1-2, 1st Floor, Mahavir Nagar,
Orderly Bazaar, Varanasi, Uttar
Pradesh,
VARANASI-221002
INDIA

To
INDIAN TRANFORMERS AND ELECTRICALS PRIVATE
,
38th KM Stone NH-8 BEHRAMPUR ROAD SECTOR-34
GURGAON GURGAON HARYANA 122004 ,
GURGAON,
122004.

Vendor Contact Primary Email id : info@indiantransformers.com
Vendor Contact Branch Email id : info@indiantransformers.com
Vendor Contact No. :
Vendor GSTIN No. : 06AAECI8568E1ZD
Vendor State. : HARYANA

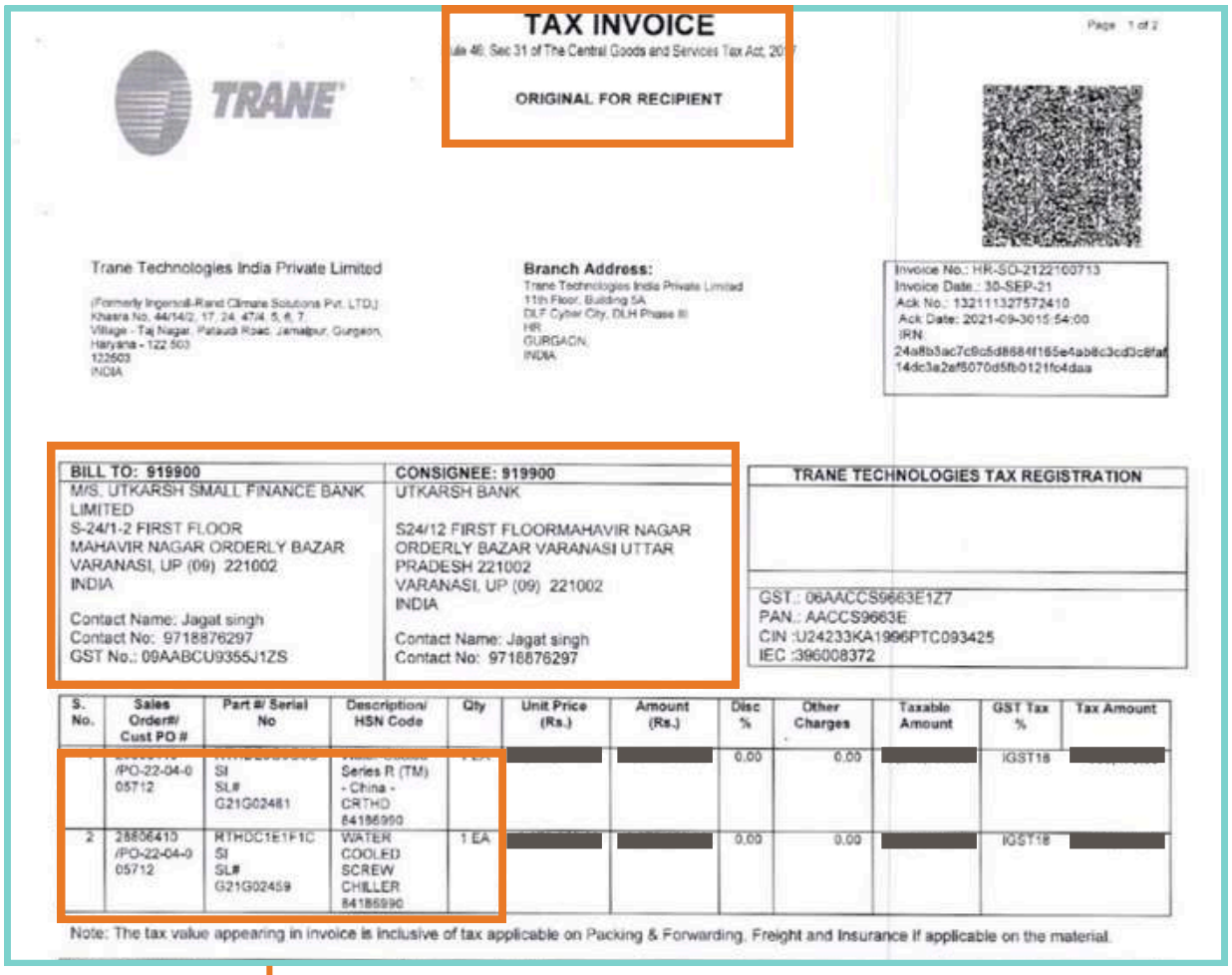
USFB Head Office - 1 : S-24, 1-2, 1st Floor, Mahavir Nagar, Orderly Bazar, Varanasi, Uttar Pradesh - 221002
GSTIN NO : 09AABCU9355J1ZS

Sr. No.	Material Description	Delivery Date	Qty	UoM	Unit Rate (In INR)	Location	Amount (In INR)
1	Transformer: Transformer HSN/SAC CODE:8504 Taxes: CGST Credit Available UP (9.0000%), SGST Credit Available UP (9.0000%)	03-Jul-2021	1.000	Number	[redacted]	USFB Head Office - 1	[redacted]
						Net Amount	[redacted]
					Taxes CGST Credit Available UP SGST Credit Available UP		
					Total Tax		
					Grand Total		

AMOUNT (in words): Rupees Twenty Five Lakh Seventy Two Thousand Four Hundred Only

Purchase order of transformer highlighting the model name

Sample Documentation : 2



TAX INVOICE

ORIGINAL FOR RECIPIENT

TRANE

Trane Technologies India Private Limited

(Formerly Ingersoll-Rand Climate Solutions Pvt. LTD.)
Khasra No. 44/14/2, 17, 24, 47/4, 5, 6, 7,
Village - Taj Nagar, Pataudi Road, Jamalpur, Gurgaon,
Haryana - 122 503
122503
INDIA

Branch Address:
Trane Technologies India Private Limited
11th Floor, Building 5A
DLF Cyber City, DLH Phase III
HR
GURGAON,
INDIA

Invoice No.: HR-SO-2122100713
Invoice Date.: 30-SEP-21
Ack No.: 132111327572410
Ack Date: 2021-09-30 15:54:00
IRN:
24a8b3ac7c9c5d8684f165e4ab8c3cd3c6faf
14dc3a2af5070d5fb0121fc4daa

BILL TO: 919900	CONSIGNEE: 919900
M/S. UTKARSH SMALL FINANCE BANK LIMITED S-24/1-2 FIRST FLOOR MAHAVIR NAGAR ORDERLY BAZAR VARANASI, UP (09) 221002 INDIA Contact Name: Jagat singh Contact No: 9718876297 GST No.: 09AABCU9355J1ZS	UTKARSH BANK S24/12 FIRST FLOORMAHAVIR NAGAR ORDERLY BAZAR VARANASI UTTAR PRADESH 221002 VARANASI, UP (09) 221002 INDIA Contact Name: Jagat singh Contact No: 9718876297

TRANE TECHNOLOGIES TAX REGISTRATION
GST.: 06AACCS9663E1Z7 PAN.: AACCS9663E CIN :U24233KA1996PTC093425 IEC :396008372

S. No.	Sales Order#/ Cust PO #	Part #/ Serial No	Description/ HSN Code	Qty	Unit Price (Rs.)	Amount (Rs.)	Disc %	Other Charges	Taxable Amount	GST Tax %	Tax Amount
1	[redacted] /PO-22-04-0 05712	[redacted] SI SL# G21G02481	[redacted] Series R (TM) - China - CRTHD 84186990	[redacted]	[redacted]	[redacted]	0.00	0.00	[redacted]	IGST18	[redacted]
2	28806410 /PO-22-04-0 05712	RTHDC1E1F1C SI SL# G21G02459	WATER COOLED SCREW CHILLER 84186990	1 EA	[redacted]	[redacted]	0.00	0.00	[redacted]	IGST18	[redacted]

Note: The tax value appearing in invoice is inclusive of tax applicable on Packing & Forwarding, Freight and Insurance if applicable on the material.

Tax invoice for chiller highlighting its model name and delivery address.

Sample Documentation : 3

CANI MERCHANDIZING PVT. LTD.

GN-2, First Floor, Shivaji Enclave, New Delhi-110027, India
Tel. : 91-11-25107261, 25107266 E-mail:enquire@cani.co.in www.cani.co.in

CIN No: U52190DL2001PTC110486
Godown: 57 S[illegible] Industrial Area, GT Karnal Road, Opp. Jhangirpuri, New Delhi.
GSTIN No: 07AABCC6128M1ZJ
PAN:AABCC6128M

TAX INVOICE

Original/Duplicate/Triplicate

INVOICE No.: CMER/D/21-22/060 Date : 23.07.2021 Reverse Charges [Y/N]: N State Code: '07	Transporter Mode : By Road (Self Pickup by Consignee) Vehicle No./ GR No.: HR38T7915 Date of Supply : 23.07.2021 Place of Supply : Haryana

Bill To	Ship To
M/s Anemo Projects Pvt. Ltd. Plot No -462, Pace City -II, Sector-37 Gurugram - 122012 Party GSTIN No. : 06AAQCA4513P1Z9 State : Haryana State Code : 06	M/s Anemo Projects Pvt. Ltd. C/o Utkarsh Small Finance Bank Ltd, Mauza Salempur Pargana Athgawan, Tehshil-Pindara, Varanasi UP- 221003 Contact Person: Sanjeev Mishra - 7303780583 Party GSTIN No. : 06AAQCA4513P1Z9 State : Haryana State Code : 06

Purchase Order No.: R1-M-1285-APPL-GGN-CMPL-UTKARSH BANK Date 19.07.2021

S.No.	Description of Goods	HSN Code	Quantity	Unit	Rate	Amount
1	CANI-Open Cell Acoustic Insulation Material 16M x 1.25M x 85 Rolls 25mm thick opern cell Accoustic material	[redacted]		Sq[redacted]		[redacted]
Total Amount Before Tax						1,696,600.00
Freight Charges						-
Add CGST Rate				0%		-

Tax invoice for insulation highlighting its model name amd delivery address.

Possible errors in purchase orders

- The submitted purchase order may be missing details or have an illegible model name.
- The address listed in the purchase order may not correspond to the project address.
- A work order or BOQ may be submitted instead of the relevant purchasing proof like invoice/bill/purchase order.

Test Reports

Test Reports

Test reports help to verify that the materials, systems, or products used in a project comply with required quality, safety, and performance standards. These reports provide reliable data to confirm adherence to industry regulations and project-specific criteria. By offering an objective assessment of technical properties, they substantiate product or material performance claims with credible evidence.
In cases where the technical sheet provided by the manufacturer lacks relevant data, a third-party test report serves as a reliable source of information.

Credibility and Transparency

They provide verifiable evidence that the project meets the required sustainability standards, enhancing trust among stakeholders.

Regulatory Compliance

They demonstrate adherence to legal and regulatory standards, ensuring the project is compliant with environmental laws.

Validation of Claims

Test reports provide empirical evidence that sustainability measures implemented in the project meet specific performance standards.

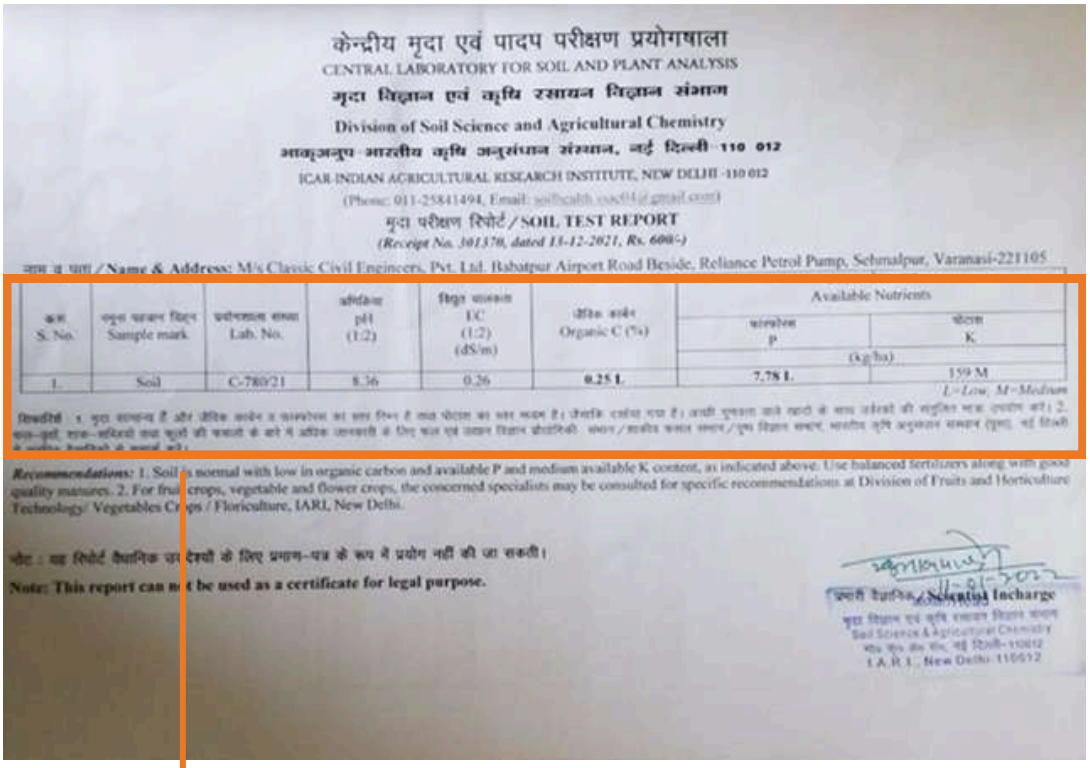
Points to remember while submitting test reports

01 Third-party testing is mandatory when obtaining test reports, to maintain transparency and credibility.

02 The labs must be NABL or ICAR accredited, as per the relevant testing requirements.

03 The appropriate codes must be used during testing, and the relevant parameters must be checked for the respective appraisal requirement.

Sample Documentation : 1



केन्द्रीय मृदा एवं पादप परीक्षण प्रयोगशाला
CENTRAL LABORATORY FOR SOIL AND PLANT ANALYSIS
मृदा विज्ञान एवं कृषि रसायन विभाग संभाग
Division of Soil Science and Agricultural Chemistry
भाकृअनुप-भारतीय कृषि अनुसंधान संस्थान, नई दिल्ली-110 012
ICAR-INDIAN AGRICULTURAL RESEARCH INSTITUTE, NEW DELHI-110 012
(Phone: 011-25841494, Email: soilhealth.iasri04@gmail.com)

मृदा परीक्षण रिपोर्ट / SOIL TEST REPORT
(Receipt No. 301370, dated 13-12-2021, Rs. 600/-)

Name & Address: M/s Classic Civil Engineers, Pvt. Ltd. Babatpur Airport Road Beside, Reliance Petrol Pump, Sehmalpur, Varanasi-221105

S. No.	Sample mark	Lab. No.	pH (1:2)	EC (1:2) (dS/m)	Organic C (%)	Available Nutrients	
						P	K
						(kg/ha)	
1.	Soil	C-780/21	8.36	0.26	0.25 L	7.78 L	159 M

L=Low, M=Medium

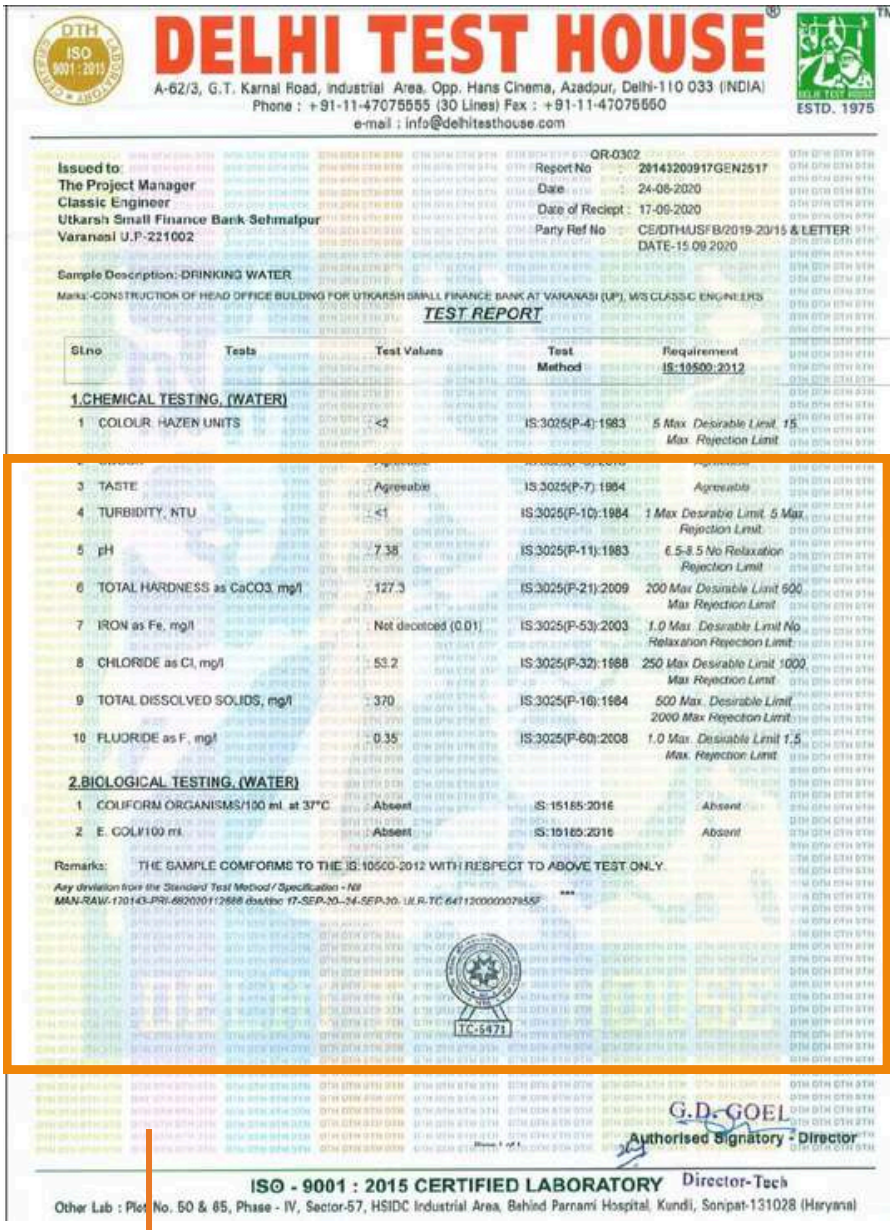
Recommendations: 1. Soil is normal with low in organic carbon and available P and medium available K content, as indicated above. Use balanced fertilizers along with good quality manures. 2. For fruit crops, vegetable and flower crops, the concerned specialists may be consulted for specific recommendations at Division of Fruits and Horticulture Technology/ Vegetables Crops / Floriculture, IARI, New Delhi.

Note: This report can not be used as a certificate for legal purpose.

Scientist Incharge
Soil Science & Agricultural Chemistry
I.A.R.I., New Delhi-110012

Topsoil test report from an ICAR accredited lab indicating soil characteristics like NPK values, Organic Carbon (C) and pH value of the soil.

Sample Documentation : 2



DELHI TEST HOUSE

A-62/3, G.T. Karnal Road, Industrial Area, Opp. Hans Cinema, Azadpur, Delhi-110 033 (INDIA)
Phone : +91-11-47075555 (30 Lines) Fax : +91-11-47075550
e-mail : info@delhitesthouse.com

ESTD. 1975

QR-0302

Issued to:
The Project Manager
Classic Engineer
Utkarsh Small Finance Bank Sehmalpur
Varanasi U.P-221002

Report No : 20143200917GEN2517
Date : 24-09-2020
Date of Reciept : 17-09-2020
Party Ref No : CE/DTH/USFB/2019-20/15 & LETTER DATE-15.09.2020

Sample Description: DRINKING WATER
Marks:-CONSTRUCTION OF HEAD OFFICE BUILDING FOR UTKARSH SMALL FINANCE BANK AT VARANASI (UP), M/S CLASSIC ENGINEERS

TEST REPORT

Sl.no	Tests	Test Values	Test Method	Requirement IS:10500:2012
1.CHEMICAL TESTING. (WATER)				
1	COLOUR. HAZEN UNITS	<2	IS:3025(P-4):1983	5 Max. Desirable Limit. 15 Max. Rejection Limit
3	TASTE	Agreeable	IS:3025(P-7):1984	Agreeable
4	TURBIDITY, NTU	<1	IS:3025(P-10):1984	1 Max Desirable Limit. 5 Max Rejection Limit
5	pH	7.38	IS:3025(P-11):1983	6.5-8.5 No Relaxation Rejection Limit
6	TOTAL HARDNESS as CaCO3, mg/l	127.3	IS:3025(P-21):2009	200 Max Desirable Limit 600 Max Rejection Limit
7	IRON as Fe, mg/l	Not detected (0.01)	IS:3025(P-53):2003	1.0 Max. Desirable Limit No Relaxation Rejection Limit
8	CHLORIDE as Cl, mg/l	53.2	IS:3025(P-32):1988	250 Max Desirable Limit 1000 Max Rejection Limit
9	TOTAL DISSOLVED SOLIDS, mg/l	370	IS:3025(P-16):1984	500 Max. Desirable Limit 2000 Max Rejection Limit
10	FLUORIDE as F, mg/l	0.35	IS:3025(P-60):2008	1.0 Max. Desirable Limit 1.5 Max. Rejection Limit
2.BIOLOGICAL TESTING. (WATER)				
1	COLIFORM ORGANISMS/100 ml. at 37°C	Absent	IS:15185:2016	Absent
2	E. COLI/100 ml.	Absent	IS:15185:2016	Absent

Remarks: THE SAMPLE COMFORMS TO THE IS:10500-2012 WITH RESPECT TO ABOVE TEST ONLY.

Any deviation from the Standard Test Method / Specification - Nil
MAN-RAW-120143-PR-68202011268 dtd/dtd 17-SEP-20--24-SEP-20. ULR-TC 641120000078SF

TC-5471

G.D. GOEL
Authorised Signatory - Director

ISO - 9001 : 2015 CERTIFIED LABORATORY Director-Tech

Other Lab : Plot No. 50 & 65, Phase - IV, Sector-57, HSIDC Industrial Area, Behind Parnami Hospital, Kundli, Sonipat-131028 (Haryana)

Drinking water test report highlighting the parameters as per IS 10500 : 2012

Sample Documentation : 3

EKO PRO

Contact : +91 - 9810243870

EKO PRO ENGINEERS PVT. LTD.

Environmental Consultants and Analytical Laboratory

(An ISO 9001:2015 Certified Company)

TC-5063

Office & Laboratory : 32/41, South Side of G. T. Road, UPSIDC Industrial Area, Ghaziabad - 201 009 (Delhi-NCR) INDIA.
Contact No.: 9711159210, 9810240837, 9810240678 E-mail : email@ekopro.in, ekoproengineers@gmail.com, website : www.ekopro.in

TEST REPORT

Noise Monitoring

Test Report No. : EKO/E-501/220523 **Issue Date : 22/05/2023**

Issued To : UTKARSH SMALL FINANCE BANK
S-24/1-2, First Floor, Mahavir Nagar
Orderly Bazar
Varansi, U.P.

Sample Description	: Indoor Noise
Sample Drawn on	: 20/05/2023
Sample Drawn by	: EPEPL (Mr. Dharamveer Yadav)
Sample Received on	: 22/05/2023
Sampling Location	: 1st Floor (HR And Training IT Area)
Sampling Plan & Procedure	: SOP-N/01
Analysis Duration	: 22/05/2023 To 22/05/2023
Weather Condition	: Normal
Remark (if any)	: NA

RESULTS

S. No.	Parameters	Test Methods	Results	Units	Limits as per NBC
1	Leq	IS:9989	45.7	dB (A)	45-50

Notes :

The customer asked for the above tests only.

2. This test report will not be generated again, either wholly or in part, without prior written permission of the Laboratory.
3. The test report will not be used for any publicity/legal purpose.
4. Responsibility of the Laboratory is limited to the invoiced amount only.

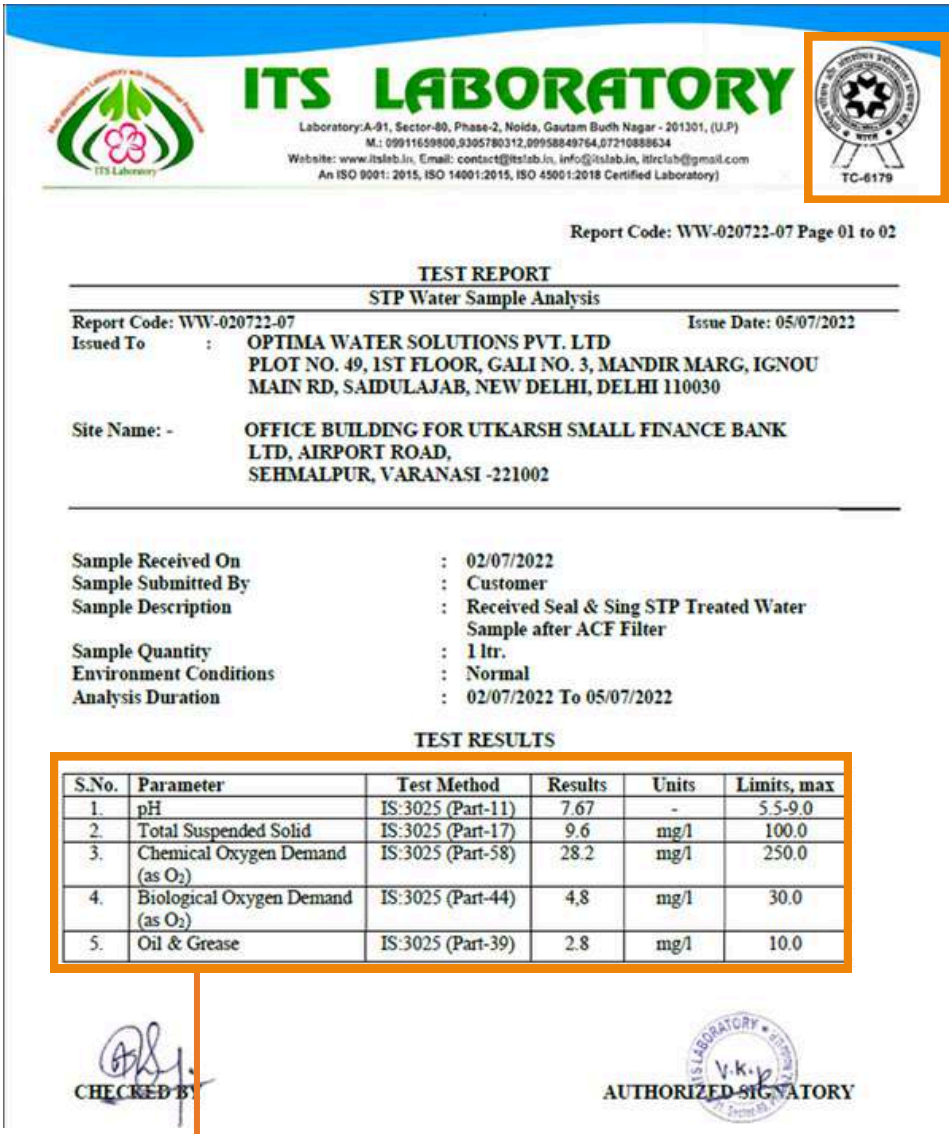
****End of Report****

For EKO PRO ENGINEERS PVT. LTD.
PURNIMA CHAUHAN
TECHNICAL MANAGER
(Authorised Signatory)

***Noise audit report highlighting the noise decibel results achieved as per NBC norms in an office space.**

*The NABL accreditation logo must be visible on the report or letterhead, or a separate certificate from the testing lab should be provided.

Sample Documentation : 4



ITS LABORATORY

Laboratory:A-91, Sector-80, Phase-2, Noida, Gautam Budh Nagar - 201301, (U.P)
M.: 09911659800,9305780312,09958849764,07210888634
Website: www.itslab.in, Email: contact@itslab.in, info@itslab.in, itlrclab@gmail.com
An ISO 9001: 2015, ISO 14001:2015, ISO 45001:2018 Certified Laboratory)

TC-6179

Report Code: WW-020722-07 Page 01 to 02

TEST REPORT

STP Water Sample Analysis

Report Code: WW-020722-07 Issue Date: 05/07/2022

Issued To : OPTIMA WATER SOLUTIONS PVT. LTD
PLOT NO. 49, 1ST FLOOR, GALI NO. 3, MANDIR MARG, IGNOU MAIN RD, SAIDULAJAB, NEW DELHI, DELHI 110030

Site Name: - OFFICE BUILDING FOR UTKARSH SMALL FINANCE BANK LTD, AIRPORT ROAD, SEHMALPUR, VARANASI -221002

Sample Received On	:	02/07/2022
Sample Submitted By	:	Customer
Sample Description	:	Received Seal & Sing STP Treated Water Sample after ACF Filter
Sample Quantity	:	1 ltr.
Environment Conditions	:	Normal
Analysis Duration	:	02/07/2022 To 05/07/2022

TEST RESULTS

S.No.	Parameter	Test Method	Results	Units	Limits, max
1.	pH	IS:3025 (Part-11)	7.67	-	5.5-9.0
2.	Total Suspended Solid	IS:3025 (Part-17)	9.6	mg/l	100.0
3.	Chemical Oxygen Demand (as O_2)	IS:3025 (Part-58)	28.2	mg/l	250.0
4.	Biological Oxygen Demand (as O_2)	IS:3025 (Part-44)	4.8	mg/l	30.0
5.	Oil & Grease	IS:3025 (Part-39)	2.8	mg/l	10.0

CHECKED BY

AUTHORIZED SIGNATORY

STP outlet water test report indicating the water quality, tested as per relevant standards

Possible errors in test reports

- The submitted test results may not reflect the necessary technical parameters required for compliance with the respective IS code. For example, drinking water test reports may be missing microbiological parameters.
- The report may lack essential details such as the date of testing and the project name.
- Test reports may not be from an accredited third-party lab and instead conducted in-house, which is not accepted.
- There may be deviations from the applicable IS code, such as using IS 456:2000 instead of IS 10500:2012 for drinking water tests.
- A partial report may have been submitted instead of the complete report.

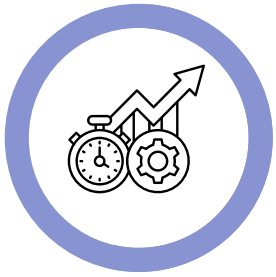
Simulations

Simulation

Simulation plays a crucial role in the green building certification process by providing detailed predictions of a building's energy performance, thermal comfort, daylighting, and other sustainability metrics. Submitting simulation documents is essential for verifying the claims made in green building projects, as they serve as objective proof that the proposed strategies will deliver the expected environmental benefits.

Performance Prediction

Simulations provide insights into how a building will perform in terms of energy consumption and natural lighting, allowing teams to optimize designs before construction begins.



Design Optimization

Simulations allow architects and engineers to explore different design options and materials, leading to better decision-making regarding building orientation, window placement, shading strategies, etc.

Integrated Approach

Facilitates a holistic view of the building's performance, considering the interplay between energy use, daylight availability, and occupant comfort.

Points to remember while submitting simulations

01 Simulations must be conducted using validated software to ensure accuracy and reliability.

02 Include shading devices and obstructions such as neighbouring buildings, trees or any other building elements in the simulation model that may affect sunlight, daylighting, and energy consumption.

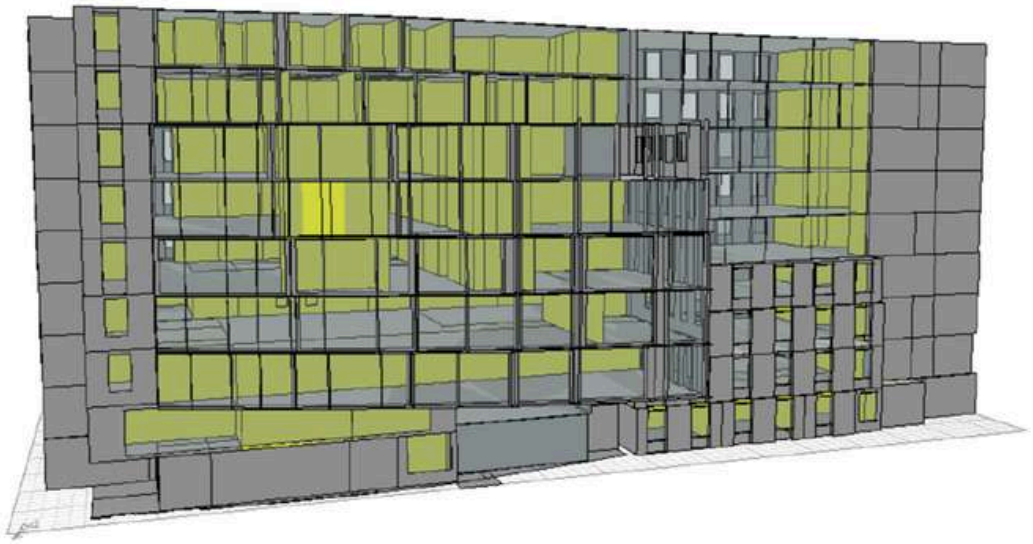
03 Occupancy schedules, lighting usage, and HVAC operation hours should reflect real-world conditions.

04 Ensure accurate definition of material properties (e.g., thermal conductivity, insulation) and proper application in the simulation.

05 Zone and simulate the relevant parts of the building based on the specific appraisal requirements.

Sample Documentation : 1

The project is located in Varanasi, Uttar Pradesh and consists of a Commercial Bank building. It comprises of Ground Floor, First Floor, Second Floor, Third Floor, Fourth Floor, Fifth Floor, Sixth Floor, Seventh Floor and Eighth Floor. Also, project is having two basement floors which is used for parking purpose.



A snippet of the daylighting simulation report, providing general information on the 3D modeling conducted for a project.

Sample Documentation : 2

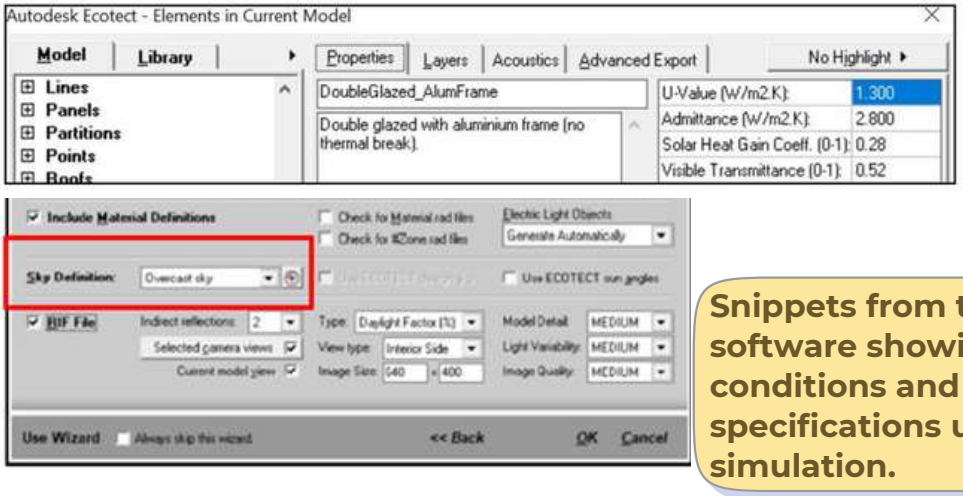
ECOTECT tool has been used in this project for creating 3-D model and analysis purpose. The Simulation is carried out with the help of radiance software and following strategies has been adopted while performing simulation.

1. Simulation is carried out by considering that- Sky is clear, Date and time: 21st September 12 noon at a working plane of 0.750 meter.
2. Orientation has been set up as according to architectural drawing.
3. Windows and doors have been placed as according to Door-Window Schedule.
4. **The Alternative 1/Path 1 has been chosen in order to meet the compliance for the project.**
5. Specification of glazing are as follows

Table 2: Specification of Glazing

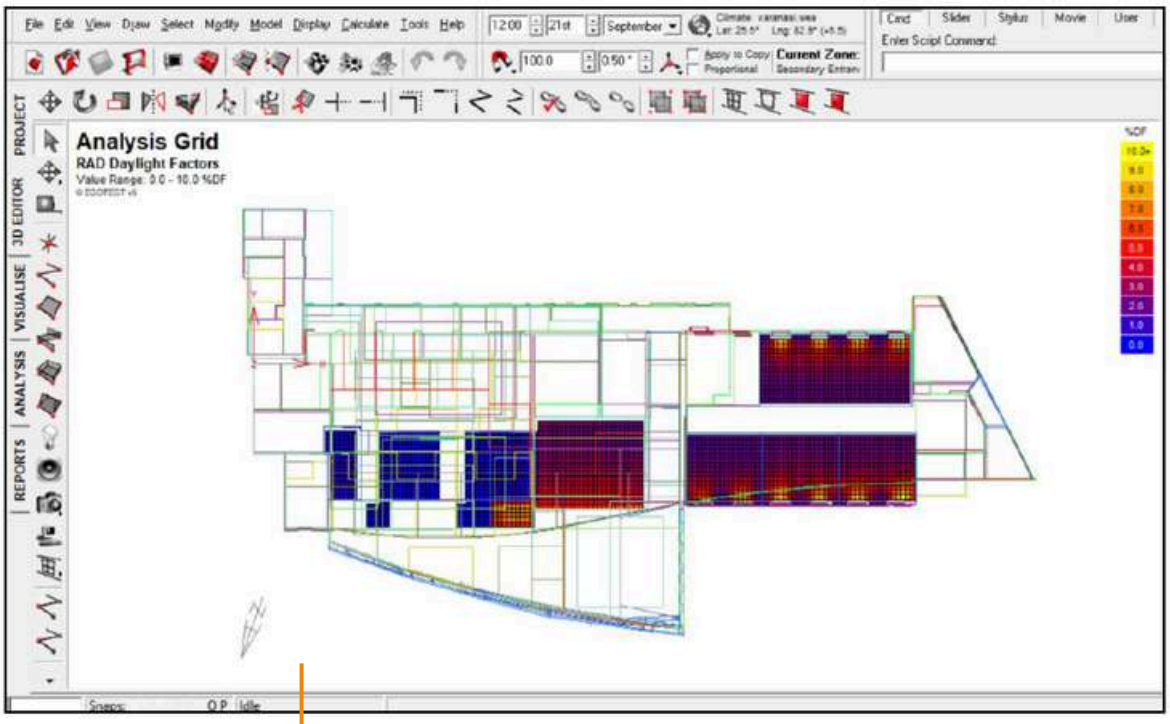
Description	Properties Type Single Glazed
VLT (%)	52
SHGC	0.28
Shading Coefficient	0.32
U- Value (W/m2 K)	1.3

A snippet from the daylighting simulation report, including general information outlining the settings used for daylighting analysis.



Snippets from the simulation software showing the sky conditions and glass specifications used in the simulation.

Sample Documentation : 3

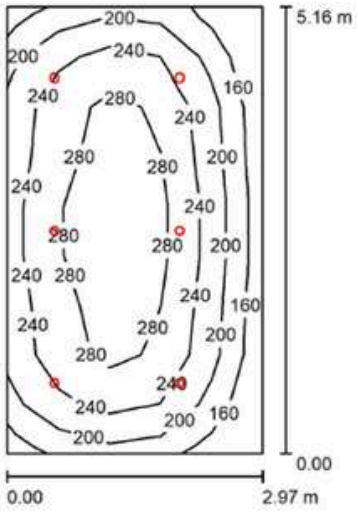


***Simulation result for one floor plate indicating all regularly occupied areas simulated with the daylight contour bands.**

*Simulation results must be shared for all the regularly occupied areas in the project to demonstrate compliance.

Sample Documentation : 4

MAINTENANCE STAFF G -TOILET / Summary



*Artificial lighting simulation report for a space indicating all parameters such as, reflectance values, work plane height, grid size, Illuminance levels and uniformity ratio.

Height of Room: 2.700 m, Mounting Height: 2.700 m, Light loss factor: 0.80

Values in Lux, Scale 1:67

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u0
Workplane	/	240	129	314	0.539
Floor	10	238	80	316	0.336
Ceiling	50	15	11	18	0.734
Walls (4)	30	47	8.57	179	/

Workplane:
Height: 0.80 m
Grid: 5 x 9 Points
Boundary Zone: 0.000 m

UGR (CIE, SHR = 0.25.)

	Lengthways-	Across
Left Wall	16	16
Lower Wall	16	16

to luminaire axis

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.195, Ceiling / Working Plane: 0.063.

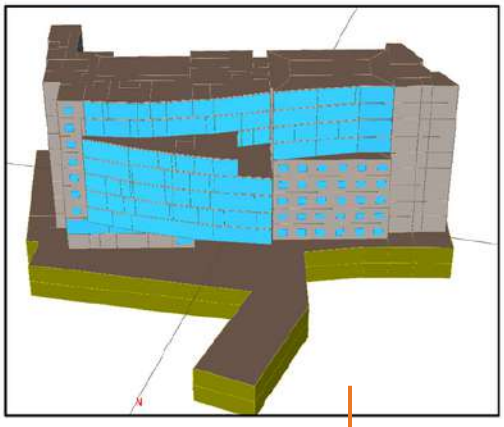
Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	6	Philips DN590B M LED10S-4000 PSU WH MB (1.000)	1009	1010	8.2
			Total: 6052	Total: 6060	49.4

Specific connected load: 3.22 W/m² = 1.34 W/m²/100 lx (Ground area: 15.34 m²)

*Artificial lighting simulation results must be shared for all the spaces in the project to demonstrate compliance.

Sample Documentation : 5

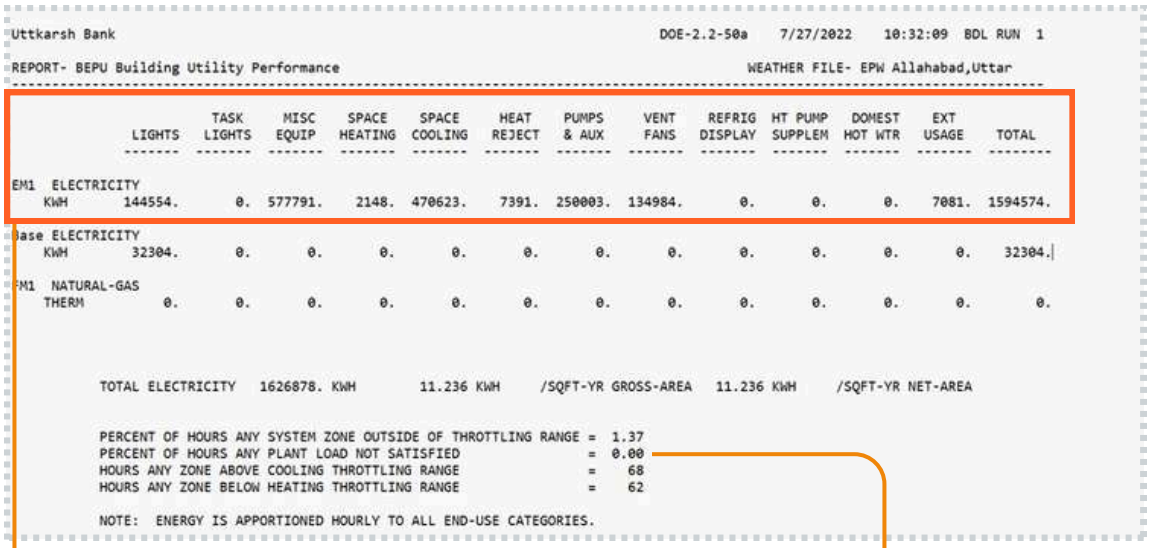


3D building model reference

Description	Proposed	Unit
Wall U-value	0.11	Btu/h-ft2-F
Roof U-value	0.07	Btu/h-ft2-F
Glazing U-value	0.23	Btu/h-ft2-F
Glazing SHGC	0.28	
Glazing VLT	52%	
HVAC System Type	Chilled water system & VRV units	
No of Chillers	2 Water Cooled Screw	
Capacity	400 TR & 200 TR	
No of Cooling Tower	2	
Capacity	350 TR each	
No of cells per tower	2	
Chiller COP	6.2 for 400TR and 6 for 200TR	
VRV COP	4.1	
Lighting Power Density	• Basement: 0.11 • 1st floor (24 Hr. operating call center): 0.32 • GF & 2nd to 8th floor: 0.37	W/ ft2
Zone Cooling set point	75	deg F

General information on input parameters used for energy analysis.

Sample Documentation : 6



Uttkarsh Bank DOE-2.2-50a 7/27/2022 10:32:09 BDL RUN 1

REPORT- BEPU Building Utility Performance WEATHER FILE- EPW Allahabad,Uttar

		LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1	ELECTRICITY													
	KWH	144554.	0.	577791.	2148.	470623.	7391.	250003.	134984.	0.	0.	0.	7081.	1594574.
ase	ELECTRICITY													
	KWH	32304.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	32304.
M1	NATURAL-GAS													
	THERM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL ELECTRICITY 1626878. KWH 11.236 KWH /SQFT-YR GROSS-AREA 11.236 KWH /SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 1.37
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 68
HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 62

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

Excerpt from output file indicating the various energy consumptions in the project

Excerpt from the Energy output file (BEPU) indicating the percentage hours plant load not satisfied for thermal comfort analysis.

Sample Documentation : 7

```
INPUT ..


$ ----------------------------------------------------------
$              Abort, Diagnostics
$ ----------------------------------------------------------




$ ----------------------------------------------------------
$              Global Parameters
$ ----------------------------------------------------------

PARAMETER
   "LPD"           = 0.2553  ..
PARAMETER
   "LPD 1F"        = 0.2104  ..
PARAMETER
   "LPD Basement" = 0.1143  ..
PARAMETER
   "EPD"           = 1.5  ..


$ ----------------------------------------------------------
$              Title, Run Periods, Design Days, Holidays
$ ----------------------------------------------------------

TITLE
   LINE-1            = *Uttkarsh Bank*
   ..

"Entire Year" = RUN-PERIOD-PD
   BEGIN-MONTH       = 1
   BEGIN-DAY         = 1
   BEGIN-YEAR        = 2022
   END-MONTH         = 12
   END-DAY           = 31
   END-YEAR          = 2022
   ..
```

Excerpt of the Input file that is required to be submitted.

Excerpt of the Output file that is required to be submitted.

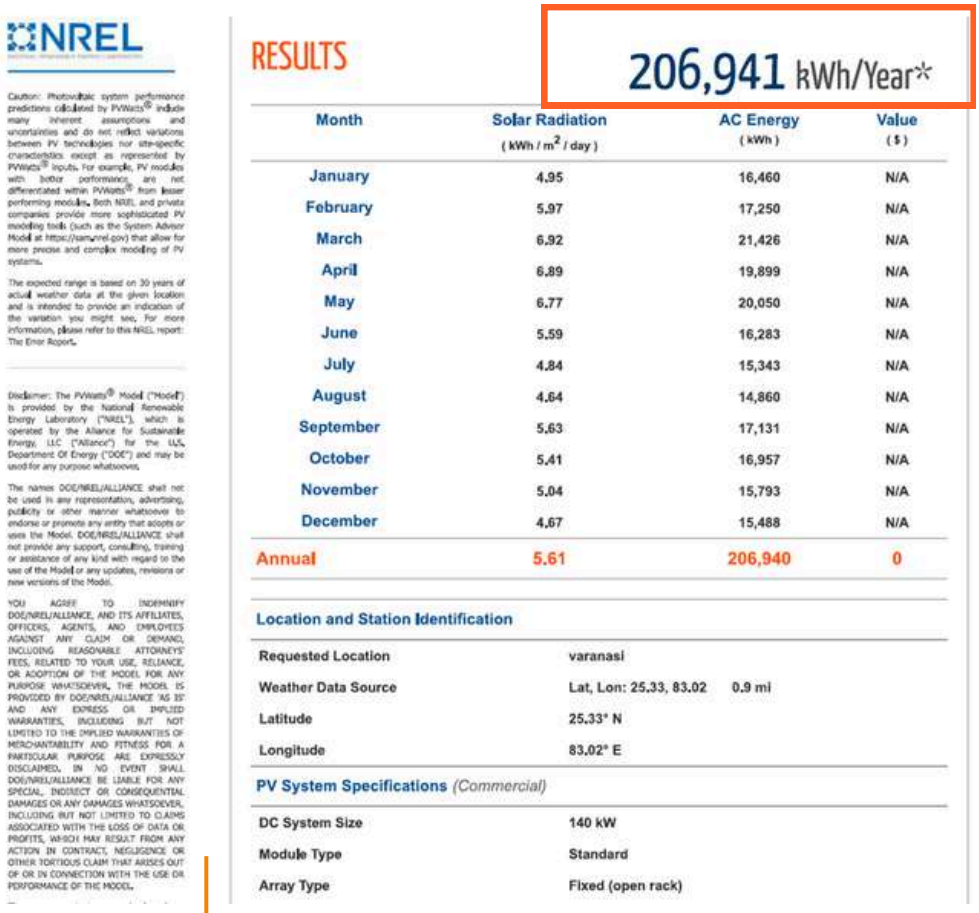
```
Uttkarsh Bank                                                    DOE-2.2-50a    2/14/2023    15:12:11  BDL RUN  1

REPORT- LV-M DOE-2.2 Units Conversion Table                                        WEATHER FILE- EPW Allahabad,Uttar
-------------------------------------------------------------------------------------------------------------------

                ENGLISH     MULTIPLIED BY   GIVES   METRIC      MULTIPLIED BY   GIVES   ENGLISH

        1                                 1.000000                              1.000000
        2                                 1.000000                              1.000000
        3       BTU                       0.293000   WH                         3.412969   BTU
        4       BTU/HR                    0.293000   WATT                       3.412969   BTU/HR
        5       BTU/LB-F               4183.830078   J/KG-K                     0.000239   BTU/LB-F
        6       BTU/HR-SQFT-F             5.678260   W/M2-K                     0.176110   BTU/HR-SQFT-F
        7       DEGREES                   1.000000   DEGREES                    1.000000   DEGREES
        9       SQFT                      0.092903    M2                       10.763915   SQFT
       10       CUFT                      0.028317    M3                       35.314724   CUFT
       11       LB/HR                     0.453592   KG/HR                      2.204624   LB/HR
       12       LB/CUFT                  16.018459   KG/M3                      0.062428   LB/CUFT
       13       MPH                       0.447040   M/S                        2.236936   MPH
       14       BTU/HR-F                  0.527178   W/K                        1.896893   BTU/HR-F
       15       FT                        0.304800    M                         3.280840   FT
       16       BTU/HR-FT-F               1.730735   W/M-K                      0.577789   BTU/HR-FT-F
       17       BTU/HR- SQFT              3.152480   WATT /M2                   0.317211   BTU/HR- SQFT
       18       IN                        2.540000   CM                         0.393701   IN
       19       UNITS/IN                  0.393700   UNITS/CM                   2.540005   UNITS/IN
       20       UNITS                     1.000000   UNITS                      1.000000   UNITS
       21       LB                        0.453592   KG                         2.204624   LB
       22       FRAC.OR MULT.             1.000000   FRAC.OR MULT.              1.000000   FRAC.OR MULT.
       23       HOURS                     1.000000   HRS                        1.000000   HOURS
       24       PERCENT-RH                1.000000   PERCENT-RH                 1.000000   PERCENT-RH
       25       CFM                       1.699010   M3/H                       0.588578   CFM
       26       IN-WATER                 25.400000   MM-WATER                   0.039370   IN-WATER
       27       LB/SQFT                   4.882400   KG/M2                      0.204817   LB/SQFT
       28       KW                        1.000000   KW                         1.000000   KW
       29       W/SQFT                   10.763920   W/M2                       0.092903   W/SQFT
       30       THERMS                   25.000000   THERMIES                   0.040000   THERMS
       31       KNOTS                     0.514440   M/SEC                      1.943861   KNOTS
```

Sample Documentation : 8



NREL

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at https://sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

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RESULTS

206,941 kWh/Year*

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Value ($)
January	4.95	16,460	N/A
February	5.97	17,250	N/A
March	6.92	21,426	N/A
April	6.89	19,899	N/A
May	6.77	20,050	N/A
June	5.59	16,283	N/A
July	4.84	15,343	N/A
August	4.64	14,860	N/A
September	5.63	17,131	N/A
October	5.41	16,957	N/A
November	5.04	15,793	N/A
December	4.67	15,488	N/A
Annual	5.61	206,940	0

Location and Station Identification

Requested Location	varanasi	
Weather Data Source	Lat, Lon: 25.33, 83.02	0.9 mi
Latitude	25.33° N	
Longitude	83.02° E	

PV System Specifications *(Commercial)*

DC System Size	140 kW
Module Type	Standard
Array Type	Fixed (open rack)

Snippet of PV watts simulation report indicating Solar energy generation potential for a particular location

Possible errors in simulation

- The project team may not submit the complete input and output files required to verify the simulation results.
- Input parameters in the simulation report may not align with the details in the input file.
- The simulated building parameters may not accurately reflect the actual building typology. For instance, a building may be simulated as a daytime-only facility, whereas it operates 24/7, which could significantly impact the simulation results.
- The technical specifications or capacities of products or equipment used in the simulation may not match those installed in the project.
- The simulation may not be conducted using validated or industry-accepted software, which is crucial for reliable results.
- The simulation may use incorrect values for occupancy, lighting, or equipment loads, affecting energy consumption estimates.
- HVAC systems or renewable energy setups may not be correctly modeled, leading to unreliable energy performance results.
- Incorrect zoning or misrepresentation of space usage can lead to unrealistic energy or daylighting performance predictions.

Documentation checklist for GRIHA version 2015

1	Site Selection	✓	✓					✓
2	Low Impact design	✓	✓	✓				✓
3	Design to Mitigate UHIE	✓	✓	✓	✓	✓	✓	✓
4	Site Imperviousness Factor	✓	✓	✓				✓
5	Air and water pollution control	✓	✓		✓	✓		✓
6	Preserve and protect landscape during construction	✓	✓	✓	✓	✓	✓	✓
7	Construction Management Practices	✓	✓	✓	✓	✓		✓
8	Energy efficiency	✓		✓	✓	✓		✓
9	Renewable energy utilization	✓	✓	✓	✓	✓		✓
10	Low ODP and GWP Materials	✓			✓	✓		✓
11	Achieving indoor comfort requirements (visual/thermal/acoustic)	✓	✓	✓	✓	✓		
12	Maintaining good IAQ	✓	✓	✓	✓	✓		
13	Use of low-VOC paints and other compounds in building interiors	✓			✓	✓	✓	✓
14	Use of low-flow fixtures and systems	✓		✓	✓	✓	✓	✓
15	Reducing landscape water demand	✓	✓	✓	✓	✓		✓
16	Water Quality	✓		✓	✓	✓	✓	✓
17	On-site water reuse	✓	✓	✓				✓
18	Rainwater Recharge	✓	✓	✓				✓
19	Utilization of BIS recommended waste materials in building structure	✓			✓	✓	✓	✓
20	Reduction in embodied energy of building structure	✓	✓	✓		✓		

Documentation checklist for GRIHA version 2015

21	Use of low-environmental impact materials in building interiors	✓	✓	✓	✓	✓		✓
22	Avoided post-construction landfill	✓	✓	✓				✓
23	Treat organic waste on site	✓	✓	✓	✓	✓		✓
24	Labour safety and sanitation	✓						✓
25	Design for Universal Accessibility	✓	✓					✓
26	Dedicated facilities for service staff	✓	✓	✓				✓
27	Increase in environmental awareness	✓						✓
28	Smart metering and monitoring	✓	✓		✓	✓		✓
29	Operation, Maintenance Protocols	✓			✓			✓
30	Performance Assessment for Final Rating	✓						
31	Innovation	✓	✓	✓	✓	✓		✓