Site Management Best Practices for GRIHA Compliance Implementation Experiences

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CHEMISTRY THAT MATTERS™

Site Management Best Practices for GRIHA Compliance

Implementation Experiences

SABIC Research & Technology Pvt. Ltd.
Bangalore, India

PROJECT INFORMATION

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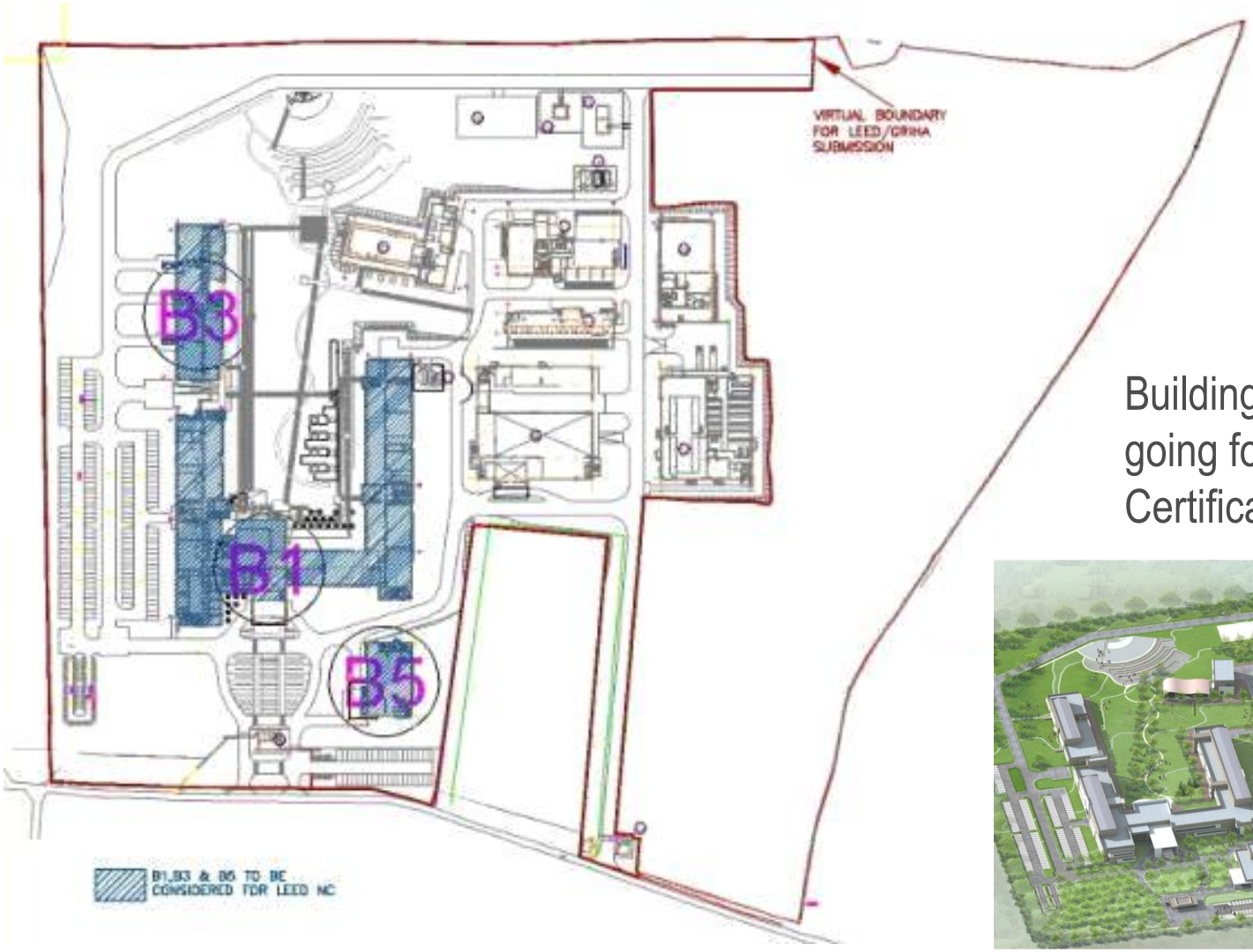
Project Info	
Project Title	SABIC Research & Technology Pvt. Ltd.
Building Use	R & D Campus (Office + Labs)
Location	Sarjapura; Bangalore
Size	2,25,390 Sq. Ft
Site Area	46.22 Acres
Certification Level	LEED NC Gold (under Review) & GRIHA 3 Star (under Review)
Project Team Profile	
Owner	Saudi Basic Industries Corporation
Architect	Venkatramanan & Associates
LEED Facilitator	Eco 3 Design Consultants Pvt. Ltd.

PROJECT INFORMATION



Buildings B1, B3 and B5 going for LEED & GRIHA Certification

Project evaluation was done at initial stages and based on preliminary review, project is expected to target **72 points** and hence **3 STAR rating under GRIHA rating system.**

It is aimed to increase the benchmark and target for the **4 STAR rating under GRIHA rating system.**

[01- Annexure- Evaluation checklist - SABIC_080411.pdf]

GRIHA Feasibility Tool for Self Assessment			
Note: Applicability checks have been provided for various criterions in the table, to check for conditions on site which may make those criterion non-applicable. If in the Applicability checks, the conditions specified are false for the given project, kindly input 'no' in place of the default 'yes'.			
Criterion	Appraisal	Points	Attempt
Criterion 1	Site Selection		
	The site plan must be in conformity with the development plan/master plan/UDPFI guidelines (mandatory). This should comply with the provisions of eco-sensitive zone regulations, coastal zone regulations, heritage areas (identified in the master plan or issued separately as specific guidelines), water body zones (In such zones, no construction is permitted in the water-spread and buffer belt of 30 metre minimum around the FTL), various hazard prone area regulations, and others if the site falls under any such area (mandatory with no point allocation).	0	
	The site should be located within ¼ km radius of an existing bus stop, commuter rail, light rail or metro station and/or the proposed site must be a Brownfield site (to rehabilitate damaged sites where development is hindered by environmental contamination, thereby reducing pressure on undeveloped land)	1	1
		1	1
Criterion 2	Preserve and protect landscape during construction/compensatory depository forestation.		
	Applicability Check 1 Top soil quality meets the quality standard of top preservation criteria as per criteria 3	yes	
	Applicability Check 2 There are existing several mature trees on site that can be preserved	yes	
	Construction has been planned in a way that excavation/basement work, up to plinth level is not coinciding with rainy season and the site disruption is restricted to pre-designated areas	1	1
	Proper staging, spill prevention plan , sedimentation and erosion control systems in place.	1	1
	Top soil has been/shall be preserved (quantity to be determined by soil requirement in landscaping) Note: Applicable if answer is yes in Applicability Check 1 above	1	1
	Trees are preserved and protected properly Note: Applicable if answer is yes in Applicability Check 2 above	1	1
	Compensatory forestation is applied on site Note: Applicable if answer is yes in Applicability Check 2 above	1	0
		5	4
Total		100	72
Score Percentile		72	

Snapshot of GRIHA checklist

SABIC | GRIHA | CONSTRUCTION STATUS AS OF NOVEMBER 2012

PRESENT STATUS AT SITE

SABIC | GRIHA | RECOGNITIONS

Association for Development
and Research of Sustainable Habitats

is pleased to acknowledge

Exemplary Demonstration of
Site Management practices

at the

SABIC Research & Technology Pvt. Ltd.
Campus, Bengaluru*

National Conference on Green Design

1 - 2 March 2012

Manekshaw Centre, Delhi Cantt.

New Delhi

*registered for GRIHA rating

Dr R K Pachauri
President
Association for Development and Research of Sustainable Habitats

GRIHA

Award for Exemplary Demonstration of Site Management Practices

SITE SELECTION & PLANNING | CONSERVATION & EFFICIENT UTILIZATION OF RESOURCES

Cr 2	Preserve & Protect Landscape during Construction/ Compensatory Depository Forestation
Cr 3	Soil Conservation (post construction)
Cr 5	Reduce hard paving on site
Cr 6	Enhance Outdoor Lighting System Efficiency
Cr 8	Provide at least Minimum Level of Sanitation/ Safety Facilities for Construction Workers
Cr 9	Reduce Air Pollution During Construction

BUILDING PLANNING & CONSTRUCTION STAGE | WATER

Cr 12	Efficient Water Use During Construction
Cr 21	Water recycle and reuse (including rain water recharge pits)

BUILDING PLANNING & CONSTRUCTION STAGE | WASTE MANAGEMENT

Cr 22	Reduction in Waste During Construction
Cr 23	Efficient Waste Segregation
Cr 24	Storage & Disposal of Waste

SITE PLANNING & MANAGEMENT

C-02 Preserve and protect landscape during construction/compensatory depository forestation.

Implementation of Site Logistics Plan

LEGEND

1 - BATCHING PLANT (45.7 M X 60.9 M)
2&3 - DG+FUEL TANK (4.5 M X 9.1 M)
4 - MATERIAL UNLOADING (30.4 M X 9.1 M)
5 - CEMENT GODOWN(6.1 M X 30.4 M)
6 - STEEL YARD(9.1 M X 30.4 M)
7 - CARPENTRY YARD (6.1 X 30.4 M)
8 - OPEN STORAGE(9.1 M X 60.9 M)
9 - LABS (6.1 M X 15.2 M)
10 - WORKSHOP MECHANICAL(6.1 M X 30.48 M)
11 - STORES(6.1 M X 45.7 M)
12 - CONTRACTOR OFFICES (15.2 M X 30.48 M)
13 - FIRST AID ROOM (6.1 M X 7.6 M)
14 - SECURITY & ID CARD ISSUE(6.1 M X 7.6 M)
15 - OPEN PARKING (4.5 M X 60.9 M)
16 - SCRAP YARD (6.1 M X 22.8 M)
17 - CONTRACTORS TOILETS (3.1 M X 15.4 M)
18 - CURING TANK (3.1 M X 6.1 M)
19 - TOP SOIL STORAGE (3.1 M X 30.4) - 4 NOS
20 - TRUCK HOLDING AREA (20.1 M X 50.4 M)
21 - NURESEY (12.1 M X 30.4 M)
22 - CLIENT'S OFFICE (19.82 M X 7.8 M)
23 - CAFETERIA (7.32 M X 7.32 M)
24 - EHS TRAINING (19.8 M X 8.8 M)
25 - STP (6.1 M X 6.1 M)
26 - EXISTING SHED 1
27 - EXISTING SHED 2

C-02 Preserve and protect landscape during construction/compensatory depository forestation.

Implementation of Site Logistics Plan

Emergency Evacuation Plan & Site Logistics Plan Displayed at Site Entry

C-02 Preserve and protect landscape during construction/compensatory depository forestation.

Implementation of Site Logistics Plan- Material Store Yards

Proper Storage of Cement Bags & Scaffolding Materials

C-02 Preserve and protect landscape during construction/compensatory depository forestation.

Staging & spill prevention measures

Erosion & sedimentation measures

Seeding of Embankments along Roads

C-02 Preserve and protect landscape during construction/compensatory depository forestation.

Erosion & sedimentation measures

C-02 Preserve and protect landscape during construction/compensatory depository forestation.

Protection of Existing Landscape

C-02 Preserve and protect landscape during construction/compensatory depository forestation.

Tree Transplantation Process

C-02 Preserve and protect landscape during construction/compensatory depository forestation.

Tree Transplantation – Present Status

Transplanted Trees

C-02 Preserve and protect landscape during construction/compensatory depository forestation.

Development of Onsite Nursery & Onsite Vermicomposting Facility

C-02 Preserve and protect landscape during construction/compensatory depository forestation.

Development of Onsite Nursery – Present Situation

C- 03 Soil conservation (During Construction)

Top Soil Preservation

C- 03 Soil conservation

Top soil Management- Present Status – Top Soil Reuse

Preserved Top Soil being Reused for the Nursery and Landscape Works

WATER, WASTE-WATER AND SOLID-WASTE MANAGEMENT

C-12 Efficient water use during construction

Use of Gunny Bags and Treated Grey Water for Curing Purpose

C-20 Waste water treatment

Waste Water Treatment During Construction & Reuse of treated waste Water & Rainwater

Onsite STP During Construction provides treated grey water for nursery and landscape purpose

C-20 Waste water treatment

RO Reject Water Used for Curing, Compactions & Block Making Process

C-20 Waste water treatment

Waste Water Treatment During Construction & Reuse of treated waste Water & Rainwater

Treated water available from onsite STP and STP at Labour Colony being used for landscape purpose

Rainwater Recharge and Percolation Pits

C-22 Reduction in waste during construction

Construction Waste Yard & Recycling of Construction Waste

C-22 Reduction in waste during construction

Construction Waste Yard & Recycling of Construction Waste

Indoor Air Quality Management During Construction

Covering the loose ends of the ductwork presently ongoing

Indoor Air Quality Management During Construction

Protection of MEP Equipments, Materials etc. Being procured at site

Indoor Air Quality Management During Construction

Protection of MEP Equipments, Materials etc. Being procured at site

HEALTH, WELL BEING & ENVIRONMENTAL QUALITY

02- Annexure- SRTPL Site Progress- Annexure- Staff & Labour Welfare Implementation.pdf

AIR POLLUTION CONTROL MEASURES

03- Annexure- SRTPL Site Progress- Annexure- Air Pollution Control Measures.pdf

Processes Set Up at Site To Address Ground Realities for GRIHA Implementation

Onsite Reality 01

• People working at site level not aware of the GRIHA initiatives to be implemented

• Ignorance on requirement of documenting the construction progress and GRIHA site implementation strategies.

Process Set up to Address

Capability building at site level to create awareness about green building efforts being carried out and to explain the requirement of documenting the construction progress and GRIHA site implementation strategies on regular basis.

04- Annexure- Green Education\WED CELEBRATIONS SABIC SITE.pdf

05- Annexure- Green Education\One Million Safe Man Hours Celebration Function.pdf

Processes Set Up at Site To Address Ground Realities for GRIHA Implementation

Onsite Reality 02

•Keeping track of documentation at regular frequency to prevent any loss of site data required for GRIHA submission is not addressed effectively

Process Set up to Address

Fortnightly Project Tracking Meetings to keep track of documentation at regular frequency to prevent any loss of site data required for GRIHA submission

Every Fortnight meeting between client, green building consultant and site contractors to evaluate present status & deliverables.

Processes Set Up at Site To Address Ground Realities for GRIHA Implementation

Onsite Reality 03

•Regular Site inspection by GRIHA facilitation consultant and ADaRSH Team is critical for maintaining check on the initiatives implemented.

Process Set up to Address

Monthly Progress Reports shared with ADaRSH team of GRIHA for maintaining easy flow of information transfer to the GRIHA team

06- Annexure- Monthly Progress Report being shared with ADaRSH team on Regular Basis

THANK YOU