IGBC Green Homes Version 2.0 Pre-Certification Final Review

Multi-dwelling Residential Units

IGBC Green Homes® - Ver 2

 # GH170327 - High Cliff, Bangalore

IGBC Green Homes Pre-Certification Level: Platinum

Date: 19 September 2018

This precertification review is based on a review of the project goals and intentions. It is incumbent upon the project team to demonstrate that the credit requirements have been met at the design and construction certification reviews. The Precertification rating awarded need not necessarily correspond to the final IGBC Green Homes Rating. The final rating would depend on the implementation of all the design parameters detailed in the Precertification documents. **The precertification is valid for 3 years from the date of precertification. Six monthly project update is mandatory till Certification.**

81	0	Points Achieved		100	Points Available
Awarded	Denied				**Certified** 50 to 59 points
					Silver 60 to 69 points
					Gold 70 to 79 points
					Platinum 80 to 100 points
12	**0**	**Site Efficiency**	**Possible Points:**	**9**	
Y		**SSP Mandatory Requirement 1**	**Local Building Regulations**	Y	**Final Review:** The project has received an approval from local authority for the proposed site plan. The submittal includes approved site plan and actual site photographs showing the progress of site for development. This meets the mandatory requirement. **Preliminary Review:** The submitted narrative states that the project has complied with all required statutory and regulatory codes of Bangalore Development Authority(BDA). The proposed project is going to be constructed in a previously developed site and awaiting approval from BDA. The submittal includes narrative stating that the project has been designed as BDA bye-laws, drawings approved by Architect and developer undertaking letter. The fit for occupancy certificate along with site photographs and as built drawings shall be submitted during final certification. However, few more details are required to meet the mandatory requirement. **Technical Advice:** Please submit an acknowledgement letter for site plan approval received from local authority to show compliance along with site photographs.

Y		**SSP Mandatory Requirement 2**	**Soil Erosion Control**	Y	**Preliminary Review:** The submitted narrative states that project will take appropriate soil erosion control measures during pre-construction, construction and post occupancy. The pre-construction measures include site barricading and sediment basin. During construction measures include top soil preservation, preservation of existing trees, dust control, sprinkling of water for the dust suppression and wheel washing at entrance & exit. The post-occupancy measures include rain water harvesting, maintenance of storm water system and landscaping. The submittal includes narrative, ESC plan guidelines and site plan highlighting ESC measures during construction and post construction. This meets the mandatory requirement. *For final certification please submit site photographs highlighting ESC measures implemented at various stages.*
2		**SSP Credit 1**	**Basic House-hold Amenities**	2	**Preliminary Review:** The submitted narrative states that the project site has access to eight basic amenities that include departmental store, school, restaurant, beauty salon., pharmacy, sports club, gymnasium and post office within a radial distance of 1 km. The project has also provided seating area, toilet & children tot-lots in the common area. The submittal includes vicinity map (google image) showing the actual distance of amenities from the site entrance, distances and photographs of each amenity. The supporting documents also include floor plan showing seating facility, site plan showing toilet facilities and tot-lot in the common areas. This meets the credit requirement.
Not pursuing		**SSP Site Credit 2**	**Natural Topography or Vegetation : 15 %, 20%**	4	**Preliminary Review:** Not pursuing**.**
1		**SSP Credit 3**	**Heat Island Effect, Non-Roof : 50%, 75%**	2	**Preliminary Review:** The submitted IGBC Green Homes Template declares that 64.1% of the total non-roof impervious areas of the site area will be covered with high SRI paver block. The calculations submitted indicates that total exposed non-roof impervious area is 459 sq.m; total non-roof impervious area covered with paver block is 294 sq.m. The submittal includes hardscape layout highlighting high SRI paver blocks, proposed material brochure and owner's declaration for high SRI paver blocks. This meets the credit requirement. *For final certification please submit calculations showing the break-up of the exposed non-roof impervious areas and areas covered with high SRI pavers.*

2		**SSP Credit 4**	**Heat Island Effect, Roof : 50%, 75 %**	4	**Preliminary Review:** The submitted narrative states that 60.7% of the exposed roof area will be covered with high SRI paint and vegetation. The calculations submitted indicates that the total net exposed roof area (excluding services, solar water heater, solar photovoltaics and utility areas) i.e. 1250 sq.m will be painted with high SRI paints and 196 sqm will be covered with vegetation. Supporting documents include roof plan highlighting the area with high reflective paint, proposed manufacturer brochure along with declaration letter. This meets the requirement of the credit. *Please note that the project has proposed to cover the exposed area with high SRI paint and the brochure provided is of cool roof tiles. Please submit brochure of high SRI paint used in the project for final certification along with the purchased invoice.*
1		**SSP Credit 5**	**Parking Facilities for Visitors : 10%**	1	**Preliminary Review:** The submitted narrative declares that the project has provided parking capacity as per the local bye-law and additional parking for visitors has been provided as per local bye-laws requirement. The calculations submitted indicates that the project intends to provide resident parking for 223 four wheeler and visitor parking for 20 four wheeler. The submittal includes narrative, parking plan showing resident and visitor parking spaces along with the copy of the local bye-laws parking requirement. This meets the credit requirement.
1		**SSP Credit 6**	**Electric Charging Facility for Vehicles : 5 %**	1	**Preliminary Review:** The IGBC Green Homes Version 2 Template and narrative submitted states that the project has provided electric charging facilities for 12 four wheelers, amounting to 5.4 %. The submittal includes parking plan highlighting the location of electric charging points and cut-sheet of electric sockets. This meets the credit requirement
2		**SSP Credit 7**	**Design for Differently Abled**	2	**Preliminary Review:** The submitted IGBC Green Homes Version 2.0 Template declares that the project intends to provide provisions for differently abled people. The narrative states that the project will provide facilities for differently abled people such as 4 nos. of preferred parking spaces, designated toilets (2 nos.) in the common areas (of 152 dwelling units overall), uniformity in the flooring level, braille railings and audio assistance in elevators, ramps & walkways for easy access and visual signage's. The submittal includes the drawing showing the location of preferred parking, developer's declaration letter and toilets for differently abled at site. This meets the intent of the credit. *For final certification please provide the manufacture brochure of the installed lift highlighting braille and audio assistance.*

2		**SSP Credit 8**	**Basic Facilities for Construction Workforce**	2	**Preliminary Review:** The submitted IGBC Green Homes Version 2 Template declares that the project team will provide the construction work force with a safe and healthy work conditions. The declaration letters from the owner states the list of amenities to be provided to the construction workforce which includes adequate housing & sanitary facilities, first aid & emergency facilities, adequate drinking water, personal protective measures, dust suppression measures, adequate illumination levels, day care/creche facility for the worker's children and labour hutments facility on-site. The project team has submitted the site plan highlighting some of the facilities to be provided for the construction workforce. The Submittal includes narrative, drawing highlighting the basic facilities provided for construction workforce & developer's declaration letter. This meets the requirement of the credit.
1		**SSP Credit 9**	**Green Home Guidelines, Design & Post Occupancy**	1	**Preliminary Review:** The IGBC Green Homes Version 2 template and narrative states that the project would intend to provide green home guidelines to the occupants on post occupancy. The green features implemented in the project team has been mentioned in the marketing brochure of the project. The submittal includes narrative, a copy of the brochure highlighting the green design features and a draft copy of tenant guidelines. This meets the credit requirement.
18	**0**	**Water Efficiency**	**Points Available:**	**18**	

Y		**WE Mandatory Requirement 1**	`	Y	**Final Review:** The project team has revised the area statement in consistent with other credits. The submitted rainfall data is taken from IMD for last five years only. The calculation for the rain water harvesting tank and recharge pit has been included in the rainwater runoff calculation. The submitted revised rainwater calculations demonstrates that total run-off from roof and non-roof surface is 68 cu.m and the designed capacity of the proposed rain water harvesting system is 382 cu.m (storage capacity as 340cu.m and harvesting capacity as 42cu.m). The details of porosity factor and percolation rates haven't been provided. Considering it shall be submitted at the time of final certification, this meets the mandatory requirement. **Preliminary Review:** The IGBC Green Homes Version 2 Template and narrative submitted state that the project will implement a rainwater harvesting system that will harvest 100% of the rain water run-off from roof and non-roof areas. The calculations submitted indicate that the total run-off from roof and non-roof surface is 68 cu.m and the designed capacity of the proposed rain water harvesting system is 340 cu.m (100%). The project proposes to have 13 recharge pits and 450 mm wide storm water drain around the site. The submittals includes a narrative, rain water harvesting plan, rain water harvesting system detail and rain water harvesting calculation. However, few more details are required to meet this mandatory requirement.. **Technical Advice:** 1.Please provide consistent areas for calculations across all credits and submit revised calculations(the area considered for hard pavements & driveways is not consistent). 2. Submit calculations based on rainfall data from Indian metrological department for the past five years. 3. The calculation methodology for arriving at the capacity of rain water harvesting tank & recharge pit is not shown. Please submit calculations considering porosity factor and
Y		**WE Mandatory Requirement 2**	**Water Efficient Plumbing Fixtures**	Y	**Preliminary Review:** The IGBC Green Homes Version 2 Template and calculations states that the project has used efficient plumbing fixtures (flush & flow) demonstrating an overall water use reduction by 48.4%. The submitted narrative states that the project has used low flow flush fixtures from Jaquar having flow rates of 4/2 LPF water closets, 6 LPM health faucet and 6 LPM kitchen sink , 3.8 LPM normal faucet and 6 LPM shower head. Also, the submittal states that treated waste water is reused for flushing purpose. The submittal includes narrative, water balance diagram, schematic diagram showing dual plumbing lines, manufacturer's cut-sheet and declaration letter. This meets the mandatory requirement.
4		**WE Credit 1**	**Landscape Design : 20 %, 40%**	4	**Preliminary Review:** The submitted IGBC Green Homes Version 2 Template and calculations submitted indicate that out of total landscape area 939 sq. m, 186 sqm is turf, 634 sq. m is planted with drought tolerant species. The submittal includes declaration letter, landscape plan highlighting turf and drought tolerant species along with list of species planted in the project. This meets the credit requirement.

1		**WE Credit 2**	**Management of Irrigation Systems**	1	**Preliminary Review:** The submitted IGBC Green Homes Version 2 Template and narrative submitted states that efficient irrigation systems are been used within the project site. These systems include central shut-off valve, drip irrigation, sprinkled irrigation, rain sensor, soil moisture sensor and pressure regulating device. The submittal includes narrative, irrigation BOQ and irrigation layout. *For final certification please submit manufacturer cut-sheet of the installed water efficient irrigation systems.*
4		**WE Credit 3**	**Rainwater Harvesting, Roof & Non-roof: 50%, 75 %**	4	**Final Review:** Please refer to comments under WE Mandatory Requirement 1. **Preliminary Review:** Please refer to comments under WE Mandatory Requirement 1. **Technical Advice:** Please refer to comments under WE Mandatory Requirement 1.
4		**WE Credit 4**	**Water Efficient Plumbing Fixtures : 25 %, 35 %**	4	**Preliminary Review:** Please refer to comments under WE Mandatory Requirement 2.
4		**WE Credit 5**	**Waste Water Treatment and Reuse : 50 %, 95 %**	4	**Preliminary Review:** The submitted IGBC Green Homes Template and narrative states that project intends to install an on-site STP to treat for 100% of the waste water generated. The calculation submittal indicates that the waste water generated is 54.8 KLD and design capacity of the proposed STP is 125 KLD. The submittal also states that 100% of landscaping and flushing water requirement is met through treated waste water. The project has considered the efficiency of STP as 95% and available treated waste water for reuse is 19,010 KL annually. The treated water will be used for landscaping (1,690 KL) and flushing (3,074 KL) annually. Supporting documents include a narrative, dual plumbing layout, water balance diagram, site plan highlighting the location of installed STP and STP design brief. It is observed that the project has considered higher efficiency of STP in the submittal. However the project still meets the annual requirement for landscaping and flushing considering the efficiency of STP as 85%. This meets the credit requirement. *Please note an error in the water demand values, % STP efficiency etc. in the template, water balance diagram and STP brief. Please provide consistent values across all documents.*

1		**WE Credit 6**	**Water Metering**	1	**Preliminary Review:** The submitted IGBC Green Homes Version 2 Template and narrative states that water meters are installed for measuring treated grey water consumption, landscape water consumption and solar hot water consumption. The project will further provide water meters for rain water municipal water, bore well water and treated potable water consumption The submittal includes narrative and SLD showing water metering system. This meets the credit requirement. *For final certification please submit manufacturer cut-sheet of the installed water efficient irrigation systems.*
19	**0**	**Energy Efficiency**	**Points Available:**	**25**	
Y		**EE Mandatory Requirement 1**	**CFC Free Equipment**	Y	**Preliminary Review:** The submitted IGBC Green Homes Template and narrative states that the project intends to install CFC-free refrigerants in the HVAC system installed by the developer. The submittal includes declaration letter from the developer, tenant guidelines, tentative manufacturer brochures and a narrative stating the project is in design stage and the exact make and model of the split ac system will be decided at a later stage of the project. This meets the mandatory requirement.
Y		**EE Mandatory Requirement 2**	**Minimum Energy Performance**	Y	**Final Review:** Please refer the review comments under Energy Credit 1. **Preliminary Review:** Please refer the review comments under Energy Credit 1. **Technical Advice:** Please address the queries sought under Energy Credit 1

8		**EE Credit 1**	**Enhanced Energy Performance :** Prescriptive Approach	10	**Final Review:** The project team has enclosed the WWR calculation in excel format for the project. The project team has enclosed the manufacturer cut sheet of proposed timer control for common interior and exterior lighting for the project. This meets the credit requirement. **Preliminary Review:** The IGBC Green Homes Version 2 Template and the narrative submitted indicate that project has chosen Option 1 - Prescriptive Approach. The project is located in a moderate climate and the project has stated that the WWR of the project is 16.4%. The project has not considered low E glass as WWR is lower than 30% The ECMs incorporated in this project are (baseline criteria in parenthesis): 1. Building Envelope: SHGC: 0.50 (0.5) - 2 points awarded Glass U value : 5.6 W/m2K (5.7 W/m2K) - 1 point awarded Roof assembly U-value:1.67 W/sq.m-K (0.75 W/sq.m-K) Overall Wall assembly: 0.98 W/sq.m-K (1.8 W/sq.m-K) - 2 points awarded 2. Lighting: The project has submitted LPD calculations for interior, exterior, common and parking areas. The proposed LPD calculations shows that the lighting power density is reduced by more than 44% from the baseline values. (2 points awarded) 3. Lighting Controls - Project has proposed lighting control for common areas The project has proposed ST 467 glass for the project. The submittal includes LPD calculations and layout for interior, exterior, common areas and parking areas, details and calculations for the U-values of the wall and roof assemblies, declaration letter and manufacturer cut sheet for proposed glass and lighting fixtures. However, few more clarifications are required. **Technical Advice:** Please submit the following: 1. WWR calculations for the project

6		**EE Credit 2**	**On-site Renewable Energy:** 50 % -100% of the lighting load	6	**Preliminary Review:** The project intends to install renewable energy to meet the energy demand. The project submitted calculations indicating that the annual energy consumption is 33,292 kWh. The proposed 25 KW solar photo voltaic cells on the roof top will generate 35000 kWh units. Hence more than 100% of annual energy demand is met through On-site RE. Submittal include tentative manufacturer cut sheet, lighting load calculations, declaration letter, PV watts calculation and the location of proposed solar panel is shown in the terrace floor plan. This meets the credit requirement.
2		**Energy Credit 3**	**Solar Water Heating System : 25 %, 50%**	4	**Final Review:** The project team has submitted the roof plan showing the location of the proposed solar hot water system in enclosure. The project team has highlighted the proposed make and model in the manufacturer cut-sheet as specified in their PHE DBR along with their calculations on the strategy adopted. This meets the requirement of the credit. **Preliminary Review:** The IGBC Green Homes Version 2 Template and narrative states that the project has installed solar hot water system to meet 42.7% of the requirements. The narrative includes calculations demonstrating the total hot water requirement for the project i.e. 14,040 LPD and installed capacity is of 6,000 LPD(3x2000 lts) The submittal includes the tentative manufacturer details of the proposed solar water heating systems. However few more details are required. **Technical Advice:** 1.Please submit plan showing the location of the proposed solar hot water system. 2.Please highlight the proposed model in the manufacturer cut-sheet.
2		**EE Credit 4**	**Energy Saving Measures in Appliances & Other Equipment**	2	**Preliminary Review:** The submitted IGBC Green Homes Version 2 Template includes a list of energy saving measures in other appliances that will be implemented. The measures include incorporating minimum 60% efficiency for pumps greater than 3 HP and minimum 75% efficiency for motors above 3 HP & ISI rated motors and pumps for others. Supporting documents include a narrative stating the project's intention to meet the compliance, developer's declaration letter along with proposed manufacturer cut-sheets and technical specifications for pumps. This meets the credit requirements.
Not pursuing		**EE Credit 5**	**Distributed Power Generation**	2	**Preliminary Review:** Not pursuing.
1		**EE Credit 6**	**Energy Metering**	1	**Preliminary Review:** The IGBC Green Homes template and narrative submitted states that the project intends to install energy meters for interior & exterior lighting, STP/PHE power consumption, DG power consumption, ventilation fans power consumption and lifts power consumption. The submittals include Single line diagram for all the energy meters installed in the project along with the manufacturer cut-sheet. This meets the requirement of the credit.
18	**0**	**Materials & Resources**	**Points Available:**	**18**	

Y		**MR Mandatory Requirement 1**	**Separation of House-hold Waste**		**Preliminary Review:** The IGBC Green Homes Version 2 Template and narrative submitted states that a common facility is provided in the project to collect and segregate dry waste (paper, plastic, metals and glass) and wet waste (organic) from all apartment in addition to bins provided at every individual unit level. The submittal includes drawings indicating the location of the waste collection facilities at centralised and individual unit level. This meets the mandatory requirement.
4		**MR Credit 1**	**Organic Waste Management, Post Occupancy : 50%, 95 %**	4	**Preliminary Review:** The submitted IGBC Green Homes template and narrative states that 100% of organic waste generated on-site is treated. The calculations submitted states that 176 kgs of organic waste is likely to be generated in the project and the capacity of the proposed system is 250 kgs. The submittal includes narrative, cut-sheet of proposed organic waste converter, developer declaration letter and layout plan indicating the location of OWC. This meets the credit requirement.
2		**MR Credit 2**	**Handling of Construction Waste Materials : 50 %, 95 %**	2	**Final Review:** The project team has submitted strategies for construction waste management . The records of wastes diverted from site will be collected from the site engineers and documented to show credit compliance. As there is no construction waste generated, amount of waste generated, reused, recycled or sent to landfill is not available. The possible materials which will be diverted to scrap dealers/ may in site include cement, GI stud, steel, tile, fly ash bricks, aggregates, glass, wood, gypsum board. The submittal includes construction waste management guidelines. The project has not submitted calculations showing the amount of waste generated, reused, recycled or sent to landfill. Considering that the project will submit at the time of final certification the credit is awarded. **Preliminary Review:** The IGBC Green Homes template calculations indicates that 100% of waste generated on-site will be diverted from being sent to landfills. The proposed construction materials likely to be generated include cement, GI stud, steel, tile, fly ash bricks, aggregates, glass, wood, gypsum board. The submittal includes narrative, site logistic plan, expected waste material calculations and declaration letter from owner stating the intent to divert the construction wastes from the site. However, few more details are required to meet this credit requirement. **Technical Advice:** Please submit strategies proposed for disposal and calculations showing the amount of waste generated, reused, recycled or sent to landfill.

4		**MR Credit 3**	**Reuse of Salvaged Materials : 1 %, 2 %**	4	**Final Review:** The project team has decided to use reclaimed oak & teak wood for club house deck work, staircase flooring and open space park elevation works of High Cliff construction. The project will use at least 2% of the salvaged material in the total material by cost. The submittal includes reclaimed building material suppliers list and tentative calculations showing that the project intends to use 2.3% salvage materials (i.e. Rs 11,375,000) of the total material cost(i.e. Rs 497,221,200). This meets the credit requirement and two points are awarded. **Preliminary Review:** The submitted IGBC Green Homes Template states that the project intends to source and reuse 4.7% salvage materials (i.e. Rs 23,264,250) of the total material cost(i.e. Rs 497,221,200). The project team has decided to buy salvaged paver tiles for the project. The proposed salvage materials include broken tiles and broken granite. However, paver blocks, broken tiles and broken granite is considered as construction waste and not salvaged material. Hence the credit is denied.
2		**MR Credit 4**	**Materials with Recycled Content : 10 %, 20%**	2	**Preliminary Review:** The submitted narrative states that the project has sourced materials with recycled content of 27.9%. The project team has submitted a list of materials containing recycled content which include steel, cement, glass, , steel railing, Facade MS and GI stud. The total material cost is Rs. 497,221,200 and material with recycled content is Rs. 137,214,077 which is around 27.9%. The submittal includes tentative BOQ calculations indicating the percentage of recycled materials and declaration letter. This meets the credit requirement. *During final certification, please submit manufacturer letters mentioning the percentage of recycled content.*
2		**MR Credit 5**	**Local Materials : 25 %, 50%**	2	**Final Review:** The project have revised the calculation in consistent with BOQ and other material related credits. The revised calculations state that the project shall source local materials such that 79.8 % of the total material value is manufactured within a distance of 400 km from the project site. The submittal further includes manufacturers available within 400 kms. This meets the credit requirement. **Preliminary Review:** The IGBC Green Homes Version 2 Template submitted states that the project has sourced local materials such that 88.1 % of the total material value is manufactured within a distance of 400 km from the project site. The project team has submitted site vicinity map showing the available manufacturer within 400Kms, tentative BOQ calculations showing a list of materials procured locally along with its cost with respect to total materials cost and declaration letter**.** However there is a discrepancy in the total cost of materials in the template and BOQ. **Technical Advice:** Please clarify the discrepancy and if required submit revised calculations. Please provide consistent values across all credits.

4		**MR Credit 6**	**Rapidly Renewable Building Materials & Certified Wood : 50 %, 75 %**	4	**Preliminary Review:** The IGBC Green Homes Version 2 Template submitted states that the project has intended to procure FSC certified wood for 85% of the total wood based materials cost. The project shall submit the exact cost of the wood materials along with FSC certificate and other supportive documents at the time of certification. The project team has submitted narrative indicating tentative vendors, tentative BOQ and owner's declaration letter. This meets the credit requirement.
9	**0**	**Indoor Environmental Quality**	**Points Available:**	**15**	
Y		**IEQ Mandatory Requirement 1**	**Tobacco Smoke Control**	Y	**Preliminary Review:** The submitted IGBC Green Homes Template and submittal states that smoking will be prohibited in all the common areas. The submittal includes a narrative stating that signage will be installed throughout the project to inform residents that the common areas are 'No Smoking' zones and is incorporated in tenant guidelines. The submittal also includes copy of no smoking policy, plan showing signage locations and declaration letter. This meets the intent of the mandatory requirement.
Y		**IEQ Mandatory Requirement 2**	**Minimum Daylighting : 50 %**	Y	**Preliminary Review:** The submitted IGBC Green Homes Version 2 Template declares that at least 50% of the regularly occupied spaces will achieve daylight illuminance levels of a minimum of 10 foot candles(fc) (108 lux) in a clear sky condition on September 21 at 12 noon, at working plane. The project has opted to demonstrate compliance using the Performance Method and the project has been modelled using Autodesk Ecotect analysis software. The simulation report indicates that more than 75% (at minimum) of regularly occupied spaces in common area and each typical dwelling unit meets daylight criteria. The submittal includes a narrative, daylighting simulation report, floor plans with window schedule and manufacturer cut-sheet of proposed glass showing 56% VLT. This meets the mandatory requirement.
Y		**IEQ Mandatory Requirement 3**	**Fresh Air Ventilation**	Y	**Preliminary Review:** The submitted IGBC Green Homes Version 2 Template states that fresh air ventilation will be designed such that for non air-conditioned spaces, the window openable area for living spaces, kitchens and bathrooms will be at least 10%, 8% and 4% respectively. The submittal includes narrative, fresh air ventilation calculations, fresh air ventilation fan cut-sheet, floor plans and schedule of opening. This meets the mandatory requirement.
2		**IEQ Credit 1**	**Enhanced Daylighting : 75 %, 95 %**	4	**Preliminary Review:** Please refer to comments under IEQ Mandatory Requirement 2.
Not pursuing		**IEQ Credit 2**	**Enhanced Fresh Air Ventilation**	2	**Preliminary Review:** Not pursuing.

2		**IEQ Credit 3**	**Exhaust Systems**	2	**Preliminary Review:** The IGBC Green Homes Version 2 Template and narrative submitted states that exhaust systems has been designed in kitchen and bathrooms which meets the minimum air flow rates (i.e. 100 cfm for kitchen and 50 cfm for bathrooms). Supporting documents include floor plans showing the location of exhaust systems in bathrooms & kitchens, owner's proposal and technical cut-sheets of the proposed exhaust systems. This meets the credit requirement.
2		**IEQ Credit 4**	**Low VOC Materials, Paints & Adhesives**	2	**Preliminary Review:** The IGBC Green Homes Version 2 Template and submitted narrative states that the project will use paints, adhesives and sealants which have low Volatile Organic Compound (VOC) content and which will be within the permissible limits as required under this credit. The project has provided developer's declaration letter and cut-sheet of the proposed vendor specifying their VOC content. This meets the credit requirement. *Educational Note: For certification please provide purchase invoice of the paints, sealants and adhesives sourced for the project.*
1		**IEQ Credit 5**	**Building Flush Out**	1	**Preliminary Review:** The IGBC Green Homes Version 2 Template and submitted narrative state that the project will conduct a flush out by keeping all windows open for at least ten days after the completion of interior works. A declaration letter from the developer has been provided. This meets the requirements of this credit.
2		**IEQ Credit 6**	**Cross Ventilation : 50%, 75 %**	4	**Preliminary Review:** The IGBC Green Homes Version 2 Template, narrative submitted states that the project is designed such that at least 50% of the regularly occupied spaces by area in each dwelling unit has an openings to the outdoor environment in at least two orientations. Also, project has met all the fresh air ventilation criteria under IEQ Mandatory Requirement 3. Supporting documents include floor plans with door & window schedule for each of the living spaces and calculations showing the areas compliant with cross ventilation in each dwelling unit. This meets the credit requirement and achieves two points.
5	**0**	**Innovation & Design Process**	**Points Available:**	**5**	

1		**ID Credit 1.1**	**Innovation & Design Process:** Rain Water Harvesting - 100%	1	**Final Review:** The project has addressed the queries raised under WE Mandatory Requirement 1 and Credit 3. Hence this credit is awarded. **Preliminary Review:** The project has attempted for Innovation for exemplary performance under WE Mandatory Requirement 1 and WE Credit 3. The submittal states that project intends to harvest 100% rainwater run-off from roof and non-roof. However this credit is kept pending for clarification sought under WE Mandatory Requirement 1 and Credit 3. **Technical Advice:** Please address the technical queries raised under WE Mandatory Requirement 1 and Credit 3.
1		**ID Credit 1.2**	**Innovation & Design Process:** Water efficient fixtures-45%	1	**Preliminary Review:** The project has attempted for Innovation for exemplary performance under WE Mandatory Requirement 2 and WE Credit 4. The submittal states that project intends to install water efficient plumbing fixtures. The project has demonstrated a 48.4% reduction in water use. Hence this credit is awarded.
1		**ID Credit 1.3**	**Innovation & Design Process:** Efficient Lighting	1	**Preliminary Review:** The project is applying for innovation credit for efficient lighting. The narrative submitted describes that the interior, common area and exterior areas of the project are designed with energy efficient LED lighting. The lighting power density is reduced by more than 44% from the baseline values as per IGBC Green Homes Version 2.0 Annexure - I by building area method. The lighting power density calculation includes all luminaries, lamps & ballast losses. The submittal includes narrative lighting layouts and LPD calculations for interior, exterior and parking. This meets the intent of the credit.
1		**ID Credit 1.4**	**Innovation & Design Process:** Local Materials -75%	1	**Final Review:** The project has addressed the technical queries under MR credit 5. Hence this credit is awarded. **Preliminary Review:** Please refer to the comments under MR credit 5. **Technical Advice:** Please address the technical queries raised under MR Credit 5.
1		**INN Credit 2.0**	**IGBC Accredited Professional**	1	**Preliminary Review:** The signed IGBC Green Homes Template and narrative states that the project has been documented under the guidance of IGBC AP, Pradeep Kumar B. The submittal includes a copy of his certificate. Hence this innovation credit is awarded.