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ARTICLE

A REVIEW ON EXISTING GREEN BUILDING RATING SYSTEM BETWEEN DIFFERENT COUNTRIES

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ABSTRACT

India and China are the developing countries while UK and USA both are the developed countries and there is a rapid increase in the construction sector. A new trend of green building gives a major emphasis in today's world. To decide whether the building is green or not many parameters are designed by the governing organization for the building to ensure the increasing practice of green building. Each country has owned its different parameters called rating system, which is different for the existing building and newly constructed building. These parameters can be estimated based on material, water efficiency, energy efficiency, health, etc. In India basically GBCI and GRIHA are followed which identify any construction as green construction based on its own parameters. USA followed the LEED standards having six different parameters with uniqueness of regional priority. In case of China, they focus on the policy of resource saving under the guidelines of ESGB while UK has the widely accepted rating system known as BREEAM which has its own nine different parameters. The present paper summarized the different aspects of existing green building rating systems used in different countries.

KEY WORDS
GRIHA, BREEAM, ESGB, LEED, Performance Evaluation, Green Buildings

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INTRODUCTION

Green building is the act of developing environment friendly and asset productive working all through its building life cycle. It incorporates arranging, planning, development, task and upkeep, redesign and so on. It is imperative towards reasonable improvement. The expansion level of contamination, the absence of water, energy sparing issues, material productive issue, arrive utilize, wellbeing solace factors, Indoor Environmental Quality (IEQ) has pushed ourselves to move from conventional working toward green building development. The significant components of a green building that we mainly see are energy and water efficiency, indoor air quality, waste and toxic reduction, environmental preferable building material, sustainable development, structural design efficiency. To move towards this green improvement, there is a need of specific criteria on which the building ought to be evaluated, that criteria are characterized by the GBRS (Green Building Rating System). Each nation has its own particular criteria that are composed of the different parameter as per the needs of the nation. In this paper, different adopted criteria for green building system of India, UK, USA and China are discussed. They are the most adaptable, acknowledged rating frameworks and that is why, they have been analyzed through the distinctive parameters.

The development in India is expanding at exceptionally quick pace that contributes much towards the economy. It is a decent activity for the nation and now there is a need to present green building ideas in this area, which can take towards economical way. Green concept in new and existing structures can help in addressing the national issues like water and energy, reduction in petroleum derivative used treatment of waste and so on. Above all, these ideas can upgrade inhabitant wellbeing, satisfaction, and prosperity. Towards this, the Green Building Council of India (GBCI) has pushed 'Green Existing Building Operation and Management Rating System (GEBOM)' to deal with the national issues in the improvement division. By adopting 'Green Existing Building Operation and Management criteria', existing structures can be prudent over the life long cycle of building. The rating program empowers the building proprietor, private engineers to apply green criteria; in order to lessen the ecological issues, which are quantifiable. Green existing structures have colossal advantages, substantial and elusive. The unmistakable advantages are diminishment in water and energy utilization. Operational reserve funds through energy and water productivity could run from 15 - 30 % [1]. The pilot form of GBCI rating framework is relevant for wide range of non-private structures including offices, IT Parks, shopping canters, air terminals, banks, and so on. Building writes, for example, industrial facility and schools will be secured under separate GBCI rating programs. The purchaser squanders created in the building can be lessened. Impalpable advantages of green existing structures incorporate improved air quality, wellbeing and higher fulfilment levels of inhabitants. GBCI has presented the credit-based framework in which credits are given on different border like site facility management, water efficiency and energy efficiency, health/comfort, and innovation. In the credit system, category levels i.e. silver, gold, platinum are evaluated and based on these acknowledgments, they are awarded best practice, outstanding, national excellence, and global leadership respectively.

Evaluation Standard for Green Building (ESGB) is assessing the green building in China. ESGB was formed in 2006 by MOHURD and overhauled in 2014 with the point of saving energy, water, material, indoor environmental quality. China is encountering quick financial improvement and urbanization. In China, the aggregate floor region of existing building is more than 40-billion-meter square. Consistently, the utilization of bond and steel is 40% of the world. As China is a nation inclined to a more catastrophic event, the future of the structures are not as much as alternate nations, almost 30 to 40 years, while in nations like USA and UK the life of a building is almost around 50 to 80 years. To advance green working in China, Evaluation Standards for Green Building or configuration codes have been issued [2]. The assessment has two principles, one for private and one for open structures. On account of China tremendous region and

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differential climatic zone, it is hard to apply one national benchmark without thinking about neighbourhood circumstance. For private structures, the government ought to enhance the overall population mindfulness program with the goal that open purchaser can likewise comprehend that green building will bring a good indoor condition and prompts maintainable advancement [2]. China has presented the star rating framework (1, 2 and 3 star) which will be allot to these parameters; land, energy, water and material saving, indoor environmental quality, operation and administration.

In USA, LEED (Leadership in Energy and Environmental Design) rating system developed by USGBC (United States Green Building Council) are used to assess earth execution of a building and empower advertise change. It began in 1993 and was propelled in 1998 with the pilot variant [3]. It is additionally a credit-based framework enabling the task to gain focuses, to quicken the market towards green building. The different LEED items are LEED V3.0 - New development and Major Renovation, LEED for School, LEED for Existing Building. LEED additionally has a guaranteed rating framework in which structures are perceived. There are three-confirmation levels Silver, Gold, Platinum. For achieving them, structures must qualify factors that are sustainable sites, energy and atmosphere, water efficiency, indoor environmental quality, material and resources, innovation and development, awareness and education [4].

In United Kingdom (UK), Building Research Establishment Environmental Assessment Method (BREEAM) is the principal rating system to evaluate the building in view of certain objective esteems for various criteria. BREEAM is generally utilized for its adaptability. Building Research Establishment (BRE) propelled it in the year 1990. It surveys the nearby codes and permits application in the worldwide building. It is followed in 77 nations. So far, BREEAM has guaranteed 56,000 structures. The rating levels of BREEAM are; Unclassified, Pass, Good, Very Good, Excellent, Outstanding. These are based on, management, health and well-being, energy, transport, water, waste, materials, pollution, land use and ecology, and innovation [5]. In BREEAM, new construction comprises of 49 individual appraisal issues spreading over about nine natural classes, in addition to a 10th class called 'development'. BREEAM credits are granted on basis of that a building meets the best practice execution levels characterized by wellbeing and prosperity.

COMPARISONS OF CERTIFICATION/RATING SYSTEMS

INDIA

In India following systems to identify the green building are used

a. 'Green Existing Building Operation and Management Rating System (GEBOM) by Indian Green Building Council, known as 'GBCI-GEBOM'
b. GRIHA, Green Rating for Integrated Habitat Assessment

The details of the above are discussed below.

GBCI- GEBOM

GBCI- GEBOM is the primary rating system used in India only for existing buildings and depends on acknowledged ecological standards. The system is intended to be far-reaching in scope, and straightforward in a particular task. GBCI- GEBOM has set up a committee to monitor the evaluation system [6]. The changed involvement and callings of the individuals acquire an all-encompassing point of view during the time spent on building up the rating program. GBCI endeavors to extend green building parameters to all buildings. The rating system will ensure that it is invigorated, contemporary and empowers Indian construction standards and measures.

GBCI- GEBOM is at an extremely fundamental level proposed to address national needs of advantage assurance while giving individual fulfillment to inhabitants. The rating program uses particularly recognized Indian national standards and if subsequent are not available, legitimate worldwide standards have been considered. The highlights of GBCI- GEBOM system are as following [6].

i. The spotlight is on execution and results accomplished.
ii. Documentation necessities have been definitely lessened. Rather, it is a greater amount of confirmation like photographs and estimations.
iii. The rating can be connected to both cooled and non-ventilated structures.
iv. The rating can be intended to suit for all building in each climatic zone. Avoidances should be private for structures.
v. Water is given to higher weightage as it matter of national concern.
vi. For energy related point of views, Energy Conservation Building Code (ECBC) or Energy Performance Index (EPI) suggested by Bureau of Energy Efficiency (BEE), is the reference standard.
vii. A different module 'Health and Comfort' is incorporated, to address the wellbeing and prosperity of inhabitants in the buildings.

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GBCI- GEBOM framework towards to green buildings highlights under the following classes; [6]

a. Site and facility management

i. Building materials to have at least 10% reused content, by cost.
ii. 50% of the wood materials have FSC, PEFC, or proportional accreditation.
iii. Half of waste produced (by weight or volume) on location does not go to dump.
iv. Paints and glues to have low VOC.
v. Laborers associated with the development to be given restrooms and drinking water.
vi. All machines used to have BEE 3-star or above rating.

b. Water efficiency

i. Water from sources like, bore wells, normal wells, metropolitan water is considered as consumable.
ii. On the off chance that treated wastewater/caught rainwater are being reused for all possible applications.

c. Energy Efficiency

i. EPI Method
ii. Energy Simulation Method

d. Health and Comfort

Smoking zone should be separate and smoking is not allowed outside the smoking zone. Smoking room must be straight forwardly depleted to the outside ambiance far from air admissions and building passageways.

e. Innovation
Actualize measures that are not tended to in the rating framework but rather can fundamentally lessen ecological effects. Perform past edge limits determined in credit classes of the rating system.

The rating corresponding to above mentioned factors is listed in [Table 1].

Table 1: LEED- GEBOM rating system

Site and Facility Management(Max 18 points)		
SF Mandatory Requirement 1	Green Policy	Required
SF Mandatory Requirement 2	Waste Collection & Disposal	Required
SF Credit 1	Eco-friendly Commuting Practices: 25%, 50%	4
SF Credit 2	Eco-friendly Landscaping Practices: 50%, 75%	2
SF Credit 3.1	Heat Island Reduction, Non-roof: 50%, 75%	4
SF Credit 3.2	Heat Island Reduction, Roof: 50%, 75%	4
SF Credit 4	Outdoor Light Pollution Reduction	2
SF Credit 5	Building Operations & Maintenance	2
Water Efficiency (Max 26 points)		
WE Mandatory Requirement	Water Efficient Fixtures	Required
WE Credit 1	Water Efficient Fixtures: 20%,30%,40%	6
WE Credit 2	Rain Water Harvesting: 25%, 50%	4
WE Credit 3	Waste Water Treatment, 100%	4
WE Credit 4	Waste Water Reuse, 75%, 100%	4
WE Credit 5	Water Metering	4
WE Credit 6	Turf Area: 50%, 25%	4
Energy Efficiency(Max 30 Points)		
EE Mandatory Requirement 1	Eco-friendly Refrigerants & Halons	Required
EE Mandatory Requirement 2	Minimum Energy Performance	Required
EE Credit 1	Improved Energy Performance: 10%, 12.5%, 15%, 17.5%, 20%, 22.5%, 25%	14
EE Credit 2	On site Renewable Energy: 2.5%, 5%, 7.5%	6

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EE Credit 3	Off Site Renewable Energy: 25%, 50%, 75%	6
EE Credit 4	Energy Metering	4
Health and Comfort (Max 14 points)		
HC Mandatory Requirement 1	Tobacco Smoke Control	Required
HC Mandatory Requirement 2	Fresh Air Ventilation	Required
HC Credit 1	Carbon dioxide Monitoring & Control	2
HC Credit 2	Isolation of Polluting Equipment & Systems	2
HC Credit 3	Eco-friendly Housekeeping Chemicals	2
HC Credit 4	Thermal Comfort, Indoor Temperature & RH	2
HC Credit 5	Facilities for Differently Abled People	4
HC Credit 6	Occupant Well-being Facilities 2	2
Innovation Category		
INN Credit 1.1 – 1.5	Innovation Credits	10
INN Credit 2	GBCI AP	2

GRIHA

India, the main economy, is the seventh biggest nation in the world. The development business plays an essential part of the nation's economy, which is reflected in the expanding land advancement occurring in India. In the light of developing energy shortage, asset crunch, expanding ozone-depleting substance outflows, it has ended up inescapable to move to a greener development industry. The GRIHA, Simple Versatile Affordable GRIHA, what's more, GRIHA for vast advancement rating frameworks have been endeavoring to address these worries and accomplish manageability since the most recent couple of years. Albeit more than 2/3rd of the building stock in India is however, to be fabricated, the current structures are a pool of asset investment funds prepared to be tapped. Arrangements must be found for the moderately substantial quantum of the current structures in India, as there are 8700 million kWh and 74 lakh huge amounts of CO_2 sparing potential secured them. The running expenses likewise, hold a noteworthy piece of the costs in the current structures, which make the move considerably more lucrative. The GRIHA Council has built up a rating framework for existing structures. GRIHA for Existing Buildings (EB) rating is a coordinated instrument to evaluate the execution of existing structures and give reasonable arrangements while expanding the indoor solace of the inhabitants. The evaluated structures will appreciate upgraded energy and water execution and expanded warm, visual solace; eventually bringing about diminished operational, and support costs. Particularly the business structures remain to profit significantly more with the upgraded estimation of the property cost and expanded occupant maintenance of the evaluated structures. GRIHA for Existing Buildings rating is outlined with underlined targets, for example, achieving a natural disaster reduction, effortlessness in execution, the arrangement with nearby what's more, national objectives, and cost viability. The rating attempts to give answers to different typologies what's more, periods of the building taking into account the differing climatic zones of India, and incorporate RWAs and clients of territories in the procedure. The rating would be evaluated on particular areas, which are basic for a comprehensive change in the execution of the building. The parameters of GRIHA are –

i. Site parameters
ii. Maintenance & Housekeeping
iii. Energy Efficiency
iv. Water Efficiency
v. Human health and comfort
vi. Social aspects
vii. Bonus points

The certification levels of India are presented in [Table 2]

Table 2: Certification level in India

Certification Level	Points	Recognition
Certified	50-59	Best Practices
Silver	60-69	Outstanding Performance
Gold	70-79	National Excellence
Platinum	80-100	Global Leadership

CHINA

The Evaluation Standard for Green Building (ESGB) was setup by MOHURD in 2006 in China. The principal target of the models is to bring the reasonable improvement up in building part. The principles work by certifying the rating from 1 to 3 stars in view of their execution against 6 defined criteria. A new form of ESGB was presented in the year 2014. There are a few contrasts between ESGB-2006 and ESGB-2014 [Table 3].

Table 3: ESGB-2006 and ESGB-2014[2]

	ESGB-2006	ESGB-2014
Evaluation phase	Operation phase	Design phase, operation phase
Evaluation objects	Residential& public building	Civil building
Index categories	Energy, resources, environmental load& IEQ, Operation management& control the general preferences item	Energy, resources, environmental load& IEQ Operation management Construction management control & score items
Structural system	Control items & general performance	Control & score items
Evaluation method	Counting the number of provisions	Total score rate

This prompts the propel advancement in the field of innovation development. The rating is characterized by focusing on the whole of weighted scores of items, which have been already scored, and inventive things. The evaluation rates structures with an assortment of pre-essentials and credits in six classes.

i. Land saving and open air condition
ii. Energy Saving
iii. Water sparing
iv. Material Saving
v. Indoor Environmental Quality
vi. Operation and administration

a. Land Saving & Outdoor Environment

China being the most noteworthy populated nation has the lack of land all through. This prompts real issues that are the reason it advances the land sparing arrangement. ESGB 2014 advances the use of more and more open transport to limit the stopping regions. Furthermore, the ESGB 2014 that the separation between transport station and railroads station ought to be in constrained separation and as far as possible benefits of arranging space are endorsed too.

b. Energy Saving

ESGB assesses the building energy execution by assessing the parameters of warming ventilation, aerating and cooling, lightning, exhaustive usage of energy. ESGB 2014 additionally elevates to use the sustainable power source. It recommends that it is important to use the encompassing condition to decrease the building energy expenditure.

c. Water saving

Saving and reuse of water are exceptionally vital on the grounds that lone 3% of water is in the crisp frame. It's important to urge extend groups to exploit each opportunity to reduce water utilization. ESGB 2014 makes it obligatory to use the water sparing hardware, water accumulation, and green water system. ESGB 2014 additionally elevates to gather the rainwater from roof to ground. It additionally has the obligatory control for seepage arrangement of water sparing performance.

d. Materials saving

ESGB, for the most part, encourages diminishing the material utilization, urges to decrease source lessening to utilize imaginative development practices, for example, pre-assembled and configuration to dimensional development zone, in this manner limiting the materials shorts. In ESGB 2014, just a single necessity is identified with utilizing the reused materials, considerably more this thing in score things. ESGB sets a pointer to materials reusing and reusing the activity administration things, including the recuperation rate of waste and it must be over 30%. It additionally recommends controlling the transportation distance.

e. Indoor Environment Quality

The Indoor Condition could improve the profitability, expire non-attendance. ESGB 2014 puts an awesome accentuation on indoor condition quality yet considers air quality. ESGB 2014 has likewise incorporated the sound protection execution into the extent of evaluation and set the base furthest reaches of sound protection execution. China takes the air quality in the development procedure; the nature of development site condition ought to be successfully great. China has not restricted the smoking in broad daylight territories but rather has made the different rooms in air terminal and railroad station.
The certification levels in China are discussed in [Table 4].

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Table 4: Certification level in China (Public building)[2]

Grade	Land saving and outdoor environment	Energy saving and energy utilization	Water saving and water resource utilization	Material saving and material resource utilization	Indoor Environment Quality	Operating Management
1 star	4	2	3	3	2	4
2 star	5	3	4	4	3	5
3 star	6	4	5	5	4	6

UNITED KINGDOM (UK)

Green building is a rising point of research in UK. The UK government has focused on green structures into a frame that concentrates upon a low carbon emission and the advantages that emerge from embracing this is the evaluation technique which is viewed as the principal of green building rating framework, proposed by BRE (Building research establishment).It was acquainted with the market in 1990 and was amended to survey workplaces in 1993. It is broadly acknowledged that all later real green building rating frameworks, for example, LEED, Green star and CASBEE are affected by BREEAM.

BREEAM is generally utilized as attributable to adaptability. It surveys neighborhood codes and conditions as well as permits applications in global structures [7,8]. Notwithstanding BREEAM empowers assessment of a structures lifecycle in view to configuration to fabricate, task and renovation. BRE gives new development, in-utilize renovation and fit-out groups and infrastructural manuals for organizers, neighborhood experts, designers and financial specialists. Accordingly, BREEAM has so far issued more than 560000 confirmations. They have expanded their design from 250000 structures in 2014 to 425000 structures in 2015 and 540000 structures in 2016.The pattern is applied to the number of countries adopting BREEAM since 1990, 50 nations in 2014, 70 nations in 2016 and more than 75 nations in 2017. BREEAM certification represents 80% of the European market of the overall industry for sustainable building confirmations. The BREEAM rating levels engage a client or other to differentiate an individual building's execution and other BREEAM evaluated structures. Each BREEAM rating level represents performance equivalent to Outstanding, Excellent, Very Good, Good, Pass [Table 5].

Table 5: Certification Level in UK

BREEAM Rating	%Score
Outstanding	85%
Excellent	70%
Very good	55%
Good	45%
Pass	30%
Unclassified	<30%

BREEAM supports innovation inside the construction business and its production network. There are two ways for grants of 'innovation credits'; i) meeting excellent performance criteria characterized inside a current BREEAM issue; ii) place an application made to BRE Global by the BREEAM. The maximum 'innovation credits' that can be granted to any building is 10. Innovation credits can be granted paying little respect to the building's BREEAM rating. Although the majority of the sustainability pillars could be evaluated by BREEAM, the ecological factor is still pre-dominant.

UNITED STATES (US)

LEED stands for leadership in energy and environmental design. It is a green building rating system governed by USGBC (United States green building board) for the improvement of reasonable structures. Its credits depend on 6 classifications; supportable locales advancement, water sparing, energy sparing, material determination, indoor air quality. The LEED rating framework has turned into the reference point for some nations. There are two forms of LEED i.e. LEED v2.2, and LEED-2009 [Table 6]. LEED v2.2 was presented in the year 2005 and another adaptation was presented in the year 2007. Since its commencement LEED v2.2 was acknowledged internationally and has licensed more than 5000 or more green building. It's a building rating framework, which is utilized from office working to high rises and to evaluate working in any of the districts. One of the primary distinctions between the LEED v2.2 and LEED-2009 is the presentation of the credits in view of provincial need credits. These focuses are not, but rather the extra focuses presented in the rating framework. Other than this LEED, rating framework has no credits based on wellbeing and solace factors. Another issue of the LEED is that it has been criticize as Performa and is more about earning points than improvement. Different parameters of LEED existing buildings are shown in [Table 7].

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Table 6: Credits Assigned (LEED Points)[3]

Assessment area	LEED V2.2	LEED2009
Sustainable sites	14	26
Water efficiency	5	10
Energy& atmosphere	17	35
Material& resources	13	14
Indoor environmental quality	15	15
Innovation	5	6
Regional Priority	Not applicable	4

Table 7: LEED for Existing Building[3]

Total possible points	110
Sustainable sites	26
Water efficiency	14
Energy and atmosphere	35
Material and resources	10
Indoor environmental quality	15
Innovation in operations	6
Regional priority	4

OVERVIEW OF LEED, GBCI, BREEAM, AND ESGB

Comparisons of different systems and their weightage are listed in [Table 8] and [Table 9]. In addition, a comparative plot of different rating systems is presented in [Fig.1]. LEED and BREEAM were set up by non-benefit organization, while legislative bodies issue the GBCI and ESGB. The BREEAM is one of the greatest, oldest and most flexible rating framework covers very nearly 77 nations built up in1990 while the LEED was most adequate rating framework accepted by almost 160 nations, set up in the year 1998.Numerous nations plan their rating framework based on LEED. Each appraising framework has its own component, which contributes towards reasonable improvement. The similarity between LEED, GBCI, and BREEAM rating framework is that they all have the credits of "innovation", which prompts the expansion in the way of research of green structures. However, in case of ESGB it focuses mainly on the saving of resources. The uniqueness of LEED is that it has the credits in view of regional priority. The GBCI focuses on wellbeing and comfort issues where the entire rating framework falls behind. BREEAM has guaranteed the 561600 structures, which is seven times more than the building authorizes by LEED [5]. LEED is more straightforward than other rating frameworks yet BREEAM is stricter towards their credits. The entire framework has diverse rating levels. The BREEAM has the maximum number of credits that is the advantage thing for the sake of development.

Table 8: Comparison of Different Rating System

	LEED	BREEAM	GBCI/GRIHA	ESGB
Country	US	UK	INDIA	CHINA
Organization	USGBC	BRE	CIA	MOHURD
Flexibility	160 COUNTRY	77 COUNTRY	1 COUNTRY	1 COUNTRY
First version	1998	1990	2001	2006
Latest version	2013	2016	2013	2014
Main categories	Integrative projects, Energy& atmosphere, Location& transport, Water efficiency, Material resource, Sustainable sites, Regional priority, Innovation	Management, health well-being, Energy, Transport, Water, Material, Waste, Land use& ecology, Pollution, Innovation	Site facility management, Water efficiency, Energy efficiency, Energy efficiency, Health& Comfort, Innovation	Land saving, Outdoor environment, Energy saving, Water saving Material saving, IEQ, Operation& management
Rating Approach	ADDITIVE CREDITS	PREWEIGHTED CREDITS	ADDITIVE CREDITS	THREE STAR RATING SYSTEM
Rating Level	Certified>=40, Silver>=50, d>=60, Platinum>=80	Pass>=30, Good>=45, Very Good>=5 Excellent>=70, Outstanding>=85	Certified 50-59, Silver 60-69, Gold 70-79, Platinum 80-100	1 Star, 2 Star, 3 Star

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Table 9: Weightage on different parameters

BREEAM Category	Weightage (%)	LEED Category	Weightage (%)	GBCI Category	Weightage (%)	ESGB Category	Weightage (%)
Management	12.5%	Sustainable Sites	23.6%	Site and Facility Management	18%	Land Saving and Outdoor Environment	20.8%
Health and Well Being	14.5%	Water Efficiency	12.7%	Water Efficiency	26%	Energy Saving and Energy utilization	12.5%
Energy	19.5%	Energy and Atmosphere	31.8%	Energy Efficiency	30%	Water Saving and Water Utilization	16.6%
Transport	8%	Material and Resources	9%	Health and Comfort	14%	Material Saving and Material Utilization	16.6%
Water	6%	Indoor environment Quality	13.6%	Innovation	12%	IEQ	12.5%
Materials	13%	Innovation in Operation	5.4%			Operating Management	20.8%
Waste	5%	Regional Priority	3.6%				
Land use and Ecology	10.5%						
Pollution	9.5%						
Innovation	10%						

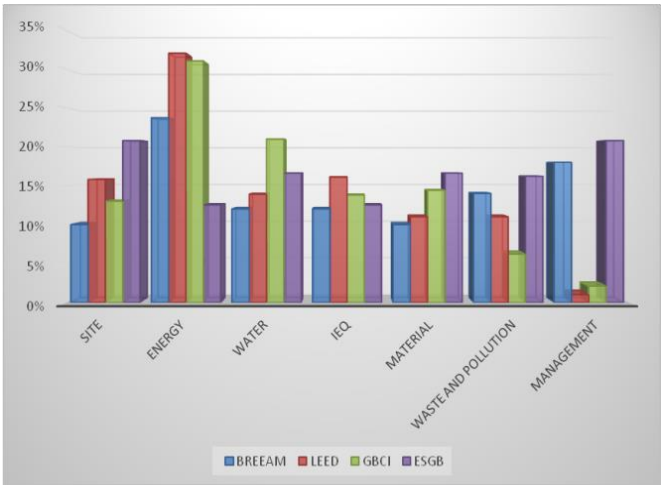

Fig. 1: Analytical comparison between credit systems of different countries.

CONCLUSIONS

To meet the objective of sustainable development, the approach of green building ought to be underlined with incredible potential so we can add to the earth too. We have to survey the execution of each significant working as indicated by green building measures for existing building. LEED-EBOM Conserving energy is not just a solitary objective for a green building. The government ought to likewise implement the engineers to get this approach, by giving sponsorships and monetary backings with the goal that we can move towards greener built environment. A building ought to be designed such that a solitary plan could meet the prerequisite and can last for a long time. Contingent upon the focuses earned according to this plan, significant remodels and retrofits can be intended to incorporate sustainability starting and have a decent LEED-EBOM Green building rating. This will decrease activity and support costs and normal impacts and can extend building adaptability, robustness and adaptability. Apportioning essentialness is not the primary reason behind retrofitting existing structures; rather the target should be to make predominant working by applying integrated building design process. In China, with the expanding urbanization and fast monetary improvement, the Chinese building business sector will in any case blast in the following a few decade and a vast number of the new building will be developed. The advancement of green building is at

starting stage, huge change must be made with the goal that reexamined norms can be better encourage for their imaginative endeavors to develop the green building. Coordinated methodologies from the perspective of every stake holder should be adopted. We can finish up by studying the above rating frameworks that each evaluating framework has its own criteria composed by the nation's needs. In India GBCI covers all the important parameters that help to move towards the green construction. There are many sub parameters are covered under the different criteria of GBCI which are discussed in this paper. Apart from this, the government of India is also laying the stress on this type of construction by providing the huge benefits in taxes that any industry has to pay. GBCI has included a point of Health & Comfort, which is unique in its own way; it covers the point for differently abled person, carbon dioxide monitoring, thermal comfort etc. that are not present in other rating system that can be counted as its merit.

CONFLICT OF INTEREST

None

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