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Philippine Green Building Council

Building for Ecologically Responsive
Design Excellence
~~Building for
Ecologically Responsive Design
Excellence (BERDE)~~

Development Guidelines

Version 0.0.2+1

July 2009~~June 2009~~

BERDE DEVELOPMENT TEAM



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1. Introduction

1.1 The Product

The name of the product is the “Building for Ecologically Responsive Design Excellence (BERDE) Rating System.” The aim of this document is to establish and present the development guidelines of the “Building for Ecologically Responsive Design Excellence (BERDE)” Rating System.

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1.21.1 Mission

The BERDE rating system aims to promote and serve as a guide towards the implementation of green building practices in the Philippines. By creating a framework, which incorporates procedures, methods and standards specifically adapted to the Philippine setting, the BERDE rating system will serve as an important tool to be utilized in line with the development of the local sustainable built-environment industry, which will in turn aid in advancing the enhancement of the social, environmental and economic welfare of Philippine Society. The development of BERDE aims to develop a sustainable built-environment industry in the Philippines and promote the implementation of green building practices that would affect the social, environment and economic welfare of the society at large through the adoption of a localized, universally understood tools and performance measure.

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1.31.2 Vision

Global warming, climate change, and over consumption of natural resources are major issues facing our world today. As the cumulative impacts of these environmental problems become increasingly evident, society has now began to look for ways to mitigate these impacts, while trying to satisfy at the same time, the needs of a growing population.

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Such a solution comes in the form of various methods and processes that integrate into the concept of sustainable development. This concept aims to satisfy human wants and needs while at the same time endeavours to minimize environmental and natural resource impacts in order to meet the needs of future generations.

A valuable component of sustainable development, green building frameworks have been formulated in various parts of the world all aiming to ease universal environmental issues of built-developments such as energy and water consumption and. Driven largely by evident effects of global warming and climate change, society is now questioning present approaches for achieving a sustainable way of living and survival. The need to make a development sustainable is evident on instances where people are using up critical resources faster than they can be renewed.

The Philippines has a significant increase in built-environments, which cascades to its corresponding environmental impacts solid waste generation which in turn would lead to the easement of bigger cumulative environmental impacts. Solid waste problem is mounting and an energy and water crisis is foreseen in a few years.

Through the development of BERDE, a Philippine green building rating system will be created aimed at bringing the concept of sustainable development closer to the Philippine setting. Such a system will serve as a clear and comprehensive guide and roadmap towards the process of the “greening” of the whole life cycle of a built-developments in the Philippines building can and must be accomplished.

Once fully implemented by the local built environment industry, the BERDE rating system will serve as a major tool in the mitigation of the Philippine contribution to collective environmental impacts such as global warming and climate change. Given that all facets of business involves a built environment, its corresponding effect in addressing global warming and climate change would then be significant.

As sustainability initiatives are multi-faceted, the BERDE rating system may take likewise takes various forms, which are described as follows:

- ▶ **A Product.** BERDE is identified as the product of the Philippine Green Building Council (PHILGBC) and is aligned with its principles. Its gathering information inputs incorporated into the BERDE rating system comes from the from its large membership membership that comprises the PHILGBC, and likewise, from inputs generated by and its alliances with both in the government bodies and scientific experts.
- ▶ **Rating Tool.** BERDE shall be a nationally recognized and industry accepted rating system in order to, which will aid in measuring and determining the magnitude measure of both the environmental impact and performance of buildings constructed in the Philippines.
- ▶ **Building Design Guideline.** BERDE shall serve as a guidance, which aims to incorporate the principles of sustainability into Moving building design all the way to, construction and operation of the building building development subjected to the rating system, towards sustainability; BERDE shall also serve as a guideline throughout the lifecycle of the building. Likewise, BERDE shall also provide rules and guidelines, which are to be implemented throughout the lifecycle of the building subjected to the rating system.
- ▶ **Educational Tool.** The BERDE rating system shall include modules, which will enable it to become an educational tool to be used for the training of professionals in the practice and principles behind green building development specifically adapted to the Philippine setting. Provisions of BERDE shall be able to train professionals in the practice of the principles of green building.
- ▶ **Brand.** It is envisioned that BERDE shall be a system administered Administered and implemented by an unbiased multisectoral body, BERDE shall be known for its aiming to provide credibility and integrity to this rating system. And The BERDE Rating System shall likewise be used developed as a vehicle for both local policy implementation and incentives implementation for both developers and stakeholders engaged in the local building industry.
- ▶ **Dynamic System.** The BERDE rating system is designed in a way that will allow it to adapt is adaptable to new processes and emerging technologies applicable to the Philippine building industry while at the same time maintain retain itsing consistency and adherence in-adherence to its original core principles.
- ▶ **Sound Business.** The BERDE rating system is designed such that it is capable of generating its own sustainable revenue revenue in a sustainable manner. The earned revenue will in turn be useds for its own development and maintenance. Specifically, the revenue will cover for the costs of which covers ongoing program improvements, administration, customer support, training and training, and ongoing program improvement.

1.41.3 Property

The BERDE rating system shall be owned, administered and implemented by the Philippine Green Building Council (PHILGBC). However, it should be emphasized that **absolutely no part of the BERDE**

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rating system and all works associated in its development shall benefit solely any Officer, Director, or member of the Philippine Green Building Council.

1-51.4 The BERDE Board

The BERDE Board shall be composed of a multi-sectoral body whose members are to be appointed by the PHILGBC Board of Trustees. This arrangement will allow for diversified and unbiased inputs from various sectors relative to the Building industry and will contribute to the continued refinement and improvement of the rating system.

To ensure a socially and technically balanced development of a green building rating system, the BERDE Board shall be composed of a multi-sectoral body whose members are to be appointed by the PHILGBC Board of Trustees. It shall be divided into sectors and sub-sectors as described below.

- ▶ **Organizational Groups exclusive from membership**
 - Building Professionals
 - Developers
 - Property Managers
 - Material Suppliers
 - Advocacy
 - Academe
- ▶ **Government Agencies**
 - National Government Agencies
 - Local Government Units
- ▶ **Professional Organizations**
 - United Architects of the Philippines
 - Philippine Institute of Civil Engineers
 - Institute of Integrated Electrical Engineers
 - Philippines Society of Mechanical Engineers
- ▶ **Relevant Non-Government Organizations**
 - Energy Practitioners Association of the Philippines
 - Solid Waste Management Association
- ▶ **Business Sector**
 - Chambers of Commerce
- ▶ **Banking and Finance Associations**

Additional board seats, if deemed necessary for the development of the BERDE Rating System are to be created at the discretion of the PHILGBC board.

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If any member of the BERDE Development Team feels that there is a need to ~~have another~~include an additional seat in the board ~~to sit~~ to represent a specific group, please refer to Procedure No. ____ - Raising Suggestions. ~~This~~The proposed new seat shall be subject to deliberation and discussion by existing members of the Board and the PHILGBC. If reason is found to create the new seat upon agreement by the majori ~~then be discussed, deliberatedly~~, the decision shall be implemented and recognized by the PHILGBC BOARD, and implemented, if found reasonable by the PHILGBC BOARD.

1.61.5 Membership

The BERDE Development Team (BDT) is composed of volunteers. However the basic prerequisite would be that volunteers would have to be members of the PHILGBC.

PHILGBC membership can be availed ~~of by anyone~~. However, membership to a particular group in the BERDE Development Team will only be granted to the new member if he or she has the credentials or experience requirements needed by the particular group they are applying in. For the detailed procedure with regard to joining the BERDE Development Team, Please refer to Procedure No. ____ - "Joining the BERDE Development Team".

Membership to the BERDE Development Team is a voluntary effort and its basic prerequisite is membership to the PhilGBC. Anyone can apply for membership ~~to the PHILGBC~~ and join various groups as described herein. Their credentials should match the group they are applying in. ~~Refer to Procedure No. ____ - Joining the BERDE Development Team for details in joining.~~

The BERDE Development Team is divided into the following ~~major~~ groups:

- BERDE Board/Program Steering Committee
- BERDE Secretariat
- Technical Committee

With regards to the groups, ~~T~~the BERDE Board may define, add, delete, or combine membership in the groups ~~from the list described below~~ subgroups under these three major groups; the breakdown of which is presented in section 1.6. The BERDE Board may also exercise discretion and determine that certain categories of organizations may or may not be eligible for membership. Any member is not restricted to propose a new group. ~~The process of creating new groups can be initiated~~ ~~T~~through Procedure No. ____ - Raising Suggestions. In addition, ~~a a m~~ member proposing a news ~~may propose a group~~ must provide a position paper explaining and defending the cause for creating a new group and this paper shall be submitted to the BERDE Board for deliberation and discussion. ~~provided that a position paper is submitted to the BERDE board for discussion.~~

A Team Leader shall represent each group. ~~The Team Leader shall be assisted by an~~ ~~There should also be an~~ Assistant Team Leader who will perform the Team Leader duties in the event that the absence of the group Team Leader in the event the Team Leader shall not be available for representation. The members of the group shall be tasked to elect such ~~its~~ Team Leader and Assistant Team Leader. In the event that a new group is organized, the BERDE board shall ~~first be tasked to~~ appoint a team leader and assistant team leader ~~for the newly created group.~~

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Comment [c2]: We need to define "anyone" e.g. Filipino citizen, foreigners, legal age, etc

~~To ensure an~~To allow for an organized group, it is advised the each group has its own charter aligned with the mission and vision of the BERDE Development Team. ~~This charter shall be,~~ submitted to the BERDE board for comment and approval ~~before the charter is adopted by the group who created it.~~

1.7.1.6 The Groups

1.7.1.6.1 Program Steering Committee

The program steering committee shall also ~~act as~~ the BERDE Board. They shall be working together with all the BERDE Staff and the ~~PhilGBC-PHILGBC~~ Board. The Program Steering Committee is charged with overseeing development and delivery of ~~the various components of the BERDE Rating System and is likewise tasked to check that the system is and remains~~ consistent with the mission of ~~BERDE of the BERDE Rating System and the PhilGBCPHILGBC.~~

1.7.21.6.2 Secretariat

The BERDE secretariat shall ~~serve as the~~ be the primary contact in relation to the development of ~~the~~ BERDE Rating ~~Tool System~~ and shall perform the following tasks:

- ▶ The facilitation and organization of the BDT Hearings
- ▶ Promote the ~~maintaining maintenance~~ of neutrality and objectivity of the initiative while recognizing the specificity of individual standards initiatives
- ▶ Seeking dedicated resources essential to the hearings and meetings in relation to the said initiative.
- ▶ Managing the documentation of ~~this the~~ initiative on a day-to-day basis.
- ▶ The promotion of cooperation among ~~PhilGBC-PHILGBC~~ members involved in this initiative in the ~~arena area~~ of technical assistance

1.7.31.6.3 Technical Group

The Technical Group is responsible for maintaining consistency and technical rigor in the development of ~~credits in~~ BERDE. They also ~~respond to~~ specific technical aspects of any issue raised by the other committees. Following are members of the Technical Committee.

- ▶ Management
- ▶ Land Use and Ecology
- ▶ Water Efficiency
- ▶ Energy
- ▶ Solid Waste Management
- ▶ Heritage Conservation
- ▶ Indoor Environment Quality
- ▶ Life Cycle Cost
- ▶ Carbon

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Comment [c3]: credits? Or the specific components in their areas of expertise under the BERDE Rating System

1.81.7 Conflict of Interest

At all levels of decision-making in committees, persons casting votes and otherwise making decisions shall be must and shall be at all times aware of potential (real or perceived) conflicts of interest regarding the matter which is subject to the vote or decision. During discussion of such issues, group members will be required to disclose any and all such conflicts pursuant to the this conflict of interest policy. The groups shall resolve whether the disclosed conflict should prohibit the individual from participating in and/or voting on the subject at hand. This policy is designed to ensure-make certain that all officers, directors, committee members and other persons serving in a leadership capacity of, for, or on behalf of the BERDE Development Team exercises good judgment in dealing with conflicts that could undermine the best interests of BERDE.

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2. Program of Activities for the Drafting of BERDE

The BERDE Program shall be administered and implemented by a multisectoral body composed of members in sectors relevant to the Philippine Building industry to ~~ensure allow for a~~ the creation of a socially and technically balanced green building rating system. The body members of the multisectoral body shall be appointed by the board of the PhilGBC-PHILGBC from the pool of its existing members. The PhilGBC-PHILGBC may also involve non-member organizations, associations and companies that are essential in the development of the rating system at its own discretion.

2.1 Program Mobilization

The PhilGBC-PHILGBC along with its supporting partner institutions and organizations shall be tasked to setting-set up the BERDE secretariat that shall assist in administering the program. Administrative support staff and consultants shall be hired on a case-to-case basis as the BERDE Rating System develops. The BERDE secretariat shall assist and support in the fund campaign work of the PhilGBCPHILGBC.

2.2 General Program of Activities

2.2.1 First Roundtable Discussions with Different Stakeholders

Roundtable discussions and workshops shall be conducted, led by BERDE Development Team -DT with the PhilGBC-PHILGBC General Membership and various interest groups. The discussions will be designed to gather relevant and current information on efficiency and conservation of energy and water; sustainable site selection; utilization of greener materials; solid waste management; improvement of indoor environments; preservation of cultural contexts and building operations and management. The Roundtable Discussion participants shall be invited to submit documentation on best practices, position papers and relevant researches as their contribution to the development of BERDE. Organizations shall be invited to have their projects piloted using BERDE as its green building guidance and rating system.

2.2.2 Preparation of First Draft of BERDE

The BERDE -DT Development Team shall conduct additional research on existing best practices in the field of green building rating systems, on green building design, construction methodology, material and equipments resource utilization and availability, operating and maintenance processes, and the consequent environmental and social impacts of said activities. Existing Philippine environmental laws, rule and regulations affecting the design, construction and maintenance of buildings shall be compiled compiled and reviewed. Information gathered during the first set of Roundtable Discussions shall be reviewed and evaluated and once approved be made part of BERDE. The BERDE Development Team shall draft the evaluation criteria for the BERDE Rating System ~~shall be drafted by BERDE-DT~~. Consultation meetings and focus group discussions with experts, academics, and industry shall be held on a per need basis. The First Draft shall be published and released to the public to further solicit comments and suggestions.

Comment [c4]: Who will be the approver? The BERDE Board, PHILGBC, members of PHILGBC? We need to expound

2.2.3 Second Roundtable Discussions with Different Stakeholders

To ~~ensure-make sure~~ that the different issues and concerns on implementing ~~the~~ BERDE ~~Rating System~~ in the different regions ~~in-of~~ the Philippines are addressed, a second set of Roundtable Discussions shall be conducted in ~~the set venues located in the~~ National Capital Region, Luzon, Visayas and Mindanao. The BERDE ~~Rating System~~ Draft shall be presented to stakeholders to further solicit comments. During the discussions, the usability of the system shall be discussed and the BERDE ~~Rating System~~ Draft, along with a Usability Survey Form shall be distributed to architecture and engineering firms, contractors, developers, regulatory agencies, material suppliers, utility companies and property management firms. ~~This allows for the~~ BERDE ~~Rating System to be~~s further reviewed ~~with the help of~~by these stakeholders, who may provide constructive criticism ~~to, which would help to~~ better improve the performance and design of ~~BERDE~~the rating system. Companies and organizations ~~whethat~~ volunteered to pilot the BERDE ~~Rating System~~ shall also be part of the discussions. Issues and concerns regarding the piloting of projects may be raised during the discussions. ~~The First Draft of BERDE shall be released to the public to further solicit comments.~~

Comment [c5]: was this not done in the previous section?

2.2.4 Preparation of Second Draft of BERDE

Inputs from the Second Roundtable Discussions and comments generated ~~from-by~~ the public release shall be incorporated ~~into the te~~-working draft of ~~the~~ BERDE ~~Rating System~~ by the ~~BDT~~BERDE ~~Development Team~~. Rules for the certification process and the balloting procedures shall be formulated by the ~~BDT-BERDE Development Team~~ and be submitted and endorsed to the BERDE Board for approval. The Second Draft of ~~the~~ BERDE ~~Rating System~~ shall be presented to the BERDE Board for approval for Balloting, ~~te-which is to~~ be conducted during a PHILGBC General Membership Meeting ~~especially-specifically called-called~~ for this purpose.

2.2.5 Balloting

A PHILGBC General Membership Meeting shall be held specifically for the Balloting of BERDE. If the BERDE Draft passes in accordance with the Balloting Procedure, as approved by the BERDE Board, it shall be declared by the BERDE Board as an official release of BERDE. The official release of BERDE shall be endorsed by the BERDE Board to the PHILGBC Board of Trustees for final approval and implementation.

2.3 Other Activities

2.3.1 Fund Campaign

The PHILGBC shall launch an industry-wide fund campaign to address the financial requirements of the development of BERDE. The BDT shall be conducting information drives with emphasis on why we need to support the development and implementation of our own rating system. Information on BERDE shall be distributed to companies and development agencies whose goals are aligned with the objectives of BERDE. With the increase of concern on the protection of the environment and climate change, organizations and companies are expected to contribute to BERDE as part of their Corporate Social Responsibility goals. The BDT shall be drafting a Fund Campaign Plan that will serve as a guide for fund raising activities related to the development of BERDE. The Fund Campaign Plan shall be executed upon approval of the PHILGBC Board of Trustees.

2.3.2 Awareness Campaign

The PHILGBC will conduct a massive information campaign to increase the awareness of the public and private sector on BERDE. The Council will utilize all types of information dissemination platforms such as the television, print (newspaper and magazines), and radio and internet media to further inform the public about BERDE. In order to better promote the BERDE Rating System, a training team composed of the BDT shall conduct an orientation-seminar for highly urbanized cities and municipalities to encourage the use of BERDE and orient them on how to use the rating system.

2.3.3 BERDE Program Launch

The BERDE Program shall be launched by the PhilGBC, together with building industry sector partners and government during Building Green 2009. The BERDE Program launch and Building Green 2009 will be managed by a Special Committee of BERDE appointed by the PHILGBC Board.

2.3.4 Launch of BERDE

BERDE shall be launched by PHILGBC with industry partners and government. Benefits gained by companies and organizations that piloted BERDE shall be highlighted. The progress on the uptake of BERDE shall be reported during this event and the public shall be invited to adopt and utilize BERDE in their projects. Industry shall also be invited to continually contribute to the development of the BERDE Program to further improve the performance of the rating system.

2.3.5 Market Development Project

A Special Committee shall be formed to initiate meetings with financial institutions and the government sector and explore possibility of creating incentive schemes for proponents of green buildings. Simultaneously, an information campaign shall be conducted, targeted at consumers, to explain the benefits of greener buildings. These events shall be designed to create interest and awareness and is expected to stimulate the uptake of green buildings.

2.3.6 Training of BERDE Professionals

A Special Committee shall be formed to develop the training module of BERDE. The public shall be invited to enroll in the training program and its graduates shall be referred to as BERDE Professionals. The BERDE Professionals shall serve as project assessors and consultants for the delivery and implementation of BERDE. The BERDE Training Program shall be part of the funding mechanism of BERDE.

3. Establishing the BERDE Development Team

3.1 Inception Works

3.1.1 Inception Committee

A committee shall be appointed by the PHILGBC Board to start the framework of the development of the BERDE rating tool and organise the BERDE Development Team. This committee's objective is to provide an initial direction for the development to commence. This shall involve the following activities:

- ▶ Draft the BERDE Mission and Vision
- ▶ Perform a preliminary investigation of the various rating systems around the world
- ▶ Draft the BDT Guideline and Methodology
- ▶ Draft a Governance and Management Structure
- ▶ Organise a deliberation of the BDT Guidelines and Methodology and related documentation.
- ▶ Orientation to the BDT Membership

The Inception Committee shall be dissolved upon attainment of the following:

- ▶ Approval by the BERDE Board of the Governance and Management Structure
- ▶ Approval by the BERDE Board of the BDT Guidelines, Methodology and related procedures and documentation
- ▶ Election of key positions in the BERDE Governance and Management Teams
- ▶ Turnover of the Inception Committee Team Leader to the elected BDT Chairman.

3.1.2 Appointment of the BERDE Board

Members of the BERDE Board shall be appointed by the PHILGBC Board following the activities as chronologically described below:

- ▶ Discuss, deliberate and finalise representation of groups of the BERDE Board. The suggested groups are all mentioned in Section 1.41.41.5 – The BERDE Board.
- ▶ Appointment of BERDE board member shall comply with the following qualifications.
 - Each appointee shall be, and shall remain, a member of the PHILGBC except an appointee to a special committees or other ad hoc group may be a non-member if so authorized by PHILGBC;
 - Each appointee shall bear credentials and experience which describes the group they may potentially represent;
 - No appointee may serve on more than one board, commission or committee at any one time;
 - Each appointee shall conscientiously review the policies and documents developed by the BERDE Development Team and shall endeavour in good faith to follow both the

spirit of those policies that pertain to his group, commission or committee and support the established mission and vision of both BERDE and PHILGBC.

- ▶ Oath Taking of the appointed Board Members to be conducted by the PHILGBC Chairman on a PHILGBC General Membership Meeting.

3.1.3 Establish the BERDE Framework: Development Guidelines and Methodology

The appointed Inception Committee shall start developing the framework of BERDE. This will involve the preparation of guidelines and development strategy which shall be subject for review, deliberation and approval by the BERDE Board. It should be noted, however, that the guidelines and development strategy could still change as deemed necessary during the process of the development of BERDE. Such instances shall be deliberated, finalised and cascaded to the BERDE development team and the PhilGBC membership.

3.1.4 BERDE Governance and Management Structure

An organizational system shall be established which shall show the governance and management structure. The Inception Committee shall recommend to the PHILGBC board the proposed structure to be followed for their discussion and approval. This may change as deemed necessary during the process of the development of BERDE. Such instances shall be deliberated, finalised and cascaded to the BERDE development team and the PhilGBC membership by the PHILGBC Board. A draft BERDE Governance and Management Structure is shown in Appendix A.

3.1.5 Appointment of BDT Members

The PHILGBC Board shall initially appoint the initial set of key members of the BERDE Development Team (BDT) who, in the preliminary, start the actual development of BERDE. This shall be based on the PHILGBC approved Governance and Management Structure. The initial objective of the appointed key members of each Technical Group is to organise the group which may include but not limited to the following tasks:

- ▶ Draft a group specific mission/vision statement aligned with the general mission/vision of the BERDE and PHILGBC.
- ▶ Draft an organisational chart for the group.
- ▶ Draft the technical group's charter which is specific to the nature of the group. A sample charter is shown in Standard Form No. ___ -Technical Group Charter. This charter is a requirement for the Technical Group to be declared organised and ready for election.

It should be noted that the above are subject to change during the development of BERDE. In such instances, the Technical group has the autonomy to revise their respective mission/vision, charter and organisation as long as the resulting documents are approved by the majority of the group. Any changes shall be forwarded to the BERDE Board for review through the BDT Chairman then endorsed the PHILGBC Board for approval.

3.1.6 Deliberation and Finalisation of the BDT Guidelines, Methodology and Structure

The Guidelines, Methodology and Governance and Management Structure shall be deliberated by the BERDE Board together with the appointed members of the BDT. This may involve a number of hearings

and meetings in order to cover all risks and aspects in the development of the BERDE rating system. It shall be voted upon by the membership for finalisation. A 50% vote is required from a 75% quorum composed of both the appointed BDT members and BERDE board to finalise the BDT Guidelines, Methodology and Structure.

The finalised documents shall now be ready for usage by the BDT throughout the course of the BERDE development. However, this could be improved and amended but it should follow the appropriate channels following Procedure No. ___ - Amendments.

3.2 Preparatory Works

3.2.1 Expanding the Membership

BERDE should be administered and represented by a multisectoral body to ensure a socially and technically balanced process of the development of BERDE. As such, the pioneering members of the BDT are to open the doors of membership for each Technical Group. Each incoming member shall be part of a specific technical group depending on their interest and area of expertise. Specific procedures shall be followed for the membership as shown in Procedure No. ___ – Joining the BERDE Development Team (BDT).

3.2.2 Orientation

Prior to immersion to the technical group, the new members shall be given an orientation by the initial set of key personnel of the respective technical regarding the guidelines, methodology, structure of the BDT and technical group charter.

3.2.3 Election of Key Management Positions

Upon reaching a representative membership of each technical group (see identified groups in Section 1.6.34.6.34-7.3) in the BERDE Development Team and gaining confidence of the established Governance and Management, the PHILGBC Board may recommend to the technical group for an election for the team leader and assistant team leader positions. Representative membership could be qualified as follows:

- ▶ Having a membership which have credentials and qualifications which represents knowledge on the following key stages of a building's lifecycle:
 - Building Conception – This may include business owners, entrepreneurs and financial institutions, government institutions and educational and research institutions and utility companies, environmental groups.
 - Design – This may include architectural and engineering consultants, material and equipment suppliers/manufacturers and utility companies.
 - Construction – This may include construction management companies, contractors, builders, and material and equipment suppliers/manufacturers.
 - Operation – This may include facilities management professionals, material and equipment suppliers/manufacturers, business owners, developers and property managers and asset managers.

- Building End-of-Life – This may include demolition contractors, solid waste management groups, environmental groups, financial institutions and government institutions.
- ▶ A minimum membership of five (5) staff whom has general knowledge of the whole building's life cycle as enumerated above. Though specialists are preferable, the team should be able to identify the need to get resource personnel as necessary to resolve issues and discussions raised during the development of BERDE in relation to the respective Technical Group.
- ▶ Having a Mission/Vision, Organisational Chart and Technical Group Charter, which is specific to the group's nature. The above requirements should be resolved by the membership of the group prior to endorsement. The draft of this charter, upon endorsement shall be reviewed by the BDT Chairman, BERDE Board and endorsed to the PHILGBC Board for approval.

The following positions shall be voted upon through a system of nomination and balloting conducted during a BERDE General Meeting. Procedure for this process is shown in Procedure No. ____ - Election of Management position.

- ▶ BDT Chairman and Vice-Chairman
 - Nomination : by the whole BDT membership
 - Balloting : by the whole BDT membership
- ▶ Technical Groups Team Leader and Assistant Team Leader
 - Nomination : by the Technical Group membership
 - Balloting : by the whole BDT membership

Elected personnel shall go through an oath taking to be conducted by the PHILGBC Chairman to be witnessed by the PHILGBC membership on one PHILGBC General Membership meeting.

3.2.4 Turnover

At this point, the Inception Committee Team Leader shall turnover all related documents to the elected Chairman. The chairman is expected review the documents and cascade them to the elected team leaders of each Technical Group. Upon turnover and receipt by the Chairman, the Inception committee is considered dissolved.

4. BERDE Development Methodology

4.1 Establish the Stages of a Building's Life Cycle

For the development of a green building rating system to be thoroughly covered, the stages of a building's life cycle should be given a review. The BDT should establish the stages in order to have a specific area to be viewed for the analysis of sustainability aspects.

An example set of stages of a building's life cycle is as follows:

- ▶ Establishing the need of a building
- ▶ Gaining commitment from the owner
- ▶ Defining the Project
- ▶ Agreeing on a Design Brief and Environmental Policy
- ▶ Inception and Feasibility
- ▶ Design of the Building
 - Primary Choices or Schematic Design Stage
 - Detailed Design
- ▶ Construction
 - Tendering
 - Construction
 - Commissioning
- ▶ Operation
 - Occupant Orientation
 - Maintenance
- ▶ Building End-of-Life
 - Demolition
 - Retrofit

The above stages shall enable the BDT to raise issues in relation to sustainability aspects at each stage of the life of a building. **The above stages should have the flexibility to cover both New Construction and Existing Construction.**

The Building's Life Cycle shall be finalised in a meeting passing of Motion to Finalise and seconding.

4.2 Establish Building Scenario Assumptions

A building scenario shall be establish as a starting point. For ease of future development of BERDE, the initial building scenario assumption shall be first the most common. Following are examples of scenarios for both New Construction and Existing Construction.

- ▶ New Construction

- Number of Floors : 4 to 25 floors
- Building Type : Office/Commercial
- ▶ Existing Construction
 - Age : 25 years old
 - Number of Floors : 5 floors
 - Building Type : Office/Commercial

The scenario shall be deliberated by the BDT on one of its team meetings.

4.3 Data Gathering

Various information from different sectors is essential in the development of a local green building rating system. As such, these should all be captured and considered in development of a green building rating system.

4.3.1 Formats

The BDT shall acknowledge the following formats of data.

- ▶ Report on a Specific Practice/Issue
 - Background
 - Good practice
 - References
 - Legal Resources
 - Synergies
- ▶ Position/Research Paper
 - Abstract
 - Introduction
 - Body
 - Recommendation
 - References
- ▶ Case Studies
 - Construction Type
 - Type of Building
 - Description
 - Recommendation
- ▶ Green Building Criteria
 - Aim
 - Assessment Criteria

- Advantages/Disadvantages
- Requirements
- Guidance
- Synergies/Tradeoffs
- References

A cover letter is required addressed to the BERDE Chairman in submitting the abovementioned documents.

4.3.2 Data Compilation

Each type of data shall be compiled and numbered accordingly. At the end of the data gathering the stage the following compilations shall be assembled:

- ▶ Compilation of Practices and Issues
- ▶ Compilation of Position/Research Papers
- ▶ Compilation of Case Studies
- ▶ Compilation of Proposed Green Building Criteria/Credits

There shall be a register for each compilation which shall be easily be referred to during the process of the next stage.

4.4 Establish Green Building Goals

Going to back to Item 4.2, the following initial considerations should be initiated to establish the green building goals. Each step of the building's life cycle shall be looked at in establishing these goals but at the onset the following questions¹ should be in mind.

- ▶ What are the sustainability goals of the project?
- ▶ How do those goals translate into measurable objectives?
- ▶ What indicators should be used to measure actual performance against these objectives comparing them against existing benchmarks and achievement of others?

Themes and sub-themes shall be identified for consideration in the green building rating system.

At the end of this stage, a compilation of goals in table format shall be completed.

4.4.1 Steps²

Having in mind the above questions and considering the compiled data, the following shall then performed be performed:

- ▶ Setting of sustainability goals and baseline reference
- ▶ Set the goals to Philippine setting

¹ Using FIDIC Project Sustainability Management questions.

² Use steps on FIDIC's PSM method.

- ▶ Perform a simulation via a risk assessment process

4.4.2 Format

A table shall be generated for the building which compose of the following headings:

- ▶ **Theme**, e.g. Atmosphere
- ▶ **Sub-Theme**, e.g. Climate Change, Ozone Layer Depletion, Air Quality
- ▶ **Indicators**, e.g. Quantity of Green House Gas (GHG), Quantity of Ozone Depleting Substances
- ▶ **Practice**, e.g. Setting a limit for GHGs, Elimination of use of CFCs
- ▶ **Comparable Practices to Other Countries**, e.g. Incentives for achieve of allowable GHG's
- ▶ **Relevant Laws in the Philippines**, e.g. Clean Air Act
- ▶ **Best Practice**, e.g. Financial Incentives for achieving allowable GHG's
- ▶ **Goals**, e.g. Carbon Neutrality
- ▶ **Measures**, e.g. Be in top 25% building energy efficiency.

4.5 Drafting the BERDE Rating System

Each of the sustainability goals compiled in Item 4.4, shall be classified and organized. A standard format shall be established and followed for each criteria/credit identified. This may entail a series of deliberation.

4.5.1 Classification

In reference to the gathered data, the goals shall be grouped in order to establish a classification. Following is a proposed classification but is still subject to change depending on the collected Green Building Goals.

- ▶ Management
- ▶ Land Use and Ecology
- ▶ Water Efficiency
- ▶ Energy
- ▶ Solid Waste Management
- ▶ Heritage Conservation
- ▶ Indoor Environment Quality
- ▶ Life Cycle Cost
- ▶ Carbon and Emissions

4.5.2 Criteria/Credits

The criteria or credits shall be established for each classification in consideration of the established life cycle of the whole building. It shall be identified for ease of use for the pilot projects. It should also appear as a guide for the design of buildings

4.5.3 Measurement Standard

At starting point, the standard of measure shall first be using “percentage” since the localization of the green building rating system shall consider levels of importance of the identified green building goals.

Allocation of percentages for each identified criterion shall be determined through the following methodologies:

- ▶ **Survey.** This shall be done by sending the overall outline of the BERDE rating system to the entire membership of the PhilGBC for each member to determine how many percentage for each classification e.g. Sites, Water Efficiency, etc. A standard 100-percent rating shall first be established and it is up to the members to allocate percentage on each criterion following a form and procedure which the BDT shall send out. The form and procedure shall involve a simple questionnaire regarding the background of the respondent. Each respondent shall be classified into the following groups:

- Product Manufacturers and Suppliers
- Contractors and Builders
- Entrepreneurs
- Educational and Research Institutions (public and private)
- Environmental Groups
- Government
- Finance and Insurance Community
- Building Design Consultants
- Professional Organizations
- Developers and Property Managers
- Utility Companies

A report regarding output of the survey shall be generated by the BDT and shall contain the following information.

- Pie Chart for each group showing the percentage of each criterion and sub-criterion.
- Collective Percentages of each criterion and sub-criterion.
- Survey Analysis
- Survey Recommendation

- ▶ **Cost Implication and Carbon Measurement.** The “greening” of the building is usually correlated to cost of investment and cost of savings during operations. Viewing it in the climate change point of view, amount of relative carbon emission measured in tons is also a consideration. In this regard, the percentages for each classification e.g. Sites, Water Efficiency, etc. could be developed by

computing the related net environmental cost and related carbon emissions for each criterion and sub-criterion. A report shall be generated for this method and shall contain the following information:

- o Unit Costs per specific environmental activity which shall be acquired from an identified agency conducting such cost studies.
- o Unit Amount of Carbon Emission per material or activity used which shall be acquired from reference materials developed by an identified international body.
- o Table of Distribution of Environmental Costs and Carbon Emissions per criterion with relevant computations.
- o Recommendation.

Both methods shall be employed in order to have the reference information in finalising the green building rating system.

4.5.4 Quality Assurance

Quality Assurance (QA) check shall be conducted on the draft BERDE Rating System to consider the following parameters:

- ▶ Consistency of Format
- ▶ Grammar
- ▶ Flow of Thought and Intent
- ▶ Countercheck with Mission and Vision of BERDE and PhilGBC

QA shall be conducted by the whole management team of the BDT which includes the BDT Chairman and Assistant Chairman and all the Team Leaders and Assistant Team Leaders of all the Technical Groups. The Draft Document shall be submitted to the BDT online for review and comments. All comments shall be collated and addressed accordingly until the final draft is prepared.

4.6 Discussion on Usability

The preliminary BERDE draft shall be presented to various groups around the country. Discussions shall be organised on the basis of usability. A usability survey shall be prepared and accomplished by a representative number of respondents.

4.7 Final Draft

Results from the Usability Survey shall be compiled formatted and integrated into the initial BERDE draft. A final QA check shall be performed. The final draft shall then be endorsed to the BERDE Board for balloting.

4.8 Balloting

4.8.1 Establish Balloting Procedure

The BDT shall design a balloting procedure for the BERDE Rating System. This procedure shall be deliberated, discussed and finalised by the BDT prior to implementation.

4.8.2 Balloting

Upon finalisation of the draft by the BDT, balloting shall be conducted first the BERDE Board. If passed the BERDE Board shall then endorse the document to the PHILGBC Board recommending balloting by the whole membership. Balloting of the endorsed document shall be conducted in the PhilGBC Membership Meeting. If the BERDE Draft passes in accordance to the approved balloting procedure, it shall be declared by the PHILGBC Board as an official release.

4.9 Piloting

4.9.1 Nomination Process

Pilot projects shall go through a nomination process as described in Procedure No. ____ - Pilot Project Nomination Process. A checklist shall be accomplished and a declaration by the owners of mutual cooperation with the BDT and PHILGBC shall be forged. A minimum number of 2 projects for New Construction and 2 projects of Existing Construction shall be nominated for piloting.

4.9.2 Coverage

The coverage of the piloting shall involve from Conception to the first three (3) months from turnover of building to the owners.

4.9.3 Facilitators

The initial facilitators of implementation of the BERDE Rating system shall be nominated by the BDT. They shall be tasked to journalize each observation. A journalized report shall be generated monthly and submitted and presented to the BDT. At the end of the coverage, a final report shall be compiled and shall be used to further improve the BERDE rating system. The final report shall include but not limited to the following information:

- ▶ Brief Description of Building
- ▶ Identify Significant Steps per established Building Life Cycle Stage as described in Section 4.1. Example of which under the Design Stage is:
 - Agree on Design Brief and Environmental Policy
 - Inception and Feasibility
 - Schematic Design
 - Detailed Design
- ▶ On each Significant Step, the following questions shall be answered and tabulated:
 - What did we do well?
 - What didn't we do well?
 - What will we do differently the next time?
 - Identified specific synergies and improvements.
- ▶ Summary Report

4.10 Evaluation

Final evaluation of the BERDE Rating system shall be conducted by the BDT. Should clarifications from specific parties, e.g. building owner, construction management group, commissioning team, facilities maintenance team, etc., they shall be invited for discussions. Each suggested improvement as per listed report by the facilitator shall be discussed, deliberated and finalised by the BDT. All considered improvements by the BDT shall then be integrated to the BERDE Rating System and shall again go through another process of balloting following same procedure described in Section 4.8.

4.11 Continuing Development

The BERDE Rating System shall go through continuous improvement adapting itself to the present conditions in the Philippines, change of technologies and market scenarios. As such, the BDT shall remain as a committee under the PHILGBC and it is envisioned that the BDT shall perform the following activities to ensure that the BERDE rating tool is adaptive all the time to market it caters.

- ▶ Evaluate current environmental costs per criteria and update
- ▶ Evaluate carbon emission equivalent per criteria and update
- ▶ Continuous analysis of level of importance per BERDE classification.
- ▶ Training of BERDE professionals who shall promote and support the green building initiatives.

5. Procedures and Standard Forms

Standard procedures are set forth in this undertaking to ensure that the mission of the development of the BERDE rating tool is achieved. It is envisioned that these procedures shall set order, promote cooperation and proper documentation during the whole process of the development.

Each procedure shall follow the format described as follows:

- ▶ Purpose
- ▶ Scope
- ▶ Procedure
- ▶ Appendix

The complete document of the procedures are compiled and numbered at the Appendix.

A brief description of each procedure is described below.

5.1 General Management

These are general procedures, which tackles the effective administration of the BDT.

Table 1 General Management (GM) Procedures

Procedures	Purpose	Standard Forms/Guides
GM-1: Management Review	To ensure the suitability, adequacy and effectiveness of the BERDE Management System is reviewed on a regular basis with the aim to foster its continual improvement and to evaluate the need for changes.	GM-1.1: Suggestion Form GM-1.2: Amendment to the Guidelines Form
GM-2: Preparation and Control of Documents	Preparation, review and approval, issue, control and availability of BERDE Documents.	GM-2.1: Improvement Register Form GM-2.2: Document Preparation
GM-3: Member Management	Ensure that the joining and participation of any individual ins beneficial and in accordance to the mission of BERDE and the PhilGBC	GM-3.1: Membership Guide GM-3.2: Vote Guide & Ballot GM-3.3: Code of Conduct GM-3.4: Members Information Template GM-3.5: Membership Log
GM-4: Environmental Management	Ensure that there are minimal effects on the environment for this undertaking.	GM-4.1: Paper Consumption Control Policy GM-4.2: Waste Generation and

Procedures	Purpose	Standard Forms/Guides
		GM-4.3: Disposal Policy GM-4.4: Water Consumption Policy
GM-5: Information Systems	Ensure that the members are guided in the use of the website	GM-5.1: Website Template
GM-6: Organizing a Group	If a group need to represented, the group shall be established aligned in the mission of BERDE and the PhilGBC	GM-5.1: Proposal to Establish New Group GM-5.2: Charter – sample

5.2 Documents Management

As this engages predominantly documentation procedures, the general works of this undertaking involves paperwork and thus, should be managed.

Table 2 Documents Management (DM) Procedures

Procedures	Purpose	Related Forms/Guides
DM-1: Correspondences	To ensure effective communication and exchange of information.	DM-1.1: Letter DM-1.2: Transmittal DM-1.3: Memorandum DM-1.4: Logbook of correspondences.
DM-2: Control of Records	To describe the means by which records are to be managed to provide clear and objective evidence of the achievement of planned quality on the development of BERDE.	DM-2.1: Filing & Numbering System DM-2.2: Generic Register Form DM-2.3: Binder Labelling Template
DM-3: Change Control	To keep track on the changes involved in the documents gathered and generated	DM-3.1: Change Register

5.3 Technical Management

The technical management section covers the area of the actual development of the BERDE rating tool.

Table 3 Technical Management (TM) Procedures

Procedures	Purpose	Related Forms/Guides
TM-1: Data Gathering	All data gather follows a	TM-1.1: Invitation for Papers

Procedures	Purpose	Related Forms/Guides
	consistent form and the information if outline appropriately for easy checking and referencing.	TM-1.2: Request for Information TM-1.3: Report on Specific Issue -Template TM-1.4: Research/Position Paper – Template TM-1.5: Case Study – Template TM-1.6: Proposed Green Building Criteria – Template TM-1.7: Progress Reports TM-1.8: Checklist of Papers TM-1.9: Register of Papers
TM-2: References and Standards	To ensure the availability of up to date versions of all relevant standards, codes, regulations and suppliers' catalogues and technical data to be used on the development of BERDE	TM-2.1: Filing Guide TM-2.2: Schedule of References
TM-3: Meetings, Development Review and Deliberation	To ensure that the documents gathered and produced is tackled and deliberated by a multisectoral body to ensure balance.	TM-3.1: Attendance List TM-3.2: Minutes of the Meeting TM-3.3: Records of Discussion TM-3.4: Hearing Procedure TM-3.5: Coordination Matrix TM-3.6: Balloting
TM-4: Quality Verification	The purpose is to check and review job output for correctness, level of accuracy and appropriateness of solution, to encourage a consistency in presentation and format, and to provide a record of the nature and extent of the check and review processes.	TM-4.1: Checklist Template

Refer to the Appendices for the Standard Forms.

Appendix A
BERDE Governance and Management
Structure

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Appendix B
Filing System

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Appendix C

Data Gathering Templates

Report on Specific Issue

Research/Position Papers

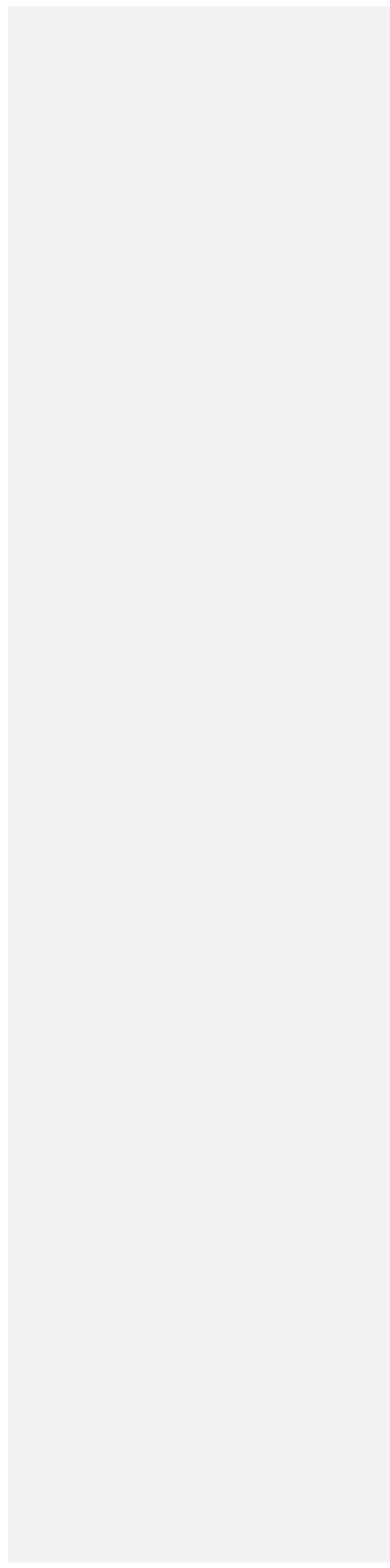
Case Studies

Proposed Green Building Criteria

Appendix D
Procedures

Membership
Submitting a Contributing Paper

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Appendix E

Standard Forms

Amendment to the Guidelines
Attendance List
Charter - Sample
Group Description
Confidentiality Agreement
Controlled Document Distribution Register
Controlled Document Transmittal Advice
Coordination Matrix
Documentation Received
General Instructions to the Team Leader
Hearing Invitation
Improvement Form
Improvement Register
Incoming Correspondence Register
Invitation for Position Papers
Member Information
Memorandum
Minutes of the Meeting
Paper Consumption
Personal Details Form
Philippines Legal and Other Requirements Register
Position Paper Check
Position Paper Template
Progress Reports
Records of Discussion
Request for Information
Request for Information Register
Risk Assessment
Schedule of References
Table of Members
Team Member Guide
Transmittal Form

Appendix F
The BERDE Website

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