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APPENDIX A : QUESTIONNAIRE

Dear Sir / Madam,

I am a post graduate candidate of Department of Building Economics, University of Moratuwa , conducting a research under the supervision of Mr. Ravihansa Chandrathilaka, University of Moratuwa as a partial fulfillment of the requirement for the Degree of Master of Science in Project Management.

The research title:

Assessing Cement Blocks in the Context of Sustainable Construction.

Aim of the research:

To investigate requirement of building stake holders on cement blocks selection as a sustainable building material and to develop a model for sustainable cement blocks selection.

I here by gurantee the responses of the questionnaires will be used only for the aforementioned purpose and will not be exposed to any third party. The research publication will not contain any personal details of the respondents. You are requested to sincerely respond to all the questions in the questionnaire.

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Thank you.

Yours truly,

D. Suraji Weerasekera

Instructions

1 .	Purpose of this survey is to collect information on the selection at cement blocks for sustainable developments as a sustainable building material to identification of assesment criteria based on the concepts and principles of sustainability, and the process of prioritizing and aggregating relevant criteria into an assessment framework.
2 .	This questionnaire should be filled with persons from the staff related to the field of construction in the organization[Building Designers (Engineers & Architects)].
3 .	This questionnaire survey consists of Part A, Part B and Part C and you are requested to fill all three parts.
4 .	**The collected information will remain confidential.**

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Company background information

Name of the organization: _____

Work experience (years):

< 5 ☐

6 - 10 ☐

11 - 10 ☐

> 20 ☐

Size of the organization (by staff):

< 10	☐
11- 50	☐
51 - 249	☐
250 - 500	☐
> 500	☐

Age of organization (years):

< 5	☐
6 - 10	☐
11 - 20	☐
21 - 30	☐
31 - 40	☐
> 40	☐

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Type of organization :

Architecture/design ☐

Education ☐

Government agency ☐

Area of building project specialism:

Commercial ☐

Residential ☐

Institutional ☐

Industrial ☐

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Organizational annual turn over:

> 5m ☐

6 - 25m ☐

26 - 100m ☐

> 100m ☐

Part B : Information about respondent

Name of the respondent (optional):		
Designation/Title:		
Years in the field of construction		
Years in the company		
Sex	Male	
	Female	

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Part C :- **Questionnaire Survey**

This Sustainable Criteria for cement blocks selection is developed specifically for sustainable cement blocks selection in building projects.Combined with sustainable concerns and requirements of building stakeholders, a list of criteria was developed. Please rate the level of importance of the derived criteria based on a scale of 1 - 5, where 1 is "least important", 2 "fairly important" , 3 "important ", 4 "very important" and 5 "extreamly important & add new criteria if necessary.

1.0 Environmental criteria

1. **Potential for recycling and reuse of cement blocks** [Cement blocks capacity as a resource in the creation of new product.]

   1. least important ☐
   2. fairly important ☐
   3. important ☐
   4. very important ☐
   5. extremely important ☐

2. **Availability of environmentally sound disposal options of cement blocks** [There is no insufficient space for its disposal in cities. The land filling is critical with local arthorities]

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   1. least important ☐
   2. fairly important ☐
   3. important ☐
   4. very important ☐
   5. extremely important ☐

3. **Impact of cement blocks on air quality** [Cement blocks can remove odors and chemicals when natural or artificial ventilaton is inadequate.]

   1. least important ☐
   2. fairly important ☐
   3. important ☐
   4. very important ☐
   5. extremely important ☐

4. **Ozone depletion potential of cement blocks** [Green House Gas (GHG) emissions originate from each stage of material's life cycle.]

   1. least important ☐
   2. fairly important ☐
   3. important ☐
   4. very important ☐
   5. extremely important ☐

5. **Environmental impact during cement blocks harvest** [Productivity improvement is necessary to reduce impacts on the environment to minimize waste material and energy.]

   1. least important ☐
   2. fairly important ☐
   3. important ☐
   4. very important ☐
   5. extremely important ☐

6. **Zero or low toxicity of cement blocks** [Cement blocks emit fumes for only a short time period during and after installation.]

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   1. least important ☐
   2. fairly important ☐
   3. important ☐
   4. very important ☐
   5. extremely important ☐

7. **Environmental statutory compliance for cement blocks** [The government regulations about the sustainable cement block selection.]

   1. least important ☐
   2. fairly important ☐
   3. important ☐
   4. very important ☐
   5. extremely important ☐

8. **Minimise Pollution of cement blocks – e.g. air, land** [Pollution, caused by the process taking place during the production of cement blocks material.]

   1. least important ☐
   2. fairly important ☐
   3. important ☐
   4. very important ☐
   5. extremely important ☐

9. **Amount of likely wastage in use of cement blocks** [Waste in the building industry is important not only from the perspective of efficiency, but also concern has been growing in recent years about the adverse affect of the waste of building material on the environment .]

   1. least important ☐
   2. fairly important ☐
   3. important ☐
   4. very important ☐
   5. extremely important ☐

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10. **Method of raw material extraction of cement blocks** [The impact of extraction of sand and quarry rock dust for block making.]

   1. least important ☐
   2. fairly important ☐
   3. important ☐
   4. very important ☐
   5. extremely important ☐

11. **Embodied energy within cement blocks** [The amount of energy required to produce a material and supply to the point of use.]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

2.0 Social - economic criteria

12. **Disposal cost of cement blocks** [The demolition of buildings and disposal of the resulting waste has a high environmental cost.]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

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13. **Health and safety factors of cement blocks** [Building products contain compounds, which adversely affect the health and safety of occupants of a building.]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

14. **Maintenance cost of cement blocks' buildings** [Maintenance consumes a significant portion of a building's life time and maintenance can easily exceed the original construction cost of the building.]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

15. **Aesthetics in cement blocks' building** [Aesthetic quality of a building]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

16. **Use of local material for cement blocks** [The use of building material sourced locally can help lessen the environmental burdens. This would considerably cut transportation cost and provide surport of the local economics.]

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1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

17. **Initial acquisition cost of cement blocks** [All stake holders interest for cost effectiveness of building materials.]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

18. **Labour availability for cement block production** [Less labour involving is caused to reducing costs, increasing productivity and allowing to build faster. Day labours with a low level of education results in clear priority on quantify and not on quality]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

19. **Maintainability of cement blocks' building** [The maintennance cost has an adverse effect on the financial viability of the building]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

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20. **Ease of construction using cement blocks** [In general the construction of a block wall is little faster.]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

21. **Resistence to decay of cement blocks**[Materials should be resistant to decay.]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

22. **Fire resistence of cement blocks**[The type of course aggregate used in block making plays an important role in evaluating the fire resistence rating of the wall.]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

23. **Life expectancy of cement blocks** [Service life of the building is increased it's life-cycle cost.]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

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24. **Energy saving and thermal insulation of cement blocks** [Buildings should be suitable for the functions and activities of their occupants.Buildings should be provide thermally, acoustically and visually comfortable and healthy internal conditions while conserving energy and the environment.]

1. least important ☐
2. fairly important ☐
3. important ☐
4. very important ☐
5. extremely important ☐

I would like to thank you for the information given and time you have dedicated to this reserch. If you are intrested to know the outcome of this research, it would be my pleasure to share it with you.