

DISCUSSING SUSTAINABILITY IN BUILDING CONSTRUCTION: the potential of SBTool for Brazilian Public bidding in FIOCRUZ

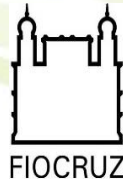
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- ACKNOWLEDGMENT

This research deals with the analysis of the potentialities of SBTool in Brazilian's public biddings in order to conduct development assessment of sustainable projects in FIOCRUZ which is a public health institution of Brazilian Ministry of Health.



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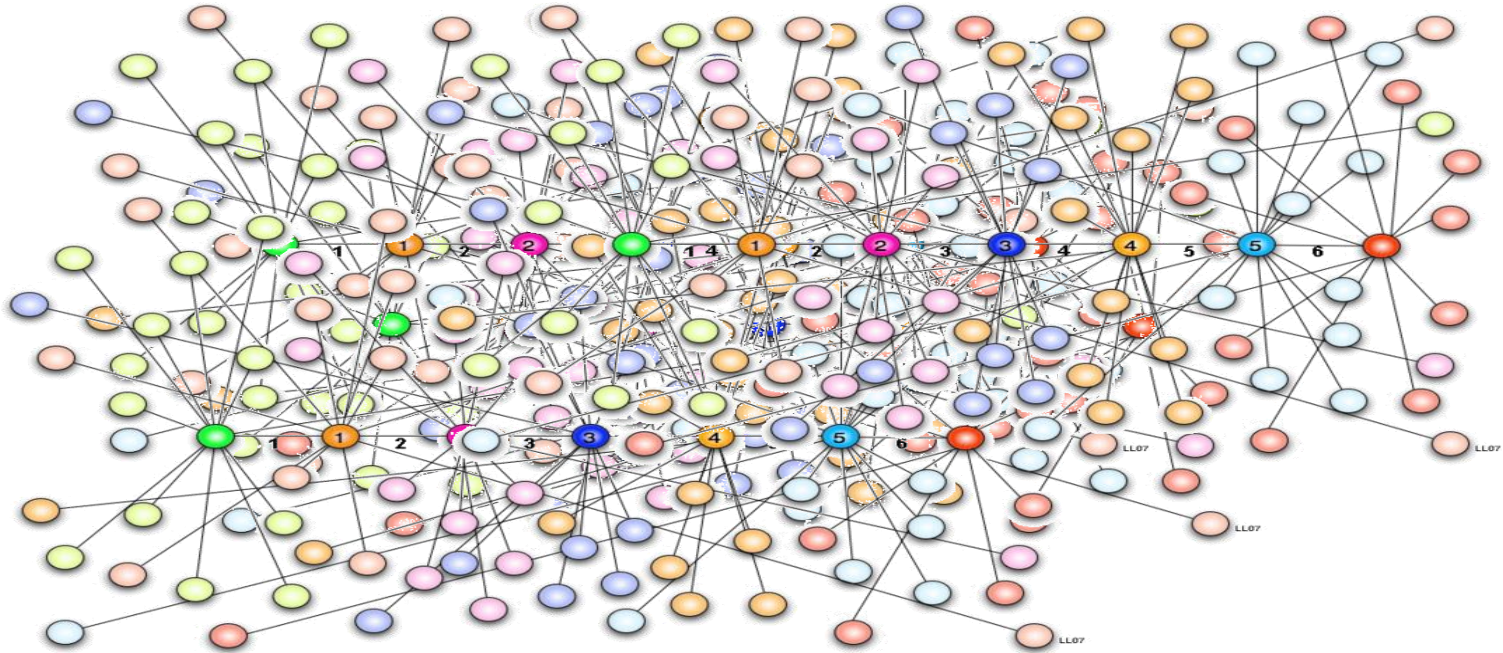
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Introduction



The path to sustainability has not been regular nor straightforward, it forms a complex net.



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Introduction

1990
rating
systems
BREEAM

1991-9
HQE
BEAM
GBTool
LEED

2006
GBTool
changes to
SBTool

2003
Launch of
PROCEL:
Brazilian
Government
Program for
Energy
Efficiency in
Buildings

2007
LEED first
certification
in Brazil

2008
AQUA-HQE
first
certification
in Brazil

2010
New
regulation:
Exigency of
sustainability
for Public
Buildings in
Brazil

2014
Exigency of
PROCEL
certification in
Public
Buildings

Timeline



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Introduction

- Projects for the production of public buildings in Brazil are selected by bidding governed by Federal Law.
- Since 2010, it became necessary to incorporate to the edicts the exigency to meet environmental quality requirements.
- However, it is still unclear **which benchmark** can be adopted in verifying compliance with environmental performance requirements.



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Sustainability in Public Bidding in Brazil

Consequences:

- In the beginning of 2016, a medical laboratory linked to FIOCRUZ has obtained the pre-design AQUA-HQE certification
- The Laboratory Facility is located on Belo Horizonte City (Minas Gerais State – Brazil) and this case study has been presented last year on CESB16.



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**HQE AND ITS BRAND NEW SUSTAINABLE
REFERENCE FRAMEWORK CHALLENGE:
CASE STUDY IN FIOCRUZ, BRAZIL
Marcia CORREIA, Monica SALGADO**



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Sustainability in Public Bidding in Brazil

- However, despite the successful adoption of the AQUA tool for this laboratory project, it is desirable to explore other alternatives.
- **SBTool assessment** has been developed and is provided by iiSBE – International Initiative for Sustainable Development – is **freely available** to the public and, for this reason, can be, to a certain extent, easily adapted and integrated in public procurement bidding processes.



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Sustainability in Public Bidding in Brazil

Among others aspects, bidding contracts in Brazil must especially respect the following:

- I - adequate final disposal for solid waste generated by the contracted works;
- II - mitigation of environmental damage through constraining measures and environmental compensation;
- III - use of products, equipment and services that are proven to reduce the consumption of energy and natural resources;
- IV - assessment of neighborhood impacts.

The large range of environmental exigencies leads the discussion about guidelines for architecture design - hence the interest on SBTool.



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Sustainability in Public Bidding in Brazil

SBTool has a generic structure that allows users to edit data according to different technologies, priorities, constructive styles and even cultural values.

SB Tool is applicable in any type of building.



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SBTool criteria

- The SBTool system allows assessments to be made in four distinct phases.
 - Pre-design phase: this phase is relevant to the selection of a project site and its characteristics. In SBTool, this is a separate assessment and it is assumed that there is no information available about the nature of the subsequent project development.
 - Design phase.
 - Construction phase.
 - Operations phase



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SBTool criteria

- Issues and Categories S, Pre-design phase only
 - S Site Location, Available Services and Site Characteristics
- Issues and Categories A to G, Design, Construction and Operations phases
 - A Site Regeneration and Development, Urban Design and Infrastructure
 - B Energy and Resource Consumption
 - C Environmental Loadings
 - D Indoor Environmental
 - E Service Quality
 - F Social, Cultural and Perceptual Aspects
 - G Cost and Economic Aspects



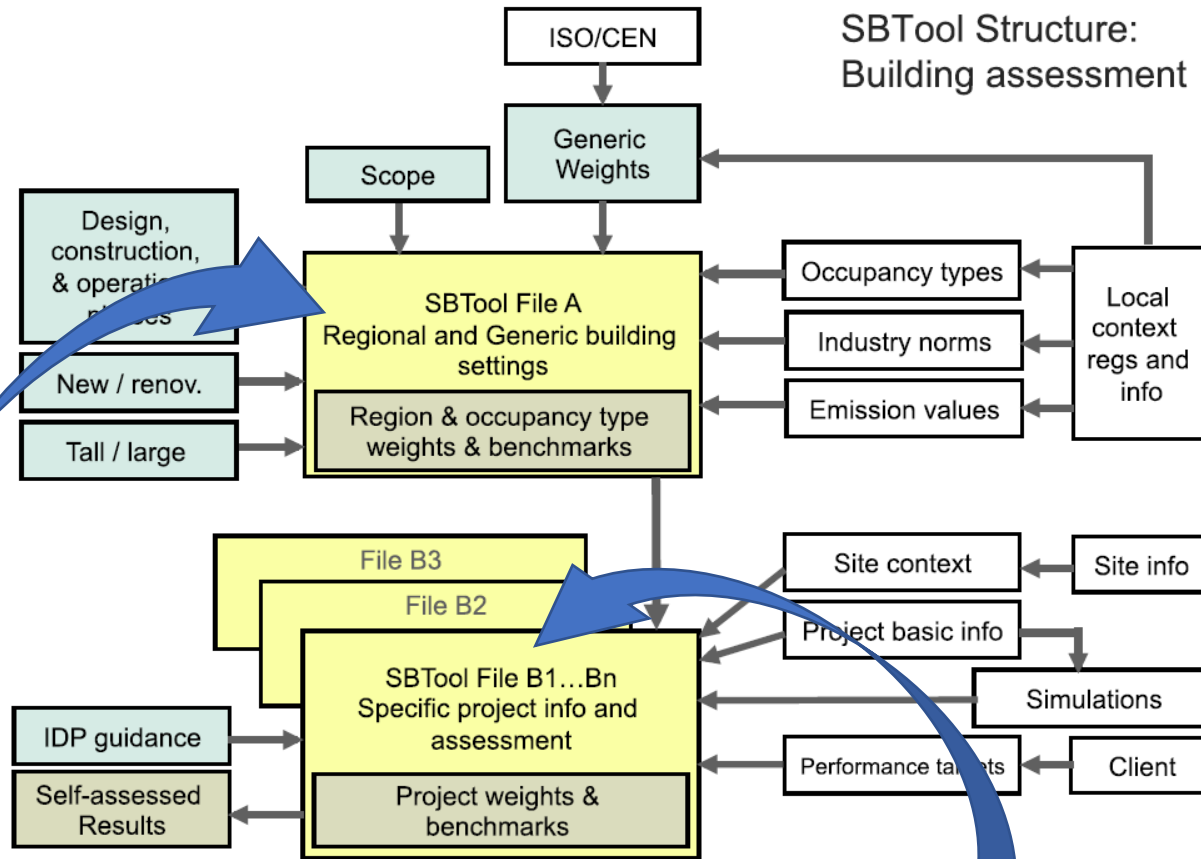
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SBTool Structure: Building assessment



File A is used to establish regionally relevant benchmarks,
One or more **File Bs** allow assessment to be made for a specific project.

(<http://www.iisbe.org/system/files/SBTool%202012%20User%20Guide%20Part%20A%20007Dec12.pdf>)

Table 1: Brazilian public bidding modes

Types of Brazilian public procurement	Characteristic
<ul style="list-style-type: none"> • Invitation • Public competition • Live reverse auction • Virtual reverse auction • Public , Joint stock companies and its Subsidiaries' law • RDC 	<p>Those bidding modes <u>select the architecture office</u> that will develop the design project.</p>
<ul style="list-style-type: none"> • Design competition 	<p>This bidding mode <u>selects the architecture design.</u></p>

Table 2: Public bidding modes and the potential for SBTool

Types of Brazilian public procurement	Potential for adoption of SBTool
<ul style="list-style-type: none"> • Invitation • Public competition • Live reverse auction • Virtual reverse auction • Public , Joint stock companies and its Subsidiaries' law • RDC 	<p>SBTool must be previously determined in the procurement announcement / “Edital”.</p> <p>The use of SBTool must occurs <u>during the contract supervising phase</u>, (during design phase).</p>
<ul style="list-style-type: none"> • Design competition 	<p>SBTool must be previously determined in the procurement announcement / “Edital”.</p> <p>The use of SBTool on this modality must occurs <u>during the architecture design selection phase</u>. It could help in the classification of competing projects and guide detailing options after the competition</p>

Public bidding modes and the potential for SBTool

- Except for the mode Design Competition, which selects the design project itself, all the other bidding modes aim to select the architecture office that will be in charge of the project.
- That means that, in the majority of cases, the assessment of projects with environmental quality will only be asked during the contract phase, after the bidding process is over.



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Public bidding modes and the potential for SBTool

- **Therefore, "Design Competition" is an interesting alternative for the selection of projects with architecture solutions that allows high environmental performance of building:**
 - in this mode of public bidding, the architecture projects presented by competitor are compared by a jury of specialists that will analyse how environmental requisites has been incorporated to the design solution;
 - after the evaluation, the "best project" wins the bidding (and not the best "architecture office", as occurs in other bidding types).



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Conclusions

SBTool positive aspects considering public biddings in Brazil:

- It is a **flexible** tool and can be adapted for Brazilian buildings;
- It is able to **guide** the development and evaluation of design projects;
- It can be applied in **all modes** of Brazilian procurement (both during procurement phase / contract phase).



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Conclusions

SBTool negative aspect:

- The level of coverage and information required by SBTool (LCA data, economic performance) extrapolates the availability of consolidated data in Brazil

Despite this, it is understood that the positive aspects outweigh the negative one, and SBTool can be adopted in Brazilian's public biddings.



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Thank you

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