

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

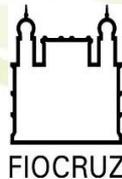
Marcia Castilho Correia, MSc - Oswaldo Cruz Foundation - FIOCRUZ;
PhD Student at Architecture Graduate Program - Federal University of Rio de Janeiro, Brazil

Prof Mônica Santos Salgado, Dr. - Federal University of Rio de Janeiro, Brazil,
Researcher - National Council for Scientific and Technological Development –
CNPq (**presenting author**)

Prof Luis Bragança, Dr. – Universidade do Minho, Portugal



PROARQ
PÓS-GRADUAÇÃO EM ARQUITETURA FAU \ UFRJ



CNPq
Conselho Nacional de Desenvolvimento Científico e Tecnológico



Universidade do Minho
Escola de Engenharia



Organisers:



International Co-own



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

1. INTRODUCTION
 2. SUSTAINABILITY IN BRAZILIAN PUBLIC BIDDING
 3. ENSURING SUSTAINABILITY OF BUILDINGS WITH SBTOOL
 4. CHALLENGES AND OPPORTUNITIES FOR THE USE OF SBTOOL IN FIOCRUZ-BRAZIL
 5. CONCLUSIONS
- 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.



Organisers:



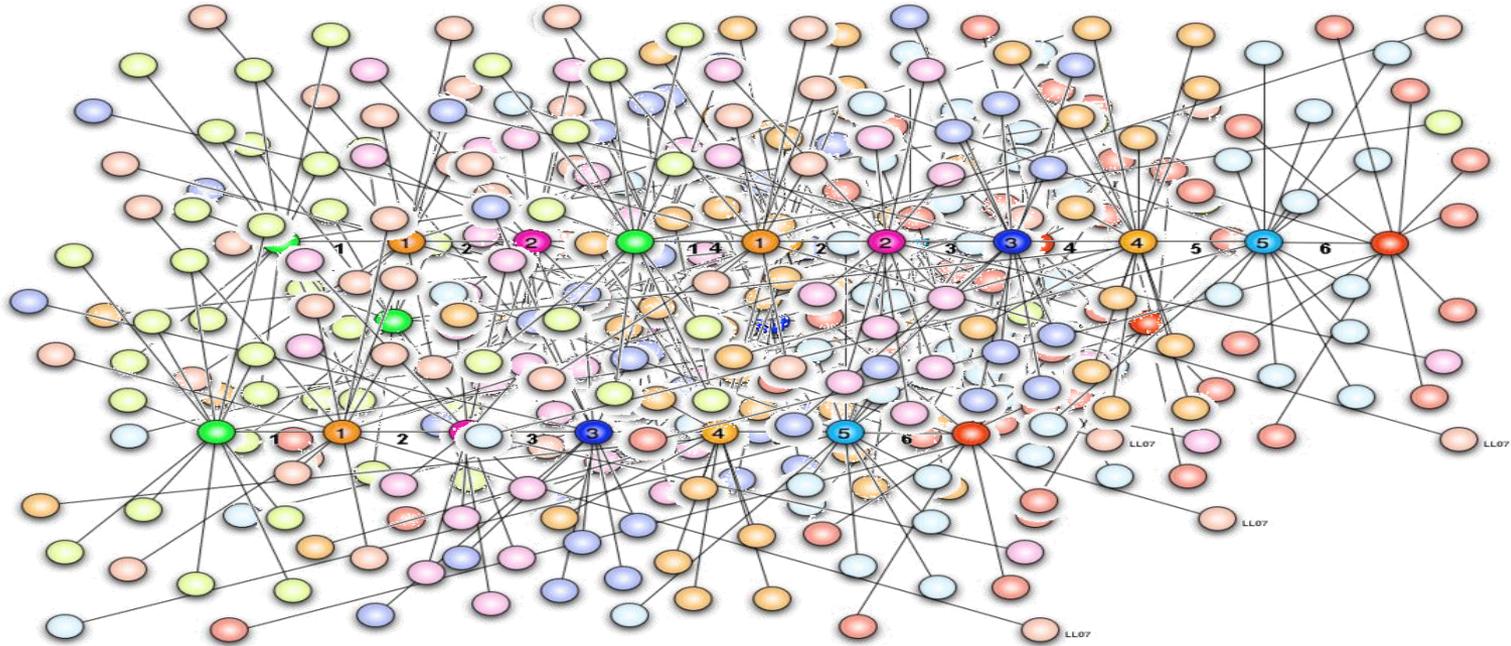
International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



Introduction



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



Organisers:



International Co-owners:



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



Organisers:



International Co-owners:



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.



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



Global Alliance
for Buildings and
Construction

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.



22-24 June 16
Prague

Conference Topics

- Sustainable renovation of existing building stock
- Architectural heritage preservation
- Sustainable to low development
- Building energy passives
- Low cost and high level materials and technologies for sustainable buildings
- Economic support tools and procurement methods
- Practices and research for sustainable building

Czech Technical University in Prague
November 1, 2015, Prague 2, Czech Rep.

Registration is now OPEN!

AGC
ROCKWOOL



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



Organisers:



International Co-owners:



Sustainable Buildings
and Climate Initiative
Promoting Policies and Practices for Sustainability



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.



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



Global Alliance
for Buildings and
Construction

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.



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



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.



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative



Global Alliance for Buildings and Construction

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



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



Global Alliance
for Buildings and
Construction

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



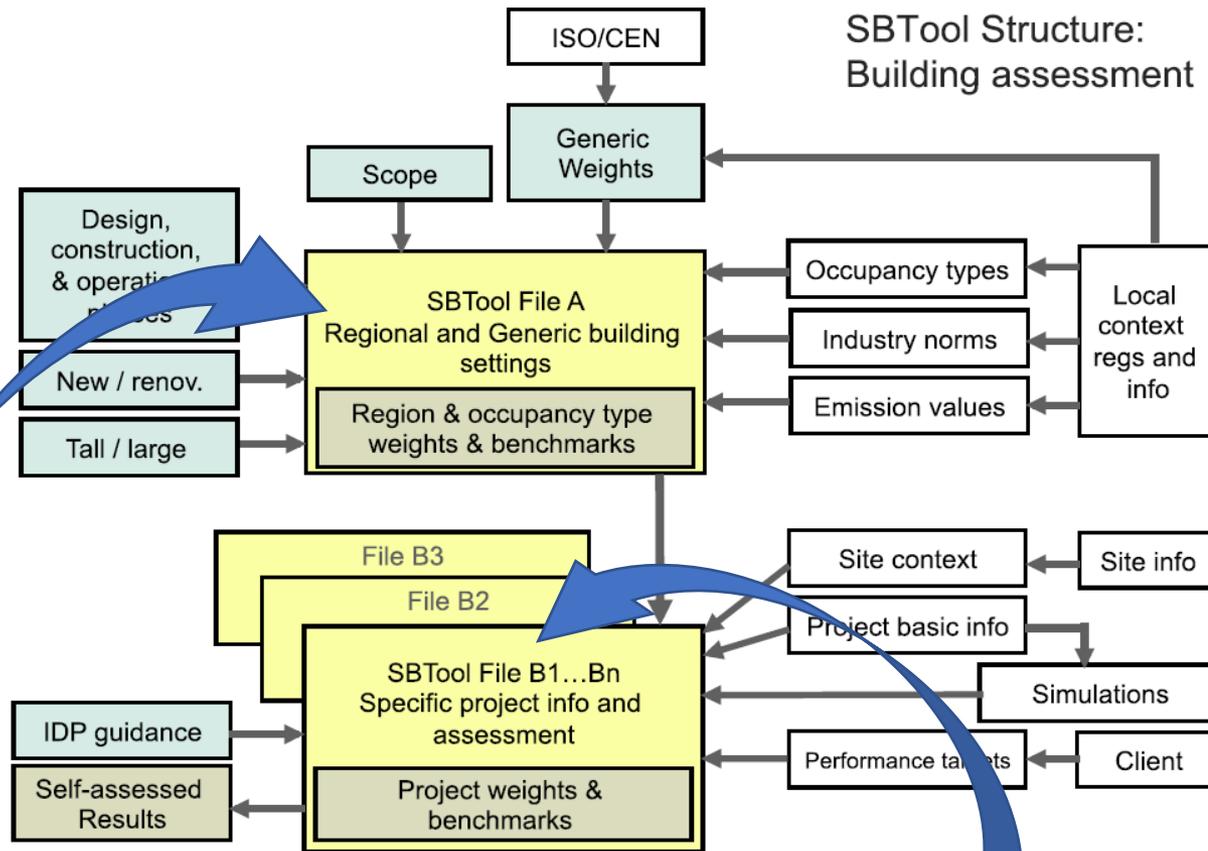
Organisers:



International Co-owners:



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%202007Dec12.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.



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



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).



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



Global Alliance
for Buildings and
Construction

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).



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



Global Alliance
for Buildings and
Construction

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.



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



Global Alliance
for Buildings and
Construction

The authors acknowledge financial support from Oswaldo Cruz Foundation (FIOCRUZ), Federal University of Rio de Janeiro (UFRJ) and National Council for Scientific and Technological Development (CNPq) – Brazil.

Thank you

Marcia Castilho Correa
marcia.correia@fiocruz.br

Monica S Salgado
monicassalgado@ufrj.br

Luis Bragança
braganca@civil.uminho.pt



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability

