

SUSTAINABILITY SERVICES

Integrated data management and occupant feedback for better solutions.

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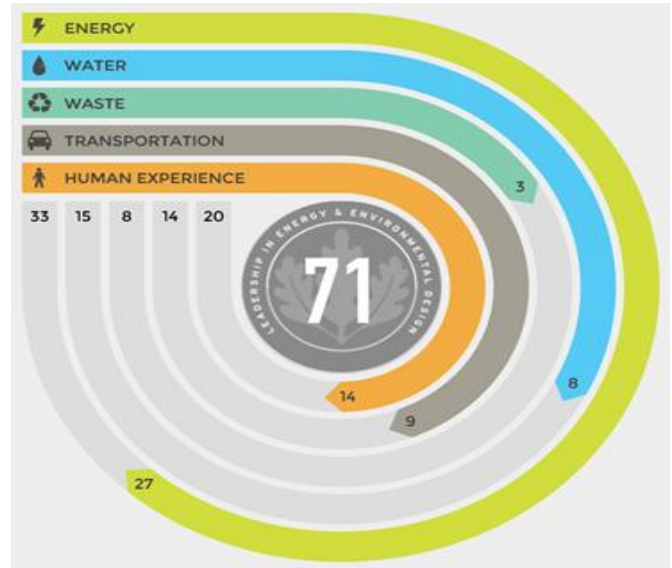
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An efficient building primarily relies on few aspects like, **energy performance, water usage, Waste management, indoor environment quality.** The need for monitoring and reporting measures have gained attention in India majorly due to green rating systems like LEED, WELL, IGBC, GRIHA etc. and national policies that mandate certain protocols for construction. However there is no streamlined procedure to record these data sets. To integrate such a system we need:

- Harmonized efforts for data disclosure.
- Adequate resources to collect
- Analyze and publish data at the right level of granularity, preferably in cloud based platforms
- Complete, consistent and structured data sets.
- Awareness with respect to building efficiency, knowledge of intent behind analysis of the data sets, benefits of maintaining data sets for the building owners as well occupants.

A new technology promoting efficient data management and measurement is **Arc skoru Inc.** by GBCI.



Arc, an initiative of GBCI supporting GBCI, USGBC and its partners. is a new data centric digital platform that helps measure and improve sustainability performance. It helps to track and benchmark progress of project, to see where they are and what could be the next steps to help them improve. It uses a score card out of 100.

Data sets and thresholds for better building performance

Energy Efficiency

- Monthly Electricity consumption data+ cost
- submetering data (HVAC, Lighting, water and waste management etc)
- LPD level data.

Office less than 50 % AC

EPI <45

Office more than 50 % AC

EPI <100

Hospitals

EPI <275

BPO

EPI <260

Carbon emission < EPIx0.82

Office Buildings, hospitals, hotels,

LPD <7.6

University, schools, library, dining

LPD <9

LPD(W/sq.m):
Energy consumed by lighting / carpet area of the space)

EPI(kWh/sq. m /yr)
Total Energy consumed within a year / total built up area

Indoor Plumbing fixtures: Maximum flow rate/consumption

Urinals <4 LPF

Water closet (Half flush) <3 LPF

Turf Area <30%

Landscape water saving > 50%

Drought tolerant/native adaptive plant species >30%

Taps <6 LPM

< 25% Less than baseline

Drip irrigation >75%

Waste water treatment 100%

Usage of treated waste water >50%

Shower head <10LPM

Water closet (full flush) <6 LPF

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Indoor Environment Quality

(high occupancy spaces during operating hours)

- Temperature and Humidity levels
- Carbon dioxide levels
- PM2.5 and PM10 levels,
- Daylight levels

Summer Temp
23 C
(+ - 2 C)

Sound Level
40-50
dBA

PM 10
<100

Daylight levels
>300lux

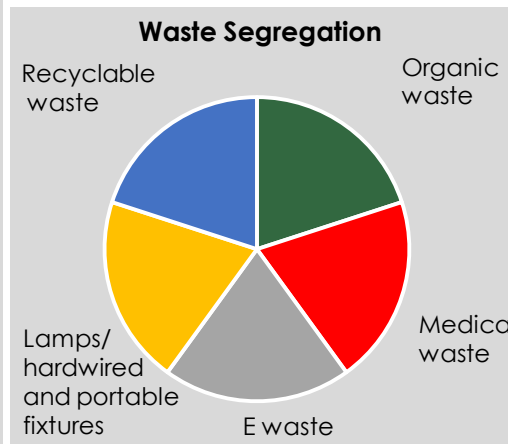
Winter Temp
21 C
(+ - 2 C)

CO2
<530
ppm

PM 2.5
<25

Waste management:

- Total weight of waste generated (per cycle of disposal).
- Total weight of waste diverted to landfill or incinerated.



Wet waste treatment on site
>50%

Retain structural/non structural elements
>50%

Reuse recycle construction waste
>75%

Use of local materials
>30%

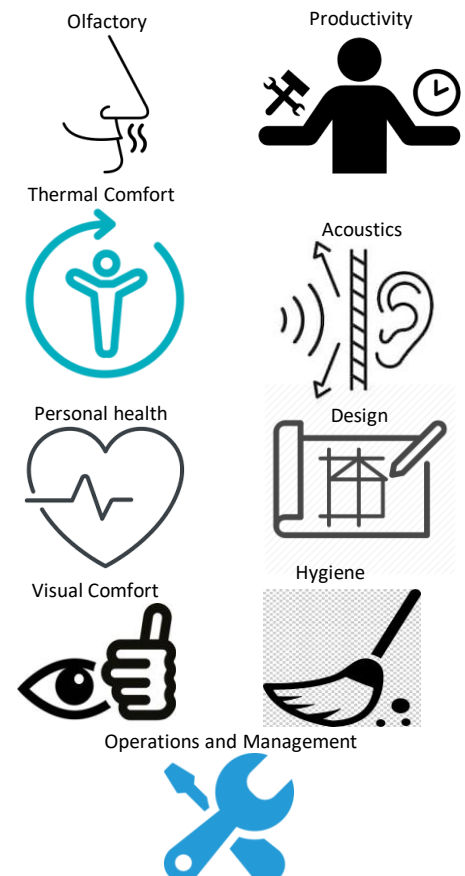
Occupant-feedback system

Occupant feedback is another part of assessing building efficiency and a key to a better solution as human comfort often directly correlates with the environment around them, which might help us to zero down the problem at hand.

- Occupants could be restrictive to a third party analysis.
- Languages and terminologies in assessment surveys might create ambiguity.
- Lack of awareness regarding the importance of their feedback, results into outputs.
- Due to detailed feedback forms, occupants loose interest in giving responses.

There is a need for a quick and robust response systems to obtain qualitative responses, which takes less time, preferably online, easy to understand. Such initiatives need to be part of building operations and management.

- Beyond the mandate requirements for green rating systems, building should engage occupants for reviews regularly, it might be beneficial to identify issues at an early stage.



References: <https://igbc.in/>
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