NATIONAL HOME BUILDERS
NHBRC
REGISTRATION COUNCIL

INNOVATIVE BUILDING TECHNOLOGIES

(WC IBT analyser analysis)

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IBT Analyser tool what is it?

- It is an IBT-based building systems database that includes detailed information on various IBT building systems based on Agreement certificate.

- The database was further developed into a tool that evaluates the most suitable IBT systems that will perform well in specific energy zones based on 10 performance factors:
  - Thermal performance
  - Acoustics performance
  - Condensation performance
  - Fire performance
  - Durability performance
  - Supply chain factors: Lead time flexibility
  - Economies of scale
  - Local labour force
  - Distance from suppliers
  - Accessibility from road

Detailed Methodology: Selecting an IBT based on performance considerations

When selecting an appropriate IBT for a project, three groups of performance criteria must be taken into account:

The four NBR performance criteria:

Quality of materials; Behaviour in fire; Strength and stability; Rain water penetration and rising damp.

The four Agrément habitability performance criteria:

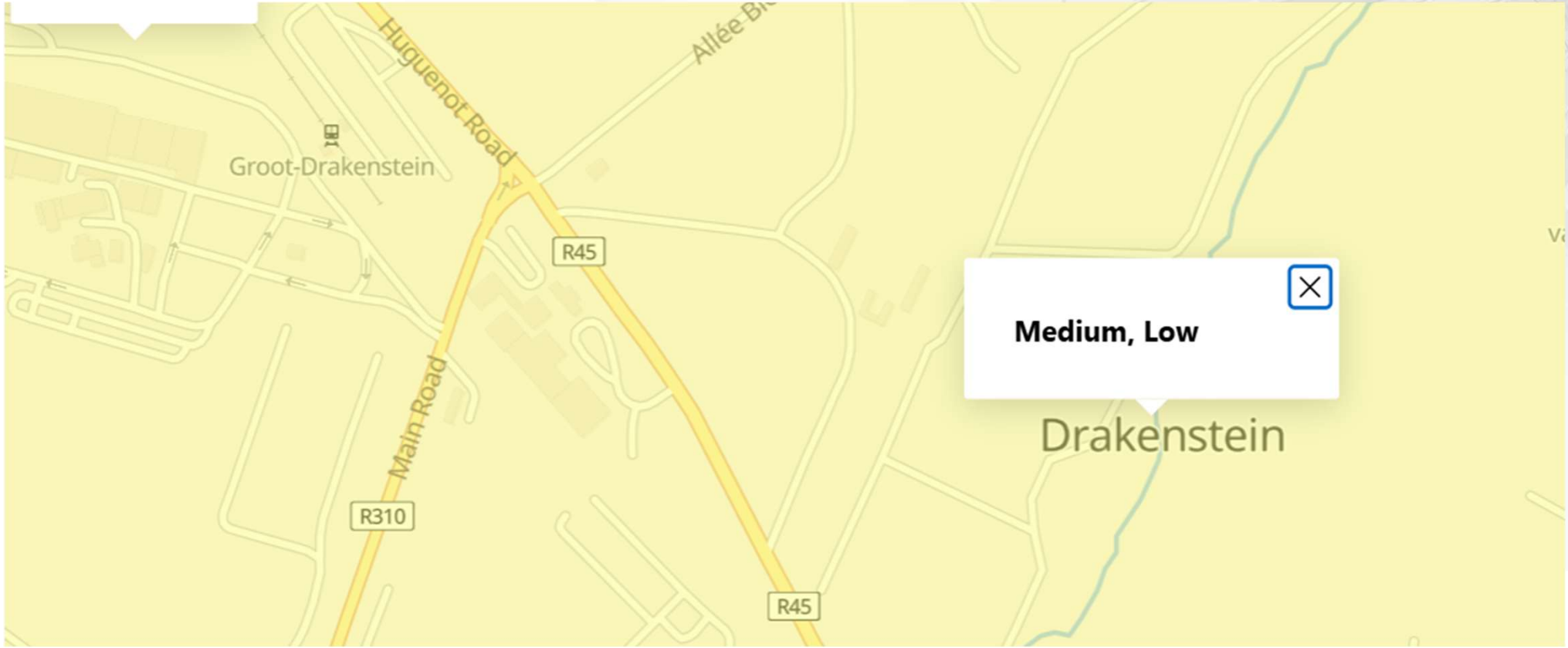
Acoustic performance; Condensation performance; Durability performance; Thermal performance and energy use.

Quality management

Requires a QMP to align the assessed with the actual performance of a building system.

Energy zone Witzenberg

Energy zone Drakenstein



No	System Name	Number of floors	Score	Classification
52	STERLING	double and multi storey	8.70	9
11	Cellular Concrete	single storey	8.10	9
25	GREEN CRETE SMART BLOCK	single storey	7.65	9
43	OCEANSAFE	single storey	6.76	9
54	Tutungeni	single storey	6.51	9
18	ENVIROLITE BLOCKS	single storey	9.15	8
41	NEOPOR	single or double storey	7.52	8
56	UVUYO	single storey	7.42	8
53	TRUMOD	single storey	7.36	8
32	Lambuilt	single storey	8.75	7
44	POWER PROFILE	single storey	8.30	7
55	UKUZWANA	single storey	8.30	7
31	KLEVABRICK	single storey	8.12	7
28	HYDRAFORM	single storey	7.75	7
48	SAF PANELS	single storey	7.61	7
40	Monl Frames Solid Wall	single or double storey	7.60	7
3	Amsa's Protea	single storey	7.45	7
33	LEGNA SOLIDWALL	single storey	8.55	6
16	COOL MAINTENANCE	single storey	8.26	6
30	Khaya Readykit	single storey	7.41	6
57	WBT ROCKTEC PANEL	single storey	8.23	5
21	EZEE BUILD MODULAR	single storey	9.03	4
37	MI PANEL 1	single storey	8.61	4
27	Housezero	single storey	7.80	4
45	Prefab Sprout	single storey	7.69	4
24	FSM FR Polycore (Wall Type 1)	single storey	7.64	4

No	System Name	Number of floors	Score	Classification
5	A-SIP	single storey	7.59	4
35	LIVING HOME MGO SIP	single storey	7.38	4
23	Flex	single storey	8.88	3
6	ASLA Concrete Framed (Wall Type 2)	single or double storey	8.88	3
2	ADVENTURE SHELLS PVC	single storey	8.88	3
20	EVERITE NUTEC FIBRE CEMENT PANEL	single storey	8.31	3
1	ABACUS EZEESPACE	single storey	8.07	3
10	BESTA BOARD	single storey	6.59	3
50	SHOUGUANG PREFABRICATED	single storey	6.58	3
39	Modular Home	single storey	6.05	3
51	SPECIALISED INSULATED PANEL	single storey	7.88	2
9	BENEX Masonry	single storey	7.87	2
22	FABRICATED STEEL MANUFACTURING (FSM)	single storey	6.19	2
4	ARUBA™ 2000 (Wall Type 4)	up to three storeys	9.20	13
7	AUTOMAPOLYBLOCK (Wall Type 1E)	single storey	8.91	13
19	EVERITE HEBEL AAC Block (Panel 2)	Up to four storeys	8.82	13
49	SELCRETE	single storey	8.74	13
42	NUDURA INSULATED CONCRETE FORM	single and multi storey	7.91	13
38	MODULAR FIBRE REINFORCED CONCRETE	single storey	7.50	12
17	ENVIROCRETE	single storey	6.21	12
14	Compressed Earth Block	single storey	9.32	11
15	Concretex	single storey	9.26	11

No	System Name	Number of floors	Score	Classification
46	PUNKU H-BLOCK	single storey	8.54	11
26	Hempcrete Block	single storey	8.17	11
12	CITRA	single storey	7.84	11
29	IMISON STUD COLUMN WALLING (Wall Type 2)	single or double storey	8.80	10
13	COMPOSITE RECYCLED PLASTIC BRICK	single storey	8.74	10
34	Litecore	single storey	8.63	10
47	RIC PREFABRICATED	single storey	7.41	1
36	Luxwood	single or double storey	7.24	1
8	banbric	single storey	6.87	1

ANALYSIS

CR value (in hours) reflects how long a material delays heat flow. Higher CR = better thermal performance.

Best prefab systems for the Western Cape, considering:

- **Medium–low energy zones** → This means the climate is **temperate to mild**
- we don't need very high CR-value systems (like Categories 11–13).
- **Emergency or project housing** → Focus should be on **prefabricated, cost-effective, and quick-to-deploy systems** with **adequate but not excessive insulation**.

🔹 Step 1: Eliminate Extremes

- **Too Low (Category 1–2, CR < ~8 hrs)** → RIC Prefabricated, Luxwood, Banbric, etc. → Poor thermal performance.
- **Too High (Category 11–13, CR > ~54 hrs)** → Compressed Earth Block, Concretex, Punku H-Block, Hempcrete, Nudura ICF, Modular Fibre Reinforced Concrete, etc. → Over-engineered and costly for low–medium energy zones.

🔹 Step 2: Optimal Range for Western Cape

- **Target: Category 3–7 systems** (CR ≈ 9–20 hrs).
- This ensures **sufficient thermal comfort** without driving up cost unnecessarily.

Step 3: Best Candidate Systems

Category 3–4 (Good balance, prefab-friendly)

- **ABACUS EZEESPACE (Cat 3, Score 8.07)** → Lightweight modular prefab, fast assembly.
- **Everite Nutec Fibre Cement Panel (Cat 3, Score 8.31)** → Durable, moisture resistant.

- **EZEE Build Modular (Cat 4, Score 9.03)** → Strong prefab credentials, good thermal resistance.
- **MI Panel 1 (Cat 4, Score 8.61)** → Sandwich panel system, efficient thermal barrier.
- **Prefab Sprout (Cat 4, Score 7.69)** → Lightweight prefab, quick installation.
- **Living Home MgO SIP (Cat 4, Score 7.38)** → Structural insulated panels with good CR balance.

Category 5–7 (Moderate, higher performance)

- **Cool Maintenance (Cat 6, Score 8.26)** → Better thermal performance, useful in inland Western Cape (colder winters).
- **Lambuilt (Cat 7, Score 8.75)** → Balanced prefab system.
- **Power Profile (Cat 7, Score 8.30)** → Prefab, single storey, well-rated.
- **Ukuzwane (Cat 7, Score 8.30)** → Similar balance of insulation and prefab assembly.

Key Justification:

- These systems fall in the **sweet spot (Categories 3–7)** → not underperforming, not over-engineered.
- **Prefab-friendly** → ideal for rapid deployment housing projects.
- **Thermally balanced** → suitable for temperate Western Cape climate, with enough insulation for winter but not excessive cost.

END

THANK YOU

Q&A