



Green building rating systems for office buildings - international

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Overview

- What rating systems are there?
- Which are being used and where?
- Drivers for different rating types?
- Market vs regulatory approaches

What rating systems are there?

- Building rating systems broadly divided into two key types:
 - Design ratings (such as GreenStar in Australia)
 - Performance ratings (such as ABGR / NABERS in Australia)

Features of design ratings

- Are based upon the “green features” of a building
- More “green features” should lead to greener buildings
- Based upon either design inclusion of “green features” or of actual installation of “features”
- Prescriptive – compliance with “features” requires specific systems to be compliant
- Example in the Australian market - GreenStar

Features of performance ratings

- Are based on the measurement of outcomes
- Provide real quantification of real outcomes
- Are non prescriptive – specify performance target (i.e. kgCO_2/m^2), but not how to achieve target
- Example in the Australian market - ABGR

Australia

- Performance ratings:
 - ABGR (Greenhouse)
 - NABERS (Greenhouse, Water, Indoor Environment and Waste)
 - Has become a significant market tool (commercially linked to leases, rent reviews etc)
 - Has been involved in emissions trading (NGACS), and likely to be involved in future carbon trading schemes
 - Developed in Australia, first mooted in 1998
- Design ratings:
 - Green Star
 - Based significantly on an adaptation of LEED to Australia

USA

- Performance ratings:
 - EnergyStar
- Design ratings:
 - LEED (Leadership in Energy and Environmental Design)
 - Silver, gold and platinum accredited buildings, akin to 4, 5 and 6 Green Stars in Australia.

Hong Kong

- Performance ratings:
 - EMSD building energy benchmarks
 - HKBGR under development with the Hong Kong Business Environment Council (BEC). Modeled on ABGR.
- Design ratings:
 - HK-BEAM design based, similar to LEED in points allocation

China

- Performance ratings:
 - None
- Design ratings:
 - LEED being adopted

UK

- Performance ratings:
 - EP Label – draft in progress has a performance component and a design component
- Design ratings:
 - BREEAM (Building Research Establishment Environmental Assessment Method)
 - Various rating types for stages of building life
 - Significantly more life cycle assessment than other rating types

Europe / EU

- Driven by the EPBD (European Building Performance Directive)
- Performance ratings:
 - In development, ABGR used as a leading example
 - Focused more on regulation than market transformation
- Design ratings:
 - LEED
 - BREEAM
 - Other country specific systems to comply with the EPBD
- Combined ratings:
 - Combined design and performance ratings, showing both design potential and achieved performance. Helps to focus on bridging the gap between design potential and the real world.

Rating types

- Design:

- LEED
- BREEAM
- Green Star
- HK BEAM
- EP Label

- Performance

- ABGR/NABERS
- EnergyStar
- HK – EMSD
- EP Label

Summary of Performance ratings:

- Built to measure actual and ongoing results
- Measured greenhouse emissions a good proxy for energy cost
- Often documentation lean, as only the inputs and outputs are assessed
- Need historical data to demonstrate performance (new/existing buildings)

Summary of Performance ratings:

- Often advocated by those with an interest in long-term operation and outgoings (tenants, building owners)
- Has been used as a market transformation tool in Australia
- Australia and ABGR/NABERS looked to as world leading in this field
- Non-prescriptive, no guide to how to achieve, but a result guarantees performance

Summary of Design ratings:

- Based upon features that “should” improve building sustainability
- Often conducted as a “snapshot” of a single point in the design/construction/operation process
- Often documentation intensive, to demonstrate presence of features
- Do not need operational data (easy to apply to new buildings)
- Often provide a recipe for rating compliance, but no guarantee of performance
- Correlation between design and performance is poorly studied

Policy use of rating tools

- Compliance
 - Being used to set compliance standards for development
 - has tended to focus on design
- Market transformation
 - Providing information to the market for the market to assign values to sustainability
 - Most pronounced in Australian market, (green leases etc)
 - Has tended to focus on performance

Forward direction - internationally

- Development of both design and performance ratings is very active
- Much more focus on performance assessment than in the past
- ABGR regarded as world leading in performance assessment
- Mix of compliance and market transformation, generally
 - Design is being used as a compliance (mandatory) tool
 - Performance is being used as a market transformation tool
 - Both have a role

Forward direction - Australia

- Expansion of rating systems into other property types, both for NABERS and Green Star
- Likelihood of mandatory disclosure of performance in the future
- Likelihood of integration of performance ratings with carbon reporting / trading
- Likelihood of increased market pressures and valuation of demonstrated sustainability with then market, both from design and performance assessments.



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