Some problems with rating tools that are corrected by the STARfish app

For further discussion see Chapters 11-12 in Net-Positive Design and Sustainable Urban Development

1. REDUCTION AND EFFICIENCY, NOT DESIGN	
Most RATING TOOLS:	**The Positive Development STARfish:**
Are called 'design tools' but are decision tools to aid in choosing among building products or assessing projects after too much time and effort has been invested in a design to change it.	Encourages iterative design instead of retrospective accounting activity and credits any and all socio-ecological gains to encourage the multiplication of private and public benefits.
Do little to encourage cross-disciplinary consultation or help to integrate designers with social and biological scientists in finding ways to meet sustainable issues and regional priorities.	Supports collaboration among the social and physical sciences, the community, building users and designers in the early stages, particularly in the use of new forensic planning analyses.
Allow meeting standards by adding more mechanical equipment - instead of optimizing passive and solar systems to reduce the overall embodied and operating impacts of buildings.	Begins with the highest ecological use and maximizes passive environmental systems before commercial products are added, to increase public health and biophilic benefits.
Are prescriptive and often operated by specialists without much design skills, and fail to either credit innovative design features or simply reward innovations regardless of actual impacts.	Credits the outcomes of innovations, and designers can add new criteria to acknowledge novel designs with positive outcomes, if they follow the principles for setting benchmarks.
Appear scientific because they are numerical, but only measure what is easy to assign numbers to, and do not set goals that buildings have not yet achieved, such as net-positive functions.	Adds many new criteria that could achieve net-positive public gains - based on site specific conditions and outcomes - instead of standards based on past industry conventions or codes.

2. FLEXIBLE TOOLS AND ADAPTABLE DESIGN	
Most RATING TOOLS:	**The Positive Development STARfish:**
Use rigid rules based on typical sites, practices, or buildings, and lack the flexibility to cover differing site conditions and/or contexts, so new tools must be created for different building types.	Allows additional impact factors to be added or subtracted (eg. streetscapes, transport, building management) since reasons for factors are recorded for oversight and accountability.
Do not encourage mixed and/or multiple building uses, so buildings are often demolished early due to their inability to adapt to changing economic or technological forces and/or new occupant needs.	Rewards novel means of accommodating changing needs, functions and technologies or mixed uses to optimise the embodied resources and lifespans of building structures.
Although often called 'performance based', they usually prescribe solutions and allow variances from standards by giving users a choice of ways to score enough points to cross thresholds.	Encourages design for adaptability and disassembly by crediting demountable, re-useable components, or modular structural elements so buildings can expand or be moved.
Do not encourage design for future retrofitting so buildings can be upgraded to higher standards. Some assess retrofits, but do not incentivize retrofitting although it tends to do less harm.	Does not make it easier to get higher scores by constructing new buildings and can identify deficits in existing buildings that can be gradually rectified by 'eco-positive retrofitting'.
Do not encourage space for multifunctional benefits, unanticipated future demands, or climate change, since points are limited to traditionally or easily measured features.	Can credit all positive and negative impacts and encourage multifunctional and symbiotic design, including the contributions of interior/exterior spaces to human and environmental health.

3. OMISSIONS AND TRANSACTION COSTS	
Most RATING TOOLS:	**The Positive Development STARfish:**
Do not require a consideration of alternative locations, site plans or building forms for the projects or sites to ensure that the basic design concept has minimal negative impacts overall.	Allows for quick quantitative comparisons of basic schematics, using many variables, based initially on experience and knowledge, and then gradually refined as the design emerges.
Are expensive to develop and use, partly because they have transaction costs (paperwork) that are not relevant to making design improvements or assessing actual impacts and outcomes.	Demands learning, but design education is a precondition for sustainable cities. It creates a game in which designers compete with themselves for the most sustainable outcome.
Do not yet influence the majority of projects and do not assess harmful buildings. This leaves a gap as building codes only set minimal standards and leave sustainability to voluntary rating tools.	Can be adapted to any type or scale of project and does not rely on first changing developer's values or consumer's preferences before it can be adapted and applied by design teams.
Sometimes encourage the use of lifecycle assessment and BIM tools as separate processes, but these tools centre on efficiency (the reduction of negative impacts) and marginalize design.	As a digital tool, it could eventually be linked to other lifecycle assessment tools and even BIM tools to make users of those tools consider core sustainability issues in addition to efficiency.
Distract from regional/global sustainability issues (ethics) such as biodiversity losses, disparities of wealth, and the extraction of labour from poor communities and raw materials from nature.	It enables wider socio-ecological issues (eg. how a development affects environmental and social justice in the region) to be analysed and compared at local, regional or global scales.

4. SOCIAL ISSUES	
Most RATING TOOLS:	**The Positive Development STARfish:**
Do not usually incentivise or assess a sense of place or belonging, let alone address social or cultural issues and local needs or priorities - even when adopted and modified for other countries.	Criteria and benchmarks are relative to local conditions, unique contextual issues, and special social circumstances and, in addition, generic socio-cultural design guidelines are provided.
Largely exclude community input in their development. The criteria may be developed by experts and ratified by industry, but the rules and ratings are not subjected to public hearings.	Explains the design rationale in words, so lay citizens can understand the wider impacts of controversial projects, make constructive design suggestions, and/or critique the benchmarks.
Count only the benefits to stakeholders and treat social benefits to owners and occupants as 'public' gains, even if the project concentrates wealth, or reduces neighbourhood amenities.	Has social benchmarks that are based on contributions to the public good and/or corrections to social deficits in the surrounding area, not just the interests of owners and users.
Are not transformative, as progress depends upon clients (ie. industry) and yet, by purporting to represent sustainability, may also slow advances in building codes that affect social sustainability.	Allows changes to be made quickly in response to feedback as it is a 'design' tool, not an awards scheme that needs to be approved by the industry that it promises to reform.
Do not adequately address social justice issues beyond the owner's existing legal liabilities, property lines or supply chains, and sometimes reward 'not breaking laws' (slavery, codes etc.).	Connects with Positive Development 'systems mapping analyses' that consider ways that development can contribute to community-wide social gains, such as local equity and security.

5. ECOLOGICAL ISSUES	
Most RATING TOOLS:	**The Positive Development STARfish:**
Count many things as 'ecological' benefits that only concern human comfort, such as indoor air quality, which has misled some to think that most ecology or biodiversity issues were covered.	Considers ecological uncertainty to ensure that the basis of society, nature, is protected and increased in absolute terms. It aims to improve upon the equivalence of pre-urban conditions.
Do not consider the highest ecological use of land. Within the limits of regulations, developers determine land uses based on economic factors, which often has huge public opportunity costs.	Determines the highest socio-ecological use of land first, and then seeks to attract economic uses, or to add 'net-positive offsets' where a less than optimal land use has been permitted.
Do not offset the full ecological footprint or increase ecological carrying capacity, and offsets usually only (at best) restore the area replaced and/or left over on the site by the buildings.	Sets benchmarks based on biophysical outcomes, which means any land area that the development removes from nature is deducted from the calculation of environmental impacts.
Rarely encourage improving 'offsite' land, water and air quality, and biodiversity offsets are often used to allow negative impacts or go beyond code, rather than to increase net sustainability.	Credits actions that benefit the region's ecology, but also penalizes negative offsite impacts that are not wholly offset, even where hard to quantify, by using fixed biophysical benchmarks.
Seldom consider the risks of exacerbating climate-related threats (potential floods, extreme winds, droughts, fires, etc.) and do not assess those imposed indirectly upon nearby properties.	Gives credit for reducing impacts of possible environmental crises in the surrounding area by design, as well as protecting the site and development itself from climate-related risks.

6. VISUALIZATION, COMMUNICATION AND TRANSPARENCY	
Most RATING TOOLS:	**The Positive Development STARfish:**
Are not very transparent as to why a given feature is weighted or assigned a certain number of points and misrepresent best practice or what is currently achievable as being 'sustainable'.	Is benchmarked against sustainability and tool users can modify weightings to suit unique issues, since reasons are recorded so others can contest the logic of the scores and weightings.
Conceal negative impacts by only recording predicted impacts after promised mitigation measures are deducted, so there is little incentive to rethink the conventional building templates.	Shows negative impacts and remedial measures rather than just the percentage reduction, and negative impacts are recorded permanently, so they can be improved upon later if possible.
Score projects relative to typical impacts (distance from unsustainability, not distance from sustainability). Hence, for instance, a project can recycle all of its waste yet be entirely wasteful.	Looks at the public value resources used (eg. not just the portion of waste recycled) and encourages waste elimination by design, not simply more waste management or recycling.
Use thresholds which conceal impacts and represent percentage reductions as optimal so, once crossed, there is no incentive to make design improvements or add more public benefits.	Rewards designs that add public benefits beyond what is considered best practice and penalizes designs for all negative impacts, even those considered normal or code compliant.
Do not disseminate innovations since most case studies are promotional documents that advertise how much 'less damage' a building causes, rather than explaining how the design features work.	Automatically creates a design report that is accessible to the public so other design teams can build upon the ideas - while acknowledging the originators of the ideas or innovations.

7. COMPLEX SYSTEMS AND TOTAL IMPACTS	
Most RATING TOOLS:	**The Positive Development STARfish:**
Treat buildings as the sum of their parts. Lists of building components or design principles with scores (even if arranged in mandalas) clash with design thinking, which is about synergies.	Treats buildings as complex systems and helps to visualize the cumulative supply chain impacts over project lifecycles and their spill-over effects in different categories at the same time.
Prescribe solutions or techniques which are compatible with conventional building templates and practices, rather than supporting design that creates additional symbiotic relationships.	Rewards innovations by their outcomes and exposes opportunities to increase positive synergies among the elements through multifunctional, adaptable design.
Count design elements in only one category, when design should aim to increase human and environmental benefits in all aspects and dimensions of a development and its surrounds.	Gives credit for actions that have multiple benefits in different categories but also encourages the addition of public benefits where there are unavoidable adverse impacts.
Often exclude consideration of embodied energy, water and carbon emissions during resource extraction and manufacturing, although these impacts often exceed the operating impacts.	Makes compound positive and negative impacts visible, and the fractal diagram expands to include secondary or remote impacts that become quantifiable as the design progresses.
May refuse to certify a project that that is on a sensitive site, but this does not prevent more harmful buildings from being built there that would not bother to try to obtain certification.	Rewards whole-system positive outcomes, such as 'no regrets' forms of carbon sequestration (eg. permanent building-integrated vegetation) - even in zero carbon buildings.
Do not consider the damage caused by buildings relative to whole-system conditions, such as scarcity of land or depletion of resource stocks (groundwater, fertile soil, native forests, etc.).	Assesses impacts against fixed biophysical conditions on the site or the region, so it automatically responds and adjusts to total resource stocks and material flows.