# Stakeholder Feedback Report

# Fitout Calculators

**October 2011**

# 1. Contents

# 2. Introduction

The Green Building Council of Australia (GBCA) developed new materials calculators to assist in the documentation of environmental characteristics of materials used in building fitouts. The three materials calculators, released for public comment as the 'Material Calculators 2.0', cover furniture, assemblies and flooring. The final 'Fitout Calculators' will be used in new Green Star rating tools.

Draft material calculators were developed by the GBCA in conjunction with the Product Certification Project Expert Reference Panel in 2010. Stakeholders were invited to provide feedback on these drafts through a formal process; details of which can be viewed at www.gbca.org.au. This Stakeholder Feedback Report provides a summary of the 32 written submissions received and the responses from the GBCA as well as changes made to the Fitout Calculators to accommodate this feedback. Stakeholder feedback is provided in *italics.*

The general comments requiring a response have been grouped into five broad categories: layout and wording, definitions, clarifications, benchmarks and suggested extensions of the tools. Similar comments have been grouped together. There is a section for each of the five criterion, followed by general positive comments which did not require a GBCA response.

The GBCA would like to thank all stakeholders for taking the time to assist in the development of the Fitout Calculators. Further feedback is welcomed as the calculators are implemented and used.

## General Comments

# 3. Layout and wording

*1. Comment: I think the 'points awarded' box should perhaps say 'points generated' - otherwise some people might mistake for the points having been awarded in assessment.*

*And*

*Comment: I think criteria 2 and 3 should swap places so that the five criteria are ordered from high score to low score.*

GBCA Response: We agree with this feedback and the suggested changes have been made.

*2. Comment: Draft material calculators 2.0 guide provides clear explanation of documentation requirements. However in order to get an even clearer understanding of documentation requirement[s], the documentation guidelines - design rating section should be classified into the following three categories:*

*1. Furniture materials*

*2. Assemblies materials*

*3. Flooring materials*

GBCA Response: There is only one difference in the compliance requirements of the three calculators; the five criteria requirements apply equally to all three. The difference is the inclusion of “exposed concrete” under criterion 1 of the fitout calculators, which is noted in the documentation requirements of criterion 1. This does not apply in the Furniture or Assemblies calculators for obvious reasons. As such we do not believe there is a need to further complicate the guide by repeating the compliance requirements of the three calculators where these will not differ substantially.

# 4. Definitions

*3. Comment: p13 definition of flooring; should clarify that external paving, concrete etc is excluded, even when covered by awnings/pergolas etc and when (arguably) protected by the elements. Perhaps refine the definition to cover only the 'rated floor area', e.g. GFA excluding garages and car ports (which will always be concrete).*

GBCA Response: Flooring includes all internal exposed concrete and floor coverings used within project floor areas that are permanently covered and protected from the elements (as stated in Section 3.3 of the Fitout Calculators Guide). This means areas permanently covered and protected from the elements are not external, even if these areas are usually finished with exposed concrete. The rationale for including these is to ensure full points will be awarded where 'exposed concrete' is used whereas these areas can also be finished with various types of hard flooring or other floor coverings, which in comparison with exposed concrete may represent an unnecessary increased environmental impact.

*4. Comment: Definition of work settings; the clause states that 'a work setting designed to accommodate more than one user should be counted as one work setting per user'... this will be difficult to assess without further guidance. Projects could artificially inflate the 'work settings' using this clause which would help their outcome. For example a workstation work settings based on manufacturer/supplier brochures where the number of work settings is indicated, the idea would be to use a linear dimension to make sure that teams don't treat a 2m work bench as having 8 work settings.*

GBCA Response: Further clarification has been provided in interpreting a work setting in section 3.1 of the Fitout Calculators Guide. Linear dimensional benchmarks have not been incorporated as they may not be relevant to all situations.

*5. Comment: In the example 'variety of workstations' being entered on one line. How does this address the potential varying attributes of those workstations? I'd suggest that 'where workstations (for example) have varying environmental attributes according to the calculator, each type should be entered separately in the calculator (otherwise the worst performer drags the others down).*

GBCA Response: Further clarification has been provided in the Fitout Calculators Guide. The example "variety of workstations" relates to a quantity of re-used workstations of various types. They were listed on a single line as in the case of re-used items; projects are not expected to find the original supplier or the brand or marketing name of the product (or group of products). We have changed the example and clarified this under criterion 1. A group of re-used items can all be entered as "re-used workstations" or "re-used task chairs", etc. See sections 3.1, 3.2 and 3.3 of the Fitout Calculators Guide.

*6. Comment: The definition of storage units; why only off-the-shelf? What about non-joinery storage units that are custom made for the project? e.g. compactus units. Or is the assumption that this is a rarity and custom-storage is usually joinery?*

GBCA Response: Further clarification has been provided in section 3.1 of the Fitout Calculators Guide to make it clear that storage units that are custom made, including compactus units, are considered joinery items for the purposes of the Fitout Calculators, rather than storage items. As a result, they are addressed by the assemblies calculator, rather than the furniture calculator.

*7. Comment: Material Calculator Guide 2.0: Sections 2.2/2.3 Documentation guidelines: What is the reason for providing contract values & costs of furnishings / assemblies / flooring – is this an error? Surely these would only need to be provided as per 2.1 where contract value is 0.01.*

*Also use the definition of contract value from Technical Clarification and Credit Interpretation Requests Spreadsheet for clarity.*

GBCA response: We agree with this feedback. Changes have been made so that this requirement only applies when a credit is claimed as not applicable. The definition of contract value has been included and expanded in section 2.1 of the Fitout Calculators Guide.

*8. Comment: provide a definition (or exclusion) for wall coverings – like tiles in bathrooms – should this come under assemblies? If so please provide guidance on how (as per flooring underlay) this should be taken account of in the calculators?*

*In the healthcare tool beds currently come under furniture – are these still to be included?*

GBCA response: The scope and definitions in the assemblies in section 3.2 of the Fitout Calculators Guide have been amended to include a specific exclusion of wall coverings such as tiles. Beds are addressed in the Furniture Calculator of Green Star – Healthcare v1.

*9. Comment: The exclusion of 'sofas' and 'lounges' from the calculator is a major backwards step particularly as the definition is extended to include casual chairs. These tend to have the highest levels of foams and adhesives and hence highest potential IEQ impacts.*

GBCA response: This exclusion has been reversed as we recognise that in some building types lounges or sofas may make a large proportion of fitout items. Section 3.1 of the Fitout Calculators Guide for definition of furniture now specifies that lounges and sofas are included in the assessment.

Note, the requirements of the Fitout calculators do not reflect the items assessed in the Volatile Organic Compounds credit in the Indoor Environmental Quality Category of Green Star rating tools and should not be interpreted as doing so.

# 5. Clarifications

*10. Comment: clarify how many points are available for each Material Calculators 2.0 credit? Please also clarify what overall % score would be required to gain the full allotted points for each credit.*

*And*

*Comment: Please explain how one would enter a value of N/A in the calculator remove the points from the calculations & thus present an accurate tool.*

GBCA response: Section 5 of the fitout calculators guide has been expanded to better describe how the overall score translates to number of points. The number of points available will be clearer when the calculators are finalised and incorporated within Green Star rating tools. Once the Fitout Calculator is incorporated, entering the credit as Not Applicable can be done within the Materials Tab in the same way as other Green Star credits.

These could not be included in the generic example provided for public comment as it was not associated with a particular Green Star rating tool.

*11. Comment: Criteria for flooring can be clearly defined, often we work on criteria from external sources and there is confusion over whether this would be acceptable by the GBCA.*

GBCA response: The Fitout Calculators Guide includes a section dedicated to each calculator. Each of the five criteria requirements is detailed in terms of definitions, compliance requirements and documentation. The Fitout Calculators Guide provides all the information necessary for a Green Star assessment, including the criteria for flooring. Suppliers should be encouraged to use the Fitout Calculators Guide, rather than working with criteria from external sources.

*12. Comment: walls & partitions – The proposed measurement of the largest panel in elevation isn't going to represent most cases; e.g. a 10m long panel with a 9m long return - under this measurement method the 9m panel is excluded. Or is this not what is meant? PROPOSAL; change this to 'the total length of the wall or partition multiplied by its total height'... this is actually easier to measure as it's a direct measurement off plans multiplied by the known height and would likely have already been calculated by the QS for costing purposes. This method also captures the majority of material, and also captures any partition materials that extend above the ceiling line.*

*Joinery – As above - I don't think this works either and will often significantly underestimate the amount of material being used. The easiest way to determine the amount of timber being used is to obtain a measurement from the Joiner - they will typically measure the joinery drawings and calculate the total m² of board that is required for the job. Their as-built documentation is usually the same format, e.g. 'purchased 250m² of particleboard'. PROPOSAL: I think a measurement of the total board/timber area is much more accurate - for Design submissions it could add a little extra work for the team in that they would have to obtain such a measurement or quote from a Joiner. In theory a QS should be able to provide the same estimate. For As-Built documentation it becomes very straight forward - rather than focus on the various configurations and types of joinery we simply focus on how much material was used in total - much easier to document (I know on many projects the 'Joinery' Credit is ignored simply because of the amount of documentation anticipated rather than the ability to meet the Credit Criteria).*

GBCA Response: Your proposal in relation to walls and partitions is actually the intent of the guidance provided. Changes have been made to make this clearer. Walls and partitions are measured as the length of the item multiplied by its height. See section 3.2 of the Fitout Calculators Guide.

Your proposal in relation to joinery differs from the guidance provided, which is the same as that for walls and partitions. The intent is a uniform method of calculating the area of assemblies; this is not an exact representation of the amount of material that goes into an item. Largest elevation is used as proxy to represent a quantity of wall or joinery.

*13. Comment: The guide document is well written and the only part that is not entirely clear is how to calculate the points for a carpet installation with underlay.*

*I would be grateful if you advise whether the following example is accurate if we assume a carpet certified to a Level A recognised standard covers the entire surface area:*

*For an installation without underlay, the carpet score is 5 x 1 =5 points.*

*For an installation with underlay, the carpet contributes 5 x 0.5 = 2.5 points.*

*Underlay also contributes 2.5 points if it has the top certification level from a recognized product certification scheme or achieves at least 90% of the points using the draft Materials Calculator.*

GBCA Response: Flooring underlay should be counted as a separate item to the floor coverings. It is not possible to determine how many points will be generated by the calculator on the basis of one product or another as all floor coverings entered will influence the outcome depending on their overall performance against the five criteria.

*14. Comment: Why are car parks, plant rooms etc excluded? The Material Calculators Credits are about materials which are used throughout the building. Items in these areas can still meet the criteria.*

GBCA Response: Whilst fitout items used in car parks and plant rooms can meet the criteria, their exclusion is intended to simplify the assessment whilst encompassing the bulk of the fitout. Projects wishing to document items in these areas are free to do so however it is not required.

*15. Comment: Modularity is an inherently sustainable approach to construction and manufacture as is design for disassembly. These are significantly more effective that an ISO14001 certificate. Why h*ave these been removed?

GBCA Response: The Product Certification Project Expert Reference Panel that assisted the Green Building Council of Australia in developing both the Assessment Framework for Product Certification Schemes and the Fitout Calculators, proposed that Fitout Calculators criteria such as durability, design for disassembly and modularity, should be addressed through product certification schemes recognised by the Green Building Council of Australia. By rewarding products certified to GBCA recognised standards in criterion 2 of the Fitout Calculators these design concepts are rewarded in the Fitout Calculators. Green Building Council of Australia recognised product certification schemes have the tools and expertise to verify compliance for each individual type of product.

*16. Comment: Ceilings are typically supplied in a Base Building Contract, rather than a fitout contract, so we would encourage the application of the Calculator in Office Design / As Built as well as Office Interiors, Education, Healthcare, Industrial, Public Buildings (actually all tools).*

GBCA Response: Green Star – Office Design v2, Green Star – Office As Built v2 and Green Star – Office Design and As Built v3 do not contain material calculators. As such the Fitout Calculators will not be incorporated in these tools. We will note feedback related to ceiling use in base buildings as part of revisions to all Green Star rating tools for offices. The remainder of the tools listed (excluding Green Star – Industrial v1 which will not include an Assembly Calculator) will include the Fitout Calculators.

# 6. Benchmarks

*17. Comment: The 10% increments in overall score needed for points to be generated is so marginal and not representative of increases that make sense with awarding up to 4 points. Would make much more sense if these increments were spread more evenly and gave incentive for doing >40%.*

GBCA response: For clarity the Overall Score benchmarks as released in the Draft Material Calculators 2.0 were as follows:

an Overall Score of 90% will result in full points generated for the credit.

an Overall Score of 80% will result in full points minus 1, generated for the credit.

etc in increments of 10% and depending on how many points are available (up to 9).

Changes have been made to the points generated in the final Fitout Calculators. A 90% overall score will result in the total number of points available in the credit to be generated. For an overall score below 90%, the overall score will be divided by 90% and multiplied by the number of points available. The final score includes one decimal point. This means almost any improvement will better the result. Further detail can be found in section 5 of the Fitout Calculators Guide.

# 7. Suggested extensions of the Materials Calculators and/or the Green Star tools

*18. Comment: The Green Building Council should include a criterion for local production. Local production will support Australian industry in particular small Australian manufacturers and local income and employment. Furthermore, sourcing locally produced content reduces the environmental impact associated with transport over large distances.*

GBCA Response: Green Star rates the environmental impacts of construction, rather than the social or economic impacts such as those you've identified as part of local production, which are beyond the scope of assessment.

*19. Comment: the flooring calculator should be modified to include criteria that address:*

*Cleaning and other maintenance*

*Safety and compliance to regulations (for example slip resistance)*

*Indoor environmental quality*

*Ecological impacts*

*Human health impacts*

*Non use of adhesives and sealants*

*Churn rates*

GBCA Response: The Green Building Council of Australia is in the process of developing the Green Star - Performance PILOT rating tool, which will address maintenance of buildings, including cleaning.

Matters addressed by regulations, such as safety (for example the Building Code of Australia), are beyond the scope of Green Star assessment.

Indoor environmental quality matters are addressed in the Indoor Environmental Quality category of Green Star rating tools.

While many of the ecological impacts arising from a project's construction are addressed in Green Star (for example these issues are addressed in the Land-Use and Ecology Category credits, the Timber credit and the Concrete credit), the ecological impact of fitout items are not addressed as this will require a life cycle based approach. Your comments have been noted, future work by the GBCA may include life cycle based credits in Green Star.

Human health impacts are difficult to address in the context of the material calculators, however Green Building Council of Australia recognises product certification schemes, whose certification is rewarded in the Fitout Calculators, addressing toxicity and human health impact of fitout items. In addition to this, some aspects of human toxicity are addressed in the Indoor Environmental Quality Category of Green Star rating tools.

The non use of adhesives and sealants is addressed in the Volatile Organic Compounds credit of Green Star rating tools. The credit rewards the non use of these only where there are no adhesives and sealants used in a particular project.

We are in agreement on the importance of addressing churn rates of fitout items and as such this is one of the main aims of the material calculators. We believe that the combination of the five criteria of the Fitout Calculators will address the churn rate of fitout items.

*20. Comment: I think the GBCA needs to put some focus on the increasing prevalence of the incineration of waste for energy production, using the justification that producing $CO_2$ from burning is better than Methane from decomposition.*

GBCA response: While this feedback has been noted, incineration of waste for energy consumption is not within the scope of the Fitout Calculators.

*21. Comment: The calculators do not seem to take into account the functionality of products within categories. In LCA this is referred to as "functional unit". The functional unit is arguably at the heart of any LCA as it determines the basis for comparison (benchmarking) between alternatives. We realise the difficulties involved with determining explicit functional units for furniture, but would strongly recommend spending at least a paragraph on this issue or better implement functional units in the calculator.*

*Some examples:*

*I could imagine that you treat desk chairs differently to say meeting room chairs, as the latter probably have less stringent requirements around OH&S.*

*If you have two chairs that are exactly the same, except that one has arms and the other one doesn't, would a straight comparison be useful? The one without arms uses less material and would always win the environmental comparison. The reason is that in this comparison you inherently exclude the function the arms provide.*

*If you compare tables or desks you might want to express their function in m2 of surface area. From a material point of view it seems logical that a smaller table uses less material than a larger one (in general). However, to draw the conclusion that a smaller table is therefore preferable is oversimplifying the issue.*

*With inner walls it would also make sense to compare them per m2. Additional functions could be acoustic or thermal (insulation) performance.*

GBCA response: The aim of the calculator is to encourage use of environmentally preferable products specified and used in the building or fitout, rather than providing a comparison of one product to another. A range of products with varying performance against the calculators' five criteria can generate full points in the calculators. This means that chairs made of timber, steel or plastic may all perform well against the calculator criteria, delivering an outcome in line with the aim of the calculator.

For the purpose of simplification, and with the disclaimer that the calculators are not LCA based, the calculators do not differentiate between a task chair that includes arms and one that does not include arms, or a task chair made entirely of plastic as opposed to one with a steel frame. The functional unit is a task chair, a workstation, a square meter of wall or joinery, etc., regardless of material constituents. While we appreciate this is not a perfect approach, the Green Building Council of Australia is of the view that the functional unit can be represented as an item of furniture or a square meter of assemblies or flooring, which is reflected in the Fitout Calculators. Your comments have been noted and while they are beyond the scope of the Fitout Calculators, the functional unit of fitout items may be raised during the future approaches.

*22. Comment: Include life cycle assessment of building materials (especially Flooring) to add some credits to the calculations. More precisely, include recycled or recyclable content of the materials.*

GBCA response: Criterion 4 of the Fitout Calculators rewards the use of products containing recycled content. While life cycle assessment based credit criteria have not been incorporated in the Fitout Calculators, these comments have been noted and may be considered in future revisions to Green Star rating tools.

# 8. Re-used Item – Criterion 1

No stakeholder comments were received in relation to Criterion 1- Re-used Item.

# 9. Product Stewardship – Criterion 2

*23. Comment: We would prefer to see more reward for leased products and less for purchased, say 50%-60% for leased and 10%-20% for purchased. Leasing effectively guarantees that the product will at least go back to the supplier, whilst for purchase there is little (in fact no) guarantee that it will be followed through in 15 years time when the tenant refits - this is currently the weak point with the product stewardship idea - no way to police actual compliance.*

*And*

*Comment: We are pleased to see that Life Cycle Management is incorporated in the Product Stewardship Policies. A major difficulty with the 'system exists' approach to Product Stewardship is that it does not allow tracking of the impacts of the recovery/recycling process. Typically some of these schemes include deployment of recovered materials to developing countries with no pollution control or safe labour policies. Hence while requiring the scheme to consider life cycle management of the product, it may overlook potentially negative impacts of the process without qualification. Properly audited LCA can indeed allow for these impacts to be assessed and quantified.*

GBCA Response: The uncertainty as to what may happen to materials in the future is the main limitation of an approach that simply recognises that a system exists. We agree there is merit in varying the reward for leased products to reflect the limitation of the 'system exists' approach. Changes have been made so that leased products are rewarded with a 30% item score whilst purchased products are awarded a 10% item score. Section 4.3 of the Fitout Calculators Guide has been updated accordingly.

*24. Comment: Product Stewardship should not be included as a separate item to Certification - because it is already included in the Certification criteria and may result in double counting. Also, the inclusion of Product Stewardship outside Certification will tend to water down the level of potential compliance as the level of audit will reduce and also mean the audit role will shift to the Green Star Assessors. It should continue to be the role of the GBCA recognised scheme as it currently stands.*

GBCA response: This criterion requires that a product stewardship contract is signed specific to the project, not simply that a product stewardship scheme is in place. Product certification schemes assess that this is in place, and that the capacity to deliver on the product stewardship contract exists. As a result, Criterion 2 compliments the work of product certification schemes rather than providing for 'double counting'. Criterion 2 also encourages leasing of products which further strengthens the prospects that the items will be re-used or recycled at the end of their intended use.

*25. Comment: We encourage the GBCA to consider amending the "product stewardship contract" to include limiting conditions related to contamination of products while on job site. Manufacturers do not want to be obligated to take back products that are contaminated in any way (particularly with hazardous contaminants present in old buildings e.g. asbestos, etc).*

GBCA Response: If contamination is an issue it may be that materials need to be given or sold to a third party to be down-cycled rather than recycled into identical new products. For example using ceiling tiles in soil remediation or rubber in streetscape products (for example speed humps). If materials are contaminated by hazardous substances such as asbestos, national regulations are already in place for the appropriate disposal of these materials.

*26. Comment: It is stated that Product stewardship agreements should not include any limiting conditions or restrictions related to timing of product return or minimum quantity of product to be returned.*

*Such exclusions seek to address:*

*A large number of items dribbling back in ones and twos over time;*

*The owner being responsible for transport back to the manufacturing facility;*

*Products being essentially as they were delivered to the customer originally;*

*The likelihood that some small proportion of the products and materials will not be able to be re-used or recycled;*

GBCA Response: In relation to the first item, we do not believe there should be any limiting conditions applied to product stewardship, even if occasional return of individual items may not be very efficient. In most cases it should be more efficient than landfill disposal. The example provided already includes the second and third items. As for the last item the example does not state all materials will be diverted from landfill.

*27. Comment: Product Stewardship Agreement (PSA) - The draft version as written seems to have lost some of its teeth and doesn't at any point say in absolute terms that the product shall not be sent to landfill. It only provides options which may or may not be selected under the terms of the agreement.*

*The manufacturing industry has made significant progress since Green Star was released, and I think rather than retreat with this aspect we should be advancing and continuing to encourage/push the industry;*

*AND*

*We advise against any conditions which required a written commitment 0% going to landfill. This is because in our real world we commit to maximise reuse and recycling, and to publicly report on the fate of materials. We do not know whether we will achieve 100%, 95%, 90% ... etc. and we will only learn that in 10 - 15 years time when the processes are applied to large quantities of materials.*

GBCA response: Neither versions of the product stewardship example, meaning that released with the current Materials Calculator Guide and the second release with the final Fitout Calculators, require that all materials will be diverted from landfill.

## 10. Product Certification – Criterion 3

*28. Comment: Allowing 60% score for LEVEL C Certified product is too high. Level C is relatively easy to achieve yet level A is comparatively very hard. Why would manufacturers put themselves out to strive towards LEVEL A if they can get 60% for Level C? We believe the original setting was correct to drive market change and create impetus for manufacturers to move between levels.*

*And*

*We question whether there is any real differentiation of Level A, B, and C standards in the points calculation. The GBCA should consider at what threshold a difference might be discernable and whether this is a practical outcome. The calculator would be greatly improved if there was a greater differentiation between A and B levels.*

*And*

*There is no distinction between a company that has a Product Stewardship program in place and Level A recognised product certification and a company that has achieved Level B and has ISO 14001 or even worse a company that is certified Level C but has agreed on Product Stewardship program on a particular contract.*

*And*

*Previously the item score for Level A, B and C was 100%, 65% and 45% respectively. In the new Materials Calculator 2.0 Guide this has been revised to 100%, 80% and 60%. As each product certification scheme can designate their own weightings to each of the Green Building Council's Priority Areas of Concern where the maximum weighting to one PAC is 20%, it is relatively easy to achieve the minimum score of 35 out of 100 for Level C, 45 out of 100 for Level B and 65 out of 100 for Level A.*

*Recommendation*

*The item score proposed in the new Materials Calculator 2.0 is too generous. There are 8 Priority Areas of Concern (PAC), where 2 x PACs are weighted at 20% each, another 2 x PACs at 14% each and the remaining 4 x PACs at 8%. Therefore a product certification scheme can meet only 2 of the 8 PACs (20% + 20% = Level C) which is equivalent to an item score of 60%. For Level B, a product certification scheme can meet 3 of the 8 PACs*

*(20% + 20% + 8% = Level B) which would be equivalent to an item score of 80%. I would recommend that an item score of 100%, 70% and 50% for Level A, B and C respectively or otherwise revise the minimum scores for Part II for each of the levels.*

*And*

*While understanding the aim of the version 2 Calculator, in practise we don't believe it has incentivised manufacturers to introduce Product Stewardship programs, rather it has made it easier to get all of the industry "achieving" 100% of the tools rating without having a "true" product stewardship program. To lift the weighting from 45% to 60% for Level C & 65% to 80% for level B and then enabling an "additional" 20% to be added if the applicant is ISO 14001 compliant has moved the goal posts somewhat down field.*

*And*

*Although I agree with the logic that products should be able to demonstrate compliance with a certain amount of Green Star requirements without having to be certified by a GBCA recognised product certification scheme and standard, I think the calculator needs some quick tweaking to prevent the following scenario.*

*A company with an EMS and product stewardship programme + some recycled content in the product = 100% points in the calculator (even if it contains potentially carcinogenic substances)*

*This is very counter-productive to what the GBCA is trying to achieve. The above scenario is nowhere near as hard to attain as full level A eco-label certification which provides much stronger analysis and investigation into the product. Furthermore, I have a strong concern that this lacks any investigation whatsoever into chemicals of concern.*

*And*

*We acknowledge that there is an emphasis on percentage volume of environmentally preferable product – so that to score any points at Level B specifiers need to specify 10% more product than Level A. This is good, and ideally this percentage would be increased, to create more of an incentive for specifying higher performing products.*

GBCA response: It must firstly be acknowledged that the aim of the Fitout Calculators is not to solely promote Level A certified products; it is to promote environmentally preferable products. It should also be acknowledged that the Fitout Calculators are a simplified measure of the environmental preference of products and as such operate under various

limitations in the amount of scrutiny and detail involved in the assessment. This is true of the previous calculators as well as the new. The Introduction section of the Fitout Calculators Guide has been expanded to better emphasise the aim of the calculators.

It is acknowledged that there is merit in adjusting the reward given to certified products as well as other criteria in order to better differentiate between products, these changes have been made and are described in Section 5 of the Material Calculators Guide. Under the revised weighting the only compliance options which will result in an item score of 100% are:

re-used item

Level A certified item

Level B certified item that is leased and has a product stewardship agreement.

A Level C certified item can achieve a maximum item score of 80%. A non certified item can achieve a maximum item score of 70%

It is not necessary for all products documented in a particular calculator to score 100% for an Overall Score of 90% to be achieved, which will generate full points in all calculators.

It is possible that no single approach to criteria weightings will satisfy all stakeholders. Until another method is available in Green Star to assess the impacts of fitout items, the simplified approach taken in the material calculators will remain.

*29. Comment: Please provide an up-to date online list of GBCA recognised product certification schemes and standards as well as the level of recognition, on the website.*

GBCA response: Two links have been provided in the Fitout Calculators Guide to this page under Sections 4.2 and 4.4.

*30. Comment: Please provide clear interpretation of the terms 'product certification standard' and 'product certification schemes.' We are assuming that product certification standards can be obtained by applying one of the GBCA's recognised product certification schemes. This should be made clear.*

GBCA Response: Further clarification has been provided as suggested in Sections 4.2 and 4.4 of the Fitout Calculators Guide.

GBCA recognised product certification standards are those administered by GBCA recognised product certification schemes and listed as such on the GBCA web site.

# 11. Re-Used Recycled and Certified Content – Criterion 4

*31. Comment: Definition of recycled content is not self-explanatory. We think that the definition provided in the existing Material Calculator Guide (version 4: November 2009) is superior.*

GBCA Response: the Material Calculator Guide (version 4) includes: "Recycled content is defined as the amount of an item by area, length, volume or mass (the metric chosen must be justified) that is sourced from post-consumer and/or post-industrial recycled material."

The Fitout Calculators Guide definition takes into account that some post industrial waste should not be encouraged where the manufacturing process can reincorporate this material. This is intended to avoid rewarding inefficient manufacturing processes that remain inefficient where the waste from the processes attracts a premium as being recycled. This waste is no different to the virgin raw material used in the process where it can be reincorporated back into the manufacturing process.

*32. Comment: "The auditor must have 'Environmental Auditor' certification issued by RABQSA or equivalent". What is meant by equivalent?*

GBCA Response: RABQSA or equivalent refers to other auditor accreditation systems equivalent to RABQSA, this is now further clarified in Section 4.5 of the Fitout Calculators Guide.

*33. Comment: Instead of citing one example with respect to the furniture calculator, three different examples should be cited for each at the furniture, assemblies and flooring calculators respectively to explain the calculation of re-used, recycled and certified content of furniture, assemblies and flooring materials.*

GBCA Response: As the re-used, recycled and certified content example calculations apply equally to all three calculators, repeating the example in each section will unnecessarily complicate the guide.

*34. Comment: GBCA recognised product certification schemes should also perform the verification of recycled content required from RABQSA auditors in criterion 4.*

GBCA response: The assessment framework for product certification schemes already requires that RABQSA auditors operate on behalf of such schemes. These auditors are already able to provide the necessary evidence for this criterion. The recognition of product certification schemes is only relevant in criteria 2 and 4 of the Fitout Calculators.

*35. Comment: The Material Calculators 2.0 place emphasis on re-used, recycled or certified content as an indicator of environmental performance. It should be stressed that this is a simplified approach to understanding environmental impacts and may sometimes lead to perverse outcomes (for example, where additional transport and processing may result in recycled products having a net higher impact than the non-recycled). In many cases though, when compared to manufacturing products from virgin materials, reuse and recycling have indeed mostly positive influences on environmental impacts when considered in LCA studies.*

*Also different materials have different characteristics and as a result reuse and recycling have different levels of benefits (or detriments). By adding up recycling of materials purely on a weight basis in order to determine overall recycled content, relevant and specific material properties are ignored. This will have a great effect on the effectiveness of the awarded credits. ALCAS recommends a review of the way in which recycled material content is calculated so that material properties are taken into account.*

GBCA response: It is agreed that the criterion takes a simplified approach to assessing products, as do the remainder of the Fitout Calculators criteria. As pointed out in your feedback, the assumption that products containing recycled content are always preferable to virgin materials is sometimes wrong, however in many cases use of non virgin materials will result in environmental gains. This is the basis for the criteria.

It should also be clarified that the Fitout Calculators assess fitout items. These experience the shortest use phase of any building component. As such the materials used in fitout items constitute a large amount of landfill waste in Australia. They are not the types of materials that are scarce in the waste stream. This means there are often many opportunities to re-use these materials in new products.

Until another method is available in Green Star to assess the impacts of fitout products and materials the simplified approach taken in the Fitout Calculators will remain.

*36. Comment: Definition of 'reuse' - what happened to the '80% mass' clause? e.g. white chair is reused but new foam & upholstery = 'reused' because >80% of mass is reused. This allowance encourages projects to refurbish products and encourages a market for reuse/refurbishment - also helps close the loop for product stewardship.*

GBCA Response: We accept this feedback and the suggested changes have been made in Section 4.5 of the Fitout Calculators Guide.

*37. Comment: We are pleased that the minimum percentage of eco preferable content has been increased to 40% however we are still concerned with the definition of what is eco preferable in relation to fabrics and leathers. While fabrics and leathers constitute a smaller percentage (between 2 - 12%) of the overall furniture weight, thousands of metres of fabric or leather can be used in an interior fitout.*

*The previous eco preferred content criteria and the new Criterion 4 creates a tick box effect that filters throughout the industry therefore the Green Building Council should consider how its criteria will affect textiles and leathers. Many architects and interior designers do not consider the wider lifecycle impacts of a recycled or certified textile or leather.*

*Recycled content was reintroduced to Green Star in 2009, after the Green Building Council had stated that "recycled content does not guarantee a minimal impact on the environment".*

*When recycled content is applied to interior fabrics (as a component of furniture) this promotes the use of recycled polyester (PET) textiles.*

*Recycled PET textiles:*

*- still contains hazardous substances such as antimony, chromium, arsenic etc;*

*- are produced overseas and then air freighted into Australia; and*

*- are not accepted*

GBCA response: The Green Star materials category limits the materials addressed to those that have a clearly demonstrable environmental impact. The concerns you raise in relation to textiles apply to many other materials; building materials including glass, masonry, plastics, aluminium and non-structural steel components that are not addressed in Green Star. In some cases some product selection may not be the most preferable. The Fitout Calculators take this into account, the overall score, which is calculated on the basis of all items entered before points are generated, not simply on the basis of one item.

The 40% mass threshold for reward under criterion 4 also ensures textiles, which are light in weight, are unlikely to influence the outcome.

Until another method is available in Green Star to assess the impacts of fitout items, the simplified approach taken in the Fitout Calculators will remain.

*38. Comment: p20; design rating evidence (first item); the specification should actually describe the product certification requirements, rather than simply referencing the GBCA. e.g. 'an extract from the specification, stipulating that the items must be certified by a GBCA-recognised product certification scheme at the level entered in the material calculator..' The specification must clearly describe all of the requirements rather than simply referencing the Technical Manual or the GBCA.*

*AND*

*p23 Design rating documentation; the specification should actually describe the requirements. Very often in assessments we see a very simple reference to GBCA web site or a Green Star technical manual and it is going to be very rare that a builder actually knows or understands what those requirements are - under program pressures and timelines such simple clauses usually get overlooked or left until too late.*

GBCA response: Changes have been made as suggested. The actual requirements of the criteria should be quoted in the specification and not a reference to the technical manual requirements.

*39. Comment: in relation to the 40% benchmark, I am unsure of this, would seem more flexible to offer say 30% product score for 40% content (by mass), 60% product score for 60%... then the (as proposed above) 80% content achieves a 100% score... one of the shortcomings of the existing tool is that there is a relatively large gap between the thresholds of >20% for 'eco content' and the 80% for reused content achieving a 100% score... would be good for this clause to transition more smoothly into the Reused criterion.*

GBCA response: In an effort to simplify the assessment and documentation involved with the calculators a single mass benchmark has been introduced, which we believe is appropriate and appropriately rewarded. This means that if at least 40% of the product complies, the assumption is that this represents a meaningful environmental outcome.

*40. Comment: We recommend the inclusion of sustainable, rapidly renewable content to criterion 4 so the criterion becomes Reused, Recycled, Rapidly Renewable or Certified Content.*

*Rapidly renewable content is defined by the Green Building Council (USA) as "Rapidly renewable building materials and products are made from plants that are typically harvested within a 10-year or shorter cycle."*

*Good Environmental Choice Australia defines rapidly renewable materials as "materials for which 'mature' harvest can occur on a ten year cycle or less". The intent of sourcing rapidly renewable materials is to reduce the use and depletion of finite raw and long-cycle renewable materials by replacing them with rapidly renewable and recycled materials.*

*To determine the 'sustainability' of a rapidly renewable material, the rapidly renewable material should meet:*

*the relevant section in a standard that is recognised by the Green Building Council; and*

*Recyclable in existing recycling infrastructure.*

*For example, if a fabric or leather made from 100% rapidly renewable content meets the requirements of the Textiles and Leathers supplementary standard in the Ecospecifier GreenTag GreenRate Furniture or the Fabric section in the GECA Furniture and Fittings Standard.*

*To allow better environmental outcomes and flexibility in raw materials, the Green Building Council should include rapidly renewable content otherwise architects and interior designers*

*will specify only recycled PET textiles which contain hazardous substances, are produced overseas and are not recyclable or biodegradable.*

GBCA response: As there is no agreement on the definition of rapidly renewable content in Australia we are unable to account for this in criterion 4.

# 12. Environmental Management Systems (EMS) – Criterion 5

*41. Comment: EMS – what is an EMS scoping document and table of content? Examples would be useful.*

GBCA response: We acknowledge that the compliance requirements can be simplified. In place of the scoping document the criteria now requires a letter from the certification body detailing how the EMS meets the criterion requirements. As these auditors have already been engaged to carry out the EMS auditing it should be simple for them to write this statement. This saves assessors and Green Star project teams the need to review EMS documentation in order to establish compliance, which can be a lengthy task.

*42. Comment: Criterion 5 states EMS must be operating in manufacturing facilities, not assembly facilities. Does this mean that that materials used to assemble the product must come from an ISO 14001 facility or is it acceptable to have a product assembled at an ISO facility? It is also stated that facilities that process raw materials are excluded, but raw materials are not defined. Consider including a definition of "raw material" under the Manufacturer Section.*

GBCA Response: Assembly facilities generate minimal environmental impact when compared with manufacturing facilities. The latter are the focus of this criterion. Processors of raw materials are those extracting natural resources (foresters, miners, etc). This has been further clarified in the Fitout Calculators Guide.

*43. Comment: There should be more weight (more than 20%) given to criterion 5, as an EMS as defined addresses the legal compliances, mitigation with environmental aspects, waste minimisation, energy, emissions and materials minimisation which is at least as significant as the other 4 criteria.*

*E.g. product stewardship program (the weight given to PSP is 30%, 40%) shows the manufacturer's commitment to take back the used items for reusing/recycling. Similarly, EMS shows the manufacturer's commitment in complying with legislation, mitigating the environmental aspects and achieving eco sustainability through continuous improvement and corrective actions. Therefore both criteria are equally important to make the manufacturer responsible and committed for environment protection.*

*AND*

*There is nothing inherent in EMS, even certified ones, that demonstrates better environmental performance, so the points should reflect this.*

*AND*

*An EMS should be better rewarded by the calculators, Where an EMS is in place, the company has invested significant resources over some time in reducing their impacts, and in line with the ISO 14001 standard's requirements*

*will be addressing their significant impacts across the whole scope of their operations (including Materials, Energy, Waste & Emissions). It is an externally certified system of environmental best practice, very consistent with the GBCA objectives.*

GBCA response: The item score available in criterion 5 has been revised to 10%, taking into account both the advantages and limitations of ISO 14001 certification. This is based on both the above feedback and feedback received for other criteria of the Fitout Calculators.

ISO 14001:2004 includes clear requirements for continuous improvements. Manufacturing facilities operating a compliant EMS over the long term will reduce the impact of their operations and therefore the overall impact of products made in these facilities. The Material Calculators have created momentum in ISO 14001 certification, by maintaining this momentum in the Fitout Calculators positive outcomes will be achieved.

The Green Building Council of Australia disagrees that ISO 14001 certification represents environmental best practice performance. It represents best practice environmental management and when applied to a manufacturing facility, this is reflected in the products made. Due to this fact we also disagree that the reward on offer should be increased.

*44. Comment: If a company that retails furniture selling chairs are ISO14001 EMS certified, can they claim the 20% for the ISO14001 EMS even though they are not the manufacturer.*

*It is stated that the EMS needs to be certified ISO14001 – but this is not always apparent through the documentation. On the Mat Calculator it has under Criterion – 5 Environmental Management System. I think this should be a little clearer, i.e. ISO14001 EMS certification.*

GBCA response: In the example provided the manufacturing facility of the chair, not the retail facility or activity, must have a compliant EMS. We agree with comments regarding the name of this criterion. The criterion has been changed to 'Manufacturers ISO 14001 certification'.

*45. Comment: 90% of the mass of our wall system comes from the pre-finished wall panels. Are we right in our understanding that on this basis the applicable certified EMS would be that of the board manufacturer (whose product is used to make the wall panels) even though there is a note that says that this does NOT include parties who process raw materials.*

GBCA response: Criterion 5 requires the manufacturing facility or facilities of 90% of the mass of the item are ISO 14001 certified and the required aspects are addressed. Further clarification has been included under this criterion in the Fitout Calculators Guide. Criterion 5 has been renamed 'Manufacturer's ISO 14001 certification'. In the example of the wall system it is the manufacturer of 90% of the products' mass that the criterion applies to. Processors of raw materials are those extracting natural resources for use in products (foresters, miners, etc). This has been further clarified in the Fitout Calculators Guide.

# 13. General positive comments which do not require GBCA response

*Comment: The Fitout Calculators are a huge improvement on the current Material Calculators Guide & the proposed system will be so much simpler and easier to use once it is rolled out through the tools.*

*Comment: The outlines of what is & isn't included in each calculator is particularly useful, as is the guide on how to measure up assemblies – this has been extremely problematic to explain previously so thank you for that – I have been guiding quite a few people to these instructions as there is a lot of information in here on how we currently (should!) process materials but until now hasn't been spelt out.*

*Comment: The draft material calculators 2.0 guide provides good insight of assessment criteria, documentation requirements and credit point calculation.*

*Comment: Overall the proposed Material Calculators 2.0 are much more concise, are simpler to understand and appear to be readily applicable to all of the relevant tools & Credits. Good job!*

*Comment: ALCAS would like to commend the GBCA for accepting that the Green Star tools are "live entities" that require periodic review and update. We are particularly encouraged that Life Cycle Assessment is recognised by the GBCA as having significant merits when assessing environmental impacts (section 7.0 Future Development).*

*Comment: The majority of the proposed draft Material Calculators 2.0 is acceptable and a continuation of the best practice objectives of the GBCA.*

*Comment We have no disagreement with either the reweighting of the certification levels or the removal of 15 year warranties requirements.*