



The *Canberra Low Carbon Housing Challenge* competition (the Challenge) is a volunteer non-profit initiative which seeks to reveal the ways in which good design is contributing to the lowering of the carbon footprint of architect-designed houses. It involves eligible architects:

- modelling the carbon footprints of low and medium density houses up to 3-storeys in the Canberra, ACT and surrounding NSW regions (Canberra region);
- showcasing attainable low carbon exemplars to the wider public through Design Canberra 2021.

The competition seeks entries that:

- Are able to demonstrate a low carbon footprint;
- Are completed or in-progress houses, townhouses, duplexes, triplexes, alterations and additions, 'granny flats' or multi-family homes (excluding apartments);
- Demonstrate compelling and diverse architectural solutions to the crucial issue of lowering carbon. The competition welcomes all approaches to tackle this issue. Strategies might include improved energy efficiency, solar passive design, smaller houses with space-saving ideas, recycled and low embodied energy materials, use of on-site solar, reuse of existing houses, clever solutions for car parking or car sharing, and landscape integration for heat mitigation, drought tolerance and streetscape character.

Key dates:

Competition Briefing

27June21 Launch event/competition opens/app access

Competition

30Aug21 eTool live forum/last day to request an app materials template

~~28Sep21 Competition closes (deadline extended due to lockdown)~~

29Oct21 Competition closes (entries will not be accepted after this date)

Jury processes

13Oct21 Carbon footprint analysis of entries

20Oct21 Jury evaluation

Exhibition

Mid-Nov21 Design Canberra exhibition launch/winners announced

Nov21 TBC Panel discussion with low carbon housing winners

Nov21 Design Canberra house tours (after work Tue 9, 16 and 23Nov)

Early 2022 Touring exhibition on key research findings

How will the outcome of this competition be used?

1. To promote competition outcomes, design excellence and the value of architecture.
2. Qualifying houses and the winners will be:



- displayed at a public exhibition during Design Canberra;
 - showcased in the event catalogue, website and through social media and promotional articles. Promotional materials would not identify the client name, address or interior floorplan layout;
 - feature in the exhibition launch attended by industry professionals, developers, builders, and government representatives.
3. The competition also serves as a research project and will be accompanied by a research paper analysing and comparing potential housing carbon footprints and their design characteristics. Case study information will be limited to the modelled house performance and promotional materials supplied by entrants;
 4. Housing case studies may be used for training purposes in future rounds of the competition.

Format of your competition entry

5. This is a single stage competition open to registered architects working in the Canberra region;
6. Architects can enter as many houses in the Canberra region as they wish;
7. Architects will prepare and submit the lifecycle assessment of their house using eTool's RapidLCA app which will be made available to competition entrants;
8. There is no direct entry cost for the competition. Separate to the competition, the usual flat fee per house of \$60.00 (GST incl) applies to RapidLCA app usage;
9. The competition organisers provide training and assistance to use the RapidLCA app;
10. You are required to upload your:
 - NATHERS energy certificate (or equivalent energy rating certificate)
 - Building or Planning Stamped drawing set
 - PDF extract from the ACT Architect Register (or equivalent state /territory) containing your registration number
 - PDF schedule of the selected/installed models of larger appliances specified for heating/cooling/hot water and solar installation (if used)
 - If you're taps, showers, toilets are higher than 3star WELs you will need to also schedule the selected/installed water fixtures.
 - Construction cost per square metre (or estimated rate for in-progress houses)

These materials will remain confidential and limited to the lifecycle peer review and jury processes.

11. For publication, upload 1 x A2 landscape format high resolution PDF per house to the supplied template. **MAXIMUM PDF size OF 10MB.**

Eligibility and judging process

12. Within the app portal you have access to your houses only and no access to other entries;
13. To be shortlisted for the judging processes, we require houses entered to demonstrate a minimum of 33% improvement on Global Warming Potential (GWP) when compared to the average Canberra base case house (derived from CSIRO and ABS data);



14. The lifecycle assessment (LCA) model you prepare and submit will be peer reviewed in conformance with ISO 14040 and ISO 14044. In 2020/2021, a review of relevant research papers was conducted and several LCA academics and sustainability engineers were interviewed. During a trial phase, eTool RapidLCA was found to be a relatively easy to use residential carbon modelling platform. eToolLCD is the software engine underpinning RapidLCA. The links below provide further information on eTool:
 - o conformance with international ISO Standards for LCA (<https://etoolglobal.com/timeline/en15978-compliance/>);
 - o algorithms and datasets third party peer reviewed (<https://etoolglobal.com/timeline/ausindustry-grant-third-party-review/>);
 - o eToolLCD has been the subject of several research papers:
 - https://www.researchgate.net/publication/273704589_Measuring_Carbon_f_or_Urban_Development_Planning
 - https://www.researchgate.net/publication/264638215_Residential_Building_Sustainability_Rating_Tools_in_Australia
 - <https://researchrepository.murdoch.edu.au/id/eprint/35823/>
 - o eToolLCD was used to carbon model the SA Zero Carbon Challenge House competition and the WA 10 house Living Labs project, and has been accredited and/or used in conformance with the Living Building Challenge, Greenstar, IMPACT, BREEAM, ISCA and LEED;
 - o eTool have undertaken over 500 LCAs across more than a decade;
 - clients: <https://etoolglobal.com/our-clients/>
 - projects: <https://etoolglobal.com/projects/>;
 - o eTool are generously supporting architects in this competition by waiving their usual subscription charges, and providing a competition-specific modelling overlay, which includes additional materials templates and training support.
15. Qualifying houses will be evaluated through a weighted process:
 - o lowest carbon footprint (50%)
 - o 'expert' jury which includes architects and their peers (50%);
16. There will be a separate People's Choice award that will run during the exhibition with the winner announced at the conclusion of the Design Canberra event;
17. No explanation, justification, or opportunity to seek feedback will be provided to unsuccessful entrants.

Competition entry categories

18. Earlier we described the array of housing types which can be entered in either the constructed or in-progress categories, and the jury would consider:

| GWP improved on base case house: | | Detached new house | Alt+adds | Attached multi-unit |
|----------------------------------|-------------------------------------|--------------------|----------|---------------------|
| 100% (net zero) | Outstanding (1 st Prize) | ✓ | ✓ | ✓ |
| 50% | Excellent (2 nd prize) | ✓ | ✓ | ✓ |
| 33% | Good (3 rd prize) | ✓ | ✓ | ✓ |

For in-progress we ask for DA/BA equivalent general arrangement drawings to be included in your confidential uploads for the jury.

19. Early-stage design projects are also eligible for commendation.



Competition Jury

20. All qualifying entry materials will be provided for consideration by the jury;
21. Entrants will have no opportunity to present their submissions to the jury;
22. The jury will evaluate the entries against the competition criteria and conditions herein;
 - o low carbon footprint as demonstrated through the RapidLCA app outcome;
 - o value for money and affordability;
 - o merit and clarity of design strategies and rationale;
 - o design quality, including demonstrated superior outcomes;
 - o site, streetscape and landscape context;
 - o innovative or 'tried and tested' approaches to social and environmental sustainability;
23. The jury will be assisted on procedural and organisational matters by the Competition Registrar, but the Competition Registrar will not participate in the evaluation of entries or in any jury decisions;
24. The jury members are to be confirmed in August.

The Competition Registrar

25. Is responsible for the governance of the competition and undertakes to:
 - a) act in accordance with and ensure compliance with the conditions outlined herein;
 - b) make no attempt to unfairly or inappropriately influence the Jury process or any member of the Jury; and
 - c) accept the decision of the jury as final.
26. The Competition Registrar will:
 - d) Ensure that the competition is conducted fairly, equitably and with integrity and is authorised by the competition Organising Committee to prepare and coordinate this Competition and to make all necessary decisions and determinations in relation to it;
 - e) Protect the anonymity of entries, where required by these conditions;
 - f) Ensure that confidentiality of submitted materials is maintained;
 - g) Ensure that all entries comply in all respects with these conditions, and disqualify (in writing) non-compliant or late entries;
 - h) facilitate the opportunity for Entrants to ask questions and receive answers to all questions asked by entrants;
 - i) communicate prompt notification of entrants of any material change in the competition conditions, key dates, Jury members
 - j) take appropriate action should an actual, potential or perceived conflict of interest arise.
27. Where an entrant needs to communicate with the Competition Registrar in accordance with these conditions, such communication must be via email addressed as follows [**registrar@lowcarbonhousing.com.au**](mailto:registrar@lowcarbonhousing.com.au).



Other Competition Conditions

28. Competition conditions are based on the *Model Conditions for an Architectural Competition*, published by the Australian Institute of Architects;
29. It is not the competition organisers intent to engage the authors of the winning designs in any further work;
30. The competition organisers can, and have undertaken carbon models of their houses, but are not eligible to compete in the competition. Like other projects, their houses add to the comparative case study understanding of local low carbon housing, sought by this initiative.
31. To ensure that all entrants are treated equally and have the same access to participation in the competition, each entrant must:
 - a) comply in all respects with these conditions;
 - b) be responsible for the accuracy of their submitted house carbon footprint modelling;
 - c) not act or behave in any way that could bring the competition into disrepute or compromise its integrity;
 - d) not communicate with the jury, request assistance, preferential treatment nor seek to influence any outcome of the competition;
 - e) inform the Competition Registrar of any actual, potential or perceived conflict of interest;
 - f) co-operate fully with the Competition Registrar to provide any reasonable information requested, or to assist any investigation into potential breaches of these conditions;
 - g) not make or be associated with any public comment about the competition or another entrant, nor make public any competition information obtained;
 - h) not engage in any collusion, anti-competitive conduct or similar conduct with any other entrants nor members of the public participating in the People's Choice voting round.
32. An entrant may be immediately disqualified for any collusive or anti-competitive conduct;
33. Entrants must take all reasonable steps to conform with these conditions, which you agree to by entering the competition;
34. A 'conflict of interest' will occur where an entrant or any associate has any business, personal or other relationship that could result in, or could reasonably be perceived to result in, the entrant gaining a benefit (includes non-financial) not available to all other entrants in the competition;
35. All complaints in relation to this competition must be addressed in a timely manner and in writing to the Competition Registrar, who will investigate and make a determination in relation to the complaint. Any such determination of the Competition Registrar is final;
36. The written complaint must set out, at least:
 - a) the circumstances forming the basis of the complaint;
 - b) the impact of the complaint on the person making the complaint;
 - c) any other relevant information, and
 - d) the remedy or corrective action desired by the person making the complaint.
37. An entrant may withdraw their entry from the competition at any time before the deadline for submitting entries in the Competition. Notice of withdrawal must be given via email, addressed to the Competition Registrar;



38. An entrant who wishes to withdraw after the deadline for submitting entries, but before the announcement of a winner, may submit a written request to withdraw to the competition Registrar, who, at their sole discretion, may accept or reject the request;
39. An entrant may not withdraw from the competition after announcement of the winner(s).

Permissions and Disclaimers

40. Upon announcing the winners and runner, the Challenge has the right to store, publish or reproduce submitted entry materials in any way relating to the conduct or promotion of the competition and its associated research. To this end, the entrant grants the Challenge a royalty free, non-exclusive, perpetual, and irrevocable licence to use, edit, exhibit and reproduce the entrant's materials, subject to full and accurate attribution and conformance with the entrant's moral rights in each instance;
41. Ownership of all intellectual property rights and copyright in submitted materials and concepts remains with the entrant;
42. The entrant warrants that in preparing their entry there has been no infringement of the intellectual property, moral right and copyright of others, and that they have obtained any necessary licences or assignments from third parties;
43. The Challenge and its Competition Registrar will accept no responsibility for any costs incurred by an entrant resulting in any way from their participation in the competition;
44. All costs associated with the preparation and submission of an entry in the competition, including RapidLCA app use, labour, materials, and any indirect costs such as photography, travel and sub-consultant costs must be met by the entrant;
45. Entrants are responsible for the lifecycle assessment (LCA) modelling of their submitted houses. The Challenge is not responsible for entrants, their clients or members of the public relying on information about potential carbon footprints, their design characteristics or housing case studies;
46. Carbon modelling is not an audit, nor is the competition offering a carbon or sustainability rating for your house. LCAs are a dynamic and evolving means to understand environmental impacts. They account for known, predicted and some generalised aspects of a house over a 50year lifecycle using reliable data sources such as AusLCl. eTool take reasonable measures to ensure that LCAs provide reliable environmental impacts and that inaccuracies do not compromise conclusions and recommendations drawn from your LCA. Refer to <https://etoolglobal.com/terms-and-conditions/>;
47. The entrant will indemnify the Challenge organisers, jury and Competition Registrar and keep them indemnified in respect of any loss suffered, as a result of:
 - a) breach of these competition conditions by the entrant or any associate;
 - b) negligence of the entrant or any associate, and
 - c) any unlawful act, omission or fraud of the entrant or any associate.
48. These competition conditions are governed by the laws applying in the Australian Capital Territory and entrant must comply with all relevant laws in preparing and submitting their entry and participating in the competition.