



This competition is initiated by the International Council for Research and Innovation in Building and Construction (CIB) Working Commissions 116 Smart and Sustainable Built Environments, and 107 Construction in Developing Countries, with support from Nelson Mandela University.

City Centre Sustainable Housing Design Competition

Sponsored by: the National Home Builders Registration Council (NHBRC) and Boogertman and Partners (B+P).

Exhibition and prize giving hosted by the: Nelson Mandela University at the 18th Built Environment Conference.

Background

Africa is projected to have the fastest urban growth rate in the world. By 2050, Africa's cities will be home to an additional 950 million people.¹ Municipalities are struggling to keep pace with this growth leading to housing backlogs and informal settlements. In South Africa, this backlog is now estimated to be over 2.2 million housing units.²

At the same time, cities in South Africa are faced with climate change and service delivery challenges. The IPCC confirms that climate change is widespread, rapid and intensifying, resulting locally in increasing temperatures, very hot days, fires, flooding, and extreme weather conditions.^{3,4} Ageing infrastructure, a lack of maintenance and limited capacity and resources mean energy, water and waste systems are becoming increasingly unreliable.⁵

¹ OECD, (2023). Africa's Urbanisation Dynamics 2020: Africapolis, Mapping a New Urban Geography | en | OECD. Available at: <https://www.oecd.org/development/africa-s-urbanisation-dynamics-2020-b6bccb81-en.htm#:~:text=Africa%20is%20projected%20to%20have,it%20also%20poses%20significant%20challenges>

² Querida Saal, (2023). Silence on far-reaching changes in housing delivery during SONA | GroundUp. Available at: <https://www.groundup.org.za/article/ramaphosa-silent-on-far-reaching-changes-in-housing-delivery-during-sona/> [Accessed 19/5/2023].

³ IPCC, (2024). Climate change widespread, rapid, and intensifying. Available at: <https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/> [Accessed 4/2/2024].

⁴ CSIR (2024). GreenBook. Available at: <https://greenbook.co.za/about-the-green-book.html> [Accessed 3/2/2024].

⁵ AGSA, (2024). Consolidated report on local government audit outcomes. Available at: <https://mfma-2022.agsareports.co.za/pages/service-delivery-municipal-infrastructure> [Accessed 4/2/2024].

As well as challenges, city centres and urban areas have valuable organisational structures, density, local resources, small-scale manufacturing and access to economic opportunities, social infrastructure, and public transport that can be drawn on to support the development of sustainable human settlements.

Brief

Given the scale and urgency of the challenges and opportunities, it is valuable to explore how sustainable housing in African cities can be developed. This competition provides an opportunity to design and present ideas for sustainable housing in an urban area of Gqeberha, Eastern Cape, South Africa.

It encourages the exploration of alternatives to existing low-cost housing development models. Highly innovative, lateral approaches, including the application of new environmental, economic, social, and organisational models as well as drawing on self-build, sufficiency, regenerative, circular economy, mixed-use, incremental housing ideas and systems are encouraged.

Designs should show how key sustainability characteristics such as density, social cohesion, access to education, health and work opportunities and sustainable food, water, energy, sanitation and food systems can be developed by responding to local opportunities and working within existing limitations.

Teams can determine the number, arrangement, size, and type of sustainable housing. Conceptual approaches, including data (see below), should be explained to show how high-performance sustainability performance criteria, such, as net positive energy and water systems and urban densities over 60 units/ha, are achieved.

The competition has a focus on environmental, economic, and social sustainability, diversity and inclusion, sufficiency, self-build, unit design, strategies for the future and innovative materials. This is reflected in the prizes that will be awarded (see Prizes) and will be addressed in the workshop series (see Workshops).

Site

The site is located in Gqeberha, Eastern Cape. The closest corner is Community Street and 5th Avenue; with Walmer Primary School to the west and the Chief Dawid Stuurman International Airport to the east. The site is 3,2 Km from the Gqeberha city hall. The site is 10 hectares.

- Site coordinates for Google Earth are: 33°59'04"S 25°36'26"E
- Further site information and photos are coming soon.

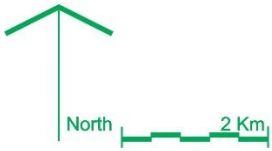


Figure 1: Locality



Figure 2: The context



Figure 3: The site

Evaluation criteria

The following evaluation criteria will be used to judge the competition.

- Explore environmental sustainability (ES)
- Support economic sustainability (EC)
- Value social sustainability (SO)
- Enable diversity and inclusion within the population (ID)
- Encourage self-sufficiency and self-build (SB)
- Envisage and prepare strategies for the future (FS)
- Create comfortable, adaptable and flexible housing units (UD)
- Promote innovative building technologies and indigenous materials (IB)
- Respond to the site opportunities and challenges
- Enhance the lives of residents and neighbours.

Accommodation Schedule

A table should be provided on the sheet which details the type and size of functions accommodated in the following way:

Function	Description	Overall number (occupants/users)	Overall floor area (m ²)	Overall coverage (m ² and percentage, ex. 48%)
Housing units	(Example) 100 no 1 bed, 30 m ² units 200 no 2 bed, 60 m ² units ...	2200	66 000 m ²	48 000 m ² 48%
Work units	(Example) 12 no 2 person, 30 m ² units ...	24	360	
Other amenities and/or activities in your proposal	...			
Subtotals				

Key: Key features (sustainability, inclusion etc.) that have been incorporated in designs should be labelled on the sheet and described in a key as follows:

Key	Description
Environmental Sustainability (EN)	
EN 1	
EN 2	
Economic Sustainability (EC)	
EC 1....	

The following key should be used:

- EN for Environmental Sustainability i.e. EN1 for feature 1 etc.
- EC for Economic Sustainability i.e. EN1 for feature 1 etc.
- SO for Social Sustainability i.e. SO1 for feature 1 etc.
- ID for Inclusion and Diversity i.e. ID1 for feature 1 etc.
- SB for Self-Build and Self Sufficiency i.e. SB1 for feature 1 etc.
- UD for Unit Design i.e. UD1 for feature 1 etc.
- FS for Future Strategy i.e. FS1 for feature 1 etc.
- IB for Innovative Building Technologies i.e. IB1 for feature 1 etc.

Judges

The panel of judges will consist of representatives from the following organisations:

- International Council for Research and Innovation in Building (CIB)
- National Home Builders Registration Council (NHBRC)
- Boogertman and Partners (B+P)
- National Department of Human Settlements (DHS)
- Council for Scientific and Industrial Research (CSIR)
- Pretoria Institute of Architects (PIA).

Submissions

Submission should be made by sending 1 no. A1 (594 x 841 mm) size page in portrait orientation, which presents and explains the proposal of each team. The A1 sheet should include plans, sections, elevations, and three-dimensional representations; as well as diagrams and text that explain the approach and solutions, as indicated above.

Submission Requirements

Submit 1 no. A1 (594 x 841 mm) size page in .pdf file format per team. The file name must be labelled, in the bottom right-hand corner of the page, with the three-digit number allocated to the submission. For example “135” in 16-size text. Each architectural learning site will be provided with 25 three-digit reference numbers.

Should your architectural learning site not formally participate in the competition then you can request a number from: CIBCityCentreSustainableDesign@gmail.com

Please ensure that there are no identifiers such as names or university information on your sheet. All entries must be anonymous.

Submission will be made to CIBCityCentreSustainableDesign@gmail.com. Submissions will open on the 10th of May 2024 and close on the 17th of May 2024. Allow at least 2 hours for your submission as information on all the participants in your group must be captured. No submissions will be accepted after this date. We recommend that you submit early to avoid any technical issues. An acknowledgement of receipt email will be sent with the reference number to the team members listed in each submission.

Copyright of submissions

The organisers reserve the right to use any submitted material for non-profit making promotions, and publications in academic research, academic journals and at academic conferences. The participants of the competition submissions will be credited in all cases.

Competitors

The competition is open to teams of undergraduate students at the following architectural learning sites:

- Cape Peninsula University of Technology - Architectural Technology and Interior Design
- Durban University of Technology - Department of Architecture
- Nelson Mandela University - School of Architecture
- Tshwane University of Technology - Department of Architecture and Industrial Design
- University of Cape Town - the School of Architecture Planning and Geomatics
- University of Johannesburg - Architecture
- University of KwaZulu-Natal - Architecture, Planning & Housing
- University of Pretoria - Department of Architecture
- University of the Free State - Department of Architecture
- University of the Witwatersrand - School of Architecture and Planning
- School of Explorative Architecture, Cape Town
- School of Architecture & Spatial Design, STADIO
- Inscape Education Group, Architectural Technology.

For 2024 one international architectural learning site is invited to participate namely:

- University of Wyoming – department of Civil and Architectural Engineering and Construction Management

Teams must consist of two to six members. A member may only form part of one team. Members from other disciplines such as Human Settlements, Construction Management, and Biology could be included.

Important dates

Submission due date	<i>17th of May 2024</i>
Judging dates	<i>30th / 31st of May 2024 in Pretoria</i>
5 min video submission due date Members and proposal introduction submission from 12 finalist groups	<i>10th of June 2024</i>
Exhibition and Prize-giving	<i>Hosted at the 18th Built Environment Conference Construction 5.0: Towards a Collaborative and People-Centered Industry, 15 July 2024 at Nelson Mandela University</i>

Prizes

Overall Scheme	<i>South African Rands (ZAR) (75 500-00 total)</i>
First prize	<i>10 000-00</i>
Second prize	<i>7 500-00</i>
Third prize	<i>5 000-00</i>
Sustainability Prizes	
Environmental	<i>7 500-00</i>
Economic	<i>7 500-00</i>
Social	<i>7 500-00</i>
Merit Prizes	
Future strategy	<i>7 500-00</i>
Self-build and sufficiency	<i>7 500-00</i>
Unit design	<i>7 500-00</i>
Sponsors Prize	
Innovative building technologies	<i>8 000-00</i>

Workshops

To support the competition, there will be four workshops. These can be accessed online and will consist of presentations and discussions for one to two hours on Wednesday afternoons in March and April 2024.

<p>Workshop one Date: Wednesday the 20th of March Time: 16.00 - 18.00</p>	<ul style="list-style-type: none"> • Aims of the competition Jeremy Gibberd • The site and its context TBC • The Competition Processes Francine van Tonder
<p>Workshop two Date: Wednesday the 27th of March Time: 16.00 - 18.00</p>	<ul style="list-style-type: none"> • Affordable Housing - Development and Delivery New policy (DHS) TBC • New initiatives and approaches for Human Settlements Sijekule Mbanga • Housing: Units, self-built and density Francine van Tonder
<p>Workshop three Date: Wednesday the 3rd of April Time: 16.00 - 18.00</p>	<ul style="list-style-type: none"> • Environmental sustainability Jeremy Gibberd • Economic Sustainability TBC • Social Sustainability TBC
<p>Workshop four Date: Wednesday the 10th of April Time: 16.00 - 18.00</p>	<ul style="list-style-type: none"> • Indigenous Knowledge Systems TBC • Innovative and Sustainable Building Technologies Isaac Hartley (NHBRC) • Closing remarks and discussion Jeremy Gibberd, Francine van Tonder