

Industry professionals suggested the following thesis topics for The Greenovate Awards. Please note that these are simply suggestions and other topics in line with below and the terms and conditions.

The External Expert Panel, in considering the Reports, will be looking for students who can show the following:

- a) Innovation in the sustainability arena;*
- b) Relevance and applicability of the work to the South African Property Industry;*
- c) An integrated approach to problem-solving;*
- d) A focus on the triple bottom line criteria (social, economic and environmental).*

Focus area/ Environmental or societal impact area	Potential topics	Industry pressure/pain points
Advancing Net Zero	Renewables (solar/micro grids/wind)	<ul style="list-style-type: none"> • The use of clean energy for HVAC systems catering to the current known disadvantages. • Unpack the impact of PV installation (with options of grid-tied & battery storage) on the life cycle operating costs; develop a tool or a calculator for existing building owners. • Trading with electricity (Industrial engineering topic) Micro-grids in precincts/housing complexes
	Business Case for net zero	Any aspect that highlights the cost-benefit of driving net zero carbon/ecology/water or waste.
	Innovations advancing net zero	<ul style="list-style-type: none"> • Innovative technologies or materials that can accelerate the commitment to net zero carbon cities, including tracking and monitoring. • Developing Urban Design strategies to gear development towards Net Zero carbon, water, waste and ecology. • Achieving Net Zero Carbon, Water, Waste, and Ecology in an existing building
	Load shedding	<ul style="list-style-type: none"> • Impacts of load shedding on investment and the road to the broader application of renewable energy resources. • Innovative response to load shedding

Circular Economy	Practical application & examples	<ul style="list-style-type: none"> • Unpack the practical, time and cost implications on affected stakeholders in implementing a circular economy in the construction industry. • Design a process that includes material harvesting for commercial buildings • Unpack the circularity of different materials, e.g., steel; concrete; timber & aluminium, to highlight some of the challenges and opportunities this might hold for SMMEs/communities/others. • Address potential models that can be incorporated into developments/precincts/cities to facilitate a stronger uptake of circular economies - • Develop a tool or calculator with an indicator to measure the circularity of materials. • Resource efficiency, Circular economy in the built environment
	Circularity in buildings (water/waste/	<ul style="list-style-type: none"> • Innovative stormwater solutions, capturing, storage and cleaning. • Innovative wastewater solutions for offices, retail spaces and homes • Using wastewater for fire sprinkler systems
Human Centred design	Health & wellbeing	<ul style="list-style-type: none"> • Tracking productivity in green buildings • Tracking biodiversity/ rewilding through buildings <p>Engagement with staff around green building user guides</p>
	Sustainable, attainable housing solutions	<ul style="list-style-type: none"> • Innovative housing solutions and construction methods for housing
Impact investing	Sustainable finance	<ul style="list-style-type: none"> • Mapping physical and transitional risk for building and portfolio owners • Are green buildings performing as they have been designed? Looking at a handful of certified new buildings, what were the energy models, the actuals, and what are the numbers now showing? • Legislation that might be affecting the progressive greening of developments or regenerative design. • Tracking REIT commitments and progress to sustainability & ESG • Investigation into long terms and short-term ROIs for: <ul style="list-style-type: none"> - Energy efficiency projects

		Renewable energy projects
Legislation		<ul style="list-style-type: none"> • Legislation that might be impacting on progressive greening of developments or regenerative design. • Legislation changes in SA and real impact on sustainability changes and carbon reduction (Example: the real impact of EPCs and will it accelerate the country to achieve the carbon neutral goals) • Green affordable housing: how to successfully implement in a highly cost-sensitive market
Certifications		<ol style="list-style-type: none"> 1. Comparison of overlapping certification standards: EPC / EWP / Green Star EBP <ul style="list-style-type: none"> - Similarities and differences between the actual or anticipated energy performance - As mentioned above, where a building has all three certifications - Opportunities to extract value from the different certifications. - Which certification offers the best return on investment: reduced operating costs, marketability, etc.? 2. A study into the effect/impact of occupancy on the green star performance of a building (quantities and stats). 3. Are green buildings performing as they have been designed? Looking at a handful of certified new buildings, what were the energy models, the actuals, and what are the numbers now showing?
Property Technology (Engineering)		<ol style="list-style-type: none"> 1. Building performance monitoring systems for the following categories: energy, water, waste, indoor environmental quality Identify or develop strategies appropriate for SA criteria: <ul style="list-style-type: none"> - Inexpensive - Easily understood data/comms/information outputs. - Reliable in SA conditions, i.e. variable weather, high UV, unreliable power supply, low maintenance
Mechanical Engineering		<ul style="list-style-type: none"> - Possible studies on mechanical systems/HVAC solutions for higher energy efficiency in buildings - The study of the use of clean energy for HVAC systems catering to the current known disadvantages.

Industrial Engineering		- Trading with electricity (Industrial engineering topic)
Alternative services (water, electricity) provision		- Innovative grey water recycling systems for retrofitting existing buildings - Efficiency of integrating water initiatives in the building that will yield more returns, given the low cost of water in SA.

Focus area/ Environmental or societal impact area	Useful references for context
Advancing Net Zero	<p>World Green Building Council (WGBC) programme: Advancing Net Zero is World GBC's global programme working towards total sector decarbonisation by 2050. Working with Green Building Councils across the network to develop tools, programmes and resources to promote the urgency and achievability of net zero carbon buildings and build industry capacity to deliver them. https://worldgbc.org/advancing-net-zero/</p>
Circular Economy	<p>World Green Building Council (WGBC) programme: As part of World GBC's work to tackle the climate crisis and advance sustainable development, Circularity Accelerator is a</p> <p>World GBC global programme to accelerate the adoption of circular economy and resource efficiency in the building and construction sector. https://worldgbc.org/circularity-accelerator/</p> <ul style="list-style-type: none"> GBCSA resources: https://gbcса.org.za/certify/green-star-sa/net-zero/ https://gbcса.org.za/guide-to-developing-net-zero-carbon-buildings-in-sa-launched/

<p>Human Centred design</p>	<ul style="list-style-type: none"> World Green Building Council (WGBC) programme: Better Places for People is World Green Building Council's global programme, dedicated to supporting Green Building Councils, partners, and the building and construction industry transition towards a healthy, equitable, and resilient built environment. <p>Better Places for People is guided by the vision of WorldGBC's North Star Goal, "<i>a built environment that delivers healthy, equitable and resilient buildings, communities and cities</i>". Our work is underpinned by the six core principles of our <u>Health & Wellbeing Framework</u>, working to catalyse social and environmental benefits across the built environment value chain.</p> <p>https://worldgbc.org/article/climate-change-resilience-in-the-built-environment-guide/</p>
<p>Impact investing</p>	<ul style="list-style-type: none"> World Green Building Council (WGBC) paper: Beyond the business case https://worldgbc.org/beyond-the-business-case/ GBCSA resources: https://gbcса.org.za/msci-south-africa-green-annual-property-index-2021/