

NET ZERO – Pilot – Technical Manual – Rev 1

Submission to be co-ordinated and submitted by a NET Zero AP*:

**In the interim while there is not yet Net Zero APs, the submission is to be undertaken by someone:*

- *Who is at least an AP in one existing stream (NB, Interior, EBP), and*
- *Has attended the GBCSA Net Zero course (or demonstrates proof of paid Net Zero course registration)*

DOCUMENTATION REQUIREMENTS

The Documentation Requirements section of this Technical Manual refers to Green Star documentation in **black** font, and new additional documentation required for Net Zero projects in **blue** font.

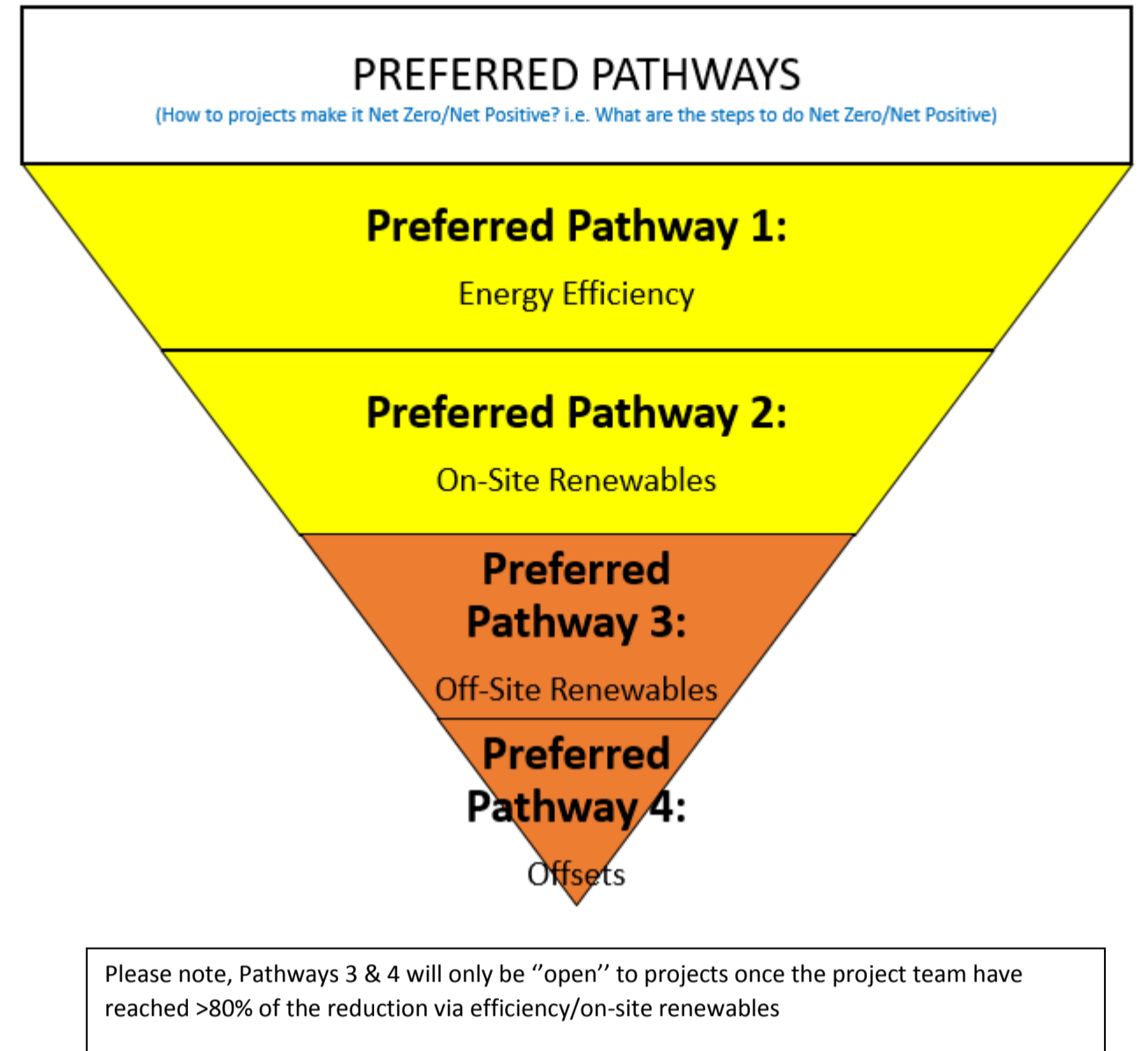
- Green Star documentation in **black** font – the specific requirements are to be read from the relevant credit in the relevant Green Star Technical Manual.
- New additional documentation required for Net Zero projects in **blue** font – this Technical Manual details what is required, and no other document is to be referred to.

1. CARBON

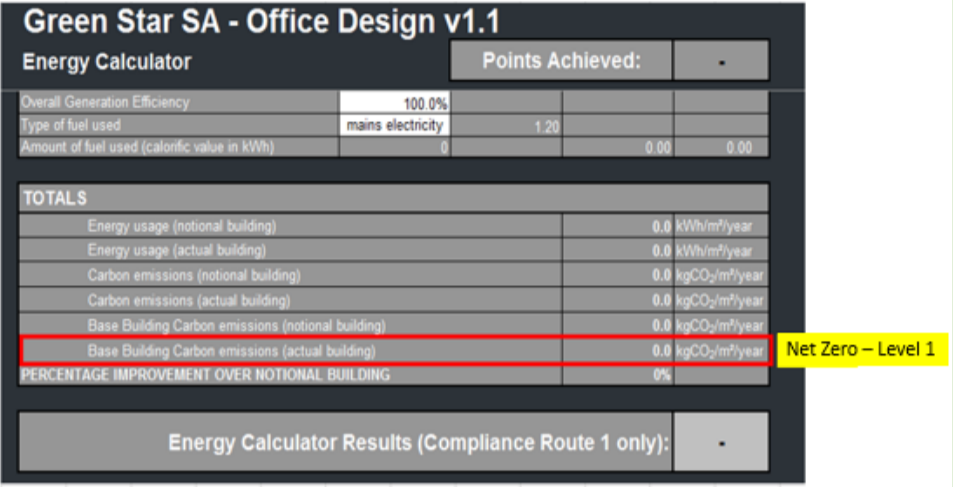
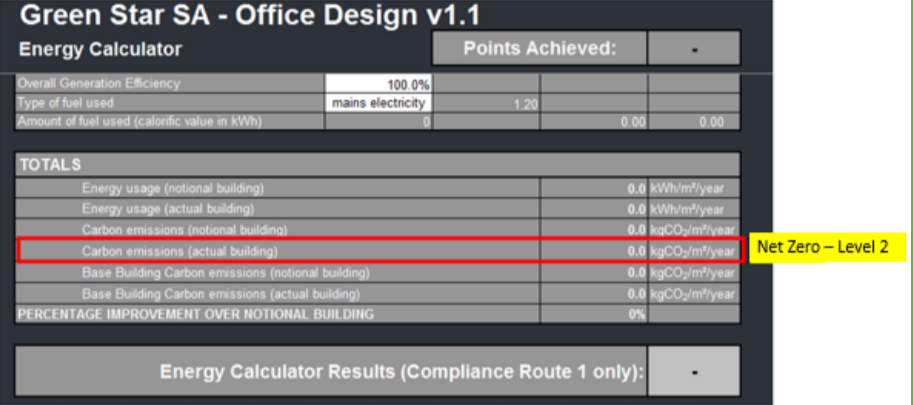
The GBCSA propose the below as the definition of a Net Zero/Net Positive Carbon Building:

“A building that is highly energy-efficient, and the remaining energy use is from renewable energy, preferably on-site but also off-site where absolutely necessary, so that there are zero net carbon emissions on an annual basis (Net Zero), or if the energy from renewable energy results in more energy being produced than what is used on site (Net Positive)”

CONSUMPTION LEVELS (Extent of scope i.e. what do we look at/measure?)				
Building Emissions - Building	Occupant Emissions - Building + User	Life Cycle Emissions - Building + User + Embodied + Renovation + Deconstruction		
Level 1 (Modelled)	Level 2 (Modelled or Measured)	Level 3* (Modelled or Measured)	Level 4* (Modelled or Measured)	Level 5* (Modelled or Measured)
Net Zero - Building Emissions (BE) (Base Building i.e. non-Tenant) Regulated emissions are those from fixed building services, i.e. <ul style="list-style-type: none"> • Heating • Cooling • Ventilation • Fixed Lighting (non-Tenant) • Miscellaneous fans & pumps • Hot water • Vertical Transportation 	Net Zero - Occupant Emissions (OE) (Operational) Unregulated emissions are those relating to energy used by the building occupants - including electrical appliances. (i.e. Base Building Emissions + Occupant Emissions).	Embodied Emissions (EE) Emissions associated with: <ul style="list-style-type: none"> • Extraction and processing of raw materials • Manufacturing of materials and equipment for use in the building • Transport of materials and equipment to the site • Construction and installation of the building structure, systems and equipment. 	Renovation emissions (RE) Emissions associated with substantial changes to the building, usually involving the use of external energy-using equipment and building professionals	Deconstruction emissions (DE) Emissions from demolishing the building, transport during this process, and those resulting from re-use, recycling and final disposal of waste material
Net Positive Building Emissions - NA	Net Positive Occupant Emissions - when 5% greater than 0			



*The current thinking of the GBCSA is that the SA market is not likely to adopt the process to include calculations for Levels 3, 4 & 5, but this will likely be adopted in the future and thus the full picture for Net Zero/Net Positive is shared.

CARBON		
New Build projects* can achieve Level 1 Net Zero certifications and/or Level 2 Net Zero/Net Positive certifications Existing buildings can achieve Level 2 Net Zero/Net Positive certification <i>*Interior Fit out projects are to contact the GBCSA for a custom methodology.</i>		
LEVEL 1	LEVEL 2	
<ul style="list-style-type: none"> The Net Zero Carbon - Level 1: Building Emissions certificate will be valid for 3 years. The Net Zero Carbon - Level 1: Building Emissions certification is the Base Building Emissions (BE) (i.e. non-Tenant), modelled over a period of one year. It is the Regulated Emissions from the fixed building services. 	<ul style="list-style-type: none"> The Net Zero/Net Positive Carbon - Level 2: Occupant Emissions certificate will be valid for 3 years. The Net Zero/Net Positive Carbon - Level 2: Occupant Emissions certification is the Operational Emissions (OE) (i.e. Building and Tenant), measured or modelled over a period of one year. It is the Unregulated Emissions relating to the energy used by the building occupants – including electrical appliances (i.e. Base Building Emissions + Occupant Emissions). 	
MODELLED (for New Build/Major Refurbishments)	MODELLED (for New Build/ Major Refurbishments)	MEASURED (for Existing Buildings)
<p>The proposed methodology is to undertake the calculations as per the relevant Green Star New Build credit ENE 1 Modelling Protocol (excluding the allowance for the Tenant).</p> <p>This is demonstrated as the “Base Building Carbon Emissions (actual building)” in the Green Star Rating Tool – as per the image below:</p>  <p>Net Zero Carbon - Level 1: Building Emissions is achieved when the “Base Building Carbon Emissions (actual building)” in the Green Star Rating Tool value is 0kgCO2/m2/year. This is as per Net Zero Preferred Path 1 and 2.</p> <p>Edge Tool – For Edge users this will be possible using the Edge calculator which will include an indication of pathway 1, 2, 3 and 4.</p> <p>Net Positive Carbon - Level 1: Building Emissions – This is not applicable for Level 1, as Net Positive should include Tenant emissions, in our view.</p>	<p>The proposed methodology is to undertake the calculations as per the relevant Green Star New Build credit ENE 1 Modelling Protocol (including the allowance for the Tenant – to be taken from actual Tenant specifications i.e not assumed).</p> <p>This is demonstrated as the ‘Carbon Emissions (actual building)’ in the Green star SA Rating Tool – as per the image below:</p>  <p>Net Zero Carbon - Level 2: Occupant Emissions is achieved when the ‘Carbon Emissions (actual building)’ in the Green Star Rating Tool value is 0kgCO2/m2/year.</p> <p>Net Positive Carbon - Level 2: Occupant Emissions is achieved when the ‘Carbon Emissions (actual building)’ in the Green Star Rating Tool value is 5% above zero.</p> <p>This is as per Preferred Path 1 and 2.</p>	<p>The proposed methodology is to undertake actual measurements as per the relevant Green Star EBP Credit ENE 1 Credit Criteria (i.e. actual meter readings)</p> <p>Net Zero Carbon - Level 2: Occupant emissions is achieved when it is measured to be 0kgCO2/m2/year.</p> <p>Net Positive Carbon - Level 2: Occupant emissions is achieved when it is measured to be 5% above zero.</p> <p>This is as per Preferred Path 1 and 2.</p>
<p>Alternatively, Offsite renewables and Offsets can be provided to the project to result in a total 0kgCO2/m2/year. This is as per Net Zero Preferred Path 3 and 4*.</p> <p>* Please note, Paths 3 & 4 will only be “open” to projects once the project team have reached >80% of the reduction via efficiency/on-site renewables</p> <p><u>Net Zero Onsite vs. Offsite calculation ratio</u> The Net Zero Onsite vs. Offsite calculation is the Ratio of the Offsite total kgCO2/year to the Onsite total kgCO2/year. The ratio is to be: - 20% Offsite total kgCO2/year: 80% Onsite total kgCO2/year</p>	<p>Alternatively, Offsite renewables and Offsets can be provided to the project to result in a total 0kgCO2/m2/year for Net Zero or in a total of 5% above zero for Net Positive. This is as per Preferred Path 3 and 4*.</p> <p>* Please note, Paths 3 & 4 will only be “open” to projects once the project team have reached >80% of the reduction via efficiency/on-site renewables</p> <p><u>Net Zero/Net Positive Onsite vs. Offsite calculation ratio</u> The Net Zero/Net Positive Onsite vs. Offsite calculation is the Ratio of the Offsite total kgCO2/year to the Onsite total kgCO2/year. The ratio is to be: - 20% Offsite total kgCO2/year: 80% Onsite total kgCO2/year</p>	<p>Alternatively, Offsite renewables and Offsets can be provided to the project to result in a total 0kgCO2/m2/year for Net Zero or in a total of 5% above zero for Net Positive. This is as per Preferred Path 3 and 4*.</p> <p>* Please note, Paths 3 & 4 will only be “open” to projects once the project team have reached >80% of the reduction via efficiency/on-site renewables</p> <p><u>Net Zero/Net Positive Onsite vs. Offsite calculation ratio</u> The Net Zero/Net Positive Onsite vs. Offsite calculation is the Ratio of the Offsite total kgCO2/year to the Onsite total kgCO2/year. The ratio is to be: - 20% Offsite total kgCO2/year: 80% Onsite total kgCO2/year</p>

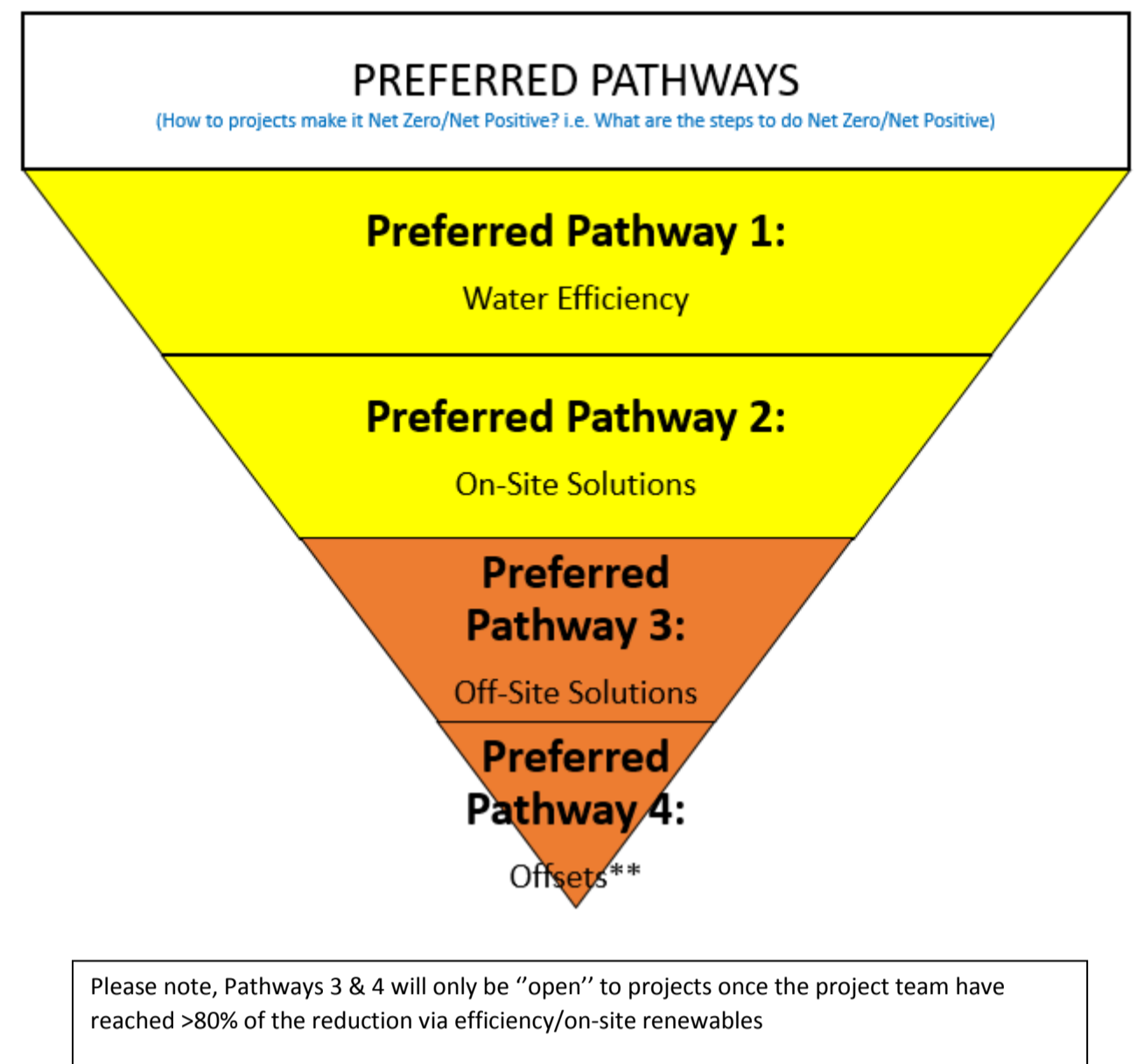
DOCUMENTATION REQUIREMENTS		
Level 1 Modelled + Level 2 Modelled (for New Build/Major Refurbishments)	Level 2 Measured (for Existing Buildings)	
<p>Green Star SA – New Build Design - credit Ene 1</p> <ul style="list-style-type: none"> Energy modelling report Copy of the completed Green Star SA Energy Calculator Extract(s) from the specifications (including Tenant specifications) Tender drawings <p>Additionally for naturally ventilated spaces:</p> <ul style="list-style-type: none"> Natural ventilation report <p>For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages) undertaken by Energy modeler or AP demonstrating ratio calculations Proof of Offsite or Offset contribution or letter of commitment from the client for the difference to be purchased 	<p>Green Star SA – New Build As Built - credit Ene 1</p> <ul style="list-style-type: none"> Energy modelling report Copy of the completed Green Star SA Energy Calculator Extract(s) from the Commissioning Report Extracts from Tenant specifications As built drawings <p>Additionally for naturally ventilated spaces:</p> <ul style="list-style-type: none"> Natural ventilation report <p>For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages) undertaken by Energy modeler or AP demonstrating ratio calculations Proof of Offsite or Offset contribution or letter of commitment from the client for the difference to be purchased. 	<p>Green Star SA – EBP – credit Ene 1</p> <p>GBCSA ‘EWP’ Energy Benchmarking Tool</p> <ul style="list-style-type: none"> Completed GBCSA ‘EWP’ Tool benchmarking Calculator (Offices) <ul style="list-style-type: none"> Detailed input page to be completed and vacancies account for. 12 months consecutive months of electricity consumption data (utility bills or meter readings signed off by contractor or facilities person responsible for meter readings)
		<p>Comparable building data</p> <ul style="list-style-type: none"> Completed EBP Energy Calculator 12 consecutive months of electricity consumption data for all buildings (utility bills or meter readings signed off by contractor or facilities person responsible for meter readings) Short Report on Normalising Methodology (where applicable) signed off by suitably qualified professional.
		<p>Historical data</p> <ul style="list-style-type: none"> Completed EBP Energy Calculator 12 consecutive months of electricity consumption data for the baseline period and the Performance Period (utility bills or meter readings signed off by contractor or facilities person responsible for meter readings) Short Report on Normalising Methodology (where applicable) signed off by suitably qualified professional.
		<p>Industry Benchmarks</p> <ul style="list-style-type: none"> Completed EBP Energy Calculator 12 consecutive months of electricity consumption data (utility bills or meter readings signed off by contractor or facilities person responsible for meter readings) Attach an Extract from the publication/document detailing the benchmark used. Short Report on Normalising Methodology (where applicable) signed off by suitably qualified professional.
		<p>For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages) undertaken by AP demonstrating ratio calculations Proof of Offsite or Offset contribution, or proof of purchase

2. WATER

The GBCSA propose the below as the definition of a Net Zero/Net Positive Water Building

“A building that is designed, constructed and operated to greatly reduce total water consumption, and then use recycled and reused water such that the amounts of water consumed is the same as the amounts of water that is produced (Net Zero), or if the water recycled/produced is greater than the water consumed (Net Positive).”

CONSUMPTION LEVELS (Extent of scope i.e. what do we look at/measure?)				
Building Consumption - Building	Occupant Consumption - Building + User	Life Cycle Consumption - Building + User + Embodied + Renovation + Deconstruction		
Level 1 - NA (Modelled)	Level 2 (Modelled or Measured)	Level 3* (Modelled or Measured)	Level 4* (Modelled or Measured)	Level 5* (Modelled or Measured)
Net Zero - Building Consumption - NA	Net Zero - Occupant Consumption (OE) (Operational) Unregulated consumption related to water used by the building occupants during operation - including all water appliances.	Embodied Consumption (EC) Water consumption associated with: • Extraction and processing of raw materials • Manufacturing of materials and equipment for use in the building • Transport of materials and equipment to the site	Renovation Consumption (RC) Water consumption associated with substantial changes/renovations to the building.	Deconstruction Consumption (DC) Water consumption associated with demolition of the building, transport during this process, and the water consumption associated with the re-use, recycling and final disposal of waste material.
Net Positive - Building Consumption - NA	Net Positive Occupant Consumption - when 5% greater than 0	• Construction and installation of the building structure, systems and equipment.		



*The current thinking of the GBCSA is that the SA market is not likely to adopt the process to include calculations for Levels 3, 4 & 5, but this will likely be adopted in the future and thus the full picture for Net Zero/Net Positive is shared.

**We are not 100% sure what this Offset could be and we are open to any suggestions – please see Question 10 below.

WATER																
New Build projects* can achieve Level 2 Net Zero/Net Positive certifications Existing buildings can achieve Level 2 Net Zero/Net Positive certification <i>*Interior Fit out projects are to contact the GBCSA for a custom methodology.</i>																
LEVEL 1	LEVEL 2															
	<ul style="list-style-type: none"> The Net Zero/Net Positive Water - Level 2: Occupant Consumption certificate will be valid for 3 years. The Net Zero/Net Positive Water - Level 2: Occupant Consumption certification is the Operational Consumption (i.e. Building and Tenant), measured or modelled over a period of one year. It is the Unregulated Consumption related to water used by the building occupants – including all water appliances (i.e. Base Building Consumption + Occupant Consumption). 															
MODELLED	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>MODELLED (for New Build/ Major Refurbishments)</p> <p>The proposed methodology is to undertake the calculations as per the relevant Green Star New Build credit Wat 1 Modelling Protocol. (including the actual Tenant number of occupants – to be taken from actual Tenant documentation i.e. not assumed).</p> <p>This is demonstrated as the “Net Potable (Mains) Water Consumption” in the Green Star Rating Tool – as per the image below:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">TOTAL REDUCED POTABLE WATER USE</th> </tr> </thead> <tbody> <tr> <td>Predicted Water Consumption from Fixtures</td> <td style="text-align: center;">0.00</td> <td style="text-align: center;">L/day/m²</td> </tr> <tr> <td>Predicted Recycled/Harvested Water available to Fixtures</td> <td style="text-align: center;">0.00</td> <td style="text-align: center;">L/day/m²</td> </tr> <tr style="border: 2px solid red;"> <td>NET POTABLE (MAINS) WATER CONSUMPTION</td> <td style="text-align: center;">0.00</td> <td style="text-align: center;">L/day/m²</td> </tr> <tr> <td>POINTS ACHIEVED:</td> <td style="text-align: center;">0</td> <td></td> </tr> </tbody> </table> <p>Net Zero Water - Level 2: Occupant Consumption is achieved when the “Net Potable (Mains) Water Consumption” in the Green Star Rating Tool value is 0L/day/m².</p> <p>Net Positive Water - Level 2: Occupant Consumption is achieved when the “Net Potable (Mains) Water Consumption” in the Green Star Rating Tool value is 5% above zero.</p> <p>This is as per Preferred Path 1 and 2.</p> <p><i>Edge users at this stage do not have a net zero or net positive certification path.</i></p> </div> <div style="width: 45%;"> <p>MEASURED (for Existing Buildings)</p> <p>The proposed methodology is to undertake actual measurements as per the relevant Green Star Existing Building Performance Wat 1 credit criteria (i.e. actual meter readings)</p> <p>Net Zero Water - Level 2: Occupant Consumption is achieved when it is measured to be 0L/year.</p> <p>Net Positive Water - Level 2: Occupant Consumption is achieved when it is measured to be 5% above zero.</p> <p>This is as per Preferred Path 1 and 2.</p> </div> </div>	TOTAL REDUCED POTABLE WATER USE			Predicted Water Consumption from Fixtures	0.00	L/day/m ²	Predicted Recycled/Harvested Water available to Fixtures	0.00	L/day/m ²	NET POTABLE (MAINS) WATER CONSUMPTION	0.00	L/day/m²	POINTS ACHIEVED:	0	
TOTAL REDUCED POTABLE WATER USE																
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NET POTABLE (MAINS) WATER CONSUMPTION	0.00	L/day/m²														
POINTS ACHIEVED:	0															
<div style="display: flex; flex-direction: column; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-bottom: 5px;">Pathway 1 + 2</div> <div style="text-align: center;"> <p>Net Zero/Net Positive Water - Level 1: Building Consumption – This is not applicable for Level 1, as Net Positive should include Tenant, in our view.</p> <p>Edge users at this stage do not have a net zero or net positive certification path.</p> </div> </div>																
<div style="display: flex; flex-direction: column; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-bottom: 5px;">Pathway 3 + 4</div> </div>	<p>Alternatively, Offsite solutions and Offsets can be provided to the project to result in a total 0L/year for Net Zero or in a total 5% above zero for Net Positive. This is as per Preferred Path 3 and 4*.</p> <p>* Please note, Paths 3 & 4 will only be “open” to projects once the project team have reached >80% of the reduction via efficiency/on-site solutions.</p> <p><u>Net Zero/Net Positive Onsite vs. Offsite calculation ratio</u> The Net Zero/Net Positive Onsite vs. Offsite calculation is the Ratio of the Offsite total L/year to the Onsite total L/year. The ratio is to be: 20% Offsite total L/year: 80% Onsite total L/year</p>															

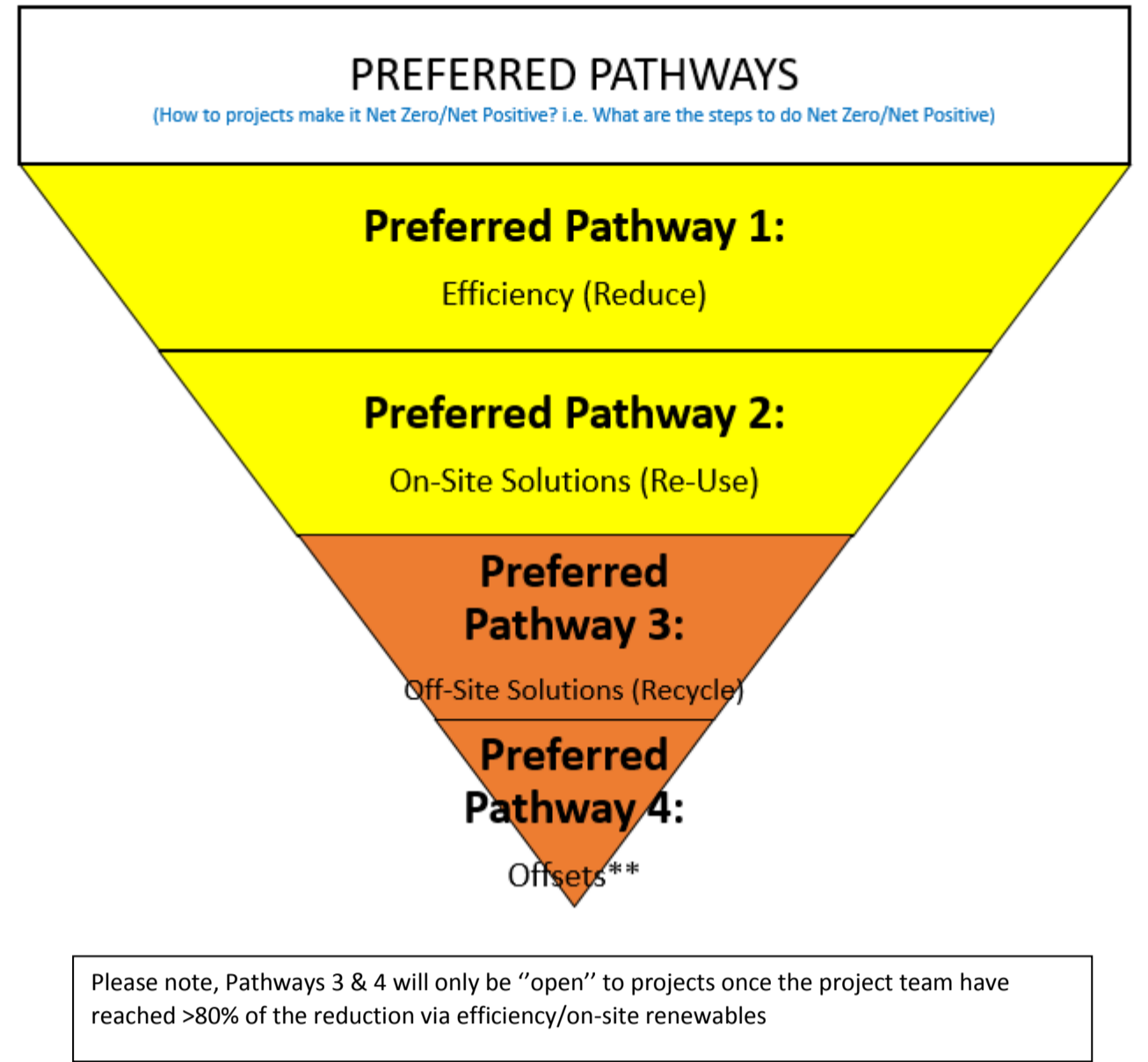
DOCUMENTATION REQUIREMENTS			
	Level 2 Modelled (for New Build/Major Refurbishments)		Level 2 Measured (for Existing Buildings)
	Green Star SA – New Build Design - credit Wat 1	Green Star SA – New Build As Built – credit Wat 1	Green Star SA – EBP- credit Wat 1
	<ul style="list-style-type: none"> Short report Extract(s) from the specification(s) Tender schematic hydraulic drawings Completed Potable Water Calculator <p>If rainwater collection or water reuse systems are installed, the following is also required:</p> <ul style="list-style-type: none"> Evidence of approval from the relevant authority <p>For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages) undertaken by Water engineer or AP demonstrating ratio calculations Proof of Offsite or Offset contribution or letter of commitment from the client for the difference to be purchased. 	<ul style="list-style-type: none"> Short report Technical data sheets from the contractor Evidence of approval from the relevant authority Completed Potable Water Calculator <p>If rainwater collection or water reuse systems are installed, the following is also required:</p> <ul style="list-style-type: none"> As built schematic hydraulic drawings Evidence of approval from the relevant authority Extract(s) from Commissioning Report <p>For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages) undertaken by Water engineer or AP demonstrating ratio calculations Proof of Offsite or Offset contribution or letter of commitment from the client for the difference to be purchased. 	<p>Compliance Path 1*</p> <p>GBCSA ‘EWP’ Water Benchmarking Tool</p> <ul style="list-style-type: none"> Completed GBCSA ‘EWP’ Tool benchmarking Calculator (Offices) <ul style="list-style-type: none"> Detailed input page to be completed and vacancies account for. 12 months consecutive months of water consumption data (utility bills or meter readings signed off by contractor or facilities person responsible for meter readings)
			<p>Compliance Path 2*</p> <p>Comparable building data</p> <ul style="list-style-type: none"> Completed EBP Water Calculator 12 consecutive months of water consumption data for all buildings (utility bills or meter readings signed off by contractor or facilities person responsible for meter readings) Short Report on Normalising Methodology (where applicable) signed off by suitably qualified professional.
			<p>Compliance Path 3*</p> <p>Historical data</p> <ul style="list-style-type: none"> Completed EBP Water Calculator 12 consecutive months of water consumption data for the baseline period and the Performance Period (utility bills or meter readings signed off by contractor or facilities person responsible for meter readings) Short Report on Normalising Methodology (where applicable) signed off by suitably qualified professional.
			<p>Compliance Path 4*</p> <p>Industry Benchmarks</p> <ul style="list-style-type: none"> Completed EBP Water Calculator 12 consecutive months of water consumption (utility bills or meter readings signed off by contractor or facilities person responsible for meter readings) Attach an Extract from the publication/document detailing the benchmark used. Short Report on Normalising Methodology (where applicable) signed off by suitably qualified professional.
			<p>*For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages) undertaken by AP demonstrating ratio calculations Proof of Offsite or Offset contribution, or proof of purchase

3. WASTE

The GBCSA propose the below as the definition of a Net Zero/Net Positive Waste Building

“A building that reduces, reuses, and recovers its waste streams to convert them to valuable resources with zero solid waste sent to landfills over the course of the year (Net Zero), or where the building can take waste from other sites and divert it for reuse, and not to landfill (Net Positive). (Applicable to both construction and buildings in operation)”

CONSUMPTION LEVELS (Extent of scope i.e. what do we look at/measure?)				
Construction Waste - Building	Occupant Waste - User(s)	Life Cycle Waste - User + Embodied + Renovation + Deconstruction		
Level 1 (Measured)	Level 2 (Modelled or Measured)	Level 3* (Modelled or Measured)	Level 4* (Modelled or Measured)	Level 5* (Modelled or Measured)
Net Zero Construction Waste (CW) Waste from the construction of the New build / Major Refurbishment project that avoids landfill	Net Zero Occupant Waste (OE) Existing Building Operational waste generated by the building during operation that avoids landfill	Embodied Waste (EE) Waste consumption associated with: <ul style="list-style-type: none"> • Extraction and processing of raw materials • Manufacturing of materials and equipment for use in the building (excludes any waste recycled under Level 1) 	Renovation Waste (RE) Waste associated with substantial changes/renovations to the building.	Deconstruction Waste (DE) Waste associated with demolition of the building, including the re-use, recycling and final disposal of building material
Net Positive Construction Waste when 5% greater than 0 (which includes construction waste from other sites)	Net Positive Occupant Waste when 5% greater than 0 (which includes operational waste from other sites)			



*The current thinking of the GBCSA is that the SA market is not yet capable of undertaking the necessary calculations for Levels 3, 4 & 5, but this will be the future and thus the overall picture is to be illustrated to demonstrate the complete picture.

**We are not 100% sure what this Offset could be and we are open to any suggestions – please see Question 10 below.

WASTE		
<p>New Build projects* can achieve Level 1 Net Zero/Net Positive certifications New Build projects* and Existing buildings can achieve Level 2 Net Zero/Net Positive certification <i>*Interior Fit out projects are to contact the GBCSA for a custom methodology.</i></p>		
LEVEL 1	LEVEL 2	
<ul style="list-style-type: none"> The Net Zero/Net Positive Waste - Level 1: Construction Waste certificate will be valid for 3 years. The Net Zero/Net Positive Waste - Level 1: Construction Waste certification is the Construction Waste, measured over the life of the construction period. 	<ul style="list-style-type: none"> The Net Zero/Net Positive Waste - Level 2: Occupant Waste certificate will be valid for 3 years. The Net Zero/Net Positive Waste - Level 2: Occupant Waste certification is the Operational Waste (i.e. Tenant), measured or modelled over a period of one year. 	
MEASURED (for New Build/ Major Refurbishments)	MODELLED (for New Build/ Major Refurbishments)	MEASURED (for Existing Buildings)
<p>The proposed methodology is to undertake actual measurements of the Construction Waste as per the relevant Green Star New Build Man 7 credit criteria.</p> <p>Net Zero Waste - Level 1: Construction Waste is achieved when it is measured to be 0kg/year to landfill.</p> <p>Net Positive Waste - Level 1: Construction Waste is achieved when it is measured to be 5% above zero. (which includes construction waste from other sites)</p> <p>This is as per Preferred Path 1 and 2.</p>	<p>The proposed methodology is to undertake calculations of the predicted Occupant Waste as per the relevant Green Star New Build credit Mat 1 Recycling Waste Storage TC MAT1-T-OB1-1217 that allows waste professionals to calculate waste volumes and demonstrate % of waste that will avoid landfill.</p> <p>Net Zero Waste - Level 2: Operational Waste is achieved when it is calculated to be 0kg/year to landfill.</p> <p>Net Positive Waste - Level 2: Operational Waste is achieved when it is calculated to be 5% above zero. (which includes operational waste from other sites)</p> <p>This is as per Preferred Path 1 and 2.</p>	<p>The proposed methodology is to undertake actual measurements of the Occupant Waste as per the relevant Green Star Existing Building Performance credit EB-MAT-2 Solid Waste Management credit criteria.</p> <p>Net Zero Waste - Level 2: Operational Waste is achieved when it is measured to be 0kg/year to landfill.</p> <p>Net Positive Waste - Level 2: Operational Waste is achieved when it is measured to be 5% above zero. (which includes operational waste from other sites)</p> <p>This is as per Preferred Path 1 and 2.</p>
<p>Alternatively, Offsite solutions and Offsets can be provided to the project to result in a total 0kg/year to landfill for Net Zero or in a total of 5% above zero for Net Positive. This is as per Preferred Path 3 and 4*.</p> <p>* Please note, Paths 3 & 4 will only be "open" to projects once the project team have reached >80% of the reduction via efficiency/on-site solutions.</p> <p>Net Zero/Net Positive Onsite vs. Offsite calculation ratio The Net Zero/Net Positive Onsite vs. Offsite calculation is the Ratio of the Offsite total kg/year (not sent to landfill) to the Onsite total kg/year (not sent to landfill). The ratio is to be: - 20% Offsite total kg/year (not sent to landfill): 80% Onsite total kg/year (not sent to landfill)</p>	<p>Alternatively, Offsite solutions and Offsets can be provided to the project to result in a total 0kg/year to landfill for Net Zero or in a total of 5% above zero for Net Positive. This is as per Preferred Path 3 and 4*.</p> <p>* Please note, Paths 3 & 4 will only be "open" to projects once the project team have reached >80% of the reduction via efficiency/on-site solutions.</p> <p>Net Zero/Net Positive Onsite vs. Offsite calculation ratio The Net Zero/Net Positive Onsite vs. Offsite calculation is the Ratio of the Offsite total kg/year (not sent to landfill) to the Onsite total kg/year (not sent to landfill). The ratio is to be: - 20% Offsite total kg/year (not sent to landfill): 80% Onsite total kg/year (not sent to landfill)</p>	<p>Alternatively, Offsite solutions and Offsets can be provided to the project to result in a total 0kg/year to landfill for Net Zero or in a total of 5% above zero for Net Positive. This is as per Preferred Path 3 and 4*.</p> <p>* Please note, Paths 3 & 4 will only be "open" to projects once the project team have reached >80% of the reduction via efficiency/on-site solutions.</p> <p>Net Zero/Net Positive Onsite vs. Offsite calculation ratio The Net Zero/Net Positive Onsite vs. Offsite calculation is the Ratio of the Offsite total kg/year (not sent to landfill) to the Onsite total kg/year (not sent to landfill). The ratio is to be: - 20% Offsite total kg/year (not sent to landfill): 80% Onsite total kg/year (not sent to landfill)</p>
Pathway 1 + 2		
Pathway 3 + 4		

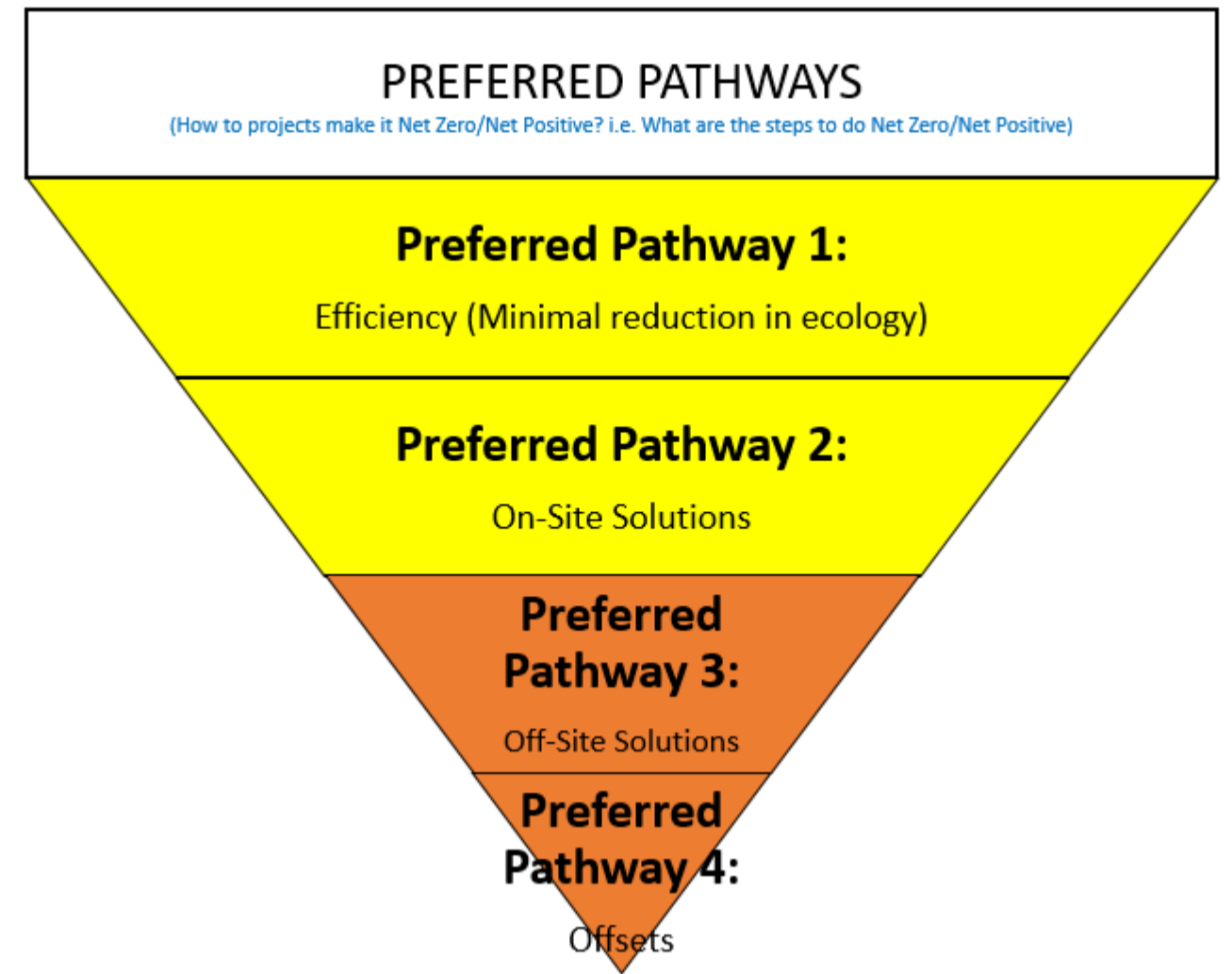
DOCUMENTATION REQUIREMENTS		
Level 1 Measured (for New Build/Major Refurbishments)	Level 2 Modelled (for New Build/Major Refurbishments)	Level 2 Measured (for Existing Buildings)
<p>Green Star SA – New Build As Built – credit Man 7</p> <ul style="list-style-type: none"> Short report (with waste receipts) Waste Management Plan <p>For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages) undertaken by Waste professional or AP demonstrating ratio calculations Proof of Offsite or Offset contribution or letter of commitment from the client for the difference to be purchased. 	<p>Green Star SA – New Build As Built – credit Mat 1</p> <ul style="list-style-type: none"> Waste and Recycling Management Plan in line with TC MAT1-T-OB1-1217 As Built drawings <p>For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages) undertaken by Waste professional or AP demonstrating ratio calculations Proof of Offsite or Offset contribution or letter of commitment from the client for the difference to be purchased 	<p>Green Star SA – EBP – credit Mat 2</p> <ul style="list-style-type: none"> Calculations of Diversion Rate OR Supply Waste Contractor Report confirming compliance Supply Waste Contractor Receipts confirming the diversion rate <p>For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages undertaken by Waste professional or AP demonstrating ratio calculations Proof of Offsite or Offset contribution or proof of purchase

4. ECOLOGY

The GBCSA propose the below as the definition of a Net Zero/Net Positive Ecology Buildings

“A building that does not reduce the ecological value of the site during development for Greenfield sites (Net Zero), and increases the ecological value of the site for brownfield sites, greenfield sites and/or existing developments (Net Positive).”

CONSUMPTION LEVELS (Extent of scope i.e. what do we look at/measure?)				
Building Ecology - Building		Occupant Ecology - User		
Level 1 (Modelled)	Level 2 (Modelled or Measured)	Level 3 Not applicable	Level 4 Not applicable	Level 5 Not applicable
Net Zero - Site Ecology Greenfield site – Net Zero: There is no net reduction in the ecological value of the site from pre to post development. Brownfield site – Net Zero - NA	Net Zero - Occupant Ecology NA			
Net Positive - Site Ecology Greenfield site – Net Positive: There is a positive increase in the ecological value of the site from pre to post development. (+2 from calculator) Brownfield site – Net Positive: There is a positive increase in the ecological value of the site as a result of development. (+3 from calculator)	Net Positive - Occupant Ecology There is a positive increase in the ecological value of the existing site over time (+2 from calculator)			



Please note, Pathways 3 & 4 will only be “open” to projects once the project team have reached >80% of the reduction via efficiency/on-site renewables

ECOLOGY																																																														
<p>New Build projects* can achieve Level 1 Net Zero/Net Positive certifications Existing buildings can achieve Level 2 Net Positive certification <i>*Interior Fit out projects are to contact the GBCSA for a custom methodology.</i></p>																																																														
LEVEL 1	LEVEL 2																																																													
<ul style="list-style-type: none"> The Net Zero/Net Positive Ecology - Level 1: Site Ecology certificate will be valid for 3 years. The Net Zero/Net Positive Ecology - Level 1: Site Ecology certification is the Site Ecology, modelled over the life of the construction period (i.e. pre to post development). 	<ul style="list-style-type: none"> The Net Positive Ecology - Level 2: Occupant Ecology certificate will be valid for 3 years. The Net Positive Ecology - Level 2: Occupant Ecology certification is the Occupant Ecology, measured on the ecological increases to the existing site. 																																																													
<p>MODELLED (for New Build/ Major Refurbishments)</p>	<p>MODELLED (for New Build/ Major Refurbishments)</p>	<p>MEASURED (for Existing buildings)</p>																																																												
<p>The proposed methodology is to model the Site Ecology as per the relevant Green Star New Build Eco 4 credit criteria.</p> <p>Net Zero Ecology - Level 1: Site Ecology is achieved when it is modelled to be a zero change in the net ecological value of the site for a Greenfield site.</p> <table border="1"> <thead> <tr> <th colspan="2">Change In Ecology Calculator</th> <th colspan="2">Points Achieved:</th> <th>0</th> </tr> <tr> <th>Land Type</th> <th>Land Types Before Construction / m²</th> <th>Ecological Score</th> <th>Land Types After Construction / m²</th> <th>Ecological Score</th> </tr> </thead> <tbody> <tr> <td>TOTAL</td> <td>1000</td> <td>5000</td> <td>1000</td> <td>5000</td> </tr> <tr> <td>ECOLOGICAL DIVERSITY INDEX:</td> <td></td> <td>5.00</td> <td></td> <td>5.00</td> </tr> <tr> <td>CHANGE IN ECOLOGICAL DIVERSITY INDEX</td> <td>0.00</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Points Achieved</td> <td>0</td> <td></td> <td></td> <td>Net Zero – Level 1</td> </tr> </tbody> </table> <p>Brownfield site – Net Zero - NA</p> <p>Net Positive Ecology – Level 1: Site Ecology is achieved when it is modelled to be a positive change in the net ecological value of the site.</p> <p>Greenfield site – Net Positive - There is a positive increase in the ecological value of the site from pre to post development. (to achieve 2 points in the calculator)</p> <p>Brownfield site – Net Positive - There is a positive increase in the ecological value of the site as a result of development. (to achieve 3 points in the calculator)</p> <p>This is as per Preferred Path 1 and 2.</p>	Change In Ecology Calculator		Points Achieved:		0	Land Type	Land Types Before Construction / m ²	Ecological Score	Land Types After Construction / m ²	Ecological Score	TOTAL	1000	5000	1000	5000	ECOLOGICAL DIVERSITY INDEX:		5.00		5.00	CHANGE IN ECOLOGICAL DIVERSITY INDEX	0.00				Points Achieved	0			Net Zero – Level 1	<p>Net Zero Ecology - Level 2: Occupant Ecology – NA</p> <p>Net Positive Ecology - Level 2: Occupant Ecology – NA</p>	<p>The proposed methodology is to measure the Occupant Ecology as per the relevant Green Star New Build Eco 4 credit criteria at date of original Occupation (for “Land Types Before Construction”), and then measure the current Occupant Ecology (for “ Land Types After Construction”)</p> <p>Net Zero Ecology - Level 2: Occupant Ecology – NA</p> <p>Net Positive Ecology - Level 2: Occupant Ecology is achieved when it is measured to be a positive change in the net ecological value of the site (to achieve 2 points in the calculator).</p> <table border="1"> <thead> <tr> <th colspan="2">Change In Ecology Calculator</th> <th colspan="2">Points Achieved:</th> <th>2</th> </tr> <tr> <th>Land Type</th> <th>Land Types Before Construction / m²</th> <th>Ecological Score</th> <th>Land Types After Construction / m²</th> <th>Ecological Score</th> </tr> </thead> <tbody> <tr> <td>TOTAL</td> <td>1000</td> <td>500</td> <td>1000</td> <td>6000</td> </tr> <tr> <td>ECOLOGICAL DIVERSITY INDEX:</td> <td></td> <td>0.50</td> <td></td> <td>6.00</td> </tr> <tr> <td>CHANGE IN ECOLOGICAL DIVERSITY INDEX</td> <td>5.50</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Points Achieved</td> <td>2</td> <td></td> <td></td> <td>Net Positive – Level 2</td> </tr> </tbody> </table> <p>This is as per Preferred Path 1 and 2.</p>	Change In Ecology Calculator		Points Achieved:		2	Land Type	Land Types Before Construction / m ²	Ecological Score	Land Types After Construction / m ²	Ecological Score	TOTAL	1000	500	1000	6000	ECOLOGICAL DIVERSITY INDEX:		0.50		6.00	CHANGE IN ECOLOGICAL DIVERSITY INDEX	5.50				Points Achieved	2			Net Positive – Level 2
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<p>Green Star SA – New Build Design – credit Eco 4</p> <ul style="list-style-type: none"> Completed Change of Ecological Value Calculator Short report Landscaping schedule <p>Where the project claims to create land types with ecological value of 25 or greater, the following is also required:</p> <ul style="list-style-type: none"> Evidence of ecosystem viability <p>For reused sites where threatened or vulnerable species are present, the following is also required:</p> <ul style="list-style-type: none"> Endangered species protection plan Confirmation from a suitably qualified registered ecologist <p>For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages) undertaken by Ecologist or AP demonstrating ratio calculations Proof of Offsite or Offset contribution or letter of commitment from the client for the difference to be purchased. 	<p>Green Star SA – New Build As Built – credit Eco 4</p> <ul style="list-style-type: none"> Completed Change of Ecological Value Calculator Short report As built architectural site plan Landscaping schedule <p>Where the project claims to create land types with ecological value of 25 or greater, the following is also required:</p> <ul style="list-style-type: none"> Evidence of ecosystem viability <p>For reused sites where threatened or vulnerable species are present, the following is also required:</p> <ul style="list-style-type: none"> Endangered species protection plan Confirmation from a suitably qualified registered ecologist <p>For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages) undertaken by Ecologist or AP demonstrating ratio calculations Proof of Offsite or Offset contribution or letter of commitment from the client for the difference to be purchased. 	<p>Green Star SA – New Build As Built – credit Eco 4</p> <ul style="list-style-type: none"> Completed Change of Ecological Value Calculator Short report As built architectural site plan Landscaping schedule <p>Where the project claims to create land types with ecological value of 25 or greater, the following is also required:</p> <ul style="list-style-type: none"> Evidence of ecosystem viability <p>For reused sites where threatened or vulnerable species are present, the following is also required:</p> <ul style="list-style-type: none"> Endangered species protection plan Confirmation from a suitably qualified registered ecologist <p>For Pathway 3 + 4</p> <ul style="list-style-type: none"> Short report (not more than two pages) undertaken by Ecologist or AP demonstrating ratio calculations Proof of Offsite or Offset contribution or proof of purchase 	

