Ref:

25 February2022

Ms Anne Hywood
General Secretary

By email: generalsecretary@anglican.org.au

Dear Anne

Diocese of Perth Protection of the Environment Report – March 2020 to February 2022

The following report is provided to General Synod by the Diocese of Perth as required by the Protection of the Environment Canon 2007. This report outlines the targets that were set, the achievements and difficulties encountered, since March 2020; when the last report was presented to General Synod.

The in red italics below are extracts from the Canon and provide the framework for the report.

Every diocese which adopts this Canon undertakes to reduce its environmental footprint by increasing the water and energy efficiency of its current facilities and operations and by ensuring that environmental sustainability is an essential consideration in the development of any new facilities and operations, with a view to ensuring that the diocese minimalizes its contribution to the mean global surface temperature rise.

The focus of energy and water saving initiatives has centred on our larger and more frequently used buildings; i.e., those that consume the most energy and water.

Cloisters Complex and QBE House (863 Hay Street and 200 St George Terrace)

Photovoltaic Solar Array. Installed in February 2020 to reduce base energy usage and energy costs to the building as well as use a renewable energy source. Cloisters Management continue to report and track energy and cost savings on a monthly basis.

Capacity Charge Usage Strategy. Capacity charges currently make up 20-30% of the cost of a commercial electricity contract. As a result, there is real scope to achieve economic savings by putting in place both passive and active measures to reduce peak loads during the 12 peak trading intervals

each capacity season. Cloisters Management has worked to monitor weather conditions and issue daily alerts during the peak of Summer, being 1 December to 31 March. The daily alerts prompt the Cloisters Management team to implement a 'energy reduction plan' which entails making changes to the Building Management System (BMS) by adjusting set points during peak demand periods. The energy reduction plan does not affect the building occupant's day to day operations or comfort. Last year the plan resulted in significant financial and energy savings when compared against 2019/2020. Capacity charge monitoring for 2022 is currently underway.

Power Factor Correction Equipment. Has been installed, the power factor correction equipment is maximizing the building's current-carrying capacity, improving voltage to building equipment, reducing power losses and electricity charges. The power factor correction capacitors act as reactive current generators and help offset the non-working power used by inductive loads, thereby improving the power factor and reducing energy usage.

National Australian Built Environment Rating System (NABERS) ratings. Because of these activities, Cloisters has achieved a 5.5-Star NABERS rating, the building was originally designed to achieve a 4.5-star rating. QBE House has achieved a 4.5-Star rating and is targeting a 5-star rating for 2022. Building Energy Efficiency Certificate (BEEC)[1] is also being pursued for each tenancy.

Waterwise Office Program. Cloisters has been awarded a Gold Waterwise Office endorsement by the Water Corporation in partnerships with the City of Perth and Property Council of Australia. This award follows ongoing initiatives and extensive capital investment to improve sustainability to the Cloisters Complex. Contributing improvements include upgrades to water efficient toilets and lobby of each floor and replacement of the mechanical plant equipment including chillers, water tanks, pumps and piping. Water consumption has been reduced by 20% since 2016. QBE House has also achieved a 5-star NABERS Water Rating.

Sustainable Cleaning Materials. Cloisters has endorsed the use of recyclable hand paper towels and toilet rolls throughout the building as well as only using biodegradable cleaning solutions to minimize our environmental impact.

565 Hay Street

565 Hay Street has indicative professional month to month NABERS tracking.

NABERS Water Rating Program efficiency for 565 Hay Street has commenced 2022 to further improve sustainability to 565 Hay Street. This will look at water efficient toilets equipment the mechanical water tower controls including chillers, water tanks, pumps, and piping.

Photovoltaic Solar Array. Solar panels installed September 2020 total array size of 31.20 kW made up of 78 Tier 1 Mono 400-Watt solar panels. Total inverter size of 27.6 kW, powered by 1 premium Solar
Edge SE27.6K inverter(s)
System production 2020 = 19.01 MWh
System production 2021 = 46.6 MWh
System production Jan 2022 = 5.92 MWh

[1] A Building Energy Efficiency Certificate (BEEC) sets out the energy efficiency rating of a building or area of a building that is offered for sale, lease or sublease.

Environmental Benefits the Solar Panel install from September 2020 to January 2022:
CO2 Emission Saved 28,081 kg
Equivalent Trees Planted 838.13

Energy Reduction Strategy. Energy reduction implementation continues to occur in the areas of mechanical BMS controls fine-tuning plant mechanical heating control set points, providing reductions in Gas consumption.

Floor lighting sensors are continually monitored to minimise unnecessary activation. House lighting Consumption has remained very consistent over the past three and a half years. This has resulted in 565 Hay Street retaining a 5.5-star NABERS and 4 Green Star rating.

Recyclable Waste Management. Improving existing recycling methods to reduce environmental footprint identify further opportunities to implement improvements to existing waste management by working closely with the client to educate stakeholders including client staff, security, tenants, cleaners, and visitors.

Indoor Environment Quality. 565 Hay Street indoor environment performance efficiency is achieved from the BMS systems built into the buildings provide monitoring and maintain good air quality daily. The management of operations ensures only the most efficient air filters are used and are replaced annually to maintain indoor air quality.

Sustainable Purchasing. With the recent implementation of a new electronic work order system, has result in a significant reduction in paper usage.

In all three of the above-mentioned commercial properties (863 Hay Street, 200 St George Terrace and 565 Hay Street) the following initiatives are also being pursued:

- Comprehensive energy management tracking, monitoring, analysis and reporting;
- Indicative month to month NABERS tracking;
- Extensive building metering to accurately measure and track consumption, to target areas for energy efficiency initiatives;
- The introduction of energy efficient chillers and variable air volume controls;
- The maintenance and calibration of sensor operated and photosensitive energy-efficient lighting;
- LED energy efficient lighting upgrades to floor refurbishments;
- The introduction of heat and glare reduction window treatments;
- Green Lease provisions that ensure tenants fit out's incorporate green philosophies and initiatives;
- Engagement with like-minded consultants and contractors who are prepared to work on improving the environmental credentials of the property;
- Ongoing upgrades to the toilet and bathroom facilities with water-efficient fixtures and fittings;
- Co-mingled recycling program with output tracking and reporting;
- Introduction of battery disposal buckets for each tenancy; and,
- Introduction of recyclable paper hand towels in all bathrooms.

Shenton House

This is a relatively new building with a 4.5-star NABERS rating. Improvements to the buildings energy efficiency rating has recently been achieved with the installation of LED lights throughout the building.

3 Pier Street

This seven-level building is too small for an official NABERS rating, however, there is efficiency to be found and improved.

Water efficieny will continue to be monitored in the usage in toilets equipment the mechanical water tower controls including chillers, water tanks, pumps, and piping.

Energy Reduction Strategy. Energy reduction implementation are in place in the areas of mechanical BMS controls fine-tuning plant mechanical heating control set points, has providing small reductions power and gas consumption.

Car Park lighting sensors and controllers continually calibrated to minimise unnecessary activation. The replacement of all car park standard fluorescent light to LED Lighting has been installed to car park levels.

Electric Vehicle Charging. The concept and benefits are being investigated to installing EV Chargers, possible benefits include contributing to corporate sustainability goals and reduce Greenhouse emissions and improve local air quality.

Recyclable Waste Management. Improving existing recycling methods to reduce environmental footprint identify further opportunities to implement improvements to existing waste management by working closely with the client to educate stakeholders including client staff, security, tenants, cleaners and visitors.

Indoor Environment Quality. 3 Pier Street indoor environment performance efficiency is achieved from the BMS systems provide monitoring and maintain good air quality daily. The management of mechanical services ensures only the most efficient air filters are cleaned or replaced to maintain the highest indoor air quality.

Sustainable Purchasing. The implementation of electronic work order system has minimised paper usage.

Wollaston Theological College

The following energy and water efficiency projects have been undertaken at Wollaston College and Conference Centre:

- Implementation of new sub meters and isolation valves have been installed to the residential houses to assist with water saving and recovery.
- There is a progressive plan to upgrade all hot waters systems across at this site which will result in less energy consumed and water wasted in the heating process.
- Consideration is being given for the upgrade of the air-conditioning systems to the meeting rooms to provide energy efficiency and reduced power costs.
- Decommissioning of surplus cool room machinery to address ageing infrastructure and repurpose for additional storage.

- Future upgrades of the existing irrigation system are being considered to design a more water and energy efficient system to replace ageing infrastructure.

Swan Valley Adventure Centre

A similar energy audit to that conducted at Wollaston has also been undertaken at Swan Valley and the feasibility of introducing solar PV systems (including the potential for a solar farm) is being investigated. Hot water systems are progressively being upgraded, with the intent to replace them all with energy efficient systems in the next few years. All lights are progressively being changed to LED lights. Water saving shower heads and taps are progressively being upgraded as an efficient alternative. Given this is a facility for approximately 300 overnight guests this is a substantial investment across the many showers and taps across the facility.

Parish Property

The following energy and water efficiency projects have been undertaken in Parish Properties:

- In September 2021, All Saints Church in the Parish of Bullcreek-Leeming replaced existing lighting and ceiling fans with energy efficient halogen globes in the parish rectory to provide to reduce future electricity to the parish.
- In September 2021, St Michael and All Angels Church in the Parish of Canning to install two a 13.5kw Tesla Powerwall batteries to the existing 15kW solar panel system to provide sustainable electricity to the adjoining parish buildings with funding obtained through the Federal Government's Powering Communities Grant program.
- In September 2021, St Lawrence church in the Parish of Dalkeith installed a 24 x 450kW solar panels with a 8.25kW three phase inverter with panel optimisers on the parish hall and admin roof as a sustainable source of electricity for the parish buildings.
- In October 2021, St Luke's church in the Parish of Gingin-Chittering upgraded their existing solar power system to increase their battery storage capacity from a 5kW to a 10kW system and increased solar PV panels from 1kW to 3kWwith additional solar panels and an with the addition installed an additional 24 x 450kW solar panels with a 8.25kW three phase inverter with panel optimisers on the parish hall and admin roof as a sustainable source of electricity for the parish buildings.
- In November 2021, St Mary the Virgin church in the Parish of South Perth received grant funding through the Federal Government's Powering Communities Grant program to install 16 x 400kW solar panels with a 6.4kW three phase inverter and a 5kW battery module on the parish hall or church roof to supply the parish buildings with a sustainable source of electricity.`

Every diocese which adopts this Canon undertakes to establish such procedures and process such as an environment commission, or similar body as are necessary to assist the diocese and its agencies to:

a) Give leadership to the church and its people in the way in which they can care for the environment

The Diocesan Office management team has been central in driving the environmental performance of the major commercial properties as well as assisting parishes with projects that improve the environmental credentials of the churches, rectories and halls. Diocesan Office also works with parishes in identifying and applying for potential sources of grants funding that may assist parishes install solar panels, water tanks and other energy saving devices.

The Diocesan website has recently been updated with extensive environmental sustainability resources, guidance and advice.

The EcoCare Commission was established by the Anglican EcoCare Statute (2006) and serves all parishes, schools, agencies and the broader Diocese in caring for God's Creation, which shows forth the Fifth Mark of Mission. Internal and legal considerations meant the Commission has been in abeyance in formal functioning throughout the reporting period. However, the essential work of the Commission in promoting the Fifth Mark of Mission has been overseen by its sister Commission, the Social Responsibilities Commission (SRC). The SRC has a membership drawn from clergy, laity, Formation Candidates, other people with a range of important skills which during this period were applied to the Protection of the Environment.

The SRC continued the work of the Commission including education, training, theological reflection and prophetic visioning on behalf of the diocese. The SRC also used EcoCare connections throughout the diocese to encourage parishes, schools and agencies to become more conscious of their impact on Creation and to take steps to lessen this impact.

The ongoing impact of the Pandemic and the budget constraints resulting from it has required the SRC to work mostly online in the last year.

Since the last report, several parishes continue with their own environmental groups and the SRC, acting on behalf of EcoCare, has been instrumental in providing them with current information, resources and new advocacy opportunities, as well as sharing the work they have been doing via social media.

The SRC stood in for EcoCare as a member of the WA Chapter of Australian Religious Response to Climate Change (ARRCC). As a peak body for a range of faiths' concern for Creation, ARRCC helps the SRC to function as an advocate to government and civil society on behalf of God's creation. Throughout the year, the SRC maintained EcoCare's membership and presence in secular environmental groups and initiatives, such as ReNew WA, to present a faith-based perspective.

b) Use the resources of God's creation appropriately and to consider and act responsibly about the effect of human activity on God's creation.

The annual Tree Planting Day was not able to be conducted in 2021 due to the limitations of budget and the Pandemic.

c) Facilitate and encourage the education of Church members and others about the need to care for the environment, use the resources of God's creation properly and act responsibly about the effect of human activity on God's creation.

During the reporting period the SRC, acting on behalf of EcoCare, produced two annual publications providing resources, referrals, information, theological reflections, prayers and liturgy. In addition, two 'Pew Sheets' on care for God's Creation were also produced. A 'Care for Creation' sermon was preached at St George's Cathedral during the Season of Creation and printed 'Care for Creation' resources were distributed throughout the diocese.

The SRC on behalf of EcoCare supported and promoted a range of ecumenical or secular events throughout the reporting period, including Earth Hour and Earth Day.

The Pandemic and budget constraints continues to mean the popular 'Sustainable September' resource for action, prayer, worship and liturgy is only available online. As an annual publication, 'Sustainable September' is aligned with the ecumenical 'Season of Creation' and includes a range of theological reflections, practical tips, resources, eco-Sermons and other material. During the September Season of Creation in 2021, the EcoCare Project Officer (guided by the SRC) liaised with several parishes and the Cathedral sharing the electronic resource and preaching materials on care for creation arising from the recognition that creation and humanity are indivisibly linked by act of God.

The other popular and widely shared resource, 'Plastic Free July' was produced by the SRC on behalf of EcoCare and made available online.

Yours sincerely

Keith Stephens
Diocesan Secretary