



Beaconhills College

2020-2021

OUR GREEN REPORT

Beaconhills College's
environmental activities.



ACKNOWLEDGEMENT OF COUNTRY

Beaconhills College acknowledges the Wurundjeri and Boon Wurrung peoples as the Traditional Custodians of this Land on which our College is built. We honour and respect their ongoing cultural and spiritual connection with this Country which includes Traditional Custodianship of the land, waterways and skies across Australia. We honour the richness, diversity and sophistication of the cultures of First Nations peoples. We admit with sorrow the wrongs of the past that have taken place and continue into today and that Sovereignty was never ceded. We pay deep respects to Elders past and present and honour the strong leadership that is evident in the emerging Elders of tomorrow. We recognise that education is the key to unlocking our understanding of Aboriginal and Torres Strait Islander Australia and seek to explore what reconciliation means at Beaconhills College by partnering together and working to build a more just and compassionate society for the traditional owners of this land.



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ENVIRO-COM

Beaconhills College acknowledges the importance of managing its ecological footprint and embedding the principles of sustainability throughout the College. We are a large community of people and use a lot of resources in delivering our extensive programs. We are committed to looking at our practices and continually introducing sustainable measures that will care for and nurture the environment.

Our leadership in this area provides enormous opportunities for our community to learn about the environment and sustainability in everyday life. We keep improving our curriculum to ensure that environment and sustainability is fundamental within the Teaching and Learning Program.

I would like to thank members of our College Team, who are responsible for developing the policy and implementing the key actions from the College's Strategic Environmental Management Plan (SEMP). The College has a clear agenda ahead and is committed to actioning our sustainability measures.

During a period when governments are struggling to respond to the enormous health and climate change issues, Beaconhills College has set some ambitious targets that will lighten our ecological footprint.

I am pleased to say that this report demonstrates a range of strategies that we are implementing and although much has already been achieved, there is still a lot more work to be done.

David Young
Business Manager

OUR VISION, OUR MISSION

LEARNING THAT MATTERS



AT BEACONHILLS COLLEGE, OUR VISION IS TO BE AN INNOVATIVE LEARNING COMMUNITY THAT IS FOCUSED ON

LEARNING THAT MATTERS.

Learning That Matters* comprises six key pillars; *Environment and sustainability, Learning mindset, Values and character, Wellbeing, Citizenship and service, and Our global community.

We aim to encourage our students and the wider community to be responsible stewards of the environment; to care, to raise awareness of the natural environment and actively work towards being more environmentally-friendly in our everyday lives. We continue to associate ourselves with sustainable practice and implore others to follow our example.

OUR MISSION

RAISE AWARENESS

Why do we care about being green?

The College was founded in 1982 and now comprises more than 3000 students (Early Years to Year 12) across our Berwick and Pakenham campuses and a community exceeding 10,000. From the classroom, to the grounds and gardens and the wider community, Beaconhills has long recognised the opportunity to a make positive difference to the world in which we live. We are aware of our responsibility to lead by example and to encourage our students to be responsible stewards of the environment, for their own future – and that of the planet.

However, our graduating students face increasing challenges in the world. They want to live healthy lives and find meaningful careers where they have the potential to shine. But they are up against rising unemployment, fewer entry level jobs in the workforce or achieving the ATAR they need for their preferred tertiary course.

Not only do we have a vested interest in mitigating atmospheric and oceanic pollution, but it is our responsibility as an institution of learning to give factual and transparent information about how climate change will impact us and what we can do to lower our emissions.

RAISE AWARENESS WITHIN AND BEYOND
OUR OWN COLLEGE COMMUNITY
SHOWING INTEGRITY, COMPASSION AND
RESPECT FOR THE ENVIRONMENT AND
EVERYTHING THAT LIVES IN IT.

New governance of environmental processes (Strategic Environmental Management Plan)

In 2010, the College launched its first environmental and sustainability plan.

Since 2017, the College has been working on a new strategy to manage the way we approach environmental challenges and address how we educate our students and families about sustainability.

At the start of 2018, with the guidance of the CERES outreach team through the ResourceSmart Schools Program, the College developed its *Strategic Environmental Management Plan (SEMP)*. *SEMP* covers our education and sustainability vision, *Sustainability Policy*, and *Green Procurement Policy*, the implementation of environmental initiatives and the *Curriculum Review*.

Lastly, in the implementation section of the document, the *SEMP* highlights the College's current practices and future goals in the areas of biodiversity, electricity, water and waste.

Growing culture and reputation on environmental protection

In 2019, College representatives were privileged to meet with environmental officers from South Africa and participate in a PhD thesis researching environmental programs in schools. We also participated in multiple ResourceSmart Schools workshops, hosted a workshop and spoke at the Steps to Sustainability Conference at Melbourne Zoo. We are increasingly recognised as an environmentally-conscious school, willing to share our stories and practices with others in the sector. Some of the schools in the local area with which we have connections include Officer Secondary College, Koo Wee Rup Secondary College and Nossal High School.

We are always looking for ways to share our knowledge and practices with others and welcome enquiries from schools or other organisations.

KEY ACHIEVEMENTS

LEADING THE WAY

AWARD-WINNING AND GREEN POWERED.



OFF THE GRID

We had a full year's intake of our 700kW solar system, giving us the most solar we have generated to date and offsetting our electricity use by 48 per cent.

SMARTER ABOUT WASTE

A positive outcome of the lockdown in 2020 due to COVID-19, was a big decrease in College waste - from 128 tonnes to 119 tonnes. This was despite major projects still proceeding during the year.

GREENER LIVING

The College is pursuing more outdoor learning opportunities and building student relationships with the natural environment.





**3 STARS RESOURCESMART
SCHOOL**

ResourceSmart Schools is a program run by Sustainability Victoria where schools complete modules to become more sustainable and leaders of sustainability in their communities.

Beaconhills College joined the program in 2017 and has now earned its third star for its commitment to reducing waste and minimising resource use. The first two stars were for sustainably-focused governance and minimising electricity use.

The College is well on the way to earning the next two stars, which relate to water minimisation and promoting biodiversity.

RESOURCE USE

AIMING FOR EFFICIENCY

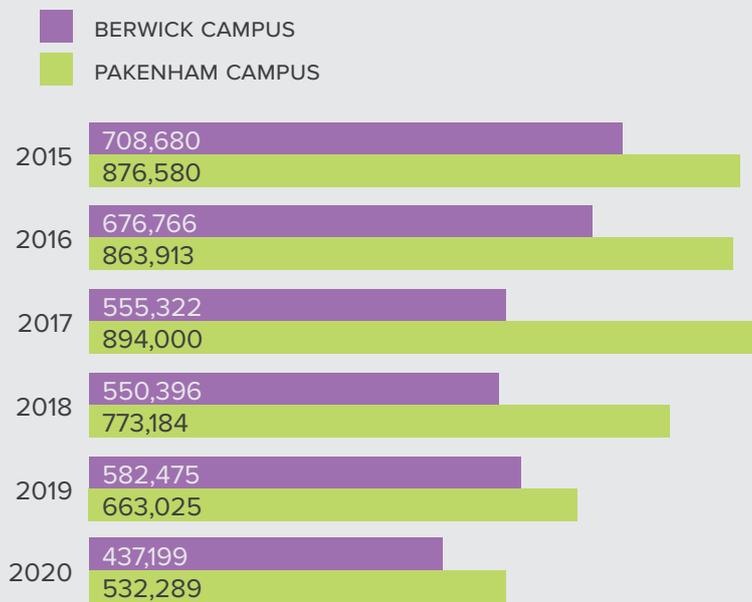
ELECTRICITY

THE COLLEGE'S GOAL OF ACHIEVING ZERO NET ELECTRICITY FROM THE GRID BY 2025 IS PROGRESSING SMOOTHLY, WITH THE GENERATION OF 820MWH OF ELECTRICITY WHICH OFFSETS THE ENTIRE COLLEGE'S ELECTRICITY USE BY 40 PER CENT.

During 2020, the solar systems ran at mostly full potential all year. The College had unexpected periods of low electricity usage, as Berwick Campus has fewer buildings and more solar installations than Pakenham Campus and uses less electricity overall.

This is the first year all solar systems in Berwick were running at full potential and the second year for Pakenham's systems, from which we have generated 1.1GWh of electricity and offset the College's electricity usage from the grid by 40 per cent.

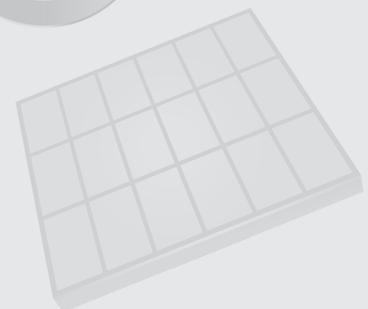
Currently, Berwick Campus has a 375kW system and Pakenham has a 300kW system. Envirogroup, the company which installs and help us maintain the systems, have been an invaluable source of knowledge and have helped the College progress to one of the biggest solar systems in the state.



ELECTRICITY USE FROM THE GRID (MWH)

BERWICK AND PAKENHAM CAMPUSES.

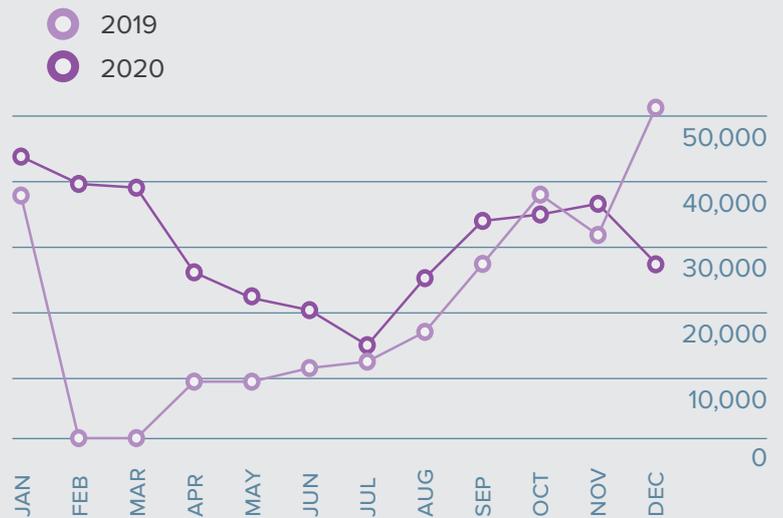
From 2013 to now, even though the College has grown, electricity usage has consistently dropped thanks to our many power-saving initiatives. In 2020 the use of grid electricity was reduced by 901MWh (48 per cent) from 2013 levels.



SOLAR GENERATION BY CAMPUS (MWH)

BERWICK CAMPUS.

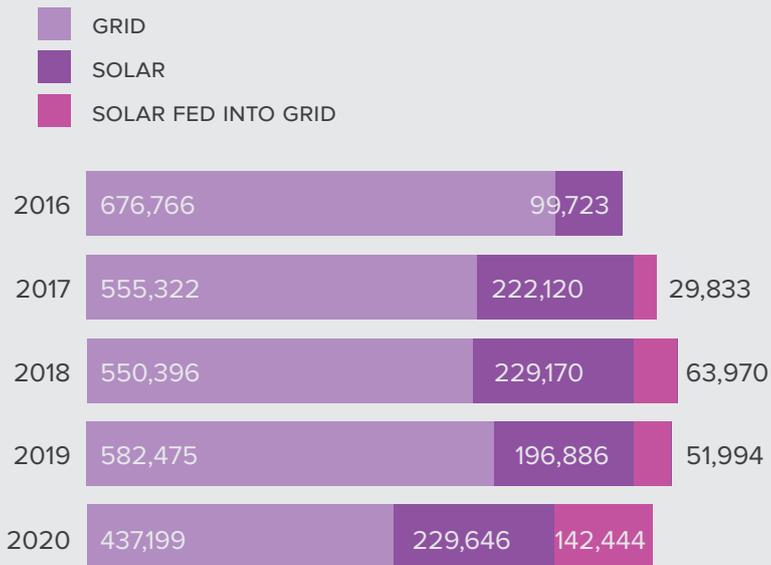
The 75kW system has been operating for its first year and we haven't had many crippling events to reduce our solar generation. In December 2020, we had issues with two of our systems which are now resolved.



PAKENHAM CAMPUS.

All systems have operated for the past two years with no major issues and generation has been very positive. We are currently looking at more ways of maximising our systems to achieve our goal of net zero by 2025.

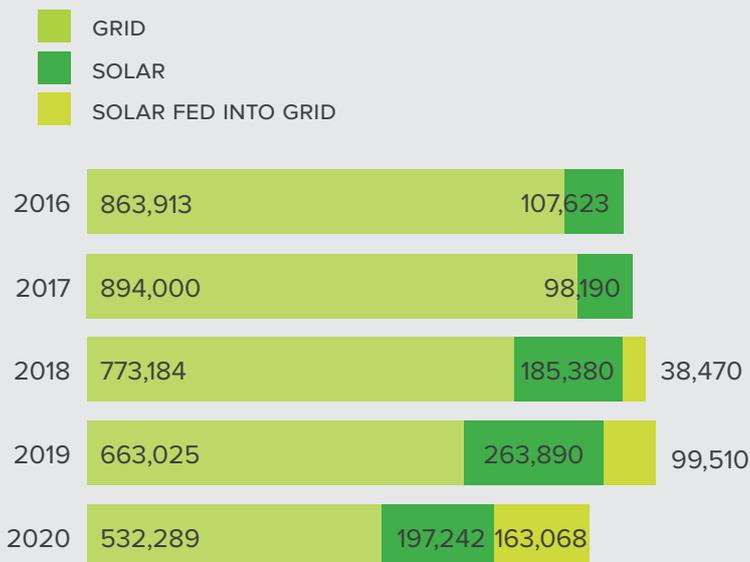




ELECTRICITY USE BY CAMPUS (KWH)

BERWICK CAMPUS.

We've reduced our electricity usage significantly in 2020 and returned more solar to the grid with the introduction of online learning programs and less people onsite. We expect these numbers to increase in 2021, but hopefully still remain less than 2019 figures.



PAKENHAM CAMPUS.

Similar to Berwick Campus, fewer people at the College meant less electricity used and more solar fed into the grid. What this does show is the College's base loading for overnight application use and other electricity use.

GREENHOUSE GASES

WE HAVE MANY PROJECTS AIMED AT REDUCING OUR 'THREE SCOPES' OF EMISSIONS, TO HELP LIGHTEN OUR ECOLOGICAL FOOTPRINT.

The three scopes of emissions are:

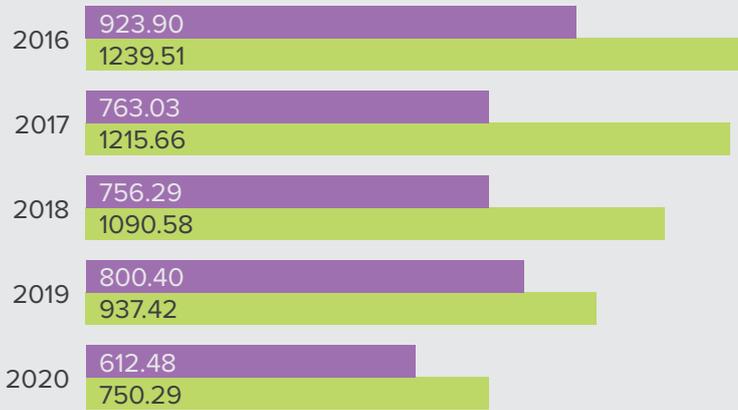
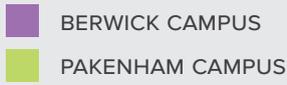
1. Direct greenhouse gases produced from burning fuel or gas
2. Indirect emissions, for example from purchased electricity
3. Other indirect emissions through the organisation's actions such as business travel, transport etc.

To reduce our first scope of emissions, we are planting plants at both campuses and working with local community organisations such as the Cardinia Environment Coalition. This vegetation acts as a carbon sink to extract carbon out of the atmosphere. We are reducing how much we use company vehicles, how much fuel we use and have invested in battery-powered cars. We have reduced our gas use, as we mainly run on electricity and only use gas in stovetops in kitchen areas.

Our second scope is electricity which we talk about in more detail in the electricity section of this document.

We are reducing our third scope of emissions by looking at how we contribute to the outside world. This includes the energy required to make products for the College and the transport distance it takes to get to the College.

Firstly, we grow about 35 per cent of the fruit and vegetables we use in the canteens on campus. The rest of the food we buy from locally sourced companies within Victoria. This ensures we minimise the distance food has to travel getting to the College and the fuel required to transport the food. Secondly, we buy a lot of furniture second hand from op shops in the local area, reducing the energy costs of making new furniture. We only buy from companies which incorporate environmental responsibility into their vision. Thirdly, we encourage the Beaconhills community to take public transport and other means of transport besides cars to come to the school, to reduce emissions from parents' vehicles.



GREENHOUSE GAS EMISSIONS (TONNES CO₂E)

PAKENHAM AND BERWICK CAMPUSES

The total greenhouse gas use was calculated from the total amount of gas and electricity the campus uses. Due to gas use being almost negligible, the graph's trend looks very similar to the electricity use graph. Our main plan for reducing emissions is by reducing our electricity use. We have not yet found a time-efficient way to track the College's vehicle emissions, however we know this is a contributing factor in the College's emissions.

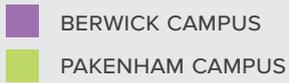


WATER

WE REDUCED OUR MAINS WATER USAGE BY OVER HALF AT BOTH SITES IN 2020. FROM THE EFFECTS OF THE PANDEMIC AND THE FACT WE HAD NO MAJOR LEAKS AT EITHER CAMPUS, UNLIKE IN 2019, WE SAW MINIMAL USAGE OF WATER.

As our irrigation is from water tanks, we only use mains water for cleaning and drinking purposes.

The last time Berwick used less water was in 2016 and Pakenham in 2012, demonstrating the growth of the College and the higher demand on resources under normal conditions.



MAINS WATER USE (KL)

PAKENHAM AND BERWICK CAMPUSES

The graph highlights the effects of fewer people at the College in 2020 and our continued efforts to maintain our water systems.



WASTE

ALL RECYCLING
STREAMS AND
COLLECTION POINTS
FOR THE PUBLIC.

- organic
- commingle
- paper/cardboard
- clothing
- small electrical
- battery
- metal
- soft plastics.

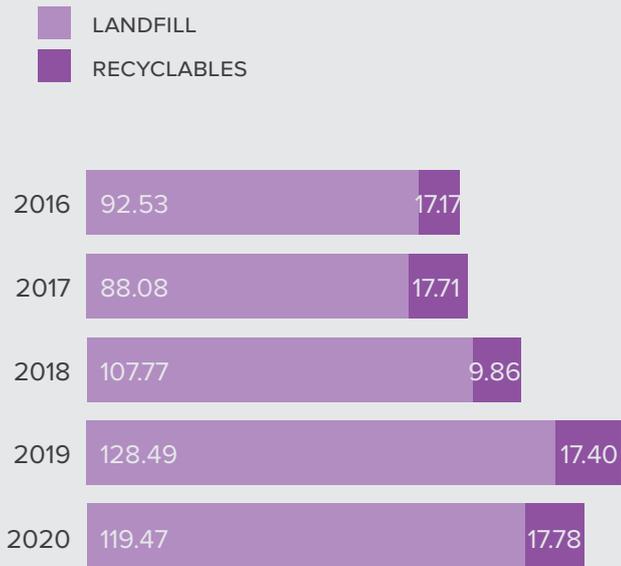
Contractor: BINGO



- comprehensive and accurate tracking system
- tracks all our waste in both litres and tonnes rather than using an equation to calculate tonnes from measuring litres, which was very inaccurate
- percentage of landfill is going into recycled processes due to general dry waste recycling through BINGO's resource recovery centres.

Challenge: contamination of recycling bins by soft plastics causing the recyclable content to be sent to landfill.

OVERALL WASTE ALLOCATION



BERWICK CAMPUS

- obtained a third and fourth commingle skip to successfully eliminate overflow going into landfill
- cleaning out Senior School, cleaning and sorting projects during lockdowns and demolishing of the performing arts building generated excess amounts of furniture and construction waste.

PAKENHAM CAMPUS

- cleanouts of old furniture and equipment, organising College cleaning and sorting projects during lockdowns and a furniture overhaul of Senior School were the main waste spikes for 2020.

LANDFILL (TONNES)

This year, we've been able to consolidate our waste data to incorporate our various sources of waste. Around 65 per cent of our landfill waste data is attributable to our construction and furniture replacement, whereas only 35 per cent comes from classroom and outside bins. Around 70 per cent of our construction waste is recycled at BINGO's Recycling facility in West Melbourne. In 2020, due to students not being onsite, more projects happening around the College and construction, waste was generated at a higher rate than usual.

ALL RECYCLABLES (TONNES)

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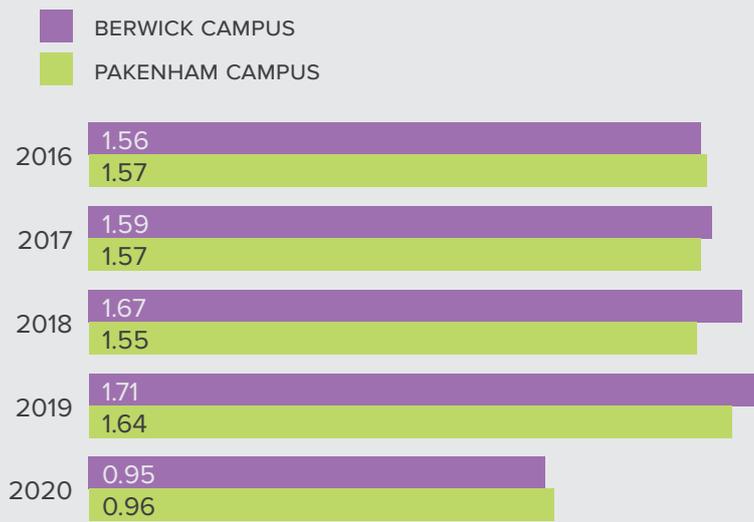
PAPER

SINCE 2012, THE COLLEGE HAS USED PAPER CUT MF TO TRACK ALL OF ITS PRINTER USAGE INCLUDING HOW MANY PAGES ARE PRINTED AND WHO PRINTS THEM.

Using the online platform provided by [Papercut MF](#), each person can view their own paper use and the College can generate reports to see the busiest printers and users in the College.

Recently we have used this data to track department printing and aim to lower this as much as possible in 2021.





PRINTED PAGES (MILLIONS)

BERWICK AND PAKENHAM CAMPUSES.

This graph demonstrates a linear increase between 2016 and 2020 paper use, with the main printer users being Senior School and Junior School at both campuses.

GARDENS AND GROUNDS

A FLOURISHING HABITAT

CREATING A FLOURISHING HABITAT IN OUR GROUNDS IS A PRIORITY FOR THE COLLEGE. WE HAVE ESTABLISHED GREEN SPACES THROUGHOUT BOTH OUR CAMPUSES AND ENCOURAGE STUDENTS, STAFF AND PARENTS TO HELP MAINTAIN AND CONTINUALLY IMPROVE THE LANDSCAPE.

Students and staff conduct water quality tests of Toomuc Valley Creek, located near our Pakenham Campus. We also have regular planting sessions with students in our vegetable and Indigenous gardens.

Beaconhills has more than 10 main garden areas, including three Indigenous gardens. Our vegetable gardens provide fresh produce for our canteens and local charity organisations.

The food gardens in Junior School and Little Beacons Learning Centre at Pakenham are used as part of the students' learning about food technology and permaculture.

While the Berwick Campus currently has fewer food gardens than Pakenham due to space, plans are now underway to create gardens around the new Little Beacons Learning Centre and increase our gardens at the Pakenham Campus..

INDIGENOUS AND FOOD GARDENS

Berwick Campus

- food garden and orchard (Year 9 building)
- food garden (Food Technology building)
- Indigenous plantings (Senior School buildings).

Pakenham Campus

- Indigenous wetland area (Year 9 Centre)
- Indigenous food garden (Founders' Gazebo)
- food agricultural area (boarding residence)
- food garden (Junior School area)
- herb patch (Canteen)
- herb garden (Little Beacons Learning Centre)
- Food garden (Food Technology building).

ALL THINGS FOOD

SUSTAINABLE. LOCAL. ORGANIC.



Kitchens and canteens

Around 35 per cent of the fruit and vegetables used at the College's kitchens and canteens come from the school's agricultural areas. It is important that students enjoy the benefits of healthy organic produce and also learn where food comes from. We value fresh, locally-grown produce over imported varieties and rely on local businesses to provide us with seasonal produce for our ever-changing Canteen menu.

Organic waste and worm farms

The College maintains its organic waste in-house by using our worm farms and organic waste bins located around the school. Each outside landfill bin has two accompanying bins; one commingle and one organic waste, coloured red, yellow and green respectively. Once the organic waste is collected, it is deposited into the College's worm farm, where the worms eat the organic waste turning it into nutrient rich soil to be used in the College's gardens.

THE IMPORTANCE OF WETLANDS

Around our campuses, we are working with local community groups and charities to promote conservation and revegetation. We've been working with Landcare and the Cardinia Environment Coalition to plant trees around Cardinia Creek in Berwick and Toomuc Valley Creek in Pakenham to facilitate habitat growth. Creating more wetlands around the Pakenham and Berwick campuses provides habitat for local flora and fauna, reinforcing the efforts of restoring habitat inside the College campuses to help preserve and protect species.

Berwick Campus

The Berwick Campus, located on a hillside, was once bushland with a creek in the valley. To recreate this environment, we've grown trees around the perimeter of the campus and created a wetland environment at the bottom of the hill. Throughout the campus, we have sheltering plants, logs and rocks to provide habitat to lizards and invertebrates, allowing them to travel throughout the campus.

Pakenham Campus

Before there were stormwater drains and buildings, Pakenham Campus was a wetland area with lots of wildlife and plants. Our plan is to restore some of the wetland area that was destroyed and conserve some of the Indigenous endangered species in the area. So far, we have built two pond areas, one at the front of the campus next to the bus loop and the other at the back next to the Year 9 Centre; these ponds provide crucial habitat for birds and other animals allowing them access to water and a safe place to nest. The ponds are breeding ground for invertebrates, amphibians and lizards which we want to see prosper.



COMMUNITY ENGAGEMENT

INTERNATIONAL, NATIONAL, LOCAL

CHANGING LIVES THROUGH SERVICE: SHAPING A
FUTURE OF GREATER POSSIBILITY FOR COMMUNITIES
THROUGH ENVIRONMENTAL ACTIVISM.

For a community to be sustainable it needs to consider programs and activities that meet the physical, mental, emotional and spiritual needs of its people. We aim to be a healthy, harmonious and inclusive community that works for the common good to build a better life for members of our community and for the environment in which they live.



SERVICE

We have a clear understanding of why we do what we do to serve our local community. We aim to make a meaningful difference through the building of relationships and connecting people in ways that enhance our lives and those we serve. Research and personal experience shows a clear link between “doing good” for others and a sense of personal wellbeing.

Service to our environment is highly valued at Beaconhills College. We offer opportunity and invite our community to participate in appeals for linen to support local wildlife sanctuaries. This program, as well as our annual good quality winter coat appeal, (supporting those experiencing hardship) aims to educate our community to consider giving to others and also that so many of our possessions have a second life of “reuse” rather than adding to landfill.

Fresh produce from the College food gardens is used to make and donate home-cooked meals for those experiencing homelessness in Cardinia and Casey. A partnership with Cardinia Environmental Coalition has empowered members of our community to donate funds to Gippsland bushfire appeals as well as building possum, nesting, owl boxes and bee hotels to assist the rehabilitation of our precious Australian natural environment.

Through our service programs we teach our students about those in our world who live in energy poverty and invite them to construct and donate a SolarBuddy unit to a student living with no light after darkness. Groups of students volunteer and assist on a regular rotation, with the College paper recycling program.

Clare Tuohy
Head of Citizenship and Service

INTERNATIONAL

ENHANCING THE LIVES OF OTHERS

The importance of clean water in Timor Leste

In June 2017, a small group of Year 10 students accompanied by two teachers, continued the tradition of Beaconhills College by visiting and supporting schools in the district of Ermera, Timor Leste. We were welcomed so warmly and graciously to many of the villages and in particular to the schools in these villages. One of the experiences that will stay with us forever was our visit to Data Rua, high in the mountains of Ermera.

During a visit to the village school, several of us needed to use the bathroom, so a teacher from the local school showed the way. The sight we were greeted with as we went to the side of the school was one of absolute dismay and disbelief. There was one very basic drop toilet and no running water for all 180 students of the school. We were reminded of the UN Sustainable Development Goals, in particular goal number 3 - good health and wellbeing, number 4 - quality education and number 6 - clean water and sanitation. These very basic necessities were clearly missing in Data Rua. Basic sanitation conditions have a significant impact on engagement at school, health and wellbeing of children and adults.

So began the Beacon of Hope Water Project – a gift from Beaconhills College to the school and village of Data Rua.

The project took three years to complete. Beaconhills College's Head of Beacon Explorers, Sam Maddock, started the process late in 2017. Extensive consultation with Data Rua Chefe Suco, Mario Concalves and community leaders helped Sam have a clear understanding of the process, planning and how the local community could be involved in the Water Project.

In 2018, armed with extensive local knowledge, Sam met with the Water Board in Gleno. Plans were put into place for training of locals to participate in the development of The Water Project. Budgets were developed and scaled drawings were completed.

Finally in 2019 the project started. There were many challenges for both Water Board staff members, transport workers, truck drivers, construction experts and local villagers. Transporting pipes and other heavy equipment via road presented obstacles and problems, but in the true spirit of the Timorese people, the project was completed early in 2020.

Beaconhills teachers Sam Maddock and Clare Tuohy visited Data Rua in January 2020. What an amazing sight greeted these teachers as they walked into the village and looked across to the school. In place of the single drop toilet was a concrete construction comprising of three private toilet cubicles all with access to running water. Not only did the students have toilets in their school, but the entire village now had access to fresh, running water. There was a real sense of humility as Sam and Clare reflected on the gift that Beaconhills gave proudly to our friends in the village of Data Rua.

The Water Project was officially opened in March 2020.

Clare Tuohy
Head of Citizenship and Service



NATIONAL. LOCAL

PROTECTING AND PRESERVING



Zoos Victoria bushfire appeal, building and painting possum boxes

Early in term 2, we launched an appeal to support the great work of Zoos Victoria. This organisation co-ordinates the support to all wildlife sanctuaries and animal shelters in bushfire-ravaged areas through its conservation program and looks to the future of how to reduce the impact of bushfires on our native animals and landscape.

Once again we celebrated the generosity of our College staff at the Commencement Church Service in January. The collection of \$2030.70 was donated to Zoos Victoria bushfire appeal.

Cardinia Environment Coalition

Working closely with Cardinia Environmental Coalition, Bunyip Bushfire Recovery team and local Men's Sheds, our Year 7 students and Year 8 Certificate of Excellence students will make over 50 possum boxes, bird houses and insect hotels. These animal support resources will be donated to local areas impacted by the fires and will assist in restoring our natural ecosystems.

2021 PLANS

Bigger and greener

- more opportunities for gardening programs (Junior School, *Certificate of Excellence Program*, Year 9 and Senior School)
- more environmental fundraising opportunities with Zoos Victoria
- involvement in local environmental groups like Locky's Legacy and Cardinia Environment Coalition
- student awareness on issues related to habitat destruction and Australia's role in climate change
- starting to build a community garden at Pakenham Campus
- continue to build and get a community garden running at the Pakenham Campus
- higher rates of donation to our charities and Salvation Army programs.

LOOKING TO THE FUTURE

Projection until 2025

Beaconhills will continue to research and implement green building design for all new developments on our campuses and review procurement policies and end-of-life procedures for equipment.

We plan to install another 800kW of solar to achieve our net 0 target - meaning we will feed the same amount of electricity into the grid that we use.

Beaconhills College will keep finding ways to improve our recycling and extend our service programs. Educating students, staff and families about the vital importance of sustainability is a key priority for the future of our planet.





BEACONHILLS COLLEGE

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