



ST VINCENT'S SCHOOL

Breathe Better Air Community Fund Report

DR JOHN PATTERSON
September 2024



FOREWARD
BY LORD JIM KNIGHT

Breath Better Air is a powerful example of citizenship education for climate innovation in action. The project has measurable outcomes, and with local adaptation opportunities can serve as a 'boxed' and replicable exemplar of best practice. Encouragingly the 'spin-off' ideas from community collaboration and the co-construction of simple activities for change makes this project a fully rounded experience. I look forwards to hearing how any replication or 'rolling out' develops.



BACKGROUND

St Vincent's School made a successful application in the Summer of 2023 to the Breathe Better Air (BBA) Community Fund. The school, a specialist school for sensory impairment and other needs, prides itself on inclusivity and aspiration with all pupils having access to the 'additional VI curriculum' (ENRICHMENT) in advance of the VI 'Curriculum Framework for Children and Young People with Visual Impairment'¹ (CFVI, 2022) The school enables and empowers pupils to realise their true potential. Participation, 'reverse-inclusion'² and leadership opportunities in horticulture, and 'green innovation' projects, highlighting routes to employment within an important and developing field (i.e. 'climate action') remain central to the project and its collaborative, co-constructed development, research and (potential) replication as a model for 'net zero' engagement in school.

From here, the School Vision aims at the subsequent engagement of St Vincent pupils in 'trainer of the trainers' opportunities.

A golden thread running through the BBA project embracing enrichment remains embedded within CITIZENSHIP EDUCATION³ where pupils care for their community and the wider environment, generating a creative space for cross-curricular opportunities across the school's broad curriculum.

St Vincent's enrichment programme is made up of a wide range of innovative and creative activities, many of which support the green agenda, providing an excellent foundation for the BBA project. These projects reach back as far as 2015 and have included the creation of climate action comics and animations (purposefully as a 'sighted' medium for reverse inclusion/trainer of the trainer opportunities) designed to connect communities with an awareness of climate change and biodiversity, wildflower and tree sapling growing and gifting (including officially at Cop26 in Glasgow). A selection of projects are shared below

[Citizenship, Comics & Climate Action | stvinwebsite](#)

[Reclaim the Green, Reclaim the Nature | stvinwebsite](#)

[Eco Saints Project | stvinwebsite](#)

Peer review publications have followed the activities as shared in the school website

¹ VI Framework eleven **areas of interest** facilitating an Inclusive World; Sensory Development; Communication; Literacy; Habilitation: Orientation and Mobility; Habilitation: Independent Living Skills; Accessing information; Technology; Health: Social, Emotional, Mental and Physical Wellbeing; Social, Sports and Leisure; Preparing for Adulthood

² Reverse –inclusion is where children with disabilities lead those without in a VI context the 'flipping of the narrative' breaks down barriers

³ Citizenship education **develops knowledge, skills and understanding that pupils need to play a full part in democratic society**, as active and informed citizens.

[Relevant Publications | stvinwebsite](#)

The School's Enrichment/ Citizenship Education input helps to provide pupils with the knowledge, skills and understanding to prepare them to play a full and active part in society and their local community. Citizenship is demonstrated throughout the project's activities; which are detailed in the body of this report.

The Climate Detectives Project was a forerunner to the BBA project, where pupils undertook research to establish the air quality around local schools. The findings raised awareness of poor air quality which can have a detrimental impact on children's health and learning outcomes.

External recognition attached to projects include:

- Freedom of the City of Liverpool 2015
- Pupils celebrated as 'Let's Go Zero Climate Heroes' shared in a Rankin Photography instillation
- Tree Council 'Beacon School'
- Royal Horticultural Society Awards 2018,2019 and 2020 2022 'Outstanding' for use of grounds Level 5
- High Sheriff Awards 2014, 2019, 2020, 2021 for 'valuable services to community'
- Pupils engaged in DfE Climate action strategy consultation
- Garden generation for RHS Tatton Show
- Educate Award 'innovation in education' 2020
- Educate North Awards 2021 'Highly Commended' for entrepreneurial learning
- Pearson's Educate Awards Silver2020 for school 'IMPACT through partnership'
- Official attendance at Cop26 with 'seeds of hope' and Magic Bench community cohesion / climate action project
- Educate Awards 2021 Outstanding commitment to the environment.
- Pearsons Award Silver 'Lifetime Achievement' 2023 (Dr J Patterson)
- Young Green Britain Challenge Winner 2023
- Educate North Community Engagement Award 2023 Citizenship comics and climate action
- Warner Brothers Cartoon Network 2024 Climate action project under development

KEY AIMS and OUTCOMES

St Vincent's met the criteria of the BBA funding through the 4 following key aims:

- Engage and collaborate with public bodies, networks, and/or communities to promote better air quality.
- Provide activities that promote better air quality in communities.
- Capacity building to support future projects and associated outcomes.
- Raise public awareness of the project.



Engage and Collaborate

St Vincent's has a longstanding track-record of working with a wide range of stakeholders under the green agenda banner. Partners and collaborators both past and present include:

Alder Hey Children's Hospital
Friends Of Springfield Park
Scouse Flowerhouse
MeeeTeam⁴
Let's Go Zero
Liverpool John Moores University: design engineering focus

⁴ Meee is an alternative remote qualification

Hope University: teacher education focus
Aeternum (suppliers of Air Quality monitors)
National Tree Council Beacon School
National Education Nature Park
UK Sustainable Schools Network
Eden Project
Merseyside Police
SOS Pilot school: Students Organizing for Sustainability
Ministry of Eco Education pilot school

Examples of projects which have benefited from collaborative partnership working are briefly highlighted below.

- The National Tree Council: pupils have become Tree Champions. Tree Champions is an inclusive initiative that connects young people, trees, and nature with the ambition of educating, building personal development and inspiring young people to broaden their career aspirations.
- RHS Tatton Park: St Vincent pupils were invited to host their own “garden” to demonstrate how gardens can connect people with communities. The “garden” was designed and developed by pupils through the Grow Wild Enrichment Group. Planters grew and gifted to the community under little free greenhouse (see attached pictures)
- Climate action comics and animations such as The Magic Bench leading to a developing project with Warner Brothers.

As demonstrated above, these successful partnerships have been impactful and provided the assurance needed that St Vincent’s have the skills and expertise to develop and sustain meaningful relationships and partnerships that were critical to secure funding and subsequently deliver the BBA project.

Partner engagement for this project was actioned between September and November of 2023, as St Vincent’s Horticultural Group (part of the enrichment programme) consisting of 48 VI pupils and support staff, hosted a series of meetings with partnership and community organisations. The aim of these meetings was to build and encourage collaborative working by setting out the vision and co-designing the BBA project. To maximize engagement and promote inclusivity these meetings were conducted both face to face and virtually.

Activities

A range of delivery activities, 5 in total, were undertaken as part of the BBA project, all of which were designed to be engaging and inclusive. Each complemented the wider ambitions of the school's enrichment programmes and citizenship education with 'spin-off' innovation encouraged (i.e. See carbon capture unit in attachments)



1. Installation of air quality monitors

Air quality monitors were installed by Aeternum in the following locations; one was placed at the back of St Vincent's School, close to an already existing re-wilded area; one at the front of school, near to the main road; four on the site of Alder Hey Hospital itself (it should be noted these monitors were installed prior to the project's commencement).

Once the monitors were placed in situ VI pupils/ key staff received instruction on the interpretation and use of the data collected. This information was then shared through peer-tutoring in school. Key staff then generated cross curricula learning opportunities around the use of:

Data capture

Reading Meters
Sharing Data

During the programme activities, a further workshop between VI pupils, staff and community was organised and delivered in May of 2024.

2. Workshops on climate action

To increase the pupil's knowledge and to contextualise the wider ambitions of the BBA project, a series of climate action workshops were delivered as part of Enrichment learning. This happened in tandem with community collaborative partners, who were:

Tree Council
Scouseflower House
Maggie Mays Community Café
Friends of Springfield Park
UN 2030 Hub

The workshops were kept very 'fluid' in order to embrace the project as something co-constructed, in which every participant had 'ownership' over all the ideas shared. There was also an emphasis on valuing all participant's input, no matter how small or seemingly inconsequential. A guiding principle throughout was to consider the Net Zero value of all participant's input. Collectively the impact measures can be taken by real time air quality.

3. Meee Qualification

The Meee qualification is an alternative qualification which provides young people with the opportunity to:

- understand and believe in themselves and their abilities
- be resilient and thrive personally
- play a positive role within their community

During the workshops 42 pupils engaged, either face to face or virtually with the Meee qualification. This strength-based qualification is best developed within a project-based learning scenario. An example of this was demonstrated through The Magic Bench project. The Magic Bench is a story of a visually impaired boy and what happens when he sits on the bench in his local park. St Vincent's invited other pupils in the Mersey Region SSN (Schools Sustainability Network) to write a story about The Magic Bench and what could happen if it appeared in their community.

The Magic Bench concept invited creative collaboration in Citizenship, pupil voice and climate action, which enabled pupils to play a positive role in their community through activities which tapped into their unique skills such as story-writing, climate action awareness, seed sowing, tree planting, etc.

The impact of this can be demonstrated through the experience of one pupil who gained confidence and inspiration to successfully share learning with other pupils, to encourage them to engage and undertake the qualification.

4. Re-Wilding

Re-wilding activities took place in several locations in and around the school.

Re-wilding and planting took place primarily at the front of school. Commensurate with this happening there was a second re-wilding by primary pupils on a smaller area nearer primary classrooms. The core group consisted of 7 Grow Wild Pupils participating alongside 12 primary children. Staff from the school and volunteers from Friends of Springfield Park were also engaged in the re-wilding activity.

The re-wilding element of the project sits within an established and ongoing re-wilding and planting/sowing of wildflowers on an annual 'cycle'.

The unique aspect of the re-wilding activities is that many of the plants and seeds used were obtained through the sustainable Little Free Greenhouse project run by the Grow Wild Enrichment Club at St Vincent's, whereby most seeds are harvested from the school's wildflower meadow.

5. Tree planting

Over 100 trees were planted by The Tree Council, supported by pupils, teachers and volunteers through the Friends of Springfield Park. These trees were planted in the following locations: St Vincent's School, Alder Hey Hospital and Springfield Park. It began and has been ongoing since November of 2023. Advice throughout was sought and taken from The Tree Council senior staff. There were also trees grown at St Vincent's planted in collaboration with nearby schools, Broughton Hall and Cardinal Heenan.

6. Community Activities

Community workshops in collaboration with Maggie May's, a community cafe situated in the School's grounds, took place in July, 2024. These workshops included recycling, re-wilding, re-pollinating. These workshops also provided the opportunity for the school to promote and celebrate all of the activities undertaken throughout the BBA project.



Capacity Building

Capacity building is about improving capabilities, strengthening skills and transformation both in individuals (pupils), organisations and the local community.

The pupils have gained new knowledge and many transferrable skills, all of which have enriched their citizenship education. Outcomes included:

Pupils increased their knowledge about the ongoing climate emergency including the causes of pollution, poor air quality, and the impact this has on population health.

Pupils learnt how to engage and communicate with a wide range of people and organisations, and how to develop effective relationships/ pupil voice

Pupils learnt about air quality monitoring equipment, how they work and how to collect and effectively share data both verbally and electronically.

Pupils increased their knowledge about the activities which improve air quality.

By engaging in the project, the pupils acted as advocates for environmental stewardship.

The BBA project promoted volunteerism – where pupils can identify themselves as agents for change.

The project activities opened opportunities for pupils regarding their future learning and employment aspirations both in school and beyond e.g., environmental science, computer science, horticulture, campaigning and linking to innovation and entrepreneurship[

Capacity building outcomes for St Vincent's:

Educators and pupils can work together to build up knowledge including digital technology, data collection and observation skills.

Promoting and sharing air quality activities with the Local Learning Network.

Improved the existing enrichment programme.

Further develops the school's ability to deliver impactful Citizenship Education.

Lays the foundations for St Vincent's and Alder Hey to work collaboratively in the future as hubs for air quality data capture sites.

Supports St Vincent's ambitions of replicating the project nationally.

The wider community has also benefited from the BBA project through:

Improved green spaces within the immediate community through rewilding activities.

Generated awareness that in time there will be improved biodiversity.

Local community organisations collaborating and working together, therefore strengthening social capital.

Raised public awareness through the workshops at Maggie Mays, presentation before Alder Hey Hospital Governors' meeting, and a talk with Hope University Students.

There has been limited targeted promotion of the BBA project outside the work of the collaborators and partnerships, but the impact of activities such as the re-wilding, tree

planting and improving local and community green spaces have indirectly raised public awareness.

By working in partnership with hyperlocal organisations such as Friends of Springfield Park, local community volunteers have recognised the role that the pupils of St Vincent's have played in improving their local community for residents to enjoy and benefit from.

As a city that has declared a climate emergency, the endorsement from key local figures, including local MP Ian Byrne and City Councilors, ensures that the project has been recognised for its creativity and innovation. This project also supports the Liverpool Net Zero Carbon 2030 Plan which advocates for creation of new green infrastructure through planting trees, shrubs, and wildflowers



RECOMMENDATIONS

St Vincent's to repeat the project with a cluster of schools /school network (we are encouraged that The Archdiocese has expressed an interest in exploring this with Hope University and its student volunteers on teaching practice). To achieve this, additional funds will have to be secured. This will allow St Vincent's to connect with other schools within the SEN learning network. St Vincent's will take the lead in initiating a 'green movement,' promoting its VI pupils as 'agents of change' to take active responsibility for re-wilding and tree planting within their own and other schools' green spaces. Harnessed to this initiative will be a continuing collaboration with existing and new stakeholders, building on the work already established during the BBA project. For this to happen the following recommendations are suggested:

1. The National Wildflower Centre for the Eden Project to utilise the green spaces at St Vincent's as a 'flower house and seed hub' with facility to process and distribute for sale the seeds and flowers harvested at the school. There will also be capacity to share seeds and flowers nurtured at the school with other schools within the learning network. Linking this will be an overarching ambition to provide biodiversity training to VI pupils in the research and development of soil science and ideas around carbon capture. The vision is for this long-term partnership to lead to a widening of opportunity, employability, employment for VI young people within the expanding and thriving green economy (see Employment and Skills Infographic in attachments).

2. Engage with Alder Hey hospital and Springfield Park to enable the long-term patients to benefit from the second stage pilot, utilising the green space surrounding the hospital

3. Further engage with the MeeeTeam who offer the Meee Fuel qualification. As stated in the activities the qualification provides young people with the opportunity to:
 - understand and believe in themselves and their abilities
 - be resilient and thrive personally
 - play a positive role within their communityThis would be an ideal programme to deliver to the long-term patients currently residing in Alder Hey Hospital.

4. For The National Education Nature Park to continue collaboration with St Vincent's to develop a 'Plants for Purpose' resource, engaging VI pupils to research and advise other schools looking for the best plant to enhance air quality. Trials at the school with air quality monitors could also link Computer Science learning to existing curricula, with real and local data set shaping Key Stage 3/4 projects.

5. Aeternum, who supported the Breathe Better Air project (see supporting document) is also committed to continued work with St Vincent's VI pupils. Deepening further study of air quality monitoring and data analytics this ongoing collaboration will "drive evidence-based decision-making, optimise re-wilding efforts, and ultimately contribute to creating a healthier and more sustainable environment for communities, especially children and young people with visual impairments."

6. Carbon Capture Unit Concept requires considerable additional resources for it to be realised. However, if achieved it would be an innovative spin-off project which could provide students with employability and further education opportunities.

7. Deliver Lectures to Hope University and Liverpool John Moores University students under 'service-learning' inviting them to replicate the project during their school placements and to further research spin off ideas such as the carbon capture unit concept (see endorsement letters from Hope and LJMU).

NEXT STEPS

Beyond the present BBA project is an ambition to secure further funds to replicate the project nationally, embedded within school curricula with an emphasis on collaborating with school clusters providing VI reverse inclusion.

To work towards this, there should be an initial stakeholder meeting to establish interested parties and to develop a plan to take this forward. After this, quarterly meetings would be advisable to maintain momentum.

ENDORSEMENTS

Please see attachments

RECLAIM THE GREEN RECLAIM THE NATURE

A 'what if?' impact concept document for discussion

UNSDG'S - 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17

AIM:

Carbon reduction, employment, 'Doing my bit',
First steps to sustainable actions

HOW?

A SIMPLE CARBON FILTER UNIT



**Innovation
Catalyst**
Encouraging
first steps
for action

What does it do for people?

Healthy Living
Community Spirit
Education
Associated Business

More information:

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Employment and Skills to deliver prosperity.

Strategic Plans and Objectives



Blueprint to deliver partnership-based education.



Project-based learning:
in schools, centred around the vocational skills needed to address local global issues.



In partnership with Universities and Colleges:
to access research and development, and develop aspiration.



In partnership with business:
to support two-way skills development, and deliver job creation.



In partnership with civil society:
to add immediate value in tackling social issues, and reduce future impact on residents.

Underpinned by:

Digital, creativity and proactive prospecting to develop tangible projects and their outcomes.

Outcomes

- 1. Maximise employability of Liverpool adults.
- 2. Help unemployed and economically inactive young people and adults in Liverpool to access high-quality jobs.
- 3. Work with employers, providers and stakeholder to establish pathways to employment.
- 4. Engage local, regional and national employers to increase opportunities for Liverpool residents.
- 5. Strengthen existing links with careers education organisations, locally and nationally.
- 6. Influence and promote social value with investors, developers and businesses.



24th May 2024

To whom it may concern

Endorsement and support from Professor Cate Carroll-Meehan, Executive Dean, Faculty of Education and Social Sciences

This statement provides endorsement and support for Dr John Patterson and the next steps of implementation of the Breathe Better Air project. As the Executive Dean of Education and Social Sciences, I have a keen interest in facilitating opportunities for university students to engage in social action projects that benefit the local, regional and international communities. To this end I am leading a project at Liverpool Hope University that will result in a week long Festival of Futures, where students across the university will engage in projects that will result in social change through volunteering, advocacy and action. The five themes are: People, Cultural and Places futures, Socially Just futures, Sustainable futures, Peaceful and Secure futures, and Digital and Human futures. The projects will be linked to the UN Sustainable Development Goals. Within the sustainable futures themes, a challenge team will work with Dr John Patterson, to deliver the Breathe Better Air Project in Liverpool Schools. We are excited about the collaboration and the potential to make a difference.

Yours faithfully

Professor Catherine (Cate) Carroll-Meehan
Executive Dean
Faculty of Education & Social Sciences

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June 18th, 2024

To whom it may concern

I am writing on behalf of Aeternum to express our strong support for Dr. John Patterson and the Breathe Better Air project. As a company dedicated to developing innovative solutions to address air pollution and climate change, we believe that our collaboration with the Breathe Better Air project perfectly aligns with our mission and values.

Aeternum specializes in providing state-of-the-art air quality monitoring technology and data analytics. Our sensors accurately measure various pollutants, and our advanced data platform generates information that empowers stakeholders to make informed decisions and measure the effectiveness of their actions in improving air quality.

We are particularly impressed by the unique approach of the Breathe Better Air project, which combines CITIZENSHIP Education, climate action, community engagement, and awareness for Visual Impairment (VI). This holistic approach creates a replicable model that aligns with the UN Sustainable Development Goals and has the potential to drive meaningful change.

By deploying Aeternum's technology in participating schools and at Alder Hey Children's Hospital, the Breathe Better Air project can access real-time, high-resolution data on air quality levels. Our data can be integrated with the project's educational resources and community engagement initiatives, raising awareness about the importance of clean air and inspiring collective action.

Aeternum's commitment to working with industry partners, research institutions, and communities aligns perfectly with the Breathe Better Air project's vision of bringing together key stakeholders to deliver meaningful change. We believe that this collaboration can act as a catalyst for change, enriching the curriculum for Young Children with Visual Impairment and supporting the development of a sustainable, forward-thinking ecosystem.

Our collaboration with the Breathe Better Air project not only aligns with Aeternum's values but also presents a unique opportunity to showcase the power of data-driven environmental initiatives. By working together, we can demonstrate the tangible benefits of our air quality monitoring solutions in the context of a community-focused project, inspiring other organizations and cities to adopt similar approaches. This collaboration has the potential to lead to wider adoption and contribute to the global effort in combating air pollution and climate change, ultimately benefiting communities around the world.

Aeternum is committed to supporting the Breathe Better Air project through our expertise in air quality monitoring and data analytics. We believe that our collaboration can drive evidence-based decision-making, optimize rewilding efforts, and ultimately contribute to creating a healthier and more sustainable environment for communities, especially children and young people with visual impairments.

We are excited about the potential of this partnership and look forward to working closely with Dr. John Patterson, the project partners, and our industry collaborators to achieve the Breathe Better Air project's objectives. Together, we can create a lasting impact and pave the way for a greener, healthier future.

Yours sincerely,

Rose Carter

Rose Carter
Cofounder, CEO
rosec@aeternum.co



13th June 2024

To whom it may concern

Endorsement and support from Phil Paulo, Head of Major Tree Planting Projects

This statement provides endorsement and support for Dr John Patterson and the next steps of implementation of the Breath Better Air project. The Tree Council (TTC) has been working in collaboration with Dr Pattersons and St Vincent's School for several years, with the school achieving Beacon Status within The Tree Council's, National Schools Programme.

Over the last two years we have been further strengthened this partnership through collaboration with Dr Patterson, pupils and staff. Activities have included tree planting across the school campus at Yew Tree Lane and the development of community tree growing facilities, including the establishment of orchard mother trees and productive willow beds on site.

This work supports TTC's national strategy to support the development of regional community tree growing and environmental hubs in collaboration with regional partner. These hubs will provide training and good practice in the areas of tree planting, establishment and care.

Regional hubs will also facilitate the growth and distribution of climate resilient trees across the local area, supporting both local and national tree planting strategies and increasing canopy cover, improving tree equity, supporting green infrastructure and delivering ecosystem services in identified urban areas, including improved air quality and urban cooling.

As this work moves forward, we are excited to be supporting Dr Patterson in the development and delivery of the Breath Better Air Project, as a part of the proposed 'wild widing' initiative which will see the expansion of tree planting of greening initiatives across the local area from St Vincent's to Alder Hey Hospital, Springfield Park and the Liverpool Loop Line.

Learning and evaluation gained from this work will be shared across the Tree Council's national networks and programmes, to encourage similar good practise in other locations of the UK.

Your sincerely

Phil Paulo
Head of Major Tree Planting Projects

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5th June 2024

TO WHOM IT MAY CONCERN

As a modern civic university, LJMU is delivering solutions to overcome the challenges of the 21st Century. The Faculty of Engineering and Technology's collaboration with local, national and international industrial partners is critical in fulfilling the University's core mission to serve "its people and communities, at home and further afield; enriching the lives of those they work with and acting as an anchor institution in the City of Liverpool".

Since 2016, LJMU has been a key partner in the LCR 4.0 family of projects, with a dedicated team of specialists delivering digital innovation support to 787 SMEs in LCR, resulting in an increase of over £187m GVA and the creation of 3,450 jobs in the region. Working cross sector, support has been provided to SMEs and communities, with a key driver being to use digital technology as an enabler towards the transition to net zero. There is clear synergy with the Breathe Better Air programme in terms of aims for community which resonates with FET. With over 200 academic staff and researchers working on cutting edge solutions to deliver solutions to key priorities in the region and globally, we are working on technologies such as use of sensors to monitor air pollution in real-time to low carbon strategies to be adopted by the community, industry and used in education.

LJMU also has a mission to encourage STEM activities and engage with communities and ensure research-led teaching equips the workforce of the future with the skills to meet demand and deliver solutions to global challenges such as 'cleaner air'. With this in mind, we are very keen to engage with the project and support innovation and research and develop collaborative solutions with the project partnership.

In summary, we are delighted to offer our support of the vision of Breathe Better Air programme, bringing together key stakeholders from the community, education, industry and research organisations to deliver meaningful change, act as a catalyst for change and enriching curriculum for Young Children with Visual Impairment and looks forward to engaging with the project and supporting the development of a sustainable forward thinking ecosystem.

Yours sincerely



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