

# ZEB Academy

## Designing for a positive impact on Nature

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Why a positive impact on Nature?

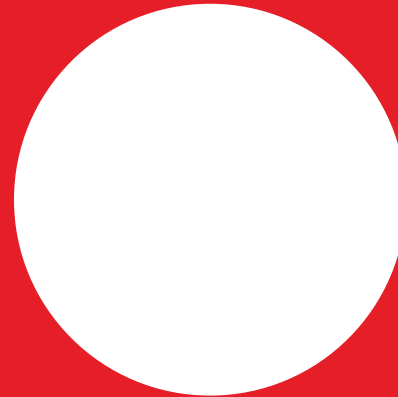
Initial



Small  
Urban



Large  
Periurban



Current



I started my professional career in France, more than 15 years ago, participating from the beginning in projects that incorporated net gains in biodiversity, habitat creation, nature-based solutions or SuDS

Small  
Urban



## London, UK

St.Mary's Roman Catholic Primary School in Chiswick was listed among the most polluted schools in London, in an audit by the Mayor's Office. Pollution levels at the school were four times the legal limit, and the headteacher regularly had to restrict outdoor play to protect the 240 children at the school. a group of parents set out to tackle these issues and turn St Mary's into a green oasis, including the installation a green wall in the playground.

ARUP



| Chiswick Oasis

## Measure

### PRE INSTALLATION

WALL AREA:



WALL DIMENSIONS:



NUMBER OF PLANTS:

0 number of plants



PLANT SPECIES:

0 types of plant species



ANIMAL SPECIES:

A small number and variety of spiders were found on the existing brick wall.



Chiswick Oasis | Green Wall Evaluation

### POST INSTALLATION

WALL AREA:



WALL DIMENSIONS:



NUMBER OF PLANTS:

Over 20,000 number of plants across the whole green wall.



PLANT SPECIES:

Over 25 number of plant species can be found across the whole green wall.



ANIMAL SPECIES:

Western honey bee | Bumblebee | Small white butterfly | Hoverflies | Spiders among others to come



Chiswick Oasis | Green Wall Evaluation

## London, UK

Arup offered expertise in green infrastructure and environmental design. The company’s landscape architects and ecologists advised on how to maximise the wellbeing, ecology and sustainability benefits; helped Chiswick Oasis identify suppliers; and provided technical advice on the design and installation. ANS Global installed the green wall at a reduced cost and will maintain it for five years free of charge. The wall is structured on an ornamental green wall, a climber’s wall and an educational green wall

# Chiswick Oasis

## Other Chiswick Oasis initiatives

### #NOCARSFRIDAY

- On Friday the 12th of April, St Mary's Primary school in Chiswick, supported by the Hounslow Council in conjunction with the Chiswick Oasis, launched the first #NoCarsFriday
- The initiative encourages parents, carers, children and staff to leave their cars at home and walk to school, cycle or use public transport. This scheme aims to change people's perceptions about cars and to promote active transport alternatives.
- As a reward children who walk to school were given extra house points by their teachers, whilst parents and carers were given a lottery ticket.



Poster for #NoCarsFriday

### PAINTING

- Airlite contributed to Chiswick Oasis by providing paint that helps filter pollutants from the air in the school dining room and some of the classrooms.
- Made with natural materials, Airlite reduces pollutants like nitrogen oxide and nitrogen dioxide.
- Colours were picked from the accredited RIBA palette for education, with proved benefits for wellbeing and conducive to learning. Arup recommended the use warmer colours for the dining room and colder colours for the classrooms.



Airlite painting at St Mary's

### AIR PURIFIERS

- IQAir donated an air quality filtration system (IQAir CleanZone SLS), to purify the air within classrooms.
- The Air Purification units have been installed with the intention to reduce air pollution inside the classrooms
- St Mary's plan to install one purifier in each classroom in the future.



Air purifier in classroom at St Mary's

### EDIBLE GARDEN

- Trees for Cities have funded an edible garden adjacent to the educational wall, providing an engaging, multi-sensory way to teach children about growing and eating healthy food.
- The Woodland Trust donated young native trees, Field Maples and Silver Birches, which will be planted near the edible garden providing shade, shelter and additional air quality benefits.



Edible garden in St Mary's playground

### WEEKEND MARKETS

- As the school playground is vacant at weekends and holidays, a proposition to open the space during weekend days for a local market. This market will promote the sense of community and the sustainable values of Chiswick Oasis.



Chiswick Oasis green wall launch

### INDOOR PLANTS

- As part of the clean air strategy indoor plants are to be promoted within the classrooms and school facilities.
- Arup has recommended planting lists that provide ideas for indoor oxygenating plants and where they are best placed in terms of light, humidity, etc. These will help to increase oxygen levels and will be a natural way of increasing air quality whilst also providing aesthetic and wellbeing benefits.



Indoor planting in a classroom at St Mary's





## London, UK

- Children play in their playground again.
- Air quality\* inside the school grounds and building has improved by up to 37%. (\*Concentrations of NO2)
- Positive wellbeing impacts are reflected through 47% of playground users spending more time outside by the green wall.
- The green wall provides a valuable resource for children to learn about plants and insects and ecology.
- Air quality has risen up the agenda in all London Boroughs.
- Chiswick Oasis have received enquiries from schools nationwide keen to implement green infrastructure.

# Chiswick Oasis

I feel happy when I spend time in the playground

I feel friendly when I spend time in the playground

I can be myself when I spend time in the playground

I can do the things I like to do in the playground

I feel satisfied when I spend time in the playground

I learn new things when I spend time in the playground

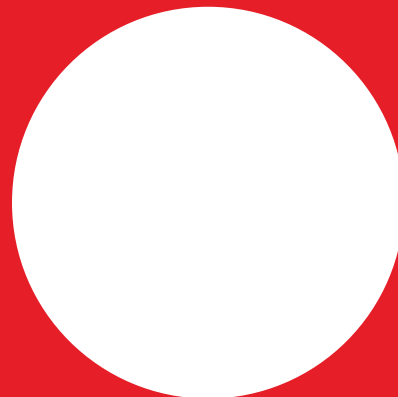
I feel good about myself when I spend time in the playground


*(circle the face you most agree with)*

Strongly agree   Agree   Neither agree or disagree   Disagree   Strongly disagree

Playground user questionnaire - completed by pupils, staff and parents

Large  
Periurban





Oman Botanic Garden is designed to celebrate the country's botanic diversity. Located 35km from Muscat, it covers 420 hectares, making it the largest in the Arabian Peninsula and amongst the largest in the world. Arup was challenged to design natural and authentic landscapes that varied from lush 'Khareef' forests to agricultural terraces and salt flats. Our landscape architects worked with existing natural ridges and ravines that traverse the site to design the buildings and walkways, incorporating gardens, play spaces and shaded routes.

Oman

Omán

Visitors will travel around Oman's mountains and deserts with an immersive landscape setting, displaying only native species that cannot be found anywhere else globally. Two of the more sensitive habitats are enclosed within separate Arup-designed biomes to mimic the natural temperature and humidity of the unique external environments. Grimshaw architects designed the buildings to achieve the highest LEED Platinum rating.

## Oman

The botanical team has worked for decades collecting seeds and cuttings and propagating them in their nurseries. The botanical garden is also a germplasm bank for the conservation of biodiversity and genetic richness, including local agricultural species and traditional cultivars. Arup has promoted the use of local materials and traditions, such as dry-stone walls or shading structures used in rural areas.

# | Oman Botanic Gardens

### Oman

With water a precious resource, Arup developed a sustainable water strategy for the project. All irrigation and water-feature water resources will be supplied from a sustainable Treated Sewage Effluent (TSE) supply and will be treated onsite to exceed a safe water quality. Waste water will be reprocessed for reuse using a plant-based treatment system that ensures not a single drop of water is wasted.

We are currently developing urban projects in a metropolitan or rural context, where we bring together water specialists, ecologists and other disciplines, not necessarily and directly associated with design, to work together with a regenerative design mindset

Key vectors we explore:

Water | Climate mitigation & adaptation

Environmental | Biodiversity

Social wellbeing

Sustainable infrastructure



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Thank you !!!