

Ove Arup

Born 1895. Engineer and philosopher.

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Ove Arup, aged 11, in 1906.

Contents

1. Introduction
2. Childhood
3. Early Career
4. Sydney Opera House
5. Some Other Projects
6. Philosophy and Legacy
7. Acknowledgements
8. The Labworth Café
9. Ove Arup Key Speech

1. Introduction

The following chapters were archived in 2021, with acknowledgement and thanks, from the Heaton History Group website at www.heatonhistorygroup.org.

You could be forgiven for never having spotted the black commemorative plaque high on the wall between the upstairs and downstairs bay windows of 16 Jesmond Vale Terrace, Heaton, Newcastle upon Tyne. The house is in the row of almost white brick terraced houses on the east side of Heaton Road, opposite the park. They have front gardens and, in the case of number 16, a high hedge so you really have to be looking for the plaque.

If you can catch sight of it from the road, you'll see that it intriguingly reads 'Ove Arup; 1895-1988; Engineer and Philosopher; Born here on 16 April.'



Commemorative plaque at 16 Jesmond Vale Terrace.

Arup is rarely mentioned among Newcastle's great engineers. Even those who have heard of him usually assume he is Danish. (More of that later.) But almost everyone will be familiar with at least one example of his work.

Sir Ove Arup (for, although not mentioned on the plaque, he was awarded a knighthood in 1970) was one of the great structural engineers of the 20th century and he was instrumental in the construction of one of the world's most recognisable buildings: the Sydney Opera House. But we can also see and admire examples of his work much closer to home. First, back to his local roots.

2. Childhood

Ove's father, Jens, was Danish and a qualified veterinary surgeon who, in 1889, came to Newcastle to work for the Danish consulate, supervising the health of imported beef cattle. He found a house for the family in Jesmond but, sadly, the following year, before she could come to the UK to live with her husband and three daughters, Jen's first wife, Johanne, died.

Following her death, Jens appointed a governess, Mathilde Nyquist, to educate his daughters and three years later he married her. Soon, with a child on the way, a larger house was required and so the Arups moved to Heaton, to the substantial 3-storey terraced house at 16 Jesmond Vale Terrace. And here on 16 April 1895, Ove Nyquist Arup was born.



Members of the Arup family pictured at his birthplace in 1967.



Jesmond Vale Terrace, Heaton.

Very soon after, however, with the British government increasingly concerned about the spread of diseases such as foot and mouth, an Act of Parliament was passed which banned the import of live cattle from areas in which listed diseases were found. Jen's job became redundant and so, with Ove just a few months old, the family relocated to Germany. Ove was educated there and then in Denmark, where he went on to university to study philosophy and engineering, specialising in reinforced concrete.

So Ove's initial stay in the country of his birth was brief. But he was to return. And the north east was to become especially important to him.

3. Early Career

On completion of his studies Ove took a job with a Danish company, Christiani and Nielsen. But in December 1923, when he was 28 years old, the company transferred him to their UK office as Chief Designer. He went on to join J L Kier and Co (reinforced concrete specialists) and to meet and work with the famous architect, Berthold Lubetkin, most famously on the Penguin Pool at London Zoo. In 1938, Ove and his cousin, Arne, set up their own company Arup & Arup Ltd.



The Penguin Pool at London Zoo on which Arup worked with the architect Berthold Lubetkin.

It was shortly after this, in the early years of WW2, that Ove faced an example of the sort of resistance that was to plague him for much of his life. And it was a formidable north east woman who stood in his way: Ove had designed a bomb shelter in ‘new-fangled concrete’, which he firmly believed would protect London citizens during enemy air raids. Jarrow MP, Ellen Wilkinson, was the parliamentary secretary at the Ministry of Home Security and entered into correspondence and talks with Arup about his proposals. While his designs would certainly save lives, Ellen Wilkinson and the government were concerned that the public would lose confidence in the existing brick and trench shelters and that those not able to shelter in the new concrete, underground shelters would be disadvantaged. In the end politics won the day, much to Arup’s disappointment, although his shelters were commissioned privately by a number of wealthy clients.

After the war, Ove opened his own practice in London, Ove Arup, Consulting Engineers, which in 1949 became Ove Arup and Partners.

4. Sydney Opera House

In 1957, Ove began work on the project which would make his reputation. But little did he know then, how much heartache it would bring nor that it would be seventeen years before it was complete.



Sydney Opera House under construction - 5 shells erected.

Throughout his working life Arup made a point of congratulating architects, who won prestigious prizes for their designs, in the hope that his company would win the contract to help realise their dreams. This is exactly what happened when the Danish architect, Jorn Utzon, won a competition to design an opera house in Sydney. The design was controversial and the engineering challenges immense. Ove had difficulty persuading Utzon to modify his original shell design to make it buildable and to take account of the acoustic requirements of a world class opera house. Costs spiralled and there were constant personality clashes between client (Australian government), architect (Utzon) and chief engineer

(Arup). Utzon eventually resigned in 1966 and the Australian government architect, Ted Farmer, appointed a team to oversee the completion of the building.

Nevertheless this protracted project and its eventual success cemented (sorry!) the reputations of Ove and his companies. In October 1973, Sydney Opera House was opened by Queen Elizabeth II. Ove and his wife, Li, were at the ceremony. Utzon, the architect, was not invited and was not mentioned at all during the proceedings.



The Sydney Opera House completed. One of the world's iconic 20th century buildings.

5. Some Other Projects

Bridge Over the River Wear

In 1961, Ove was approached to construct a concrete, pedestrian bridge across the River Wear from Dunelm House to Bow Lane, linking the university with the historic centre of Durham. There was a seemingly paltry budget of £35,000.



It was assumed that the financial constraints would mean the bridge would have to be a low one requiring most pedestrians to climb and descend steep banks on either side. But Ove was always ready for a challenge and decided to design and oversee the construction of a high re-enforced concrete bridge himself. To minimize costs, he ingeniously designed it to be constructed on conical pivots, in two halves parallel to the river. When finished in 1964, the two halves were swung manually, through 90 degrees to meet and be connected centrally by a bronze expansion joint. Kingsgate Bridge is now a Grade 1 listed building.



Kingsgate Bridge, Durham, a favourite project of Ove Arup.

Of all the projects that Ove worked on this was to give him the greatest satisfaction, so much so that it was his wish that his ashes be scattered from Kingsgate Bridge into the River Wear. And so he was both born in the north east and returned to the region in death.

Dunelm House



Dunelm House.

The adjacent Students Union building, Dunelm House, was also an Arup building. Ove acted as structural engineer and architectural adviser and his bust is mounted on the wall, which faces this bridge. It is built in the so-called 'Brutalist' style and excites conflicting emotions: In 1968 it won a Civic Trust Award but has also been called 'the ugliest building in Durham' by the university's students.

Although, in 1995, English Heritage said it had once been described as 'the greatest contribution modern architecture has made to the enjoyment of an English medieval city'. In 2017, Durham University declared that no longer fit for purpose and announced plans for demolition so that it could redevelop the site but there is a well-supported campaign to save and list the building. A decision is yet to be made.



Right: Bust of Sir Ove Arup on Dunelm House.

Sir Ove's Park?

In 1967 Ove Arup drew up radical proposals in which Newcastle United Football Club would share sporting facilities with the nearby Newcastle University. The ground capacity of the £32.6m complex would have been around 63,000 with 31,000 seated and 32,000 standing.



Arup proposal to redevelop St James Park.

Included in the plans were two gyms, four multi-purpose halls, five-a-side football and rugby fives courts, 13 squash courts, swimming, diving and learner pools plus a supporters' club and restaurant. The plan for a state of the art stadium to replace the old ground fell through when the club was reluctant to share the facilities with the university.

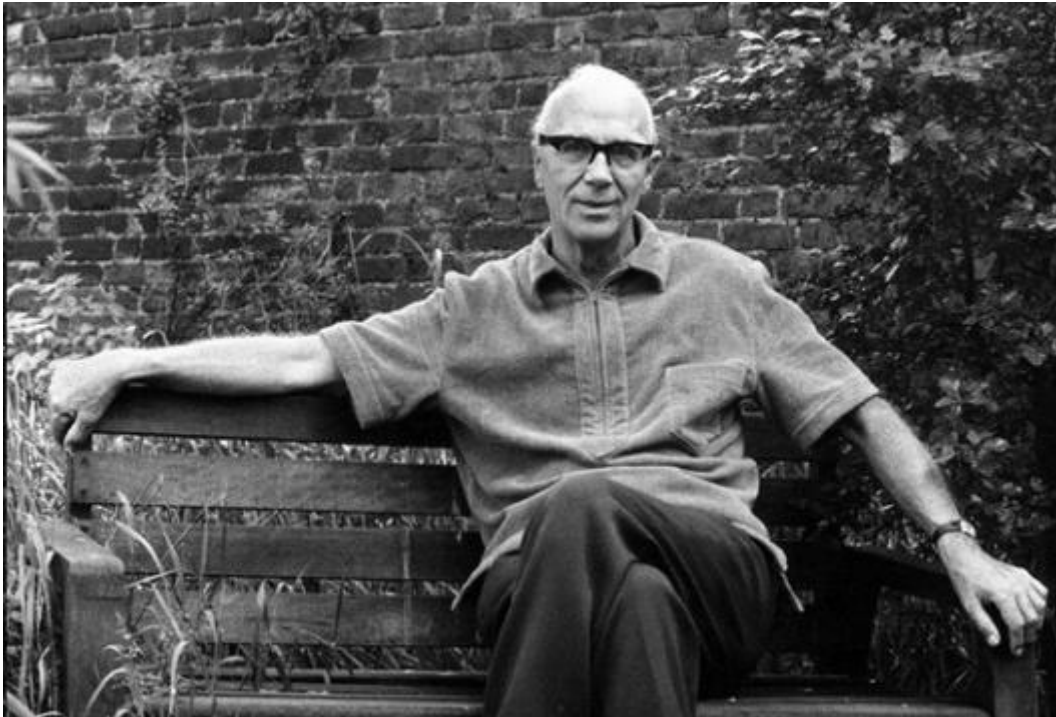
Byker Viaduct



A local Arup structure which was built, albeit one constructed after Sir Ove's retirement, and one which is still very much standing, is the elegant Byker Metro bridge.

Again, the design was challenging because it had to be squeezed in between an existing road bridge and a main line rail viaduct; it crossed a steep-sided valley with old mine workings beneath; the valley is crossed by a geographical fault as well as the Ouseburn. The solution, a tall 800m S-shaped viaduct, won the Concrete Society Award for Civil Engineering in 1980 and makes a striking addition to the bridges which cross the valley. It is an appropriate local memorial for the Heaton-born company founder.

6. Philosophy and Legacy



Polymath

Ove Arup, besides being a talented structural engineer had many interests. He was an art collector, pianist and the accordianist as well as writer and artist: After his death, his daughter Anja published a book, 'Doodles and Doggerel,' of his drawings and verse. He was also a keen and successful chess player, going so far as to set up a company to manufacture chess sets, made to his own innovative designs.

He was often considered eccentric and many stories still circulate among those who knew him. He is, for example, said to have almost always carried a pair of chopsticks in his jacket breast pocket, so that he could sample other peoples' food while dining with them.

Philosopher

But what of the 'philosopher' as mentioned on the plaque on the house of his birth? As already mentioned, Ove studied philosophy, along with engineering, at university and it remained an important influence on his work throughout his life.

His 'Total Design' vision was intended to encourage creative collaboration across all disciplines: not only engineering, building and architecture but other less obvious ones too, including computing, ethics and philosophy. He was a creative and critical thinker, who loved to debate and apply both original thought and what he learnt from other disciplines to his work and

to the way his firm was run. Ultimately he wanted to make the world a better place.

Honours

Ove was much-honoured during his lifetime. including:

CBE (1953); RIBA Gold Medal for Architecture (1966) – unusual for a Structural Engineer to receive; Knighthood (1970); The Gold medal of the Institution of Structural Engineers (1973); Queens Award for Export Achievement (1984); Elected Honorary Royal Academician (1986).

Legacy

When Sir Ove Arup died on 5 February 1988, he was the figurehead of one of the largest structural engineering companies in the world. Today his company employs over 14,000 staff in 92 offices across 42 countries and is responsible for many prestigious engineering projects worldwide. The firm is owned by trusts, the beneficiaries of which are past and present employees, each of which receive a share of the firm's operating profit each year. There is still an Arup office in Newcastle upon Tyne.

The Ove Arup Foundation, a charitable educational trust, was set up in his memory for ' the advancement of education directed towards the promotion, furtherance and dissemination of knowledge of matters associated with the built environment'.

7. Acknowledgements

The article which forms the foregoing chapters was researched and written by Arthur Andrews, Heaton History Group, with additional research by Chris Jackson.

This article is part of Heaton History Group's project 'Brains Steam and Speed: 250 years of science, engineering and mathematics in Heaton', funded by Heritage Lottery Fund, with additional funding from Heaton History Group and the Joicey Trust.

8. The Labworth Café



The Labworth Café, Canvey Island, Essex.

The following was archived in 2021, with acknowledgement and thanks, from Wikipedia.

The Labworth Café is a modernist International style reinforced concrete building overlooking the Thames estuary at Labworth beach on Canvey Island, Essex. Built in 1932–1933 by Ove Arup to resemble the bridge of the Queen Mary, it exists as the only building solely designed by the distinguished engineer.

History

The café and shelter were designed while Arup worked as the architect, engineer and contractor to the London firm Christiani & Nielsen. He noted that his "place was in the office" during the project, and in retrospect deplored the cheapness and shoddiness of the materials and workmanship implemented by the firm. The building had been designed in 1932 for the tourists visiting the fast-growing island resort. The cafe was opened in 1933 as the Canvey Island Cafe but came to be known as the "Labworth Cafe" due to the large "Labworth" text – in reference to the "Labworth estate" within which the building is situated – painted around the inland facing third storey. The name "Labworth" is derived from the "Labworth farm" which the estate replaced in the early 20th century and has its origins in the Old english lobwerde: a compound of lobb; used as nickname for a spider, or meaning of heavy, clumsy mass, referring to soil, and werda meaning a low-lying marsh in the south east of England.

The decline in popularity of the English seaside holiday led to the Cafe's neglect, and the building narrowly escaped demolition during the major redevelopments of the island's sea defences 1973–1982. By the 1990s the

cafe was in a state of disrepair, but it was awarded the status of a Grade II listing in 1996 by English Heritage and then bought in 1998 by local businessman and lottery winner Chris Topping. The Labworth was consequently refurbished, and reopened in the late 1990s with the first floor functioning as the Labworth Restaurant. In 2001, a cafe was added to the ground floor and the building reopened as the Labworth Restaurant and Beach Bistro.

Modifications



Viewed inland from the north east, the Labworth Cafe in 1996 with its heavy typographic style apparent on the first floor.

The first significant alterations to the building occurred in reaction to the flooding of Canvey Island in 1953 which claimed 58 lives. The flood prompted a succession of improvements to the sea defences around the perimeter of the island. The path of the new "second" seawall in 1953 followed the line of the promenade on the south side (beach side) of the cafe, but the larger replacement – completed in 1983 – was built around the cafe's north side (inland).

The construction necessarily raised the ground on the north side to an equal level with the promenade on the south side (beach side) subsequently burying the cafe's supporting piles and essentially reducing the building's height to two storeys. The placement of the wall, its proximity and large scale also obscured the effect of the first floor over-hang, and the view of the central ground floor when seen from the north. However, the general appearance remained intact when viewed from the south until the building's second major alteration with the addition of the new cafe in 2001. The two arms that extend from the circular drum of the first floor originally

enclosed two shelters on the ground floor but were transformed into an indoor serving and seating area.

Canopies

The construction of the original café included a group of thin steel columns which supported canopies on the access areas of the roofs of the shelters. At some point in the building's history these were removed.

Typography

In the refurbishment of the late 1990s, the large black condensed text of Labworth painted around the north side of the first floor was removed and replaced with a collection of metallic signs.

Chris Topping



Chris Topping with his daughter Carly Bowen.

The following was archived in 2021, with acknowledgement and thanks, from the website of the Basildon, Canvey and Southend Echo at www.echo-news.co.uk.

WHEN dreaming of winning the lottery, everyone has a list of extravagant spends they would like to make. For one chef, his dream came true.

Chris Topping, 61, is celebrating opening the Labworth Cafe along Canvey 15 years ago. He managed to redevelop the run down 1930s building after he and his wife Doris, 62, won £900,000 on the lottery. They were two of 11 people in a syndicate at Amigos in Rayleigh, who shared a £5million jackpot in October 1997.

In 1997 it was a drab and crumbling building but with the help of family and friends Chris managed to redevelop the Grade II listed building into a modern design. It now includes a ground floor bistro and a first floor restaurant with panoramic views of the Thames Estuary. Since then, the restaurant has welcomed thousands of customers.

Chris, who is also the head chef at the restaurant in Eastern Esplanade, said: “It’s certainly evolved over 15 years.

“We didn’t know how successful it would be at first. I don’t think anyone thought it would take off like it did. At the time it was brilliant to be able to get hold of it and see it grow. It was nice to be able to give something back to the community with my lottery win. Now we are there for our staff as well. We are one big family and have regular customers, who are also part of the family.”



The Labworth Café in the 1930s.

9. Ove Arup Key Speech



The following was archived in 2021, with acknowledgement and thanks, from the Arup website at www.arup.com.

By 1970, Arup (then Ove Arup & Partners) was made up of several independent practices, spread across the world. As the 1960s drew to a close and the leaders of the various original Arup practices started to retire, it was clear there was a danger that the firm's ethos might become diluted. There was still a collective desire to continue working together, so this felt like the right moment for Ove Arup to reflect on the firm's nature, its values and its future.

On 9 July in Winchester, Ove delivered his 'key speech' to all his partners from the various practices. In this speech Ove set out the aims of our firm and, in his own distinctive and philosophical way, identified the principles by which they might be achieved.

Fifty years later, we continue to treasure these aims, looking to them for guidance as we face new challenges. We are inspired by the speech's honest search for answers to the question of what work is for, what work we should pursue, and how we should best work together.

Some comments in the speech are a reminder of a different time. Ove's remark about the attractiveness of secretaries, for example, and the social class structures that he takes as a given are reminders of inequities once widely considered to be acceptable. Rather than edit away these comments, or dismiss them as outdated and inconsequential, we instead take this opportunity to reckon with our past, to learn and to actively shape a more diverse and inclusive firm. This, too, is forecast in Ove's 1970 vision.

The Ove Arup Key Speech was archived at Lives Retold in 2021, with acknowledgement and thanks, from the Arup website at www.arup.com. It forms Part 2 of his life story.
