



**CHEMICAL
CITY**

**THEN &
NOW**



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Chemical City grapples with the complex legacies of ingenuity and toxicity of the chemicals industry on Teesside. Locally, this history is synonymous with one company, ICI, which before its dissolution, was perhaps the area's most influential corporation. In its heyday, ICI impacted the lives of all local people through a project of intensive manufacture, place-making and global trade. As you start to zoom out from local histories, it is easy to map this production onto a global map of labour relations and environmental damage.

The Tees Valley is associated with histories of heavy industry, and particularly iron and steel production. As a 'blow-in' to the area, I have long felt that the more distributed, arguably more dispersed and undeniably tricky history of chemicals production has been left conveniently unexplored. Whereas Middlesbrough's iconic bridges stand as monuments to steel production and engineering, the things made at ICI Wilton and Billingham were largely processual – part of a longer chain of manufacture which eventually led to a product. The stuff made is everywhere – nylon, polyester, plasterboard, Perspex – but is harder to spot.

As an organisation with deep roots in its location, at MIMA, we are committed to sharing more nuanced histories of the Tees Valley. We are deeply invested in advocating for environmental responsibility and since 2019, our exhibitions and public programme have focused on advocating for ecological awareness: both through the presentation of ideas and research and through the more sustainable practices we adopt.

As a gallery, MIMA can tackle topics and histories with an attitude of enquiry and freedom. We have a responsibility to ask difficult questions and to raise complex issues. We do not have to know the answers or resolve all considerations. We use our exhibitions as an opportunity to collaborate with a whole range of expert thinkers and practitioners who can shed light to complex legacies. It has been thrilling to travel the research journey of this project with pre-eminent theorist Esther Leslie. Having been inspired by her research into the development of synthetic dyes and materials in Germany, we invited Esther to turn her attention to connected histories in the Tees Valley. Her resulting texts offer an extraordinary body of research, which underpinned the development and interpretation of the exhibition.

We foreground the voices of artists. Through this project, we built long-term conversations with three incredible artists and commissioned new artworks with relationships to the themes, ideas, histories and places that run through the exhibition. Annie's work is rooted in the wonderment of a childhood situated amongst the architecture of a new town and huge chemical works, and infused with the myths and stories of a family of ICI workers in Billingham, who moved to the area as migrants. Onya's piece proposes the imaginative re-use of industrial waste. At once a landscape painting, environmental proposition and economic system, Onya's work gets to the core of the emotional and practical legacies of industry. Katarina's installation takes us into a world where violence and destruction are countered with female creativity and art-making. In the context of this exhibition, her work invites us to follow the tendrils of twentieth century social and political structures into tumultuous stories of conflict and solidarity.

As well as hoping to share something of a social history – albeit partial and imperfect – we wanted to use this opportunity to point to some of the innovative problem-solving happening in contemporary materials and manufacture. While the best way to cut down consumption of the world's resources is to buy less, there are ingenious environmentally focussed innovations in the commercial world of fashion. I see these as a direct response to the problems caused by twentieth century manufacturing. Galleries one and three in the exhibition hopefully form a dialogue across eras and generations.

MIMA is part of Teesside University and we use our programmes as a conduit between research happening within the university and wider communities of practice. As well as Lynne Hugill, an expert in more sustainable fashion who devised a large section of the exhibition with us, we took this exhibition as an opportunity to work with students from the School of Arts & Creative Industries on live briefs that manifest as informative texts and diagrams in the display. History graduate Connor Lagus, who worked as a researcher, formed an invaluable part of the production team, as did Olivia Heron who was Assistant Curator at MIMA during the early stage development of the exhibition.

The collections and archives – Tees Valley, North East and national – that house the materials shown in the exhibition do not always have an opportunity to research and present these materials. We use MIMA's exhibitions as a catalyst for this work. We are particularly keen to champion our neighbours Teesside Archives, North East Film Archives and the Dorman Museum, who hold the materials that can unlock local stories.

We are immensely grateful to the artists, thinkers, fabricators, designers and lenders who have made this project possible. We are thankful for the publics who have visited the exhibition and engaged in events.

In this publication, editor Holly Willats and designer Joanna Deans have thoughtfully created a record of the many conversations that formed the exhibition and have taken place as a result of it. We hope it supports you to discover new stories and look at our material world in a new light.



This is a publication about a specific history that continues to impact on the lives of people today.

Imperial Chemical Industries (ICI) was a British company that for much of the twentieth century was the largest manufacture in the country. ICI was a major employer in Teesside, and at one point employed as many as 30,000 people in the area. The company had a huge impact on Teesside socially and culturally; towns such as Billingham expanded vastly to meet the demands of its ICI plant, and its workers, whole social lives and networks were built around working for the company. This legacy can be clearly traced in MIMA's exhibition, *Chemical City* that follows the impact of ICI on the local area from its post-war heyday to the contemporary. ICI may have closed its doors in 2008, but it continues to have an influence, and we wanted to explore this.

This publication looks closer at stories, from when ICI was a driving force in Teesside, to the present day, when more sustainable ways of making are being developed and new industries are starting to appear in reaction to its history.

Through working on this publication, I have become increasingly aware of the pride that Teesside has in its ICI legacy. Those employed by the company speak very positively of their work and fondly of the social life they were able to have alongside it. This seems very unique to ICI, and I cannot think of a contemporary company like it.

We can't go back to ICI though - it is very clear that the future has to be in sustainable and renewable materials, as demonstrated in Lynne Hugill and Onya McCausland's work - but perhaps we can take something from ICI's ambition, its innovation, and the opportunities that it offered its employees.

As Connor Lagus discusses in his text, there is hope for a new burgeoning industry in Teesside. So rather than only looking back, we hope that this publication reflects a little on the past as a way to give context for a new future.

Artist, Annie O'Donnell was invited by MIMA to make new work for Chemical City. Annie's exhibition installations draw on memory and circle the artist's relationship to place. Annie lives in and grew up in Billingham; her family coming to work in the area for ICI in the late 1920s. Annie's poems reflect on memories of ICI across three generations: her grandfather, her parents, and herself as a child.



Annie O'Donnell

SYNTHETIC CATALYSTS



I. C. I. MAGAZINE



A PHOTOGRAPH TAKEN AT BILLINGHAM SPORTS: MINE "B" TEAM WINS

TUG-O'-WAR

They told me how strong you were and how you pulled a railway wagon,
or was it that you placed it back on track?
Did you lug around huge sacks of earth, skip to work,
or even walk there backwards?
Did you know if you were coming or going?

Was it beef tea and filleted eggs, Ovaltine and scallops,
or beer and peanuts that fuelled you?
Invalid food for human mules from Port, Haverton and Scotstown.
Words of encouragement and caution,
settling the toss and lining the rope.

Was it 'First up, best dressed' that day? Cufflinks, collar studs, braces and tie,
shoes to see your face in.
Jacket swung in matador's passes or shrugged off onto the grass?
Perhaps 'Dressed with studied carelessness'?
Many's the war declared through nonchalance, you know.

Strong as the weakest link, the anchor men, wound up and tied in.
'Mine B Team! Lay on! Take the strain! Heave!'
Pulling, snorting, stumbling, you felt the moment,
while memories of woods in Wicklow came tumbling round you,
the trainer's thrush hands fluttering.

You stared only at the space between you and the next man,
pulling back time in a line of manila,
Saunders Grove, Dublin, Linlithgow, Eston, Billingham - there and back again.
Oblivious, the spectators' cheer woke babies and startled dogs.
They said you hit the mark, you did it.

Best of three,
always best of three,
unavoidable Trinities in pernicious unions.

Changing sides now, and what was it the Director said?
Something about beginning at the beginning and 'Community, Identity, Stability.'¹
Planetary mottos for big business.
Big business for small towns.
A future motto of 'Faith'.



And again.
The rope stretching, the mark hovering.
Men equal.

The rope broken.
A Gordian solution on a summer's day.
One verdict, both teams won.
Silver cup and gold medals, but what remains?
A knife, a fork and a sharpening steel, handled with antler.

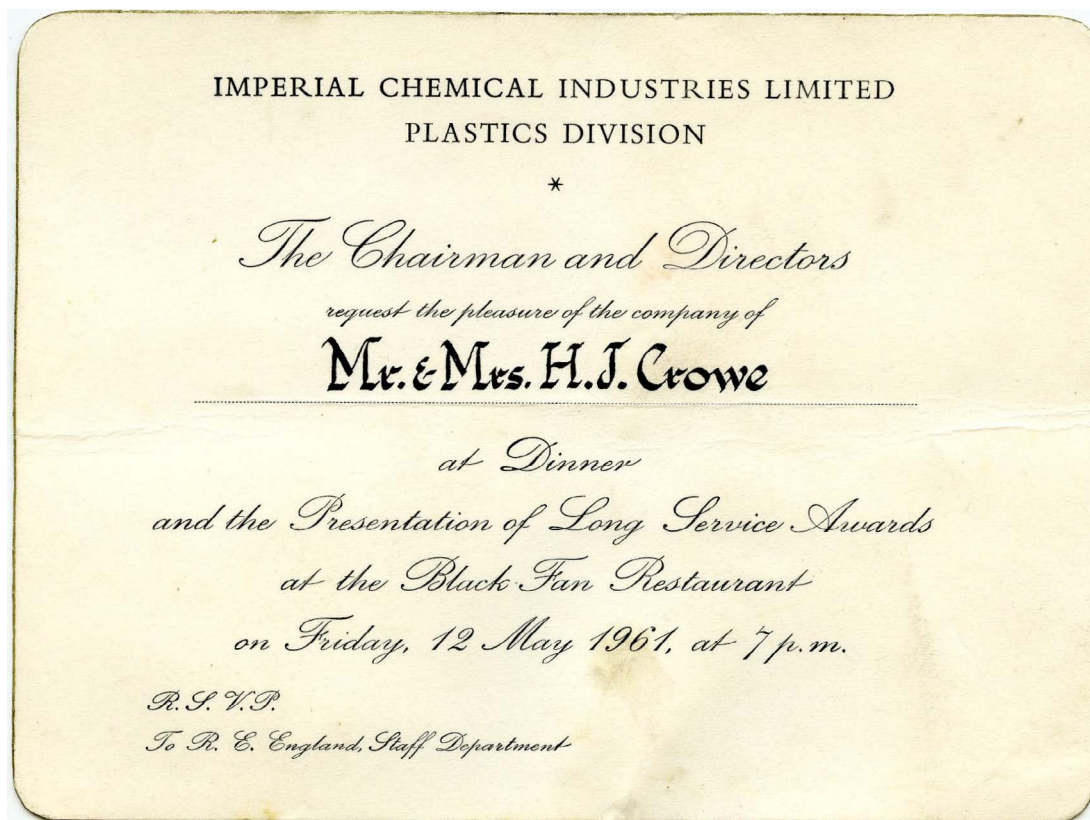
The stag left the woods.

Poem triggered by a 1934 ICI magazine report of a tug-of-war match in which my grandfather, Harry Crowe, an anhydrite miner, took part.

¹ Huxley, A. (1932) *Brave New World*, London: Vintage, p.5







Previous pages: *Plans for Plants*, (from a series of 26 hand-cut collages), Annie O'Donnell.
Images courtesy of the artist

ALL THINGS BEING EQUAL

I

Surefooted even then,
the roofs he worked on when young
can still be seen.

Later The Mohawks called him
Robin Red Socks, Bird Rescuer,
Sky Climber, High Steel Walker.

But first he would be bound to earth,
where, turning the corner,
houses suddenly gave way to wasteland,
where rabbits dug memories of anhydrite cathedrals
that rumbled under the town.
'It's just the mine'.

And so it began:
a life in shifts,
a litany of numbers,
2 till 10, 10 till 6, 6 till 2,
Tootleten, Tentlesix, Sixtletoo,
'There's a great future in plastics. Think about it.'¹

II

Escaping to war, Daedalus returned,
a changed man, among changed men,
he saw her first, skipping down the corridor,
swinging her handbag, crooning a song
of her own invention.
Miner's Child, Sea Watcher.

Six stone wringing wet,
she did a 'man's job',
moleskin trousers wrapped around twice,
Cat's Eyes, dreaming of moors and hills,
spirit stoves and beehives,
G-Plan and feature walls.

¹ Mr Braddock in *The Graduate* (1967) Directed by Mike Nichols (Film) USA: Embassy Pictures



And so it continued,
a life in shifts,
a litany of numbers,
2 till 10, 10 till 6, 6 till 2,
Tootleten, Tentlesix, Sixletoo,
'There's a great future in plastics. Think about it.'

III

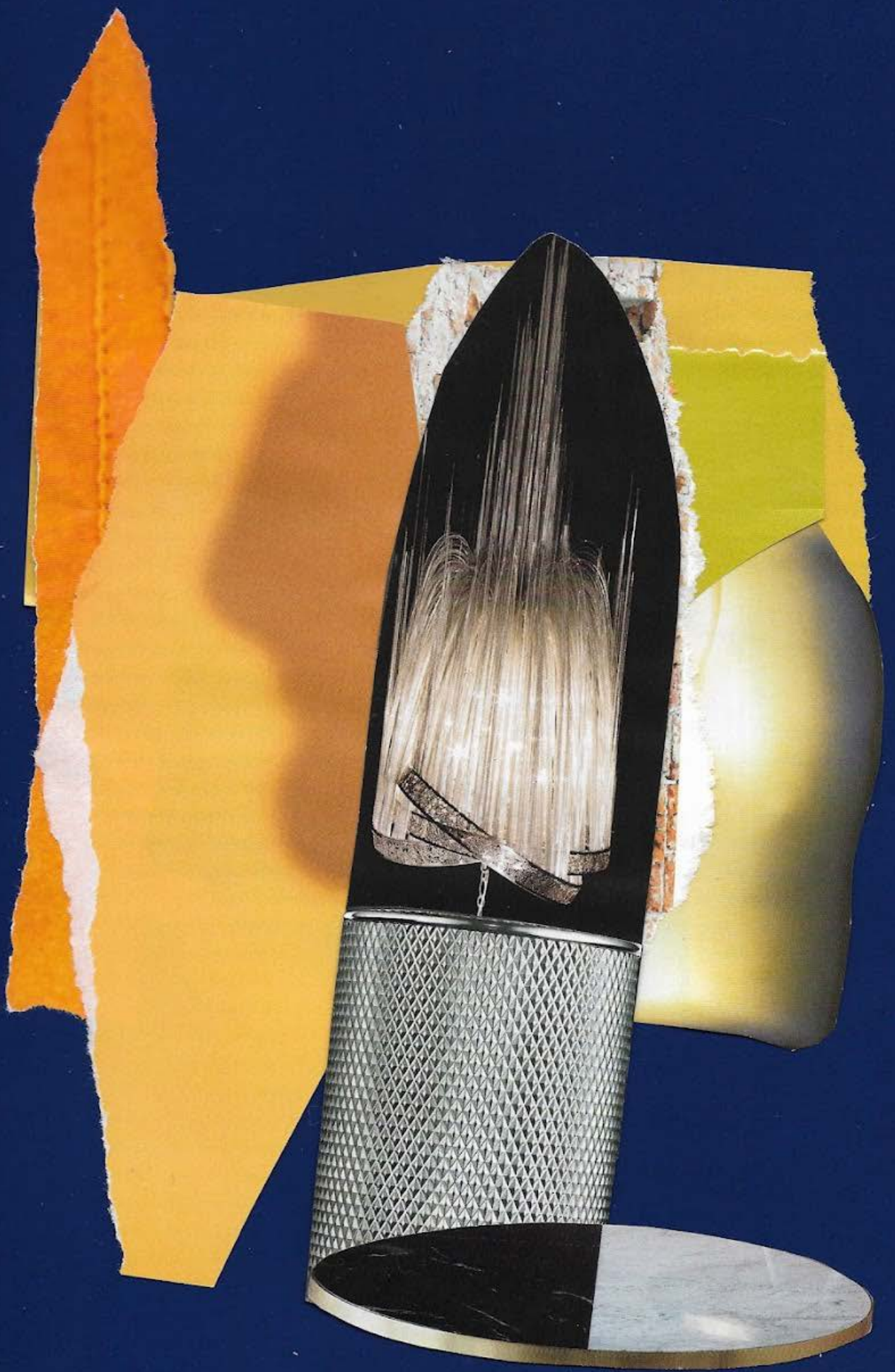
Christmas hamper, a cardboard cabin
of ICI sherry, shortbread and cake.
'What is maple syrup, exactly?'
'Under the brambles, under the sea,
True love for you, my Darling,
True love for me.'

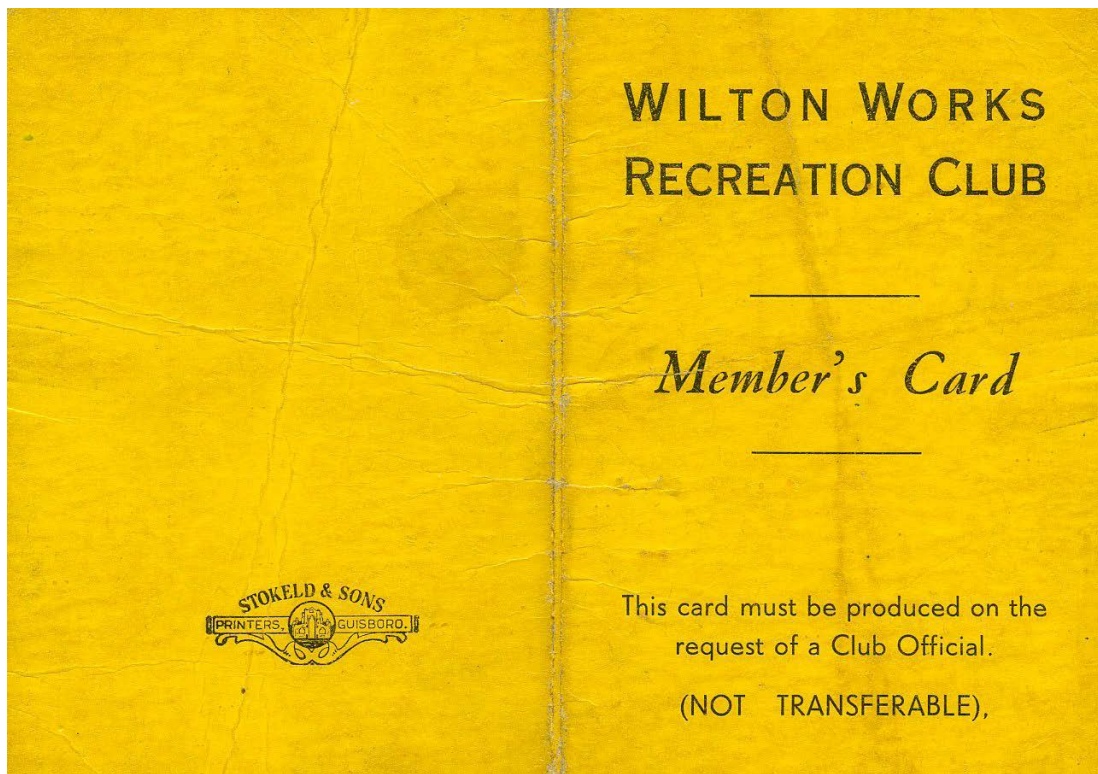
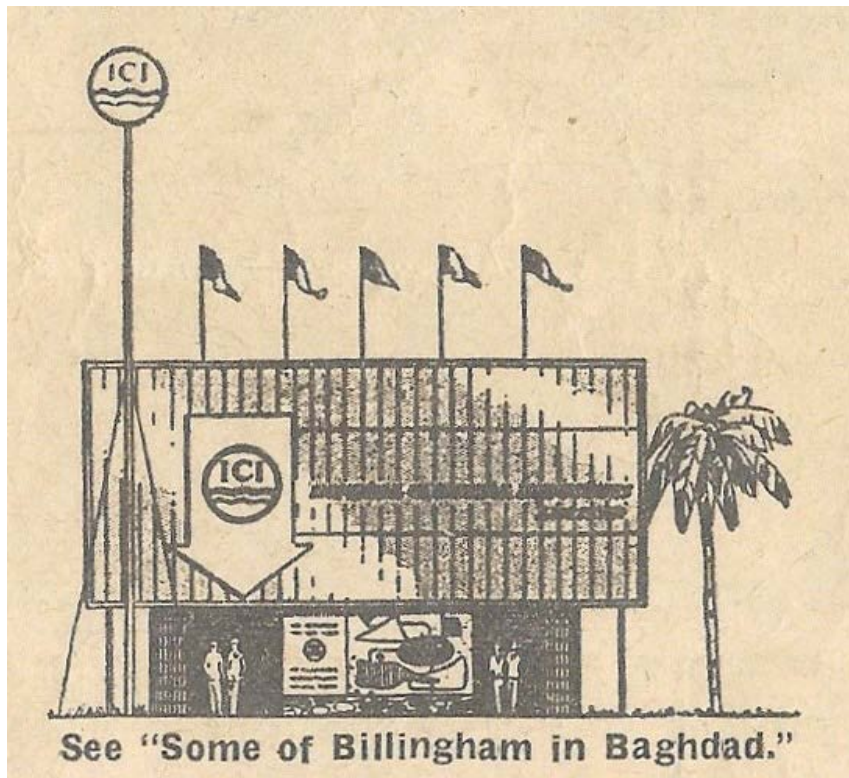
The Old Billy kids said the pools were poison and antidote,
acid and alkali, Pacific and Atlantic,
'If you fall in one, you've got a minute to jump in the other
or your skin falls off and you're a skellington'.
Big lad advice was never to be trusted,
all things being equal.

And so it ended,
A life in shifts,
A litany of numbers,
2 till 10, 10 till 6, 6 till 2,
Tootleten, Tentlesix, Sixletoo,
'There's a great future in plastics. Think about it.'

A poem for my parents' working lives - especially their time in ICI Plastics' Division.







POTATOES AND WREATHS

It begins, as most things do, with foundations,
Pallets in perfect pre-ordained positions,
A corps de ballet, the old Russian kind, with a Soviet name,
From back in the days when small town girls squinted at
Blurred photographs in the 'Dancing Times',
Dreaming of performances in distant cities,
Choreographing in a box room,
While trying not to make
The recorder player needle jump,
Jump.

Sometimes, that bit happens, and you miss it,
Driving by, the fertiliser bags have already appeared,
Still in ICI blue, it seems, the colour you see on outlying farms
When you least expect it, a memory of home.
And suddenly here they are, stacked like bones in a body
Not a human body, but one that has learned
About balance and placement, alignment and centredness,
No easy thing, I seem to remember
When working out where place ends
And where you begin.

Upstage, the Tees exits stage right to the sea
And the concrete silo waits like an upturned boat,
The bodies now hidden under white shrouds,
Soon to be summoned by Myrtha.
Stage left is part-chimney, part-bellows,
Its role unknown, always overshadowed by a tower
Where liquid falls like rain and warm winds blow.
And meanwhile, car after car circles the roundabout
Or gives way, and the van still sells
Potatoes and wreaths.

A poem for the bit of ICI near the prilling tower at Portrack roundabout.



Future Booster (2021), Annie O'Donnell.
Commissioned by MIMA. Fabrication by David
Stupple of Cow Sike Workshop. Installation image
(detail) by Rachel Deakin, courtesy of MIMA



Esther Leslie



SYNTHETIC BEGINNINGS

Dr Esther Leslie was a Critical Advisor for *Chemical City*, and as part of this role, worked on three essays about the key themes of the exhibition that all fed into the curation of the show. Here we present extracts from the essays, with the opportunity to download the texts in full.

Extract from Synthetic Beginnings – to read the full texts, download [here](#).

Synthetics are the technical wonder story of the last 150 years, in a chemical and industrial sense. In this area of Teesside, as elsewhere in the world, the quest began in the nineteenth century to produce synthetically things that were available in nature but lacking for one reason or another. Perhaps supplies were absent, if only temporarily, or it was realised that it could be cheaper to cook up substances in the laboratory. Maybe it was desirable to attain substances in more controllable ways, or it was deemed right to make more stable forms, or given quantities at will. Perhaps the synthetic versions were more effective or useable than their natural counterparts.

And so, it is not that synthetics were understood broadly as inferior, second-best to a natural source, but rather, and increasingly, and perhaps still today, though the tide is turning, they were seen to be better than their relations that existed in nature. More and more synthesis got underway.

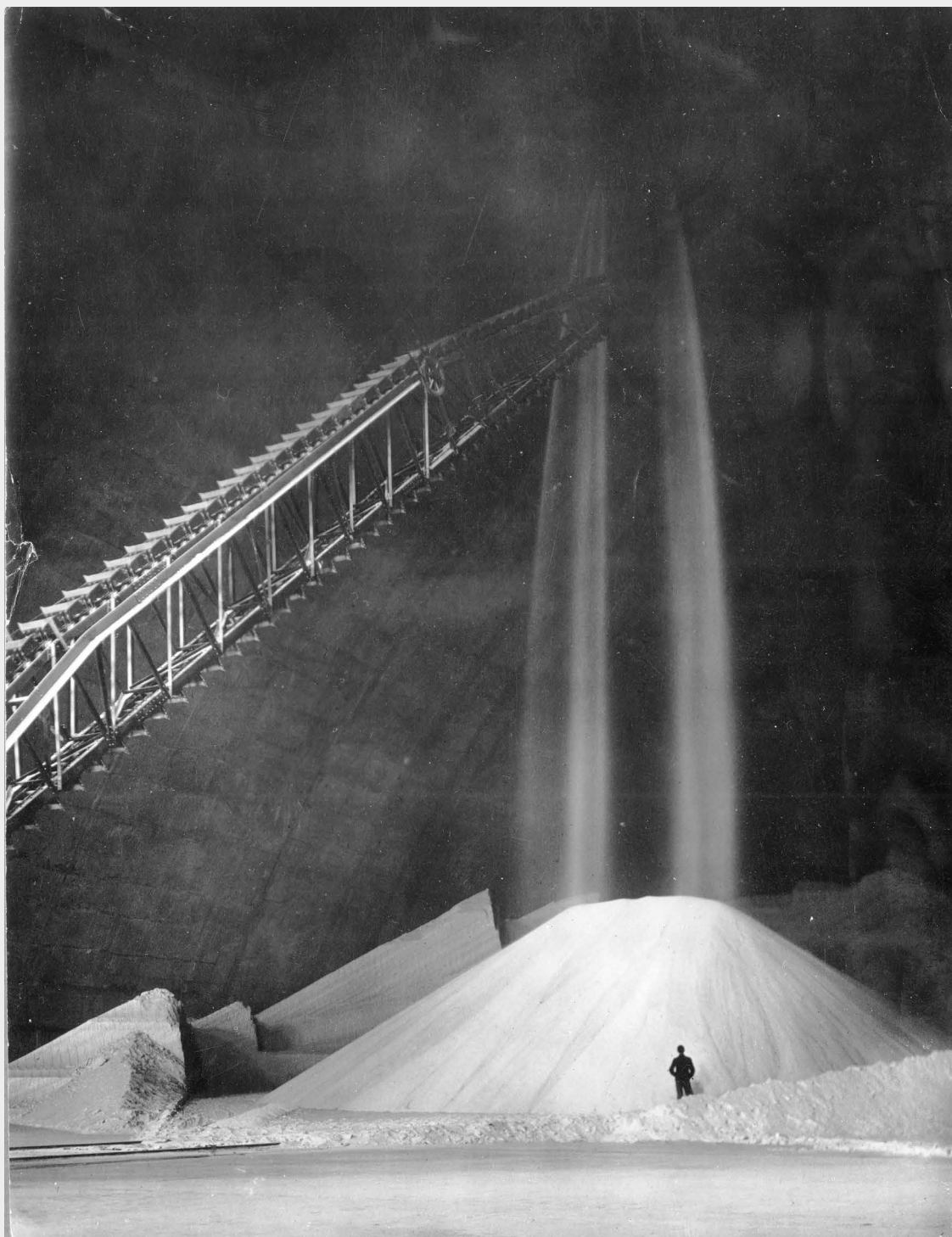
There is a history of synthetic production in Billingham, at Wilton, and other sites nearby, and it is a history that goes back before the First World War. The chemical industry of the nineteenth century here, as elsewhere, was concentrated on two products, textiles and fertiliser. These outputs clothed and fed bodies, the increasing numbers of bodies, urbanised, massified, industrialised and modernised bodies. Textiles and fertilisers angle chemicals towards life and living, warmth and food. In the early days, matter to be collected and processed to these ends of gaining the stuff for clothing and the stuff that encouraged the growth of food included sulphuric acid, alkalis, soap, dyestuffs and fibres.

It was the work of the twentieth century chemical industry to extend the availability of this stuff by producing synthetic versions or substitutes. Its task was to generate more cheaply, more quickly, chemical compounds that could do the necessary work for processes in the textile and fertiliser industries – and their spin offs, such as explosives. Through synthetics, reaction times might be optimised, processes scaled up and more. This was a work of speed up and of overcoming time and space. This was the work of the company Imperial Chemical Industries, which came into existence in 1926, following the merger of Nobel Industries Ltd, Brunner, Mond and Company Ltd, the United Alkali Company, and the British Dyestuffs Corporation.

These companies combined to make a beast of many parts. Thousands of people were employed in the various sites in five main product areas: alkali products, explosives, metals, general chemicals and dyestuffs. Production of textiles and fertilisers in time were supplemented from the 1930s by pharmaceuticals, a development from the dyestuffs industry; and by fully synthetic fibres, such as nylon and polyethylene terephthalate and, in addition, by thermoplastics.

ICI was a culture, a body of workers and plants and managers and social lives. It strode a world and it was entangled in its localities.

Further extracts from Esther Leslie's *Synthetic Beginnings* alongside images from Beamish Museum and Teesside Archives.



We wake up to this damage, the damage of plastics everywhere and never ever decaying. But we also understand that there is a future for synthetics, that there is ingenuity in making things from other things, but responsibly and that may need to be done if there is nothing left of the original stuff. To make anything and everything by our own hands, by tricking nature, or outwitting it, remains also part of the image of utopia.



800 feet beneath Billingham existed a maze of tunnels, divided by 5000 broad pillars of rock and abuzz with electric trains and diesel wagons, crisscrossing 200 miles of well-lit roads arcing up and downhill in pursuit of the seams.



Once Terylene appears in the world, the visibility of synthetic life increases dramatically. Terylene makes clothes. Terylene sells itself through fashion, through the photographs of models draped in Terylene, there to be looked at. Terylene is a wonder stuff. It was a material under research for war purposes in the early 1940s. But when it came, it was not for a world of struggle but of ease.



Crimplene came to be the material for working-women's and men's going out clothes. The colours were bright. It was easy to cut. It did not fray. It held its shape and could be dripped-dry. It was the stuff of A-line skirts, then miniskirts, of multicoloured men's shirts and slacks. It held a promise of pleasure and leisure.



There is a film, by an amateur filmmaker from the Cleveland Cine Club, called If I film at 2fps, a speeded-up race through the streets of Middlesbrough to the north bank of the Tees, in order to reach the factory in time to clock in.

<https://player.bfi.org.uk/free/film/watch-if-i-film-at-2fps-1965-online>



In March 1956, the ICI company magazine reported on the birds in the Tees estuary. The birds were coming inland, hanging around the factory. They were attracted, the report stated, by the warmth of the air above the pipe bridges and the smell of ammonia. Well over a million starlings, which, the report notes, 'make the night hideous with their piercing chatter'. And they leave droppings inches thick all around. Ironically it might be noted it was dwindling supplies of those natural nitrogen-rich mineral deposits, made up of excrement, eggshells and the carcasses of dead seabirds – or guano – overly mined by indentured Chinese labourers and indigenous South American people, that encouraged the whole quest for chemical substitutes back in the early days. But in modern times, the birds are a nuisance. They have adapted too well to this new nature. They must be shot. 'It is hoped', states the magazine, 'that the shooting will demoralise the masses and drive them to roost outside the factory area'. Nature is re-settling out of place. It must be displaced.



One states: “We have just had what might have been two beautiful days completely ruined by haze and stinks, which have been particularly bad over Portrack, where I teach. I have had the misfortune to be developing a catarrhal cold and the discomforts of this have been greatly increased by the pollution of the air’. Another writes: ‘I would like to know how much longer the people in Stockton-on-Tees will have to suffer the horrible smell that comes over from I.C.I. I work in a nursery school and the only nice days of this year are spoiled for the children’. From a third: ‘My two children’s’ health is suffering, as they have had terrible coughs for the past three or four months. The doctor cannot do anything about it as it is the fumes getting on their chests’. Another constituent states that conditions have forced him to take the decision to move out of the area.”

- Bill Rodgers, the Labour M.P. for Stockton-on-Tees, quoting from some of the many letters he had received about the fact that Stockton suffered more than other areas from the smell, caused by amines from ammonia, because of the direction of the wind at certain times.



If mythic times are to be evoked – the area of Teesside had its own demi-God. In the 1820s, the railway came to the marshlands and meadows, first running from Stockton to Darlington and then on to provide coal staithes from the Eston Hills. This was a start that catalysed industrial development. It brought about a new town, poised between coal deposits and iron ores and it was called Middlesbrough, but it was also dubbed, by Gladstone, the Prime Minister of the time, who visited in 1862, ‘an infant Hercules’, and this tiny hero would be one who, with every cry and whine and whistle, breathed out ever more carbon gases into the atmosphere. One hundred years later, the ground and the water and the air was polluted and the future uncertain.



[Stockton] was a city of flaming furnaces, which had forged the weapons of war, the ships and more in steel and iron. In amongst it, almost inconceivably, were people, the workers, eaters, sleepers, shoppers, players and, more than anything, the cleaners, who dealt with the daily smutting of washing on the line, the dusty grit that blew in, the filthy clothes.



How to honour the work and dedication and ingenuity of those heroes of industry, those on the shop floor, in the plant, under the ground, without forgetting the hardships, the setbacks, the suffering and the unfairness.



Was [there] a collective experience above the ground, just as there was one below? Beneath the factory, men stumbled for eight hours a day along narrow unlit, tunnels, airless, uncomfortable, wrestling with machinery, that once it was expended ended up in the Dead Man's area. And then came the periodic blasts rippling out from down there, waves expanding as circles across the environment, meddling with the arrangements in the kitchen and living rooms. The factory extends beyond itself.



Stockton was to be the pedestrianised historic centre, for shopping and entertainment. Middlesbrough was to be the regional centre. Redcar was to become a Summer leisure resort.



... share-ownership schemes, holidays with pay, company housing, a company magazine and recreation clubs. This is how you forge company men.



ICI contracted. It sold off parts of itself. It broke into bits. But the corporation had not only altered the landscape. It was already suffused through the landscape. [...] The landscape of industry takes root inside the body. The labour environment had suffused some lungs with asbestos, the fibres that lodge in the lungs and steal the breath. A slow violence caused by asbestos mesothelioma derived from the atmosphere came into visibility. The legacies emerge only very gradually into the world: Asbestos fibres can lie inactive on lungs for up to half a century. As the corporation shrunk, becoming absent, other presences, other remnants, other left behinds came more or less sluggishly into visibility. These join the other intangibles of memories and stories and past gestures made day after day in working lives and now no longer necessary. New entanglements in legal and bureaucratic, media and medical institutions become apparent. There was Jim who died four months after feeling unwell, after decades away from the paints and specialty polymers and the asbestos dust. Many Teesside messenger boys, cycling through the asbestos lagged large sheds to deliver their notes, warmed up their daily lunch of tinned beans on steam pipes lagged with asbestos in the 1950s at the Billingham plant. Those fibres made their appearance in his life palpable some 40 years after.



What was ICI? What will it have been? What is to be made of the remainders? What senses did it cultivate for those who lived amongst it and who live within its traces? What senses yet to harness? What sense can be made of it all?





Katarina Zdjelar

**TWO FEMALE BODIES:
AN EXCERPT**



For *Chemical City*, artist Katarina Zdjelar was commissioned by MIMA to make new work, *NOT A PILLAR NOT A PILE (DANCE FOR DORE HOYER)* 2017/2021. Katarina Zdjelar's installation delves into gaps in archives to consider who we remember and how. By engaging with a dance from 1946 she explores connections between the arts and political struggle.

The work is a homage to two women: Doyer Hoyer (1911-1967) and Käthe Kollwitz (1867-1945). Hoyer was a dancer and choreographer and Kollwitz was an artist who is best known for her prints. Both Hoyer and Kollwitz represented women and working people through their creations and were deeply impacted by the violence of war.



Two female bodies. Facing one another. One shoulder apart.
One shoulder in between them. A shoulder bridging. Belonging to both bodies. It separates them. It unites.

Have you noticed, it is often in work of Kollwitz that the margins of one body dissolve? One body floods, bleeds, leaks, rivers into another. Friends, lovers, mothers and children flow into each other. Bodies extend and morph one's physicality. As if bodies have openings. Attachable openings. Liquid bodies, resonant bodies, social bodies, monstrous bodies.

Kollwitz could not separate her own body from the bodies she has been depicting: analyzing it in the mirror, she used it to learn how to draw other bodies which she observed. Which is to say, we see a lot of Kollwitz's body in other bodies she renders in an almost kaleidoscopic experience, often sharing the fate of many that she portrayed. With those that were escaping her narrative, situated between socialist ideals and pedantic life of the middle class she stood in solidarity by depicting them.



Bodies are borderlands.

I wonder, could a practice of Kollwitz be described as practice of borderwork?

A shoulder apart holding the bodies.
One body.

Hoyer thought of her own body as a medium of a greater power. Not of a choreographer.
Not of a dancer. But of a medium for presence. Bodies running through her body.
Body is a channel.

We approach archives and collections with questions to think through, pierce through,
carve through, drill through ... Archives speak and are generation responsive. Archived
bodies speak to living bodies.



Katarina Zdjelar, *NOT A PILLAR NOT A PILE (DANCE FOR DORE HOYER)* 2017/2021. Commissioned by MIMA.
Photograph by Rachel Deakin, courtesy of MIMA





Interviews



MEMORIES OF ICI

REFLECTING ON ICI

On the 28 & 29 January 2022, MIMA held an open archive event as part of its *Chemical City* exhibition programme, in partnership with Teesside Archives. The public were invited to visit the exhibition and view additional ICI archive materials from Teesside Archives. During this event, interviews were recorded with visitors who had memories of ICI, many of whom had worked for the company. Some visitors also brought objects in to show, which were then photographed to be added to the archive.

Here we present a selection of interviews and photographs from the event, to give a direct insight into life at ICI from those who experienced it.

We want to thank all that took part in the event and in particular, Mike, Graham, Richard and Anne for sharing their stories with us.





Above: ICI Heysham Works management team 1961/62, image courtesy of Mike Dedman
Left: Mike Dedman, Heysham Works, 1961, image courtesy of Mike Dedman
Right: Mike Dedman, MIMA, 2022. Photography by Rachel Deakin

MIKE DEDMAN
Interviewed by Holly Willats

From: Michael Dedman
Date: Sun, Jan 30, 2022 at 5:16 PM
Subject: ICI interview on Saturday
To: Holly Willats

> Hi Holly, sorry about my rambling yesterday, but I was totally unprepared! I came to see what was in the Archive.
>
> And my son to remind himself of the ICI he lived beside until he was 13 and I left ICI.
>
> I would like to clarify a few salient points that may not have been clear from my waffle.
>
> ICI was a very paternalistic company that encouraged all of its staff to enjoy personal development in sport, educational and social pursuits, and provided the facilities to do so.
>
> Engineers' development was ensured by moving us to various departments to widen our experience and by carefully selected courses.
>
> ICI technology in steam reforming, ammonia synthesis and appropriate catalysts were licensed around the world so such knowledge and experience was very welcome by companies with similar plants in Iran and India.
>
> I am very proud to have worked in ICI.
>
> Regards, Mike

Holly: *Can you tell me, how did you come to work at ICI?*

Mike: I came out of the navy in 1976 and was immediately recruited by Power Gas; I worked for them for two years as a project engineer and then the opportunity came up: ICI were looking for engineers as they were expanding ... the personnel asked me if I was willing to move to Heysham as they had a plant there. We were young and only just married, and off we went!

At Heysham I was appointed the Plant Engineer for the old (very old!) development steam reformer and the first low pressure steam reformer, which were just beginning to be developed and improved by ICI. I then transferred to working on the compression plant, where I worked for about three years as Plant Engineer, and then they transferred me to Billingham where I became the High Pressure Closure Expert in one day.

H: *That's quite a title!*

M: Yes! All the ammonia converters and all the high pressure vessels have a closure – in other words, a lid – at very high pressure. I rapidly learned how to use the computer programme, and spent about three years in pressure-vessel design and I wrote various documents and designed various vessels. I then moved to Engineering Works, where we were doing the overhauls of the very new Steam Reformers that had been built – four of them, all in a line.

That was a very interesting period of work for about three or four years, and then I moved to the Shut-Down Group. Some of the plants were very unreliable and so this little planning group had been set-up and I was the lead engineer in terms of its mechanical work. We had an enormous cabin, with all the plant plans pinned up along the wall and we'd input into the computers – very early computers. Then, when the shut-down happened, (which often happened when we weren't expecting it) we would just have to dash in and do the best we could.

I was later appointed as Senior Commissioning Engineer for Methanol 2, as I'd had the experience on the steam reformers, which also had Methanol 1. We had the joy of putting the proposal to the Board, working up the estimate, working up the design, building it; that plant went online and didn't have any trouble for the first year and produced its design capacity.

H: *It must have been a great sense of achievement.*

M: Yes, it was, and in fact I've spoken to Keith Farmery (who took over the plant from me) and he said it ran beautifully. In fact, it's since been dismantled and sold to Japan or somewhere I think. I was rung at home and I was what, in my 70s I think, and they said, "ICI tell us that you worked on the plants and we're moving one and can you offer any help!", and I said, "I've just had a quadruple heart bypass, so I think I may have to decline, but thank you very much!"

H: *Was there a good social life around working at ICI?*

M: Yes. ICI had a lot of young engineers and managers. There was one event in particular at Norton Hall, which was a show that took the mickey out of all the senior managers – some of the girls and the younger men did dance acts and all sorts of things to set them up. It was a good laugh.

The happiest memories I have of that time are the Norton Hall dinners; they were in lovely surroundings and you felt really posh – which we weren't, and we never pretended to be! But one thing I did feel is, if people asked "Where do you work?", and you answered ICI, it was seen as the bee's knees. You were proud to work there; I think everybody was.

H: *That says a lot about them as an employer; that they treated people well.*

M: Yes, they were all decent people, there were no real bully bosses that I knew of; I certainly didn't have any, I had a happy time really. Obviously, they did a lot of training and that was one of the great things.

When you went to Billingham, one of the first thing they offered was safety training. Doctor Summersmith, who was an expert in ornithology and wildlife in the area but at the time I knew him, was the ICI Safety Officer. I remember one of the first things he showed us was a video, a 'what to do / what not to do', and it showed a man who was hooked up on a scaffold pole by his wedding ring! I immediately took my wedding ring off and told my wife that I couldn't wear it again, and I never did ... That film frightened the hell out of me!

ICI had an organised approach: you wrote proper reports, followed the system, and kept everything tidy so you knew where you were, and that approach really stuck with me. One of the most important things was the permit to work: you always had to have a permit to work on you before you went and did anything. It was good practice and it's something I then introduced through my work afterwards around the world. It was a lot of work to do it but it needed a system, and the system worked. But all that's just gone now; all gone. It's sad.

H: But you have to hope that a future industry will develop here, and perhaps there are signs of that with Fujifilm taking on the site where the ICI HQ used to be.

M: Yes, that building was demolished because it was riddled with asbestos. I must have worked there on the methanol project... the thing I remember most about it was the paternoster lift! I would have still been in my twenties then.

H: It was a lot of responsibility they gave you, when you were just in your twenties.

M: Oh yes. Heysham was really great, they had a very good community spirit there. We used to have pie & pea suppers at the club. I certainly did have a great time.

H: It sounds really positive.

M: I have very happy memories of ICI, and I would thank them really, for training me so well so that I could go to very senior jobs abroad.



RICHARD & ANNE CAINS
Interviewed by Connor Lagus

Connor: *How did you start working at ICI?*

Richard: I lived in a little place called Pocklington in the East Riding of Yorkshire; nothing happening there at all, it was all agricultural but I had an interest in Chemistry from my O Levels, and it was actually my Chemistry Master who suggested I try ICI. So I contacted them to ask if they would interview me; I came up to Stockton on the train with my dad for an interview and was offered a job.

I went into lodgings in Stockton - I was there for five years before I met Anne and we married. So each day it was catching the bus or walking down to Stockton High Street; I think the bus fare was something like tuppence ha'penny to get from Stockton to Billingham.

When I came for the interview it had been a lovely sunny day and so I thought, this is going to be wonderful, but on my first day of work it was thick fog, mist. I was a country bumpkin: coming up from somewhere where it was all green fields and my school had been along a little country path with a stream and trees and things... and when I got to ICI Billingham I thought, gosh, what on earth have I gone and done to myself! - you could barely see the hand in front of your face!

But everybody was very kind and patient. As I was only 17 at the time, our meals were subsidised - we paid something like nine pence and you got tickets for that, and then you had to pay full price when you were 18, but even so, full price wasn't very much.

I started work in 1954 and found myself working on sulphuric acid research.

I was helping to commission a kiln, which was absolutely enormous: it was 100 yards long - you could probably have got an ordinary single-decker bus in the middle of it, and at either end you could have got a double-decker bus. You fed anhydrite at one end, blasted powdered coal up the other end, and out came sulphur dioxide which was converted into sulphur trioxide and hence into sulphuric acid.

When I became 18 I was able to go on shifts, and I was working on the smaller lab reactor, which was trying to make sulphur out of anhydrite. But all of a sudden the Americans discovered that there was a tremendous amount of sulphur in their oil and they had to get rid of it, so instead of there being a world shortage of sulphur, it became a waste product and at one time they were even talking about making it into brick blocks and building houses out of it!

One end of the lab did ammonia research and at our end was sulphuric acid research and you could get a bit of wet litmus paper and it would be red at one end of the lab and blue at the other end! Everybody was coughing and wheezing.

[...]

A few years later I found myself doing research, usually on plant improvement. I worked on ammonium nitrate. That was the one I think, when one morning there was a very loud bang and the whole plant disintegrated. We were about a quarter of a mile away in the research department, and one of the heavy doors from the plant blew all the way over to us with a great clatter. Fortunately all the workers were having breakfast so they weren't affected.

[...]

They then sent me off to HOC – and between ourselves – I knew very little about organic chemistry but they said, “Oh don't worry Dick, you'll soon pick it up”.

One of the problems with the fertiliser, particularly the ammonium nitrate, was that if you left it out in the open, after a while it went like a tombstone, so the farmers said that it was no good. So we spent an awful lot of time adding to fertilisers to work out what would make it free-flowing. One of the things we did add was a form of clay, which worked ok when you put it in a 500g bottle and shook it around – that was alright. So we thought, right, we'll do it on a plant scale. The chap I was working for, he worked out that if I added a certain amount onto the conveyor belt at a certain time, that would bring it up to the right level.

So we had about six tonnes of ammonium nitrate, which is highly explosive, and we were down in Q Building basement, putting our ammonium nitrate into a big drum, adding the right amount of clay, rolling it around and then re-bagging it. If that lot had gone up, then Billingham would have gone up, it was as bad as that! Anyway, we got away with it, shall we say... So there were times that were a bit hairy!

C: Did you meet your wife Anne at ICI?

R: Yes I did. She turned up at the research department when she was thinking of going to University. She was in the secretarial works but they said, well you're not learning very much here so why don't you go up to the research department where it's a bit more technical and scientific.

I thought she was far too good for me. She had a rather posh voice and I thought she was the type of lass that would be marrying a technical officer rather than a scrubber of an assistant like me!

Anne was a very good organiser so she organised research trips out, and things like that. After a while, I realised that I was happy when I was with her and I was unhappy when I wasn't with her and it grew from that. I thought, this is a lass I better get married to, or she'll go off with somebody else; and she agreed.

C: Do you think a lot of people met through ICI?

R: Oh I think so, yes, there was a good social life and I think that probably helped a lot. Certainly the typists were very much in demand!

Anne: ICI was a very good employer for young people and it was very good on a social side.

R: But ICI was very hierarchical. Just before I turned up, I think there had been a 44-hour working week, and we still had to work on new years day for a long time, in fact, I was on shifts on new years day and had to walk home as there were no buses. It was very much 'us' and 'them'. People, even in my day, were calling the management 'sir'. The payroll, they had their own social clubs, they had their own canteen.

A: They had tablecloths!

R: Yes, they had tablecloths and waitress service as well!

C: So it was a fancy affair was it, if you were higher up?

R: Oh well certainly, and I think once upon a time they used to have afternoons off because that was when the senior management would go to their country retreats!



GRAHAM PARKS

Began working for ICI at the age of sixteen and retired five years ago.

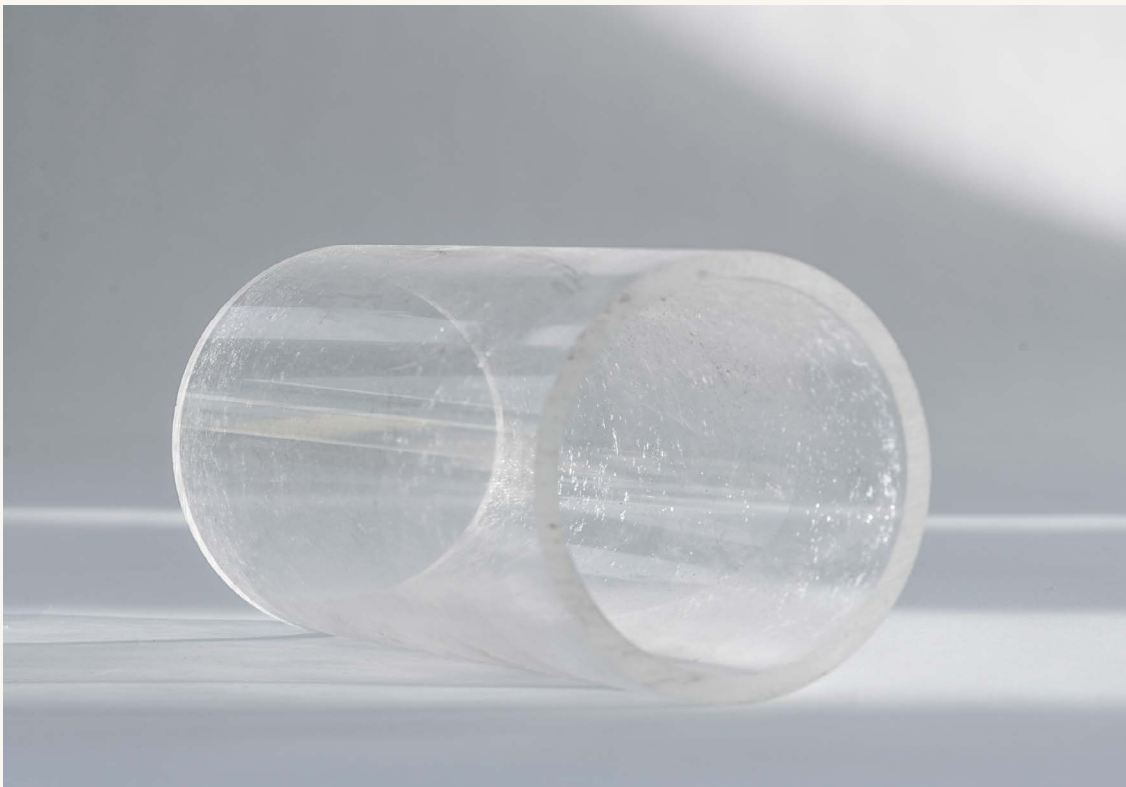
ICI were the best to work for:

- Pension
- Best medical cover
- Hamper at Christmas
- Six-month sick pay



OBJECTS

Objects brought in by members of the public to the MIMA archive event.



Above: A pair of British Steel glasses, below: a Perspex Sale Sample. Photography by Rachel Deakin
Left: Graham Parks, MIMA, 2022. Photography by Rachel Deakin

Connor Lagus



**REFLECTIONS ON
THE CHEMICAL CITY**

Connor Lagus was a Historical Researcher for *Chemical City*. Having grown up in Billingham, Connor considers his own relationship to the town: a place where the legacy of ICI is ever-present but also shows signs of a promising new industrial future.



“An ordered universe... in the midst of the larger world of planless incoherence”. This is how Aldous Huxley described Billingham following his visit to the town and it’s state of the art Imperial Chemical Industries (ICI) plant in the late 1920s.

The Billingham that Huxley saw helped to inspire the world he details in *Brave New World* – a highly organised global society of rigid structures and hierarchies, all managed by a powerful centralised government. The dystopian nature of *Brave New World* aside, there are clear elements of Billingham in this era that Huxley drew inspiration from. In less than a decade, ICI had transformed Billingham; it had built the houses in which the workers lived, opened the clubs where they socialised, established the sports teams they played in, all of which could be read about in the ICI company magazine. ICI had shaped Billingham, but unlike many of the other attempts at company paternalism of the era, such as Henry Ford’s ill-fated Fordlandia project, ICI’s involvement in Billingham is overwhelmingly remembered with fondness.

However, this is all a little different to the Billingham that I experienced growing up. By the time I was born, ICI’s presence in the area was rapidly dwindling, and by age 6 the company had sold off what remained of its assets around the town. But the legacy of ICI in Billingham continues to be preserved in a number of ways. Despite 20 years of ICI’s absence, the industrial works on the edge of the town are still often referred to as ‘the old ICI’. Street names continue to reference the company in the form of Imperial Road and Mond Crescent (ICI’s first chairman, Sir Alfred Mond), amongst others.



‘Synthonia’ is important to understanding the company’s legacy in the town. A portmanteau of synthetic and ammonia (the synthesis of ammonia being the initial purpose of the chemical industry here), the word has featured heavily in ICI affiliated social clubs and sports teams. Billingham Synthonia F.C., nicknamed the “Synners”, continue to bare this legacy, despite currently playing their home games in nearby Norton. Synthonia is an essential word in the vocabulary of anyone from the town, but as I have learned while discussing my research with those unfamiliar with Billingham, it is complete nonsense to outsiders. This also highlights how unique of an experience it is to research the town in which you have spent your formative years. It is a strange and personal undertaking. While ICI has a strong legacy, it can sometimes feel like an odd legacy. It is easy to feel as if Billingham is an outdated creation from a time that no longer exists – a purpose built town that has outlived its purpose.

Reflections on industrial towns in the North East can all too often become a discussion around decline. To my own surprise, the further I researched my home town, and the more I spoke to people about Billingham, the more I began to see cause for pride and hope. Billingham hasn’t outlived its purpose; it has only outlived ICI. The former site of ICI on the edge of the town is now occupied by CF Fertilisers and Lucite, among other outfits. The towers continue to light the night sky with their flames; synthesis continues to take place. On parts of the former ICI site we see less of a continuation and more of an adaptation. Nowhere is there a better example of this than what once was Billingham House.

Billingham House was a 10 storey office block built by ICI in 1959 to serve as their new headquarters for the area. It is remembered by many with pride - a towering reminder of ICI's presence in the town, should one have ever been needed. Many recall the paternoster lift - an endlessly revolving elevator that you had to jump into and out of - that fascinated the children lucky enough to visit their parents who worked in the offices.

The version of Billingham House that I have discovered through research and interviews is very different to the one that I was familiar with. ICI had closed their offices here in the mid-1990s as they began to withdraw from the area, leaving it abandoned.

The skeletal remains of the building continued to loom over Billingham. The upper floors attracted occasional acts of vandalism and arson, the underground car park often flooded. It now served as a reminder of what once was.

Following years of rumours around the fate of Billingham House, it was finally demolished in 2012. It would take a few years until the former site of the building saw development, until Fujifilm Diosynth broke ground on a new Biocampus in 2020, completing it the following year. As well as creating jobs and opportunities for the town, this new facility represents something greater. The site catapulted Billingham back into the public eye in 2021 as it became a production centre for COVID-19 vaccinations (comedian Adam Hills even addressed this in a song about Billingham on Channel 4's *The Last Leg*. Fujifilm have





already committed to expanding their site onto the former ground of ICI's Billingham Synthonia football team, as it looks to increase its pharmaceutical research and production capabilities in the town.

Roughly 100 years ago, the people of Billingham watched with excitement as the chemical works that would become ICI began to take shape on the edge of their town. In the decades that followed, the work conducted across these sites impacted not just the local area, but the world, through scientific research, development of systems and exporting

NOW



products. Having only ever known the Billingham I had lived in, it was the scale of this impact that surprised me the most throughout my research.

It is difficult to predict what the future will hold, but seeing new industry, new life, breathed into Billingham, is exciting. It is possible that Billingham may once again inspire a novel akin to Brave New World – although, it would be nice if the next one was a tad less dystopian.

Onya McCausland

TURNING LANDSCAPE:
TEESSIDE





For *Chemical City*, artist Onya McCausland has made a new work titled, *Saltburn 54°34 07.37 N 0°57 42.87 W 2021* – a 13-meter painting in MIMA’s gallery. The piece is rendered in paint that was manufactured by the artist using recycled ochre taken from a mine water treatment site in Saltburn, Tees Valley.

This piece asks us to consider what should happen with former industrial sites, and proposes an imaginative and regenerative use of a toxic material.

TURNING LANDSCAPE

Saltburn 54°34 07.37 N 0°57 42.87 W 2021 is part of a wider body of research by McCausland titled *Turning Landscape*, which examines the recycling of waste materials that have formed and built up in the landscape as a result of the end of coal mining. In particular, her research explores the use of these waste materials as a pigment for paint.

McCausland has researched several sites where mining and quarrying still shape the landscape, and found that each one has its own ochre. Each one is geologically distinct and its ochre can be seen as an index of a location – formed from the specific environmental, ecologic, geographic idiosyncrasies of that place only.



SALTBURN

Saltburn is in one of the few mining regions that remains active today. A thousand meters under the North Sea is Boubly potash mine: an environment so remote that it doubles as a deep underground laboratory suitable for hosting ultra-low background science projects, like the search for dark matter.

A mile or so inland from the north east coast is the Saltburn Mine Water Treatment Scheme. This site treats the floodwater of an old iron stone mine that closed in the 1960s. It is from this location that McCausland has collected ochre to create the distinct Saltburn yellow ochre.

When on the wall, the paint is an ultra matt emulsion that resembles the material in its raw pigment state. The pigment has been combined with a potassium silicate or 'water glass' binder which is environmentally responsible, non-toxic and sustainable..



As part of the *Chemical City* exhibition, McCausland invites exhibition visitors to take a tin of paint, to use at home or in a community space.

Through the production of paint, McCausland proposes an imaginative use of a material that would otherwise go to landfill and thus offers new relationships with, and understandings of the materials of a place.

<https://turninglandscape.com/>

<https://www.ucl.ac.uk/slade/research/mphil-phd/onya-mc-causland-turning-landscape-into-colour>

https://www.itv.com/news/wales/2021-12-30/the-community-repurposing-mine-water-to-create-something-beautiful?fbclid=IwAR3MOzheRMwocTcHCRLNzE_yIMq1uLW_pZ0JAMl4y-U0K7yK4szbjFr6MGPw



Saltburn
Ochre

First Edition Saltburn Ochre
1 Litre

1 Litre

1 Litre

1 Litre

1 Litre

1 Litre

1 Litre

1 Litre

1 Litre

1 Litre

1 Litre

1 Litre

1 Litre

1 Litre

1 Litre

1 Litre



Onya McCausland, *54°34 07.37 N 0°57 42.87 W*, 2021, courtesy of the artist

Above: Onya McCausland, Installation of *54°34 07.37 N 0°57 42.87 W*, 2021. Commissioned by MIMA. Courtesy of Onya McCausland

Lynne Hugill

INTERVIEW

WOVEN ORGANIC BANANA MIXED FIBRE
65% BANANA VISCOSE 35% NON VIOLENT SILK



An interview with Lynne Hugill, researcher and co-producer on the Material Innovations section of Chemical City.

You worked with a group of students from MIMA School of Art & Design Fashion towards the Materials Innovation section of the exhibition; how did you approach working with the students, and how did you decide what to include?

The main research was conducted by myself and BA Fashion graduate Emily Dey, who worked on the project as a three month summer internship. The process involved researching innovative and sustainable products from UK and international brands. The students were then involved in the later stages, looking at visitor communication and the exhibition display. Students were given a choice of briefs which was a great learning process for them, as they had to understand why the products were sustainable, how they were produced, and the issues in the industry.

What can we learn from historic synthetic production, from companies such as ICI?

The production of synthetics made by ICI circa 1960s were considered very innovative and exciting as the materials were strong, easy to launder, resisted creasing and were hard wearing. However, today we are more informed of the negative and environmental issues around the use of non-renewal resources, such as petroleum and the consumption of energy and water that is needed in the manufacture process. New materials such as bio-polyesters are using renewable resources such as natural fats, oils and plants, which are bio degradable and more sustainable.

What do you think has been the biggest challenge for the fashion industry when finding alternatives to synthetic production?



I think one of the challenges is to find materials and manufacturing processes that are affordable, as often more sustainable products are more expensive. This is being addressed as high street brands such as H&M, Zara and ASOS are working towards more sustainable models. However, some fast fashion brands are guilty of ‘green washing’ where they claim to have more sustainable practices than is evident.



What is your favourite item from within the show?

It is hard to pick a favourite item from the show as each one has been carefully selected to bring innovation to the exhibition. However, there are a couple of products I would especially love to own because of their special story...

The Rens Original coffee sneaker, made from recycled materials, including coffee waste and recycled bottles, is such a fantastic example of how waste can be used to create new products. Rens Original is based in Finland, which is the world's top coffee consuming nation per capita and the sneakers are manufactured in Vietnam, which is the second largest producer of coffee in the world after Brazil.

Also the LUXTRA bag, made from 'Desserto' – a highly sustainable plant based vegan-leather that is made from cactus. The quality of this product and the process of production is an amazing story. The cactus plants are harvested every six months and are grown organically without any need for irrigation or pesticides.

How do you feel the young students and designers you work with are responding to these new processes?

I think there is a real engagement with environmental issues from young designers, and we are noticing that our students are engaging with these issues to inform their own personal projects.

What, do you think, is the future for the fashion industry in terms of a sustainable output?

As the fashion industry is the second most polluting industry in the world, change has to happen. There is no doubt that there is a huge pressure for the fashion industry to be more transparent in their manufacturing processes and a growing interest by the consumer to be more informed about where their clothes are made, by whom and the impact they have on communities and the environment. There are many organisations who are working and campaigning with the industry to make sure changes happen; more and more brands are having to review their practices and work towards sustainable products.

Could you tell us your top three designers / fashion studios for sustainable fashion production at the moment?

Stella McCartney for their innovative work with materials, including a synthetic vegan spider silk created in a lab using yeast, in partnership with technology innovator Bolt Threads.

Christopher Raeburn for their responsible design in the use of recycled, organic or surplus materials. We have included their iconic Air Brake parachute jacket made from recycled vintage parachutes in the exhibition. RÆBURN offer free life-time repairs on their garments too.

Modern Meadow is one to watch for their innovative expertise when combining science and technology. Using biology and material science they are developing new bio-materials from science; these materials use proteins and DNA and are developed using high-tech systems. One such development is a leather called ZOA, which has been developed from the protein collagen, but grown without animal derivatives.





Current Innovations display,
Chemical City, 2021. Photograph by
Rachel Deakin, courtesy of MIMA



KUMI SNEAKERS



CONTRIBUTOR BIOGRAPHIES

Rachel Deakin is an artist based in Middlesbrough, her projects are inspired by her immediate environment and include photography, collage, found objects and elements of the everyday. Rachel is co-founder of photography collective WAX and studio holder at The Auxiliary Project Space.

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Annie O'Donnell is an artist who researches place identity through her sculptural practice. Her previous career as a dancer can be felt in her theatrical handling of colour and sensitivity to site. Annie has an MFA and Ph.D from Newcastle University and is represented by Platform A Gallery, Middlesbrough.

@annie_odonnell_

Lynne Hugill is the Fashion Course Leader at Teesside University. Current research is centred around future fashion with a focus on sustainable materials and the circular economy.

@lynnehugill

Connor Lagus studied History MA at Teesside University and is currently the Graduate Heritage Officer for the Wensleydale Railway. Connor was first involved with Chemical City in 2019 as an intern helping with the initial research stage of the project; he then assisted as the historical researcher for the exhibition in 2021, and continued to contribute to different aspects of the project.

Esther Leslie is Professor of Political Aesthetics at Birkbeck, University of London. Her books include various studies and translations of Walter Benjamin, as well as “Hollywood Flatlands: Animation, Critical Theory and the Avant Garde” (Verso, 2002); “Synthetic Worlds: Nature, Art and the Chemical Industry” (Reaktion, 2005); “Derelicts: Thought Worms from the Wreckage” (Unkant, 2014), “Liquid Crystals: The Science and Art of a Fluid Form” (Reaktion, 2016).

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Elinor Morgan is Artistic Director at MIMA. Since 2008 she has curated residencies, exhibitions, public projects and education programmes across the UK working at organisations in Norwich, Cambridge, Birmingham and on independent projects in London. She has led and supported public art projects and developed freelance projects. She co-edited 'The Constituent Museum' (Valiz, 2018), a reader on how arts institutions might work differently with their publics.

Onya McCausland makes work that examines the materiality of painting and proposes paint as a social tool. Investigating the specificity of particular earth pigments that form paint, the work closely attends to distinct geographical regions and landscapes, following histories and socio-economic legacies of land use. Onya is Co-Director of Turning Landscape and also teaches at the Slade School of Fine Art, University College London.
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Helen Welford is Exhibitions and Collection Curator at MIMA. She specialises in the management of the Middlesbrough Collection held at MIMA and on the development and production of large-scale exhibitions. Helen's research interest include feminist practice and representations of queer identities.

Holly Willats is an independent curator and writer, and the Director of the arts organisation, Art Licks. She is based across both London and the North York Moors.
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Katarina Zdjelar grew up in Belgrade and is currently based in Rotterdam. Working mainly in the medium of video, her work explores the way one body encounters another as a site of resistance and possibility, pointing to the fragile agency of collective action in the present. Her most recent works look at potentials and legacies of pacifist (proto) feminist practices, including that of Käthe Kollwitz and Dore Hoyer. Katarina represented Serbia at the 53rd Venice Biennale.

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With additional thanks to our interviewees Richard & Anne Cains, Mike Dedman, and Graham Parks.

Chemical City - Then & Now
Published by MIMA, 2022

Edited by Holly Willats

Commissioned by MIMA, Middlesbrough Institute of Modern
Art, for the exhibition *Chemical City*

Images courtesy of the artists; MIMA; Beamish, the Living
Museum of the North; Picture Stockton Archives; Ryder
Architecture; Teesside Archives. Installation images by
Rachel Deakin

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