THE BLACK COUNTRY URBAN BIOPHILIC PARK

IN MEMORY OF THE TIME BEFORE MAN EXPLOITED THE LANDSCAPE SOMETIME IN THE 1300'S (MAYBE?)
REMEDIATION, TIME & REGENERATION

"IN THE END, OUR SOCIETY WILL BE DEFINED NOT ONLY BY WHAT WE CREATE, BUT BY WHAT WE REFUSE TO DESTROY."
- JOHN SAWHILL, THE NATURE CONSERVANCY
(1936-2000)







The Black County Biophilic Legacy Park

'A PLACE OF 1000'S RIVERS'

And Vision for The West Midlands National Park

Chantelle Harris
Ma Landscape Architecture

Creating a Black Country Legacy Park, 'A place of 1000's rivers' focuses on the 'weak and watery' upper reaches of the Tame as it stretches out into the Black Country and its relationship to local communities.
The aim is to create a series of lakes, pools and water gardens to reveal and celebrate the ecology, geology, and hydrology of the Black Country. It draws on the work of the 2018 sir Geoffrey Jellicoe award winner, Anne Whiston Spirn. The Black Country Remediation Legacy Park is a beacon of the UN's sustainable development goals 2030. The project illustrates a modern green utopia within a contaminated site, Rattlechain Lagoon - former sewage works, brickworks and a hazardous waste dump for the past 60+ years.
Due to the Black Country being historically the most polluted landscape within the UK, all of the former industrial sites have been transformed into an imaginative forest landscape and given in reformation to the local community. We also look at what the Black Country could have been if we had designed with nature first, rather than exploit the landscape for financial gain.

The Black Country statistically has:
1. One of the highest rates of poverty within the UK
2. Being most likely to die from avoidable causes (2 people per day)
3. Highest air pollution levels
4. Having the lowest life expectancy in the Midlands
5. Having the lowest rates of unhappiness due to its industrial past

In its current form, the landscape has hidden picturesque and sublime spaces which have been concealed by industrialisation, prohibited spaces or given priority to industrial buildings and new build estates on former brownfields; appealing to educated families and young professionals, further broadening social inequality and quality of space to those living in former council housing. This creates an opportunity to design a transformative, resilient landscape for nature from a child's perspective for the legacy health of the local community by turning a toxic wasteland into a thriving, biophilic landscape.

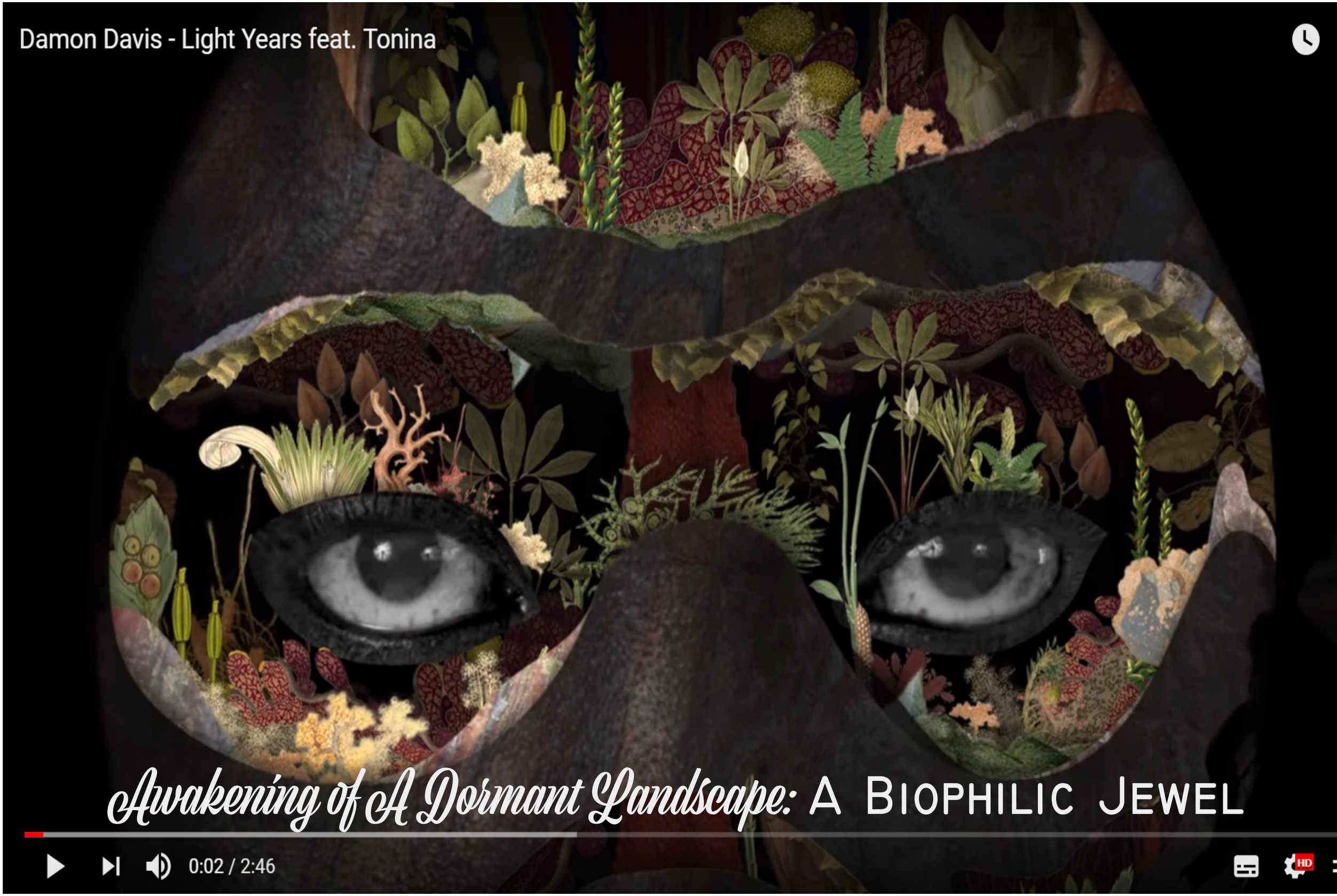


Our atmosphere, our water, our food, our houses,
our clothes, our persons,
all are contaminated by dirt,
and smoke is one of the most active agents in its production.
The necessity for the prevention of smoke must therefore be apparent to every
intelligent and unprejudiced mind and the best method for its extirpation or rather amelioration,
par consequence an object of the greatest interest.

J. Maule Sutton, Medical Officer of Health, 1882

Site area- Wednesbury to Oldbury 1889

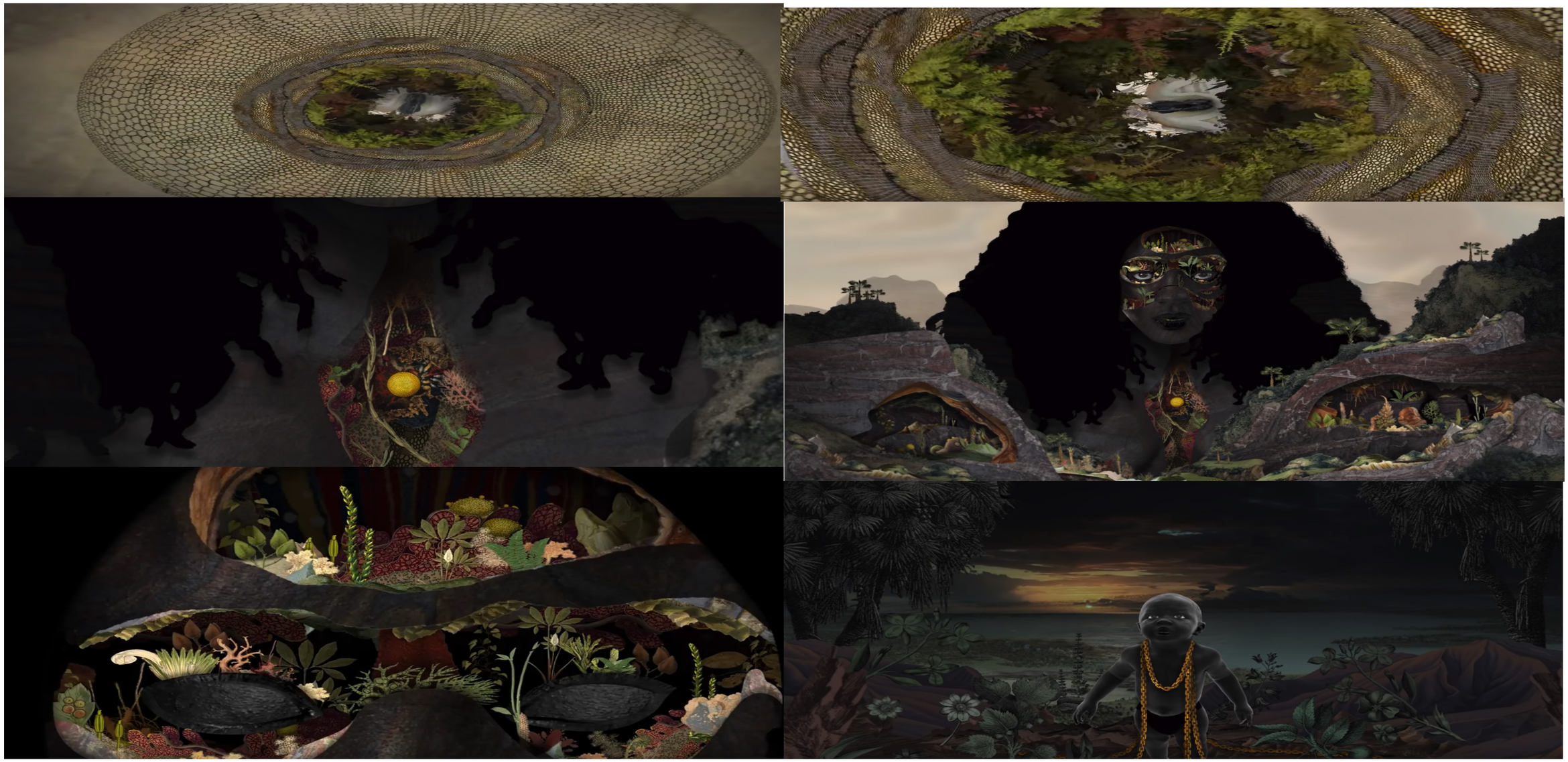




https://www.youtube.com/watch?v=2wtHaSyiYMc

Gaining perspective...

VIEWING THE LANDSCAPE THROUGH THE EYES OF A CHILD



Left and Above:
Damon Davis ‘Lightyears’ from the Afrosurrealist Art Exhibition “Darker Gods in the Garden of Low Hanging Heavens”.

NEW GREEN/BLUE CORRIDOR

AIMS:

I) CONNECT NEIGHBOURHOODS
AND COMMUNITIES BY IMPROVING
WALKABILITY
AND SOCIAL SPACES

2) CREATE AN ECOLOGICAL
NATURE FIRST
APPROACH TO DESIGN TO
REMEDIATE THE LANDSCAPE

3) PRIORITISE WILD PLAYFULNESS,
ENCOURAGE RISK, EXPLORATION
AND SEEK TO CREATE EDUCATIONAL
SPACES,

4) ENHANCE THE POTENTIAL OF THE
NATURE RESERVE BY STRETCHING
THE BOUNDARYS OF THE
SITE AND DECONSTRUCT
THE EDGES.

5) INTEGRATE THE HISTORY
OF THE SITE/BLACK COUNTRY
WITH DESIGN CHOICES
SUCH AS UTILISING CLAY/CERAMICS
WITHIN DESIGN FEATURES

6) UTILISE THE 8 CONCEPTS
OF ART TO CREATE DESIGN
PRINCIPLES TO APPROACH
THE HEALING LANDSCAPE,
LANDSCAPE AS ART AND THE
FORM OF THE PLANTING
DESIGN,

7) TAKE ADVANTAGE OF THE
WATERWAYS BY ENSURING THAT EACH
COMMUNITY HAS DIRECT ACCESS TO THE
WATERWAYS -
INCLUDING, VIEWS OF WATER AND/OR
SENSORY SOUNDS OF TRICKLING WATER.

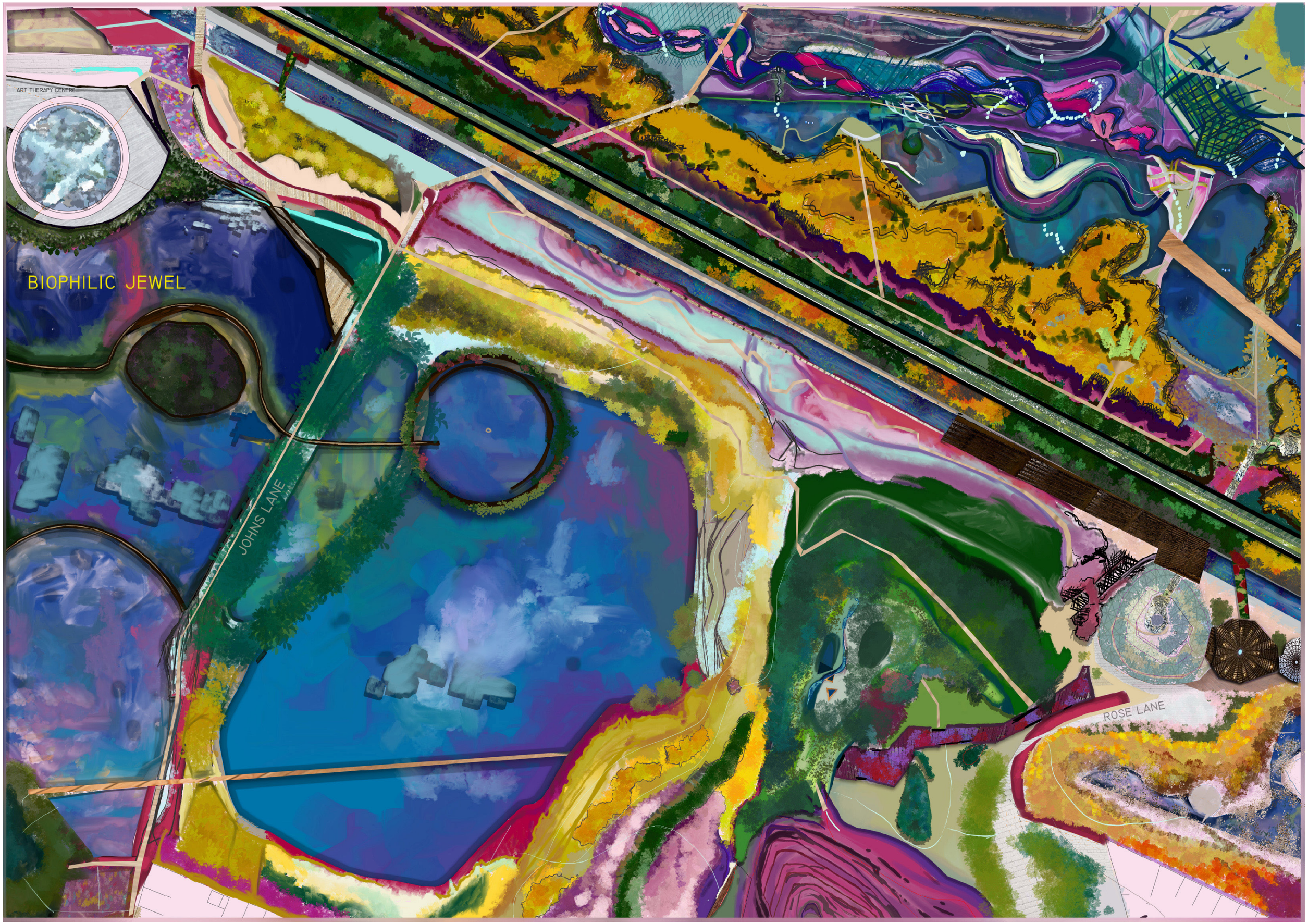


HAZARDOUS WASTE AREA

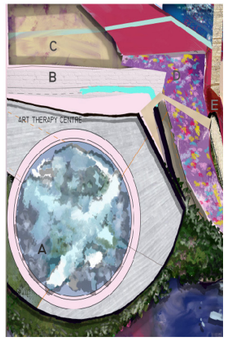
DISPOSAL LICENSE SL31

In the event of an emergency
Contact Site Operators
0121 552 3333

WEST MIDLANDS HAZARDOUS UNIT


ART THERAPY CENTRE
BIOPHILIC JEWEL
JOHNS LANE
ROSE LANE

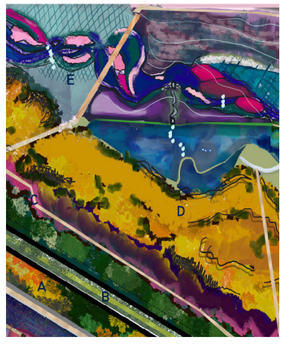
VISUAL REFERENCE



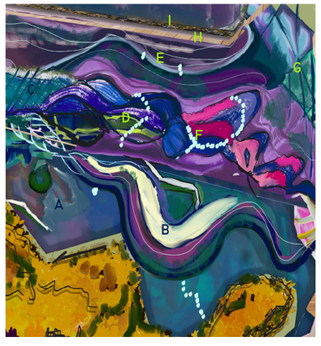
A.ART THERAPY CENTRE
- 360 VIEWS OF SITE
B.BRICK PATH AND EMERGENCY
ACCESS DRIVE LEADING TO
UNDERGROUND GARAGE
C.GRASSLAND NATURE TRAIL
D.MEADOW
E.TUNNEL



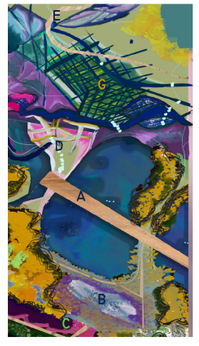
A. WILDLIFE BRIDGE - HERBESCENT FLOWERS
B. DECKING
C.DECKING WALKWAY LINK
TO ART THERAPY CENTRE,WILDPLAY PARK,
FOREST, RIVER AND WETLANDS
D.EUPHORBIA FIELDS
E.ELEVATED DECKING AND WATER EDGE PATH



A.TEMPORAL BORDER
B.RAIL LINE - GRASS (NO ACCESS)
DOUGLAS FIR BORDER
C.WOODLAND DECKED WALKWAY
D.ASPEN WOODLANDS -
NATURAL FREE ROAMING
E.WETLAND MEADOW
AND DRAINAGE SWALE



A. POOL - DELICATE PLANTING
B. SLOPED MEADOW
C.WETLAND
D.TAME RIVER AND MEANDERING
RIVER'S EDGE LINED WITH
E.TERRACED MEADOW - REST
F.STEPPING STONES
G.CASCADING PONDS
H.DECKED PATHWAY
I.MOSAIC WALL - CREATED BY LOCALS,
CHILDREN'S GROUP AND ART THERAPY
PATIENTS



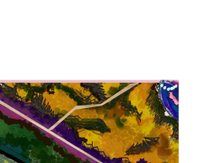
A. ELEVATED GETTY
B.WETLAND SWALE
C.WOODLAND MEADOW
D.RIVER EDGE MEADOW
E.DECKED WALKWAY
G. CASCADING PONDS
(DRAIN)



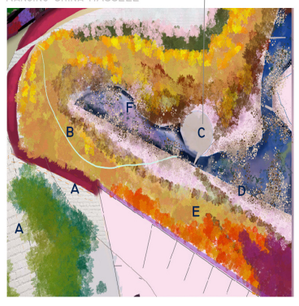
A.POND
B.ELEVATED DECKING
C.WOODLAND EDGE
D.FIELDS OF COLOUR - MEADOW
E.LOCAL COMMUNITY -
DIRECT ACCESS TO AND
THROUGHOUT THE PARK
VIA ROSE LANE



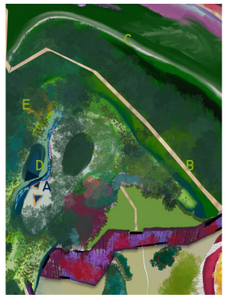
A.TROPICAL
B.ELEVATED WALKWAY -
LEADING TO RIVER'S EDGE
C.BAMBOO CANAL VIEW- HISTORY OF SITE
D.WILD PLAY - DESIGNED BY ADAM WHITE
E.COBBLED PATH THROUGH TUNNEL
F.WILLOW AND ROSE TUNNEL LEADING TO PARK
G.WISTERIA TUNNEL LEADING TO MIST FOREST



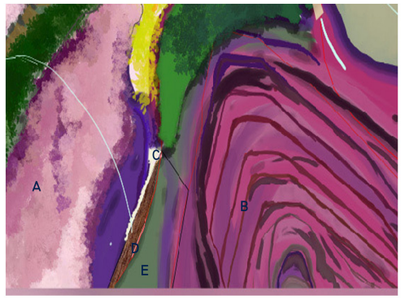
Fangshan Tangshan
National Geopark Museum
Nanjing China HASSELL



A.WHITE BRICK PATHWAYS LINED WITH
BIRCH AND GRASS
B.PATHWAY
C.RIVER DECKING - FISHING, PADDLING
D.STEPPING STONE CROSSINGS
E.TIERED ASPEN WOODLANDS
F.DESCENDING WETLANDS LINED WITH
LOCAL ROCK



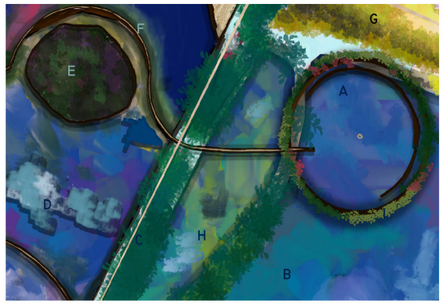
A.CONSTRUCTED WETLANDS
B.DECKED PATHWAY THROUGH
SURREALISM FOREST
C.SANDSTONE WALKWAY
D.ELEVATED POOL
E.MIST GARDEN



A.PURPLE FIELD LINED WITH
B.HEATHER MOUND
C.SANDSTONE WALKWAY
D.CAMPUS
E.ROOF GARDEN



A.YELLOW FIELD OF
B.TERRACING
C.WILLOW
D.EMERGING FOREST
E.TIERED BLUE MEADOW



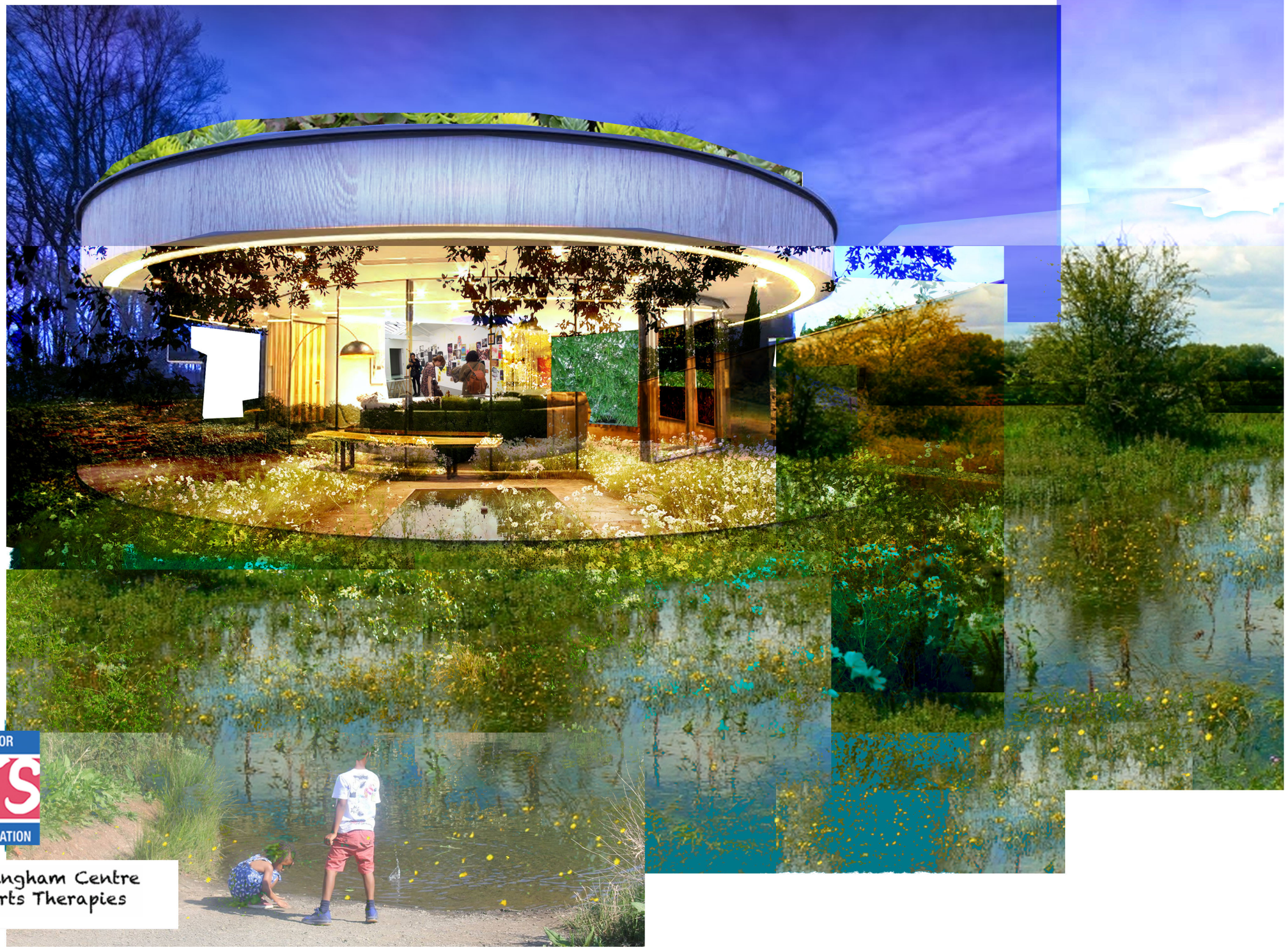
A.DECKED PIER
B.LAGOON
C.WILLOW WALKWAY
D.DRIFTING WETLANDS
E.DECKED WALKWAY
G.YELLOW FIELD
H.MOSS POND
I.HANGING GARDENS

ART THERAPY CENTRE

THE INSTITUTE FOR ARTS IN THERAPY AND OUTDOOR EDUCATION

The centre 'works through creative and relational methods to promote the overall wellbeing of children, young people, families and communities. This is holistic and child-centred, considering the needs and capabilities of each individual child in the context of their family, school and social environment.'

In association with



THE INSTITUTE FOR ARTS IN THERAPY & EDUCATION

Birmingham Centre for Arts Therapies

CULTURAL CENTRE EXIT



IAN POTTER WILD
PLAY TRAIL

DIGITISED HISTORY
INTERPRETIVE DESIGN
DAVID LINCONSHIRE

RENATURALISED
STREAM

NIGEL DUNNETT
WILDFLOWER
MEADOW

ROBERTO BURLE MARX AQUATIC PLANTS

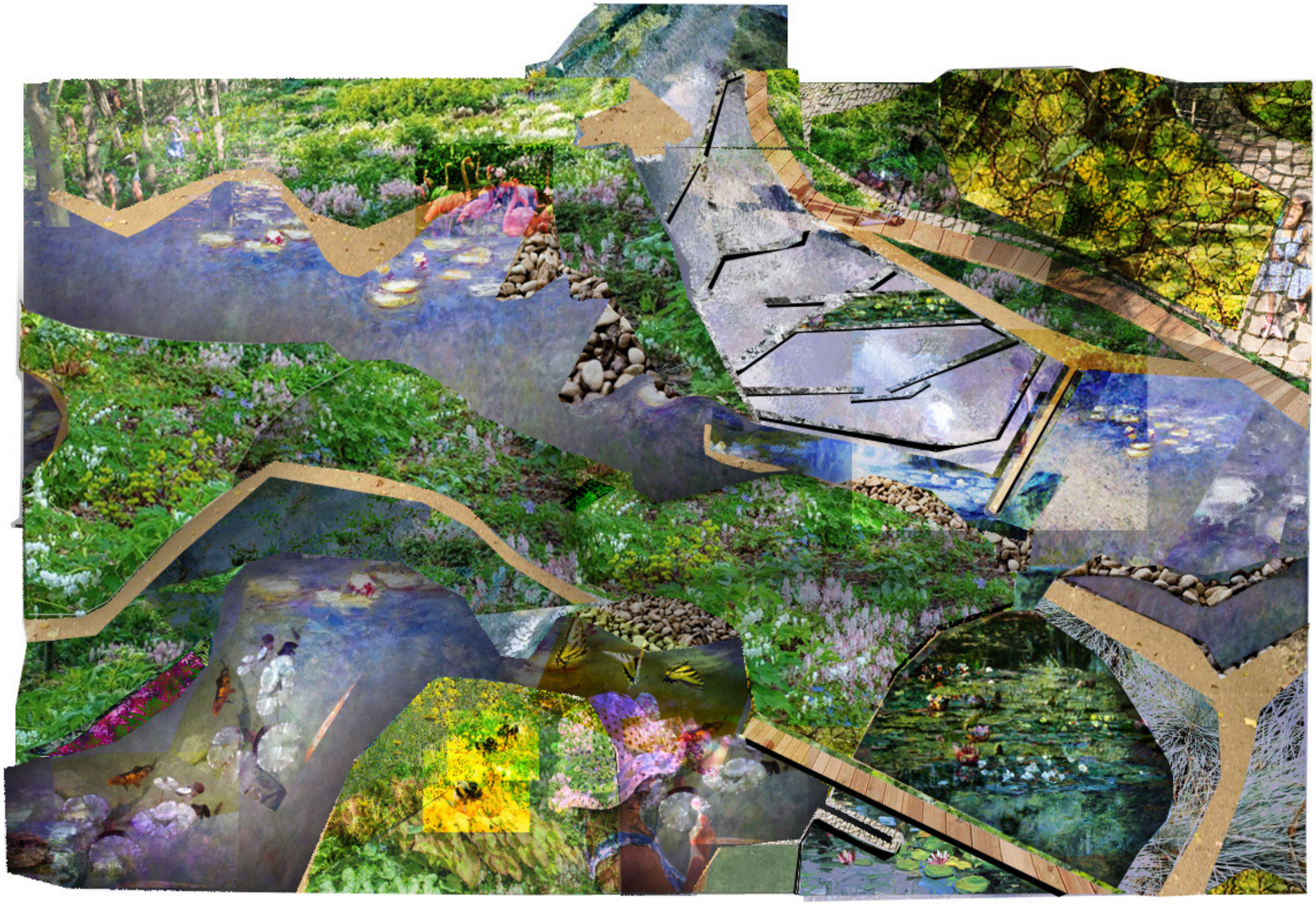
TAKING INSPIRATION FROM THE RUSTED SKIP, REMNANT OF WHEN CHEMICAL WASTE WAS TIPPED INTO THE PONDS AND LEAKED INTO THE CANALS AND RIVER. THE ORGANIC, BRONZE GEOMETRIC SHAPES FORMS A STRIKING SILHOUETTE WITHIN THE LANDSCAPE.











THE TAME RIVER - MOMENTS THROUGH THE EYES OF A CHILD

THE BLACK COUNTRY URBAN BIOPHILIC PARK

Playful spaces



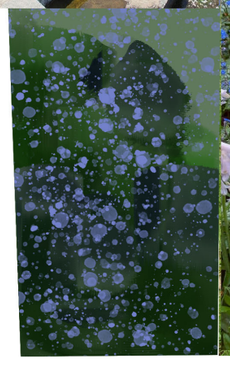
THE SUBLIME FOREST



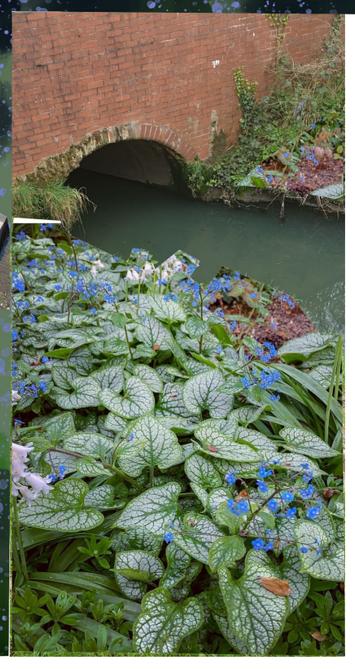


ASPEN WOODLANDS





BLUEBELLS



WHITE BLUEBELLS AND BRUNNERA MACROPHYLIA 'JACKFROST'

The Sublime and The Beautiful

William Cullen Bryant. 1794–1878

A Forest Hymn

THE GROVES were God's first temples.

Might not resist the sacred influences
Which, from the stilly twilight of the place,
And from the gray old trunks that high in heaven
Mingled their mossy boughs, and from the sound
Of the invisible breath that swayed at once
All their green tops, stole over him, and bowed
His spirit with the thought of boundless power
And inaccessible majesty. Ah, why
Should we, in the world's riper years, neglect
God's ancient sanctuaries, and adore
Only among the crowd, and under roofs
That our frail hands have raised? Let me, at least,
Here, in the shadow of this aged wood,
Offer one hymn—thrice happy if it find
Acceptance in His ear.

My heart is awed within me when I think
Of the great miracle that still goes on,
In silence, round me—the perpetual work
Of thy creation, finished, yet renewed
Forever. Written on thy works I read
The lesson of thy own eternity.
Lo! all grow old and die—but see again,
How on the faltering footsteps of decay
Youth presses,—ever-gay and beautiful youth
In all its beautiful forms. These lofty trees
Wave not less proudly that their ancestors
Moulder beneath them. O, there is not lost
One of earth's charms: upon her bosom yet,
After the flight of untold centuries,
The freshness of her far beginning lies
And yet shall lie. Life mocks the idle hate
Of his arch-enemy Death—yea, seats himself

Upon the tyrant's throne—the sepulchre,
And of the triumphs of his ghastly foe
Makes his own nourishment. For he came forth
From thine own bosom,
and shall have no end.

Deep in the woody wilderness,

till they outlived

The generation born with them, nor seemed

Less aged than the hoary trees and rocks

Around them;

But let me often to these solitudes

Retire, and in thy presence reassure

My feeble virtue. Here its enemies,

The passions, at thy plainer footsteps shrink

And tremble and are still.

tremble and are still. O God! scare
the world with tempests, set on fire
The heavens with falling thunderbolts, or fill,
With all the waters of the firmament,

The swift dark whirlwind that uproots the woods
And drowns the villages; when, at thy call,
Uprises the great deep and throws himself
Upon the continent, and overwhelms
Its cities—who forgets not, at the sight
Of these tremendous tokens of thy power,
His pride, and lays his stripes and follies by?
O, from these sterner aspects of thy face
Spare me and mine, nor let us need the wrath
Of the mad, unchained elements to teach
Who rules them. Be it ours to meditate,
In these calm shades, thy milder majesty,
And to the beautiful order of thy works



D,

ND BUILD UP-
M HISTORICAL
STEP HAD
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AL WIRE,
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R

PEDESTRIAN TUNNEL PROPOSAL



MOSAIC
TILED
COVERED
INNER TUNNEL

THERE WILL BE MOTIONED SENSORED LED'S IN THE CENTRE OF THE TIUNNEL WHICH REFLECT FROM COLOURED MIRRORS, MOSAIC/COBBLED PAVING THE GROUND WILL BE LOWERED WITH A BORDERED MOSS AND MUSHROOM BED. ONCE THE CHILD NEARS THE EXIT, THEY WILL SEE GREEN VEGETATION AND HEAR SENSORY SOUNDS OF NATURE
BUT IT WILL ONLY AS THE CHILD EMERGES WILL THE TRUE SCOPE OF THE SPACE BE REVEALED AS THEY ARE DRAWN INTO A TROPICAL 'SECRET GARDEN' WHICH FORCES THE CHILD TO LOOK UP AT THE VASTNESS OF THE SPACE. AHEAD, SEVERAL METERS AWAY IS A DEAD END, WHERE THE ONLY ALTERNATIVE IS TO CLIMN THROUGH THE PLANGTS IRREGULAR TERRACING, VIA A RAMP WHICH WINDS AROUND THE CRATERED SPACE OR A METAL SPIRAL STAIRCASE WHICH CREATES A SECOND LEVEL.
VIEWING STATION WITHIN THE SPACE.

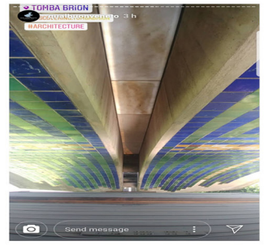
PRECEDENCE:

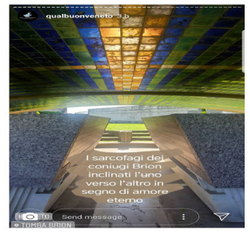


CASA SPERIMENTALE,
AN EXPERIMENTAL CONCRETE TREEHOUSE
GIUSEPPE PERUGINI AND UGA DE PLAISANT



XILITLA, MEXICO
LAS POZAS





SHEEPWASH NATURE RESERVE

SOFTEN THE CANALISED EDGES WITH WETLAND MEADOWS. REVITALISE THE SPACE WITH COLOUR, MOSAIC FLOORING, WALLS DESIGNED BY CHILDREN. DEDICATE SPACES FOR LAND ART AND ALLOW OPPORTUNITY FOR WILDPLAY.





INTEGRAL SITE HISTORY - CLAY AND BRICKWORKS 1800S+



Frida Kahlo's Garden - Thriving 60+ years after her death


LIVING LANDSCAPE
SERIES OF TEMPORARY AND PERMANENT PONDS - FRESH WATER HABITAT
NATIVE AQUATIC PLANTS, WILDFLOWERS, COIR ROLLS
ASPEN FOREST
BUTTONWOOD FARM IN CAVERSHAM
NIGEL DNNETT
DRAMATIC
UNEXPECTED
SUBLIME
SPRING-HEELED JACK FOREST
NODES/ ARTILERIES
THE RIVER IS THE SPINE
SURREAL
ETHEREAL AND EFFERVESCENT LANDSCAPE
SUBLIME
SUDS/ RAIN GARDENS
REVELATION
DRASTIC
WILD
RICH, VARIEGATED LANDSCAPE

A Healing, Living Landscape

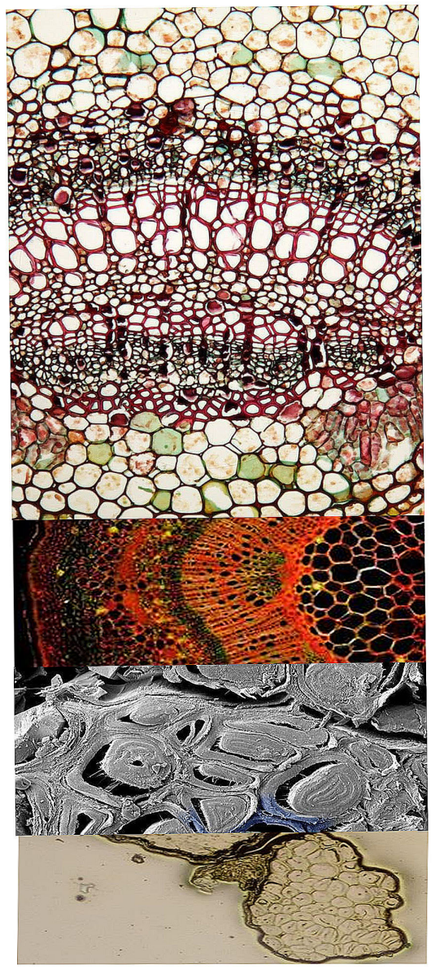
A contaminated post-industrial landscape turned into wetlands and marshes, urban woodlands (primarily Aspen,) wildflower meadows, sweeping Sunflower and Brassica fields, orchards, and EDIBLE GARDENS.

CONCEPT

THE CONCEPTUAL DESIGN IS BASED ON THE COMPLEXITIES OF PHYTOREMEDIATION TO THE MICROSCOPIC LEVEL:
CELL GROWTH, PLANT STRUCTURE AND THE MECHANISMS OF PHYTOEXTRACTION WHERE HARMFUL HEAVY METALS
CAN BE EXTRACTED FROM THE SOIL BY HYPERACCUMULATOR PLANTS AND CONCENTRATED INTO THEIR ROOTS
AND SHOOTS. BY UTILISING HYPERACUMALATOR PLANTS AND TREES TO DECONTAMINATE THE SITE, INCLUDING THE EXISTING RIVER BY
REMEDIATION, REWILDING AND GREENING THE LANDSCAPE. INTRODUCING NEW BLUE SPACES, OPENING THE EXISTING CANALISED WATERWAYS
AND NATURALISING THE RIVER,

PLANT STRUCTURE

SALIX BABYLONICA SECTION



WILLOW SHOOT

BALANCE
BELONG
GROWTH
FEEL GOOD
WILDNESS
HEALING
HEALING
CONNECTION
RESTORATION

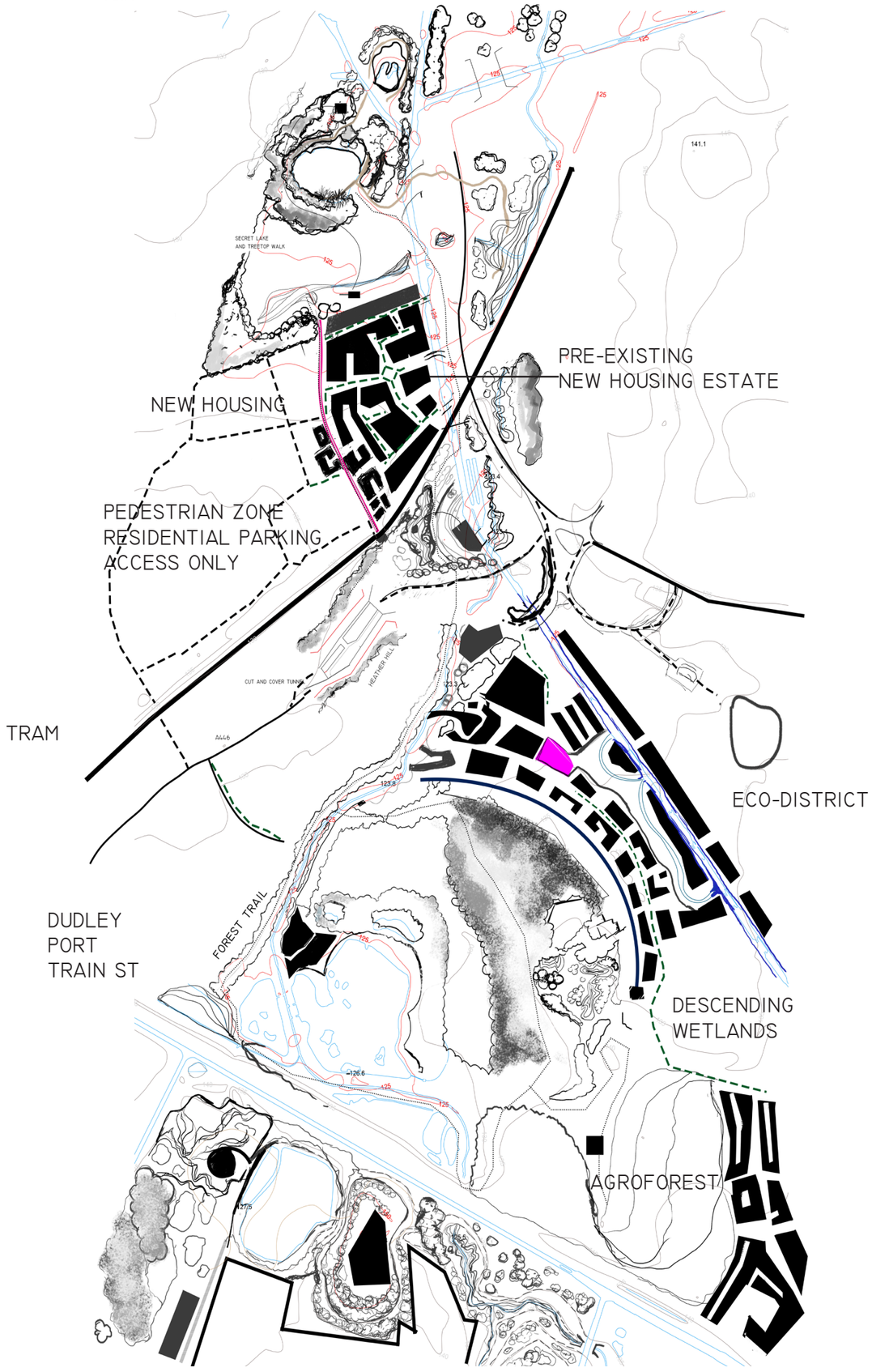


SPATIAL PRINCIPLES



SPATIAL CONCEPT

1:1250

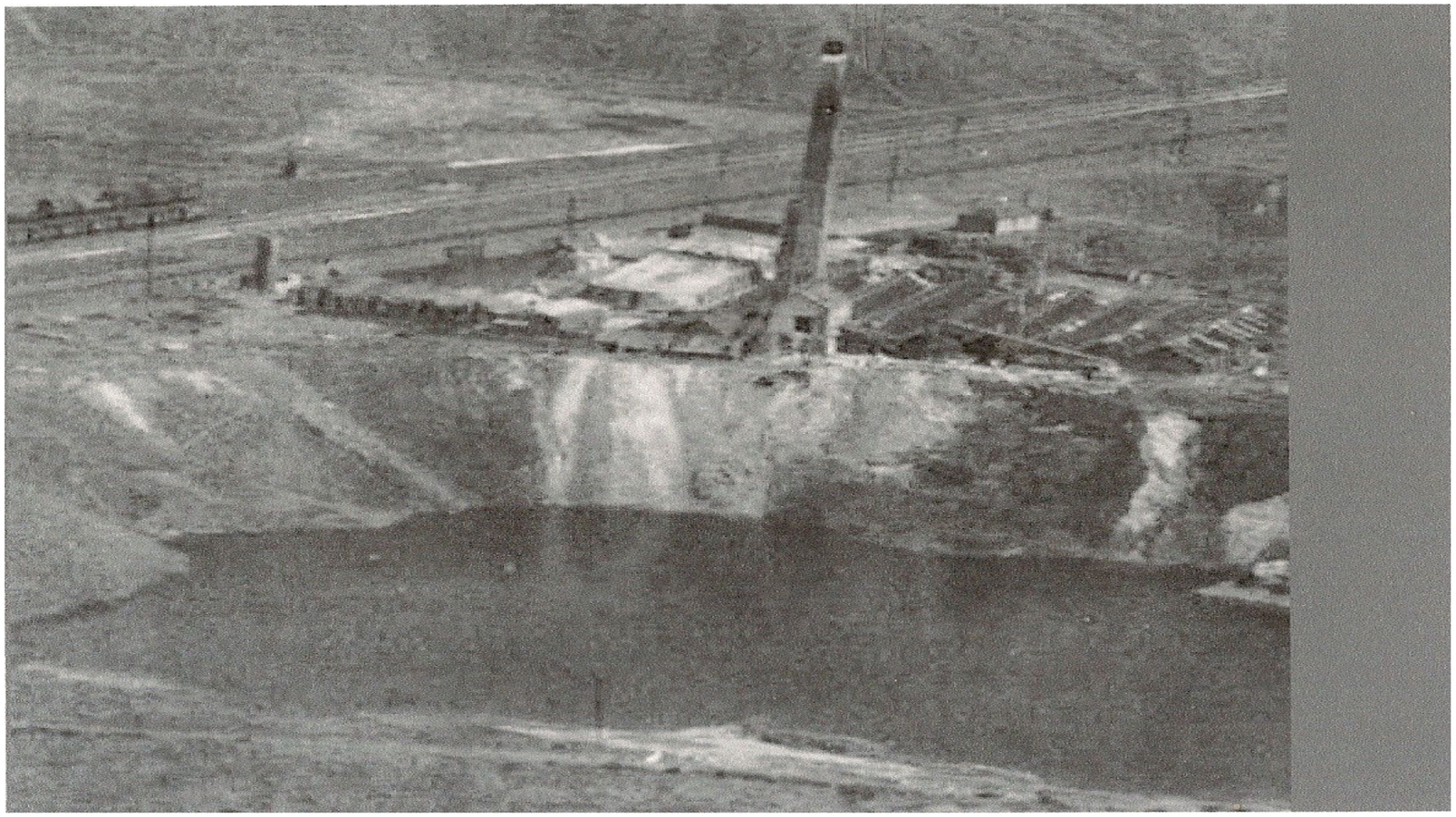

SECRET LAKE
AND TREETOP WALK
PRE-EXISTING
NEW HOUSING ESTATE
NEW HOUSING
PEDESTRIAN ZONE
RESIDENTIAL PARKING
ACCESS ONLY
CUT AND COVER TUNNEL
HEATHER HILL
A446
TRAM
ECO-DISTRICT
DUDLEY
PORT
TRAIN ST
FOREST TRAIL
DESCENDING
WETLANDS
AGROFOREST



RATTLECHAIN LAGOON
JOHN'S LANE

The Nightmare of Rattlechain Lagoon

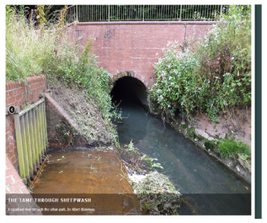
A TALE OF TWO TIPS...



'The Rattlechain brickworks overlooking the water filled disposal steep edged site in 1950.'

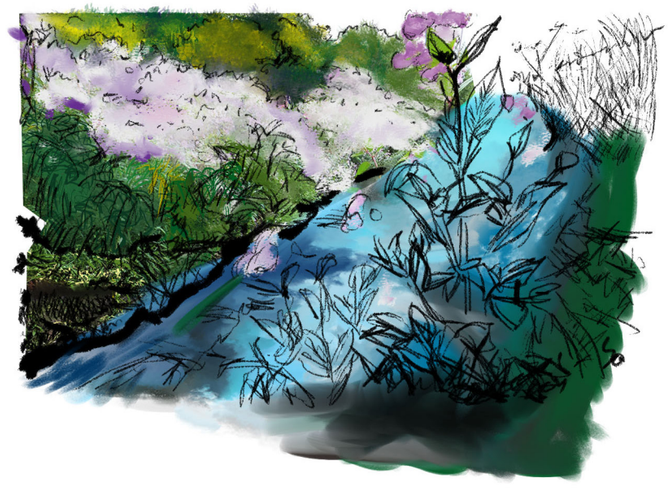


CANALISED RIVER

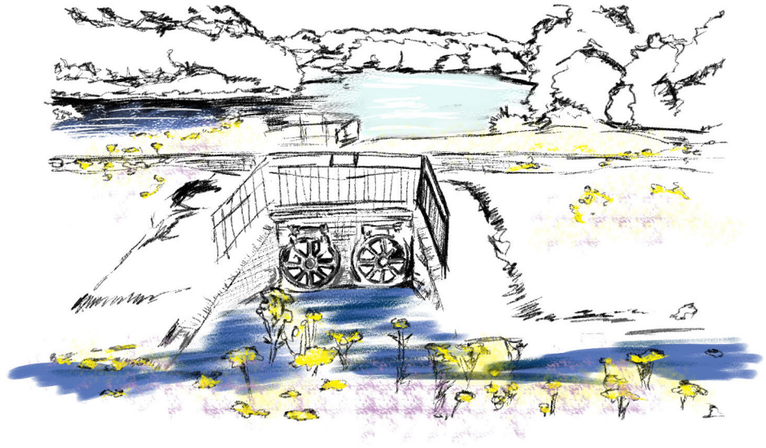


RENATURALISED RIVER TAME

LINED WITH JAPANESE BASALM



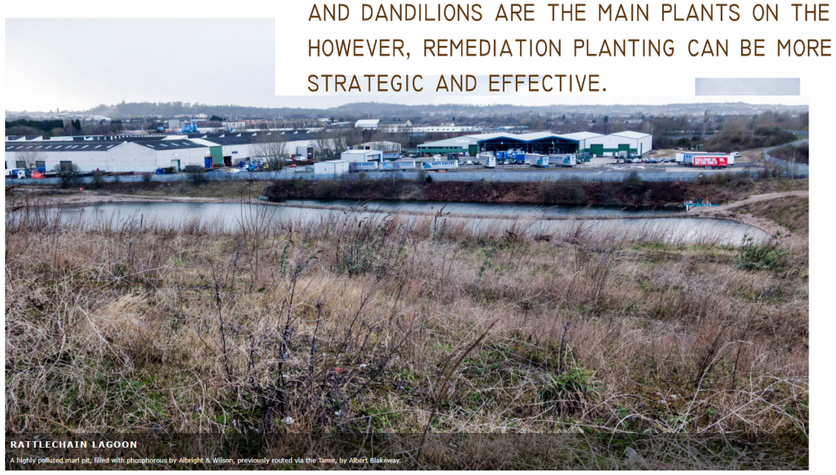
OLD MARL PITS
THE RIVER FLOWS BESIDE THE LAKES.



STARK VEGETATION - WILD WEEDS, BUDDLEIA DAVIDII AND DANDILIONS ARE THE MAIN PLANTS ON THE SITE HOWEVER, REMEDIATION PLANTING CAN BE MORE STRATEGIC AND EFFECTIVE.









The diagram shows the pedestrian journey from the Tame river in Wednesbury, to the Tame Valley Canal in Hilltop, West Bromwich to Sheepwash Urban Nature Reserve where the Tame river reconnects and travels to Rattle change lagoon.

1. The route had poor walkability
2. the air smelled like chemicals
3. pollution
4. loitering,
5. motorcyclists racing along the canals
6. evidence of high deprivation levels which was distinctive in contrast to the new build estates.



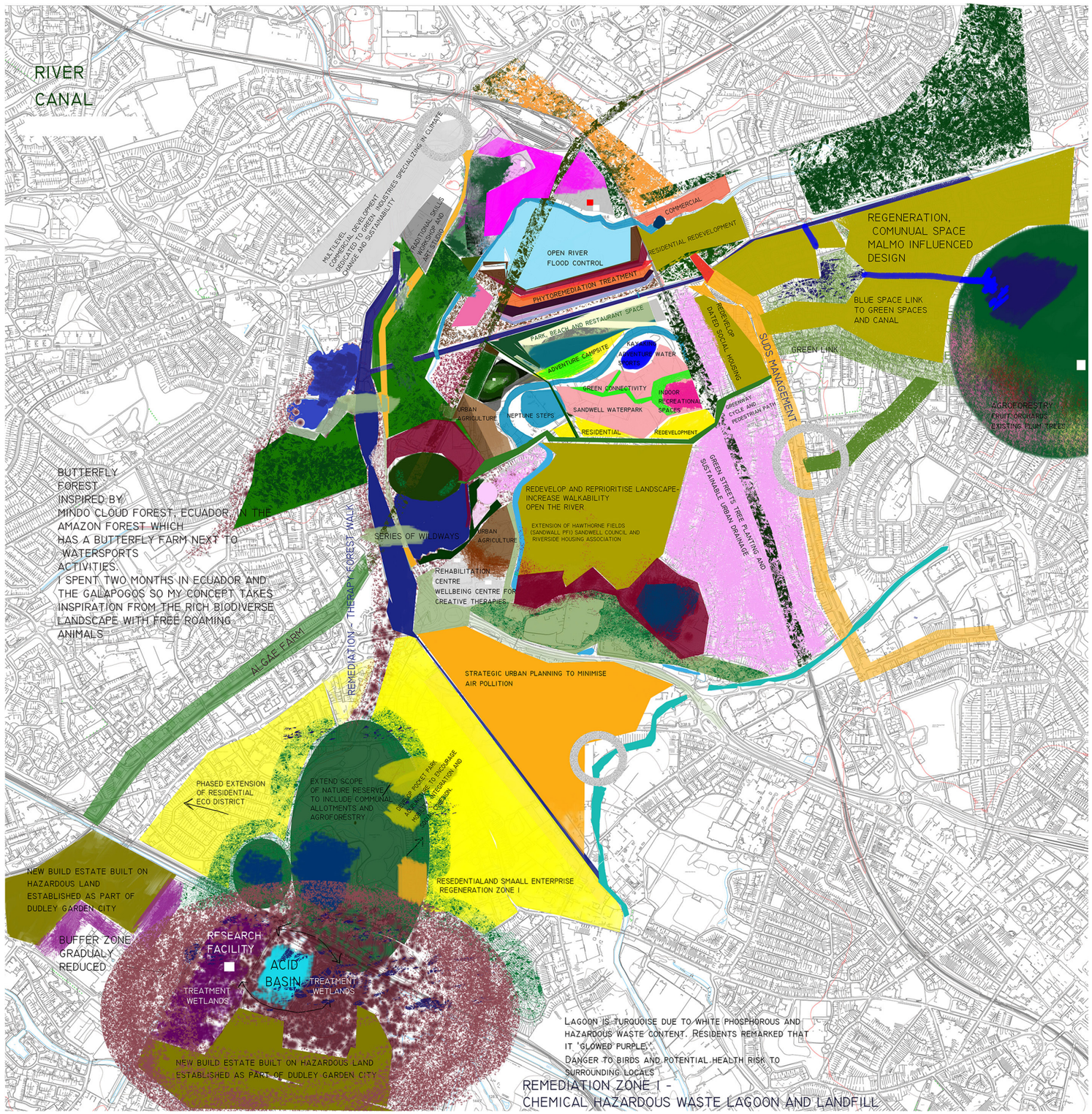


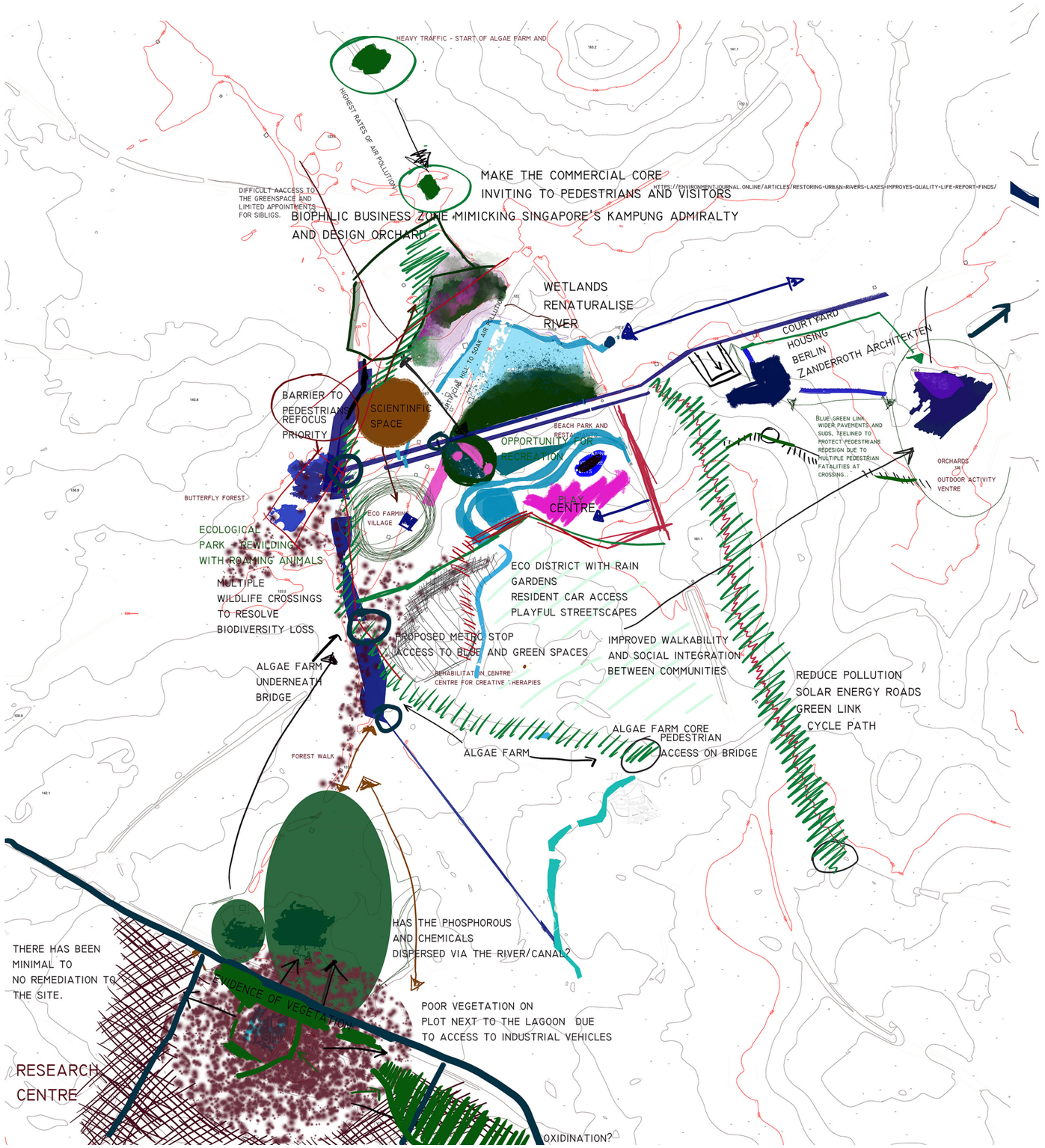
The urban view of people fishing along the Tame Valley Canal from a newbuild house.
The metro tram bridge is shown in the distance.

REWILDING AND REMEDIATION- INDUSTRY, IDENTITY & MEMORY

THE BLACK COUNTRY REFORMATION PROJECT AIMS TO CREATE A LANDSCAPE WHICH IS 100% RENEWABLE AND SUSTAINABLE DESPITE IT'S INDUSTRIAL HISTORY. IT AIMS TO BECOME A BEACON PROJECT FOR THE UK BY DESIGNING HOLISTICALLY WITH THE LANDSCAPE, ECOLOGICAL DESIGN AND USING INNOVATIVE GREEN INDUSTRIES AND ENERGIES TO BECOME A LEADER IN FIGHTING CLIMATE CHANGE. THE REPEATED EXPLOITION OF THE LANDSCAPE FOR

FINANCIAL GAIN HAS BEEN THE IMMEDIATE CAUSE OF POVERTY TO THE LOCAL COMMUNITIES.




HEAVY TRAFFIC - START OF ALGAE FARM AND
HIGHEST RATES OF AIR POLLUTION
MAKE THE COMMERCIAL CORE
INVITING TO PEDESTRIANS AND VISITORS
HTTPS://ENVIRONMENT.JOURNAL.ONLINE/ARTICLES/RESTORING-URBAN-RIVERS-LAKES-IMPROVES-QUALITY-LIFE-REPORT-FINDS/
DIFFICULT AACCESS TO THE GREENSPACE AND LIMITED APPOINTMENTS FOR SIBLIGS.
BIOPHILIC BUSINESS ZONE MIMICKING SINGAPORE'S KAMPUNG ADMIRALTY AND DESIGN ORCHARD
WETLANDS
RENATURALISE
RIVER
COURTYARD
HOUSING
BERLIN
ZANDERROTH ARCHITEKTEN
BARRIER TO PEDESTRIANS
REFOCUS
PRIORITY
SCIENTINFIC SPACE
BEACH PARK AND RESTAURANT
OPPORTUNITY FOR RECREATION
BLUE GREEN LINK WIDER PAVEMENTS AND SUDS, TEELINED TO PROTECT PEDESTRIANS REDESIGN DUE TO MULTIPLE PEDESTRIAN FATALITIES AT CROSSING.
ORCHARDS
OUTDOOR ACTIVITY VENTRE
BUTTERFLY FOREST
ECO FARMING VILLAGE
PLAY CENTRE
ECOLOGICAL PARK - REWILDING WITH ROAMING ANIMALS
MULTIPLE WILDLIFE CROSSINGS TO RESOLVE BIODIVERSITY LOSS
ECO DISTRICT WITH RAIN GARDENS
RESIDENT CAR ACCESS
PLAYFUL STREETSCAPES
PROPOSED METRO STOP
ACCESS TO BLUE AND GREEN SPACES
IMPROVED WALKABILITY AND SOCIAL INTEGRATION BETWEEN COMMUNITIES
REHABILITATION CENTRE
CENTRE FOR CREATIVE THERAPIES
ALGAE FARM UNDERNEATH BRIDGE
REDUCE POLLUTION
SOLAR ENERGY ROADS
GREEN LINK
CYCLE PATH
ALGAE FARM CORE
PEDESTRIAN ACCESS ON BRIDGE
ALGAE FARM
FOREST WALK
HAS THE PHOSPHOROUS AND CHEMICALS DISPERSED VIA THE RIVER/CANAL?
THERE HAS BEEN MINIMAL TO NO REMEDIATION TO THE SITE.
EVIDENCE OF VEGETATION
POOR VEGETATION ON PLOT NEXT TO THE LAGOON DUE TO ACCESS TO INDUSTRIAL VEHICLES
RESEARCH CENTRE
OXIDINATION?

ECO BUSINESS DISTRICT

TREE CANOPY

GREEN ROOF

MIXED COMMUNAL HOUSING

RESIDENTIAL REGENERATION
LINKING GREEN SPACES TO IMPROVE
HEALTH AND WELLBEING

REMEDIATING Ni-PHYTOTOXICITY OF CONTAMINATED
MUCK SOIL USING LIMESTONE AND HYDR

143.8

136.9

123.2

161.1

ENERYGY PRODUCTIVE ROAD

LEAD AND CADMIUM REMEDIATION USING MAGNETI
ZED AND NONMAGNETIZED BIOCHAR FROM DOUGLAS FIR

DREDGING, AN EFFECTIVE MEANS OF REMOVING
CONTAMINATED SEDIMENTS FOR OFF-SITE REMEDIATION
, HAS BEEN SHOWN TO BE TOO SLOW AND EXPENSIVE
AT THE ERF BECAUSE UNEXPLODED ORDNANCE
IS PRESENT. ENHANCED NATURAL REMEDIATION
IS EFFECTIVE UNDER FAVOURABLE CLIMATOLOGICAL
CONDITIONS IN AREAS THAT EXPERIENCE
INTERMITTENT FLOODING, BUT DESATURATION
OF THE SEDIMENTS IS CRITICAL TO ITS EFFECTIVENESS.
POND DRAINING BY BLASTING A DITCH EFFECTIVELY
REMOVES WATERFOWL FEEDING HABITAT, BUT
ATTENUATION OF THE CONTAMINANT IS INHIBITED
BECAUSE THE DITCH INCREASES FLOODING FREQUENCY,
AND THE HABITAT ALTERATION IS PERMANENT.
POND PUMPING, WHERE FEASIBLE, HAS SHOWN GREAT
POTENTIAL FOR THE DESATURATING OF WIDE AREAS
OF ERF, ENABLING THE NATURAL ATTENUATION
MECHANISM TO PROGRESS. FURTHER INVESTIGATION
WILL BE NECESSARY TO CONFIRM THESE INITIAL
CONCLUSIONS AND DETERMINE THE OVERALL EFFECTIVENESS OF ALL THREE METHODOLOGIES.
METHODS DEVELOPED OVER THE COURSE OF THIS WORK MAY BE APPLIED TO FORMER REMEDIATION PROJECTS
WHERE IN-SITU VOLATILIZATION CAN OCCUR AND LIMITED DISTURBANCE OF WETLANDS IS CRITICAL.

142.1

REMEDIATION - THERAPY FOREST WALK - FOREST BATHING

ALGAE ENERGY FARM

ENERYGY PRODUCTIVE ROAD

138.9

AN ISSUE WHICH
BIOCHAR AND CLAY SOILS WILL BE USEFUL IN REMEDIATING TOXIC AREAS OF FORMER REFUSE TIPS, SEWAGE DISPOSAL
AND

SPONGE

ALDER SHRUBS AND TREES THAT ARE CAPABLE OF FORMING
SYMBIOSES WITH MYCORRHIZAL FUNGI AND THE NITROGEN-FIXING
ACTINOMYCETE FRANKIA SP.

BENEFICIAL ROLE OF PLANT GROWTH
PROMOTING BACTERIA AND
ARBUSCULAR MYCORRHIZAL FUNGI ON
PLANT RESPONSES TO HEAVY METAL STRESS

TAXODIUM DISTICHUM

POACEAE GENUS

146.8

COMBINING ALDERS, FRANKIAE, AND MYCORRHIZAE FOR THE REVEGETATION AND REMEDIATION OF CONTAMINATED ECOSYSTEMS

N

BIOPHILIC URBANISM

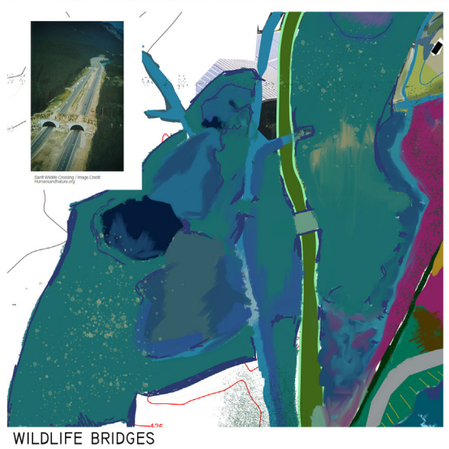




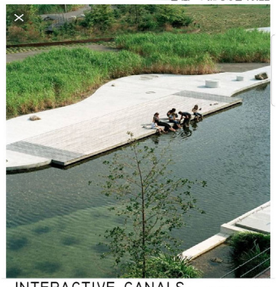


VIBRANCY AND BIODIVERSITY
ALONG ROADS -SUDS





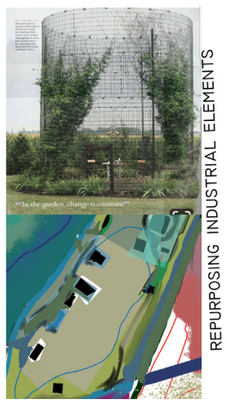
WILDLIFE BRIDGES



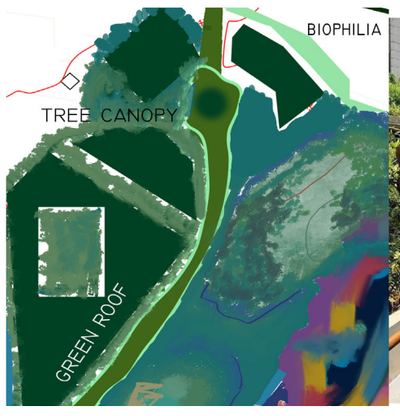
INTERACTIVE CANALS

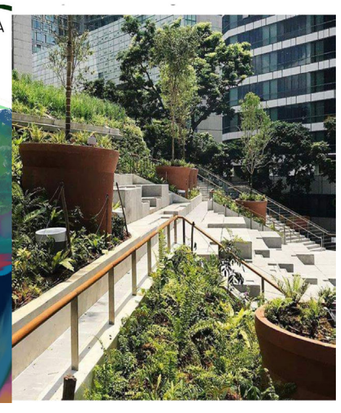


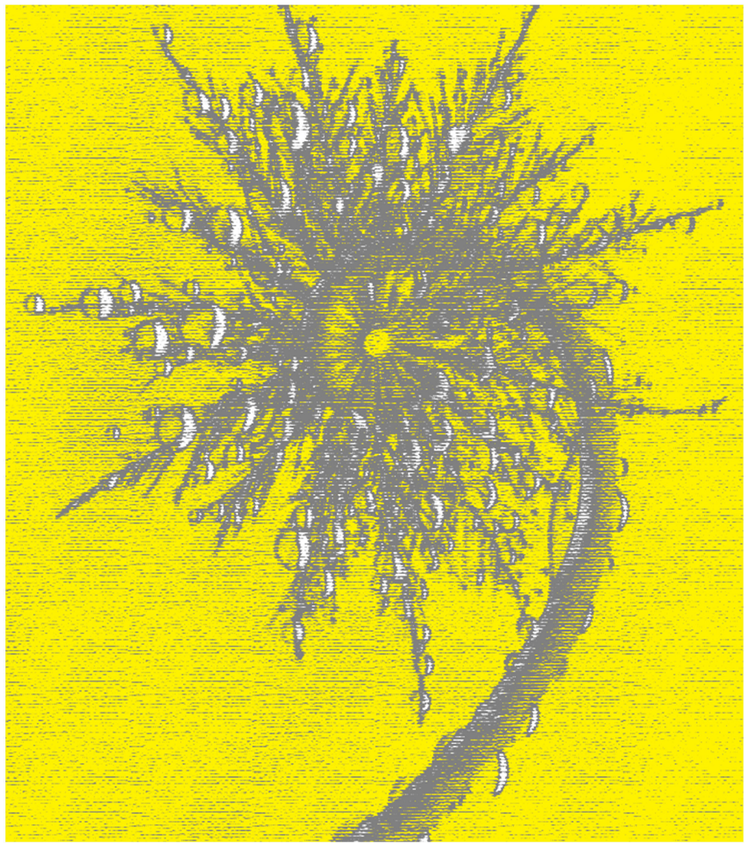
CONTEMPORY PERMEABLE ROADS



REPURPOSING INDUSTRIAL ELEMENTS



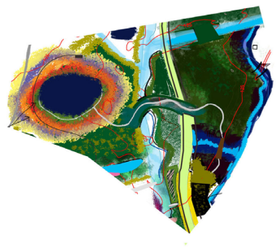




SEEDLING WITH DEW DROPLETS
BIOPHILIC CITIES

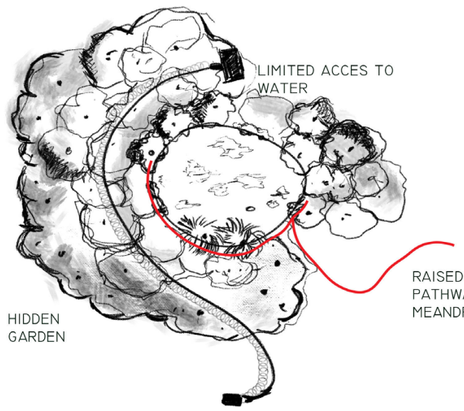


ARTERIAL ROUTES,
NODES
CONNECTIVITY
HEART



SYNCHRONITY
CONNECTIVITY
OF NATURAL WORLD
WITH URBAN SPACES

REWILDED SPACE DOMINEERS
SOFTENS THE VIEW
ENABLES THE ROAD TO
LOSE PROMINANCE WITHIN
THE LANDSCAPE



ELEVATED VIEWS TO
HIDDEN SPACES

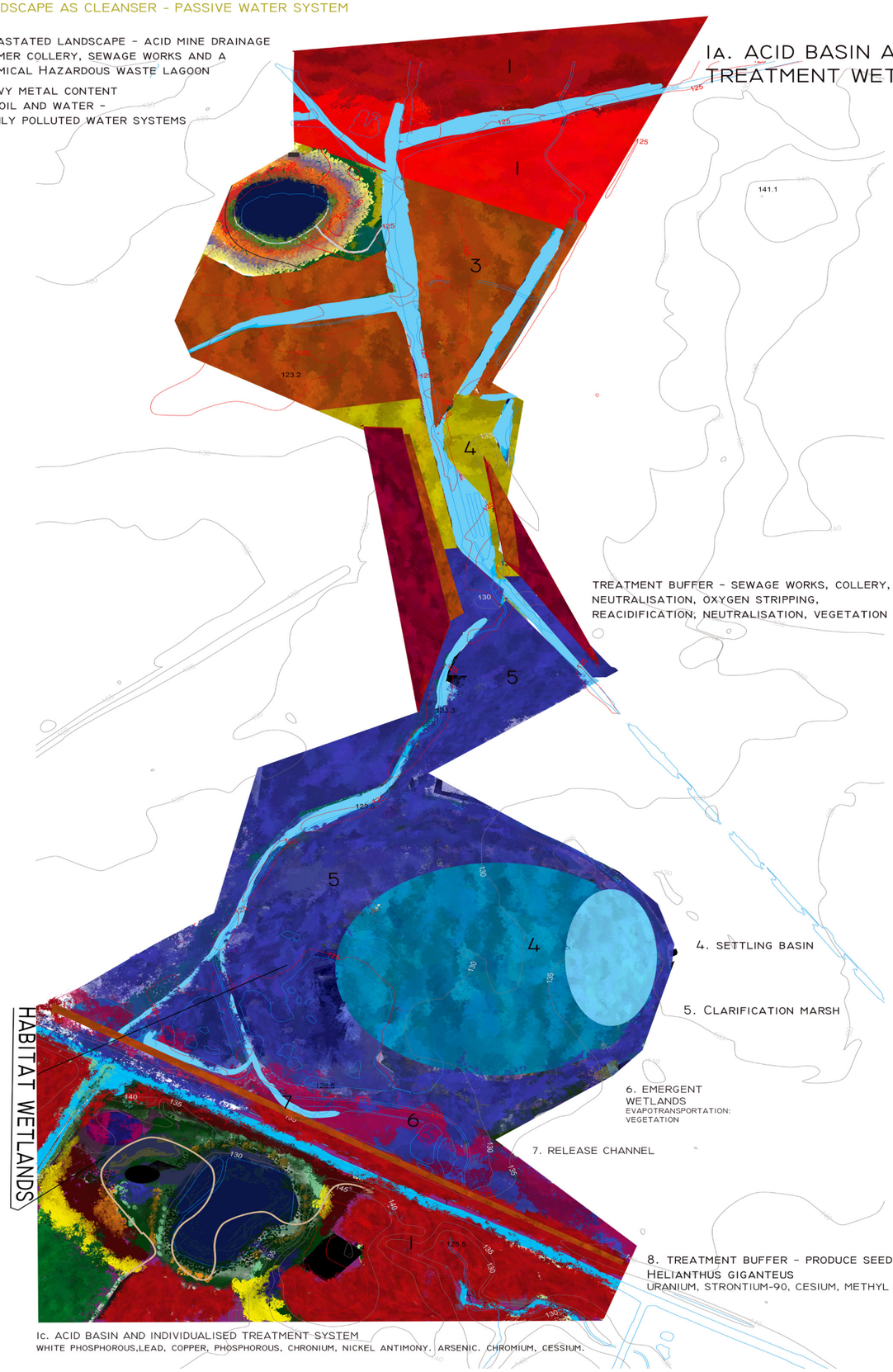
TREETOP WALKWAYS

LANDSCAPE AS CLEANSER - PASSIVE WATER SYSTEM

DEVASTATED LANDSCAPE - ACID MINE DRAINAGE
FORMER COLLERY, SEWAGE WORKS AND A
CHEMICAL HAZARDOUS WASTE LAGOON

HEAVY METAL CONTENT
IN SOIL AND WATER -
HIGHLY POLLUTED WATER SYSTEMS

1A. ACID BASIN AND TREATMENT WETLANDS



TREATMENT BUFFER - SEWAGE WORKS, COLLERY, MINE
NEUTRALISATION, OXYGEN STRIPPING,
REACIDIFICATION, NEUTRALISATION, VEGETATION

4. SETTLING BASIN

5. CLARIFICATION MARSH

6. EMERGENT
WETLANDS
EVAPOTRANSPORTATION:
VEGETATION

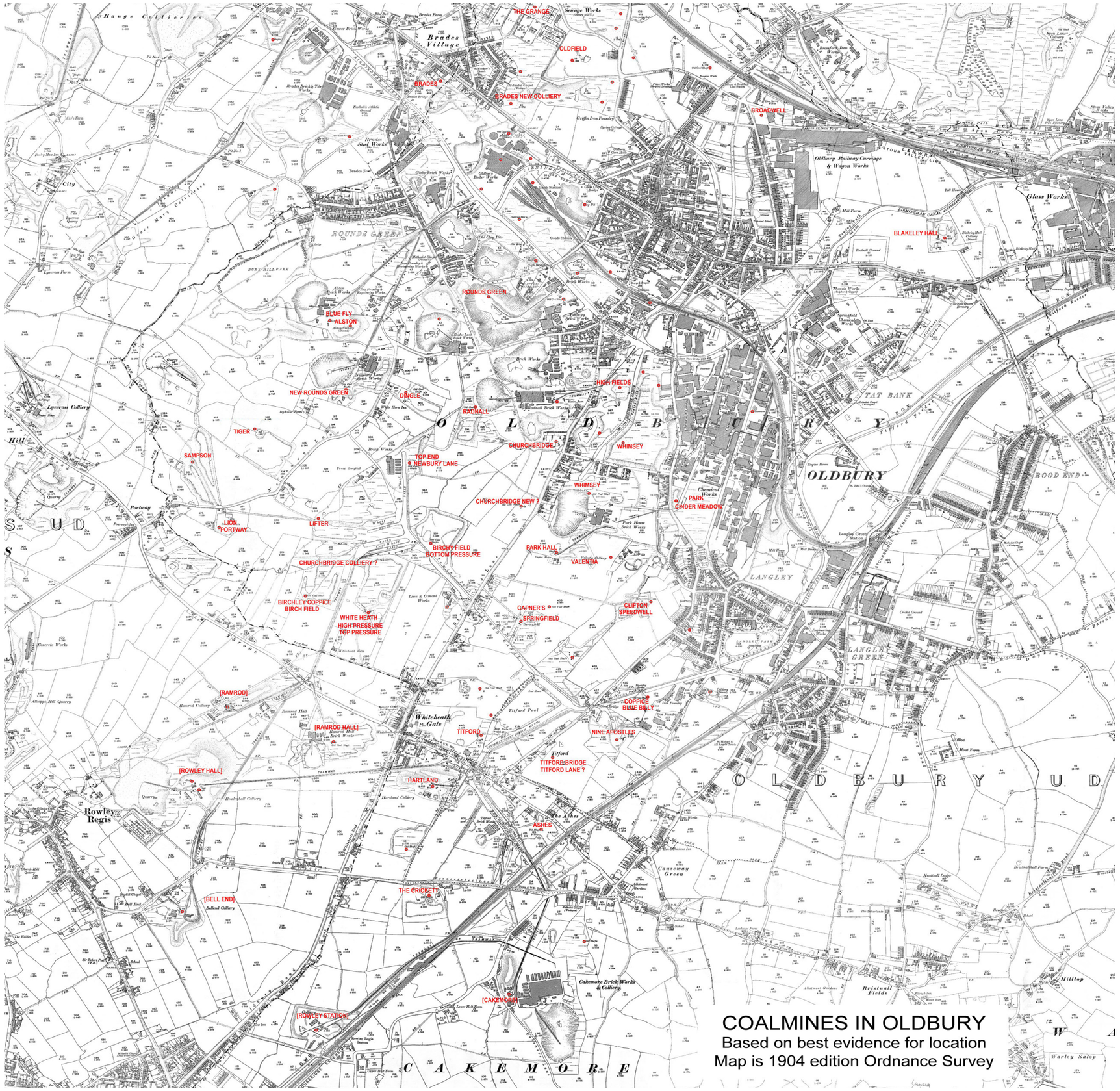
7. RELEASE CHANNEL

8. TREATMENT BUFFER - PRODUCE SEEDS/OIL
HELIANTHUS GIGANTEUS
URANIUM, STRONTIUM-90, CESIUM, METHYL BROMIDE ETC

1C. ACID BASIN AND INDIVIDUALISED TREATMENT SYSTEM
WHITE PHOSPHOROUS,LEAD, COPPER, PHOSPHOROUS, CHRONIUM, NICKEL ANTIMONY. ARSENIC. CHROMIUM, CESSIUM.



Site History and Analysis


THE GRANGE
OLDFIELD
BRADES
BRADES NEW COLLIERY
BROADWELL
BLAKELEY HALL
ROUNDS GREEN
BLUE FLY
ALSTON
HIGH FIELDS
NEW ROUNDS GREEN
DINGLE
RAINALL
TIGER
CHURCHBRIDGE
WHIMSEY
SAMPSON
TOP END
NEWBURY LANE
OLDBURY
WHIMSEY
CHURCHBRIDGE NEW ?
PARK
CINDER MEADOW
LION
PORTWAY
LIFTER
BIRCHY FIELD
BOTTOM PRESSURE
PARK HALL
VALENTIA
CHURCHBRIDGE COLLIERY ?
BIRCHLEY COPPICE
BIRCH FIELD
WHITE HEATH
HIGH PRESSURE
TOP PRESSURE
CAPNER'S
SPRINGFIELD
CLIFTON
SPEEDWELL
COPPICE
BLUE BALL
[RAMROD]
[RAMROD HALL]
TITFORD
NINE APOSTLES
TITFORD BRIDGE
TITFORD LANE ?
[ROWLEY HALL]
HARTLAND
ASHES
[BELL END]
THE CRICKET
[CAKEMORE]
[ROWLEY STATION]
COALMINES IN OLDBURY
Based on best evidence for location
Map is 1904 edition Ordnance Survey

Historic waterways

1800 to 2019

'This property at Dudley Port is particularly valuable, for when the clay is gone the land will be equally valuable for tips. Moreover, the surrounding canal is a highly important factor.
But to find out more I will need to write more.
So, until then, as always
Don't bang 'em about.'
Blossom.
-1908, British Clay Worker



View from Sheepwash pool high rise flats and electrical pylons in the horizon







Views of the Tame with pylon in the distance

Historic waterways 1800-2019

- Historic pathlines connecting Sheepwash Reservoir to Rattlechain Lagoon
- 1930's river lines
- 1900
- 1880
- 1960's
- 2019 floodzones
- 2019 waterways
- Grey landscape prospective brownfields

Historic pathlines connecting Sheepwash Reservoir to Rattlechain Lagoon

Groveland Brook

Woodlands

Sheepwash Nature Reserve

Tunnel

Tow/Bridge entrance

Rattlechain Lagoon



Research Centre

Campus

Sustainable commercial businesses

Netherton Tunnel North Portal



SUDS plan management







Netherton Tunnel entrance North face



Residentual green tower blocks

River valley

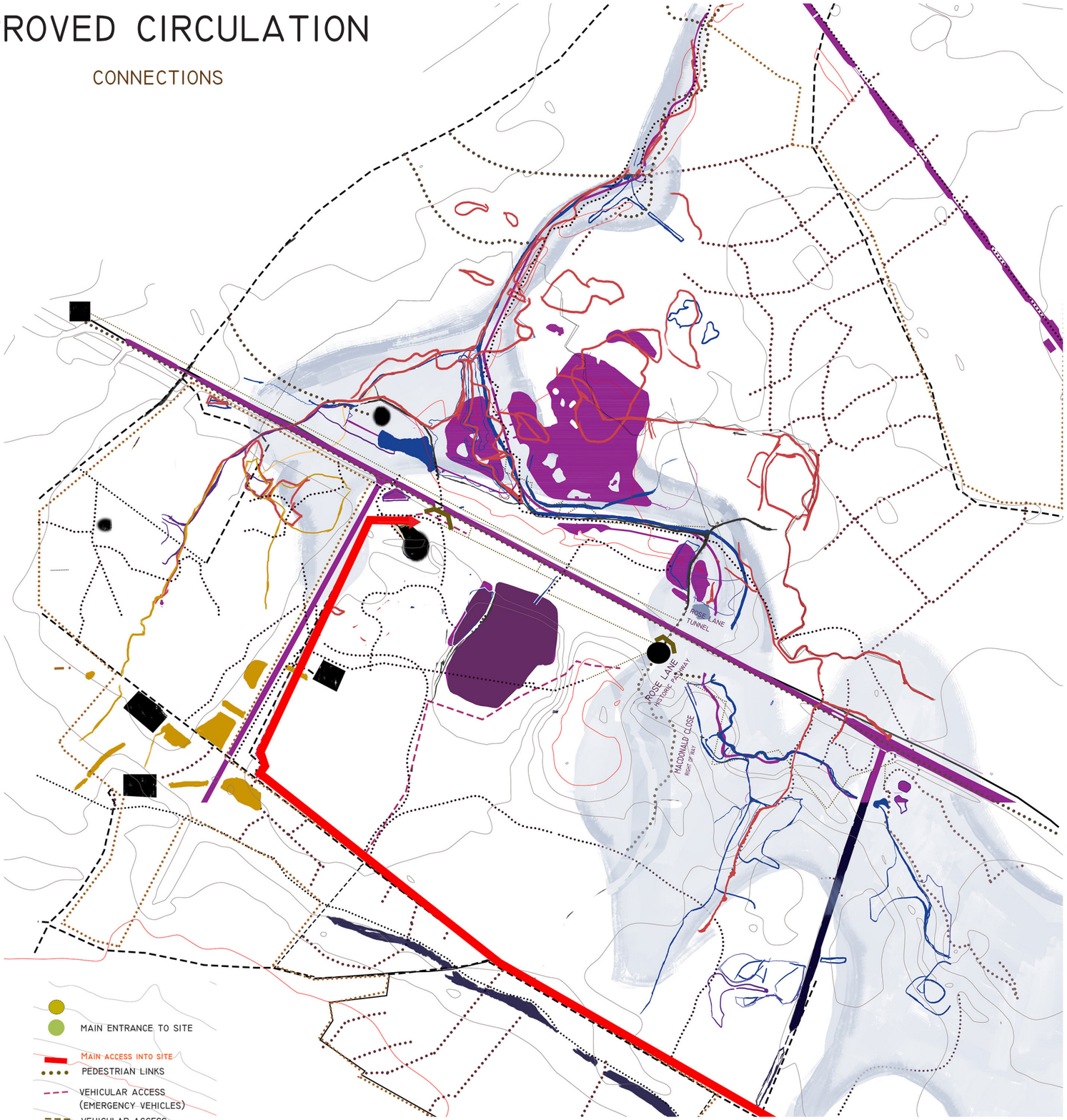
Wetlands

Causeway

Photo © Geography

IMPROVED CIRCULATION

CONNECTIONS

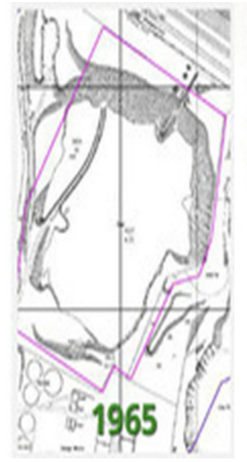




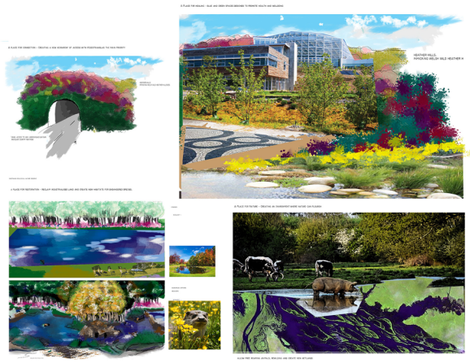
The evolution of the lagoon







1950 - The image shows the now water and phosphorus contaminated former clay pit (rattlechain lagoon). Note that it is one single pool and not the current subdivided two lagoon setup. Waste was being dumped into this one single pool by **Albright and Wilson**, the division of the pool by causeway path occurred around 1961 with the raising of the water levels- to cover the increasing level of phosphorus waste and to ensure that it did not catch fire.



A PLACE IN BALANCE - CREATING AN ENVIRONMENT MORE IN BALANCE, TO THRIVE IN A CHANGING CLIMATE
A PLACE TO BELONG - CREATING AN ENVIRONMENT THAT PEOPLE CAN ENJOY AND WHERE THEY CHOOSE TO LIVE
A PLACE FOR GROWTH - CREATING AN ENVIRONMENT FOR SUSTAINABLE ECONOMIC GROWTH
A PLACE TO FEEL GOOD - CREATING AN ENVIRONMENT WHICH SUPPORTS HEALTHY LIFESTYLES AND WELL-BEING
A PLACE FOR NATURE - CREATING AN ENVIRONMENT WHERE NATURE CAN FLOURISH
A PLACE FOR HEALING - BLUE AND GREEN SPACES DESIGNED TO PROMOTE HEALTH AND WELLBEING
A PLACE FOR CONNECTION - CREATING A NEW HEIRARCHY OF ACCESS WITH PEDESTRIANSLAS THE MAIN PRIORITY
A PLACE FOR RESTORATION - RECLAIM INDUSTRIALISED LAND AND CREATE NEW HABITATS FOR ENDANGERED SPECIES,



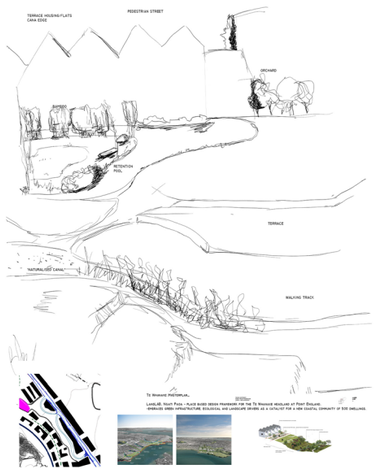
Dale Settings in an Ideal Sandy Terrace - Stuart Jones
Stuart Jones

RIVERSIDE
GREAT BRIDGE LIBRARY



POND AND WETLANDS

, GLASS

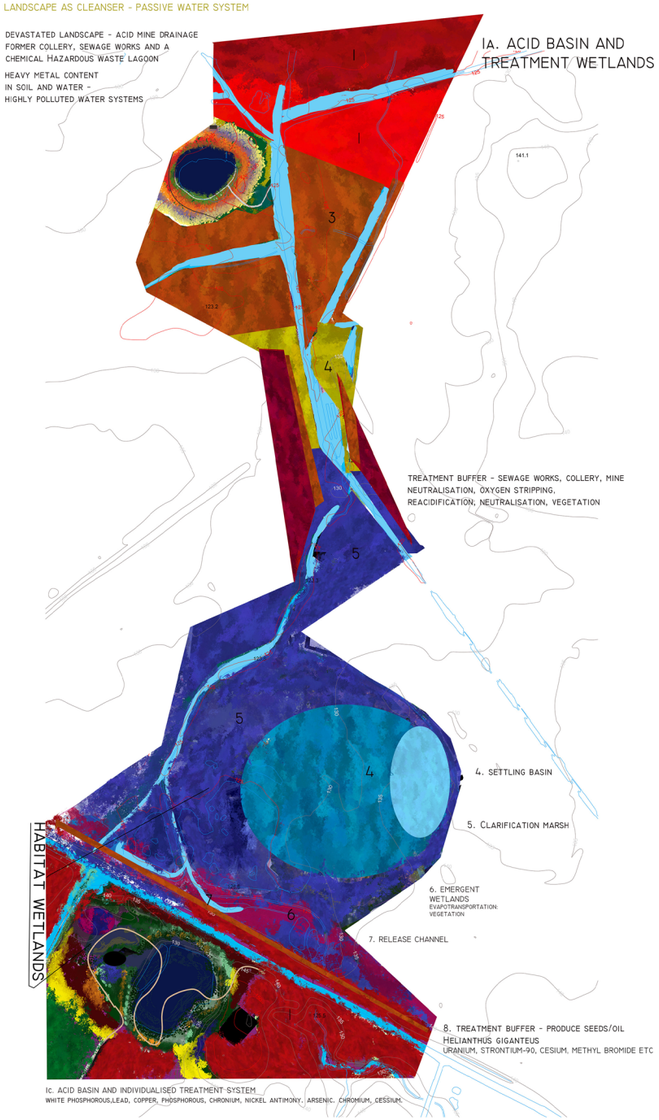


LANDSCAPE AS CLEANSER - PASSIVE WATER SYSTEM

DEVASTATED LANDSCAPE - ACID MINE DRAINAGE
FORMER COLLERY, SEWAGE WORKS AND A
CHEMICAL HAZARDOUS WASTE LAGOON

HEAVY METAL CONTENT
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HIGHLY POLLUTED WATER SYSTEMS

IA. ACID BASIN AND TREATMENT WETLANDS



TREATMENT BUFFER - SEWAGE WORKS, COLLERY, MINE
NEUTRALISATION, OXYGEN STRIPPING,
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VEGETATION

7. RELEASE CHANNEL

8. TREATMENT BUFFER - PRODUCE SEEDS/OIL
HELIANTHUS GIGANTEUS
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Ic. ACID BASIN AND INDIVIDUALISED TREATMENT SYSTEM
WHITE PHOSPHOROUS,LEAD, COPPER, PHOSPHOROUS, CHRONIUM, NICKEL ANTIMONY, ARSENIC, CHROMIUM, CESSIUM.

SITE GEOLOGY



ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE.
SEDIMENTARY BEDROCK FORMED BETWEEN 359 AND 308 MILLION YEARS
AGO DURING THE CARBONIFEROUS PERIOD.

SUPERFICIAL DEPOSITS: ALLUVIUM - CLAY, SILT, SAND AND GRAVEL.
BEDROCK GEOLOGY: ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE.

SUPERFICIAL DEPOSITS: GLACIOFLUVIAL DEPOSITS: DEVENSIAN - SAND AND GRAVEL.
BEDROCK GEOLOGY: ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE.

ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE.

SUPERFICIAL DEPOSITS: GLACIOFLUVIAL DEPOSITS, DEVENSIAN - SAND AND GRAVEL.
BEDROCK GEOLOGY: ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE.



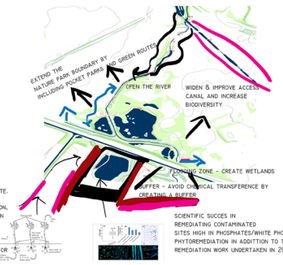
EFFECTIVENESS OF ARBUSCULAR MYCORRHIZAL FUNGI IN PROMOTING PLANT BIOMASS PRODUCTION (SHOOTS AND ROOTS) IN METAL-CONTAMINATED SOILS.
(A) TRIFOLIUM REPENS IN PB-CONTAMINATED SOIL (VIVAS ET AL., 2006). (B)
TRIFOLIUM REPENS IN CA-CONTAMINATED SOIL (VIVAS ET AL., 2003).
(C) PLANTS OF ZEA MAYS IN AS-CONTAMINATED SOIL (ZAI ET AL., 2008).
(D) HELIANTHUS ANNUS IN CR- CONTAMINATED SOIL (CHAVES ET AL., 2001). AND
(E) PLANTS OF COFFEA ARABICA IN CU-CONTAMINATED SOIL (ANDRADE ET AL., 2010).



KNOWN CONTAMINANTS IN FORMER CLAY PIT/SEWAGE DUMP
ACCORDING TO THE ENVIROMENTAL HEALTH AGENCY:
MOSTLY CALCIUM-PHOSPHATE, WHITE PHOSPHORUS, SULPHUR, AND WASTES
AND EQUIPMENT CONTAMINATED WITH PHOSPHORUS.
WHITE PHOSPHORUS IS ESTIMATED TO BE ABOUT 0.1% OF THE TOTAL WASTE.

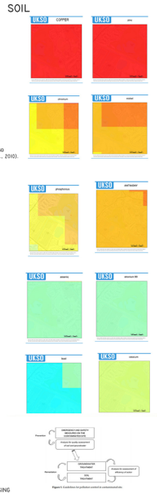
EFFECTIVENESS OF ARBUSCULAR MYCORRHIZAL
FUNGI IN PROMOTING PLANT BIOMASS PRODUCTION
(SHOOTS AND ROOTS) IN

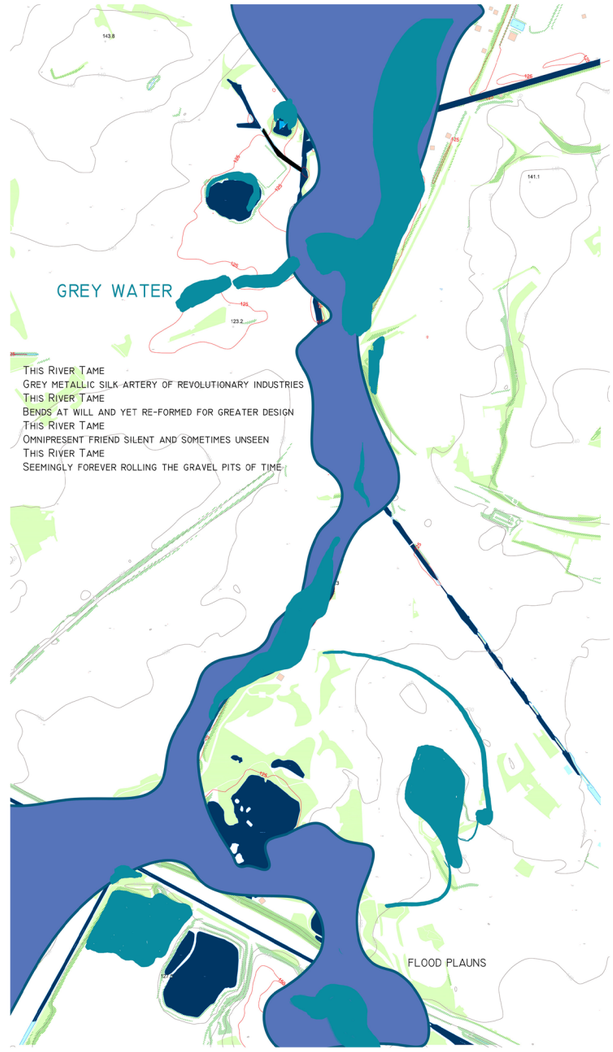
PHYTOREMEDIATION,
PHYTOEXTRACTION
USING A PASSIVE
WATER SYSTEM
FUNGHI AND
HYPERACCUMULATOR
PLANTS



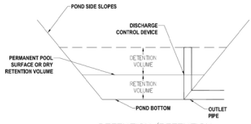
SCIENTIFIC SUCCES IN
REMEDIATING CONTAMINATED
SITES HIGH IN PHOSPHATES/WHITE PHOSPHATES USING
PHYTOREMEDIATION IN ADDITION TO THE APPROPRIATE
REMEDIATION WORK UNDERTAKEN IN 2015.

SOIL





THIS RIVER TAME
GREY METALLIC SILK ARTERY OF REVOLUTIONARY INDUSTRIES
THIS RIVER TAME
BENDS AT WILL AND YET RE-FORMED FOR GREATER DESIGN
THIS RIVER TAME
OMNIPRESENT FRIEND SILENT AND SOMETIMES UNSEEN
THIS RIVER TAME
SEEMINGLY FOREVER ROLLING THE GRAVEL PITS OF TIME

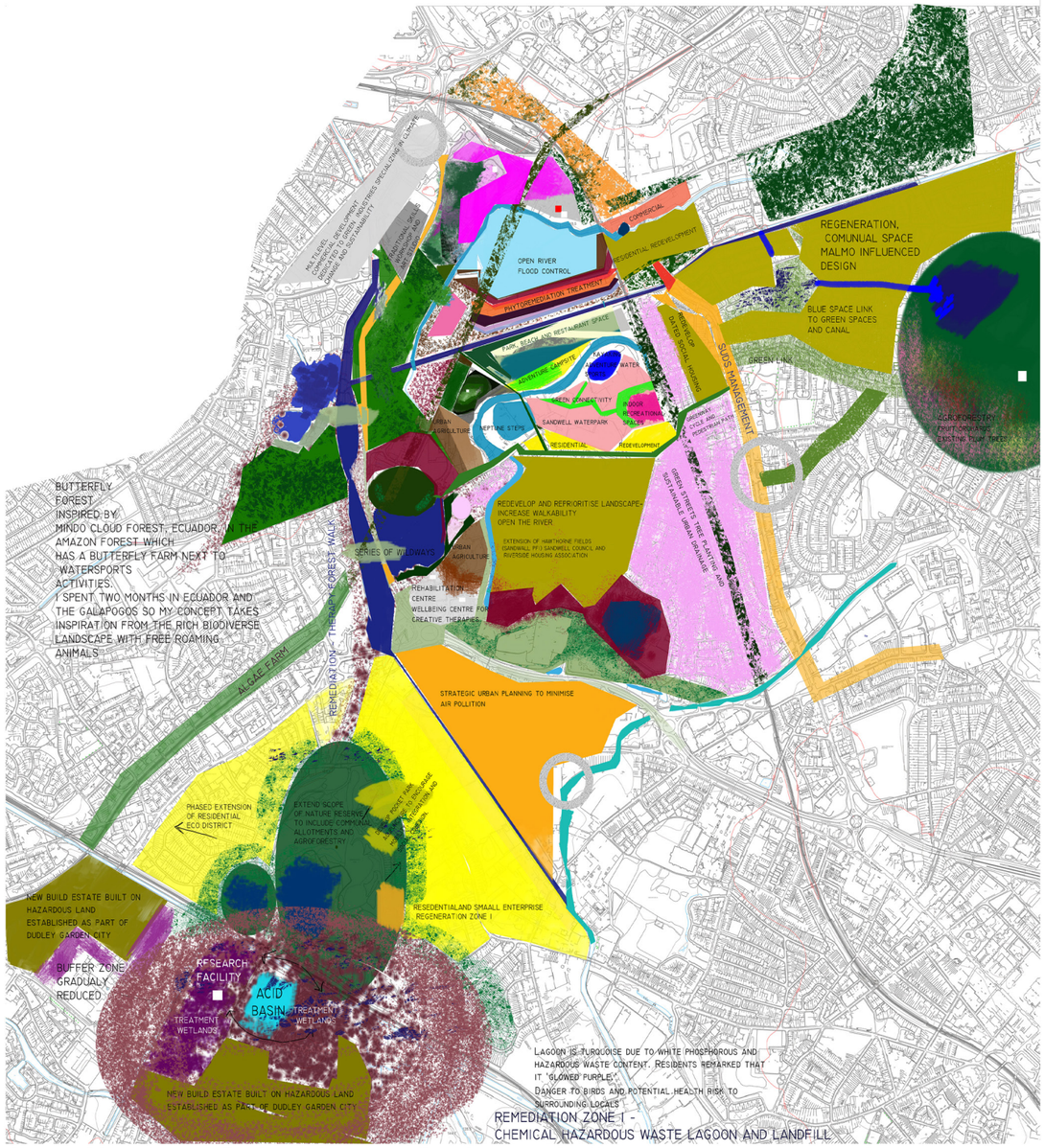


DETENTION/RETENTION
POND DIAGRAM

REWILDING AND REMEDIATION- INDUSTRY, IDENTITY & MEMORY

THE BLACK COUNTRY REFORMATION PROJECT AIMS TO CREATE A LANDSCAPE WHICH IS 100% RENEWABLE AND SUSTAINABLE DESPITE IT'S INDUSTRIAL HISTORY. IT AIMS TO BECOME A BEACON PROJECT FOR THE UK BY DESIGNING HOLISTICALLY WITH THE LANDSCAPE, ECOLOGICAL DESIGN AND USING INNOVATIVE GREEN INDUSTRIES AND ENERGIES TO BECOME A LEADER IN FIGHTING CLIMATE CHANGE. THE REPEATED EXPLOITION OF THE LANDSCAPE FOR

FINANCIAL GAIN HAS BEEN THE IMMEDIATE CAUSE OF POVERTY TO THE LOCAL COMMUNITIES.



ARTIFICIAL HILLS OF BERLIN



HUMBOLDTHÖHE, BERLIN
PHOTO BY NOAH BEIL



HUMBOLDTHÖHE, BERLIN



ODERBRUCHWIPPE, BERLIN



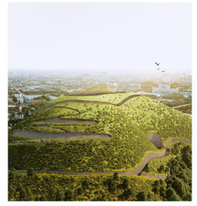
HUMBOLDTHÖHE, BERLIN

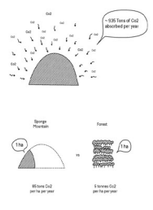
MOUNTAIN AS MONUMENT.



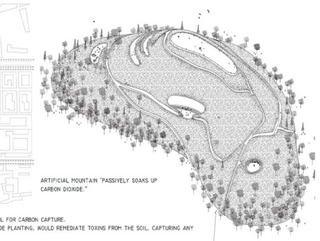
ADJACENT HOUSES GET VIEWS OF CHERRY BLOSSOM TREES AND LUSH VEGETATION RATHER THAN WASTELAND

Sponge Mountain, Turin, Angelo Renna









ARTIFICIAL MOUNTAIN 'PASSIVELY SOAKS UP CARBON DIOXIDE.'

'Renna developed the concept for SUCCESS, a project run by the UK Engineering and Physical Sciences Research Council (EPSRC) funding research into the potential of using soil for carbon capture. Geoscientists, engineers and ecologists are working with designers to investigate the ways in which soil could be optimised to absorb carbon dioxide in urban environments.' Hillside planting, would remediate toxins from the soil, capturing any hard metals emitted from Rattlechain lagoon before it disperses into the surrounding waterways.



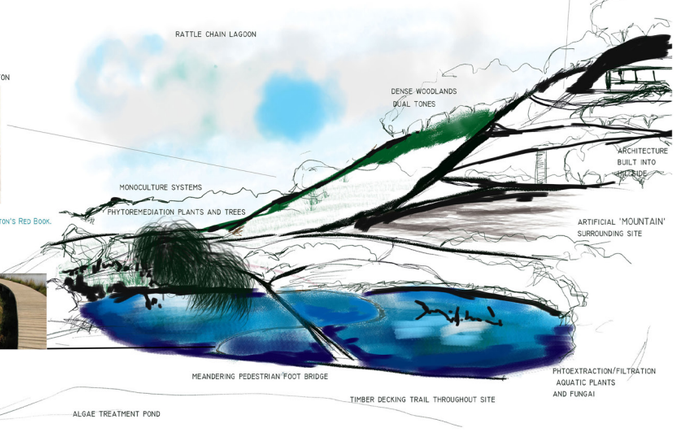
SUNBRIDGE PARK RED BOOK, 1973, HUMPHRY REPTON



APPROACH ROAD, SHERINGHAM PARK, ENGLAND, FROM REPTON'S RED BOOK. IMAGE: NATIONAL LIBRARY OF SCOTLAND



CASA JURA BY JDS ARCHITECTS



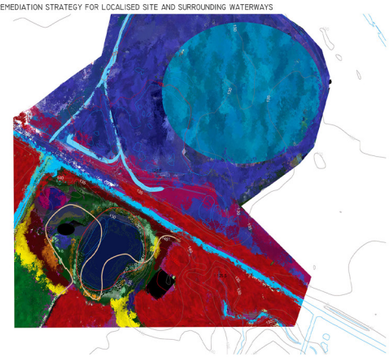
SITE ELEVATION



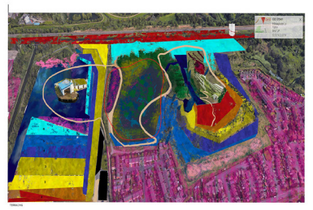
RATTLECHAIN LAGOON SECTION VIEW



REMEDIATION STRATEGY FOR LOCALISED SITE AND SURROUNDING WATERWAYS

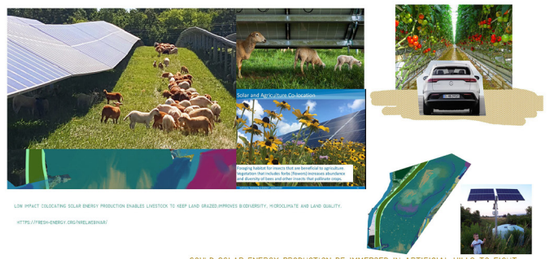


REMEDIATION CONCEPT DESIGN STRATEGY









CONTAMINANT	MAXIMUM LEVELS OF CONTAMINANT FOR: Multi Family Housing, Recreation, Park	Single Family Houses, Gardening, Playground	Farming Animals, Growing Food		TYPICAL PLANTS
As Arsenic	16ppm	16ppm	16ppm	Often found in lead-acid batteries, light-emitting diodes, paints, dyes, metals, pharmaceuticals, pesticides, herbicides, soaps, and semiconductors.	Chinese Brake Fern *Pteris vittata L.*; Sunflower *Helianthus annuus*; Highland Bent Grass *Agrostis rossiliensa*
Cr Chromium	180ppm	36ppm	26ppm	PHYTO EXTRACTION	Alpine Pennycress *Thlaspi caerulescens*; Beard Duckweed *Spirodela polyrhiza*
Pb Lead	400ppm	400ppm	63ppm	PHYTO STABILIZATION	Blue Grama Grass *Bouteloua gracilis*; Common Wheat *Triticum aestivum*; Sagebrush *Artemisia tridentata*
Hg Mercury	0.81ppm	0.81ppm	0.18ppm	PHYTO STABILIZATION	Creeping Bentgrass *Agrostis palustris*; Rocky Mountain Beeplant *Cleome serrulata*; Basaltic Milkvetch *Astragalus filipes*; Redroot Pigweed *Amaranthus retroflexus*; Tansy Mustard *Descurainia pinnata*; Tall Wheatgrass *Thinopyrum ponticum*; Tepary Bean *Phaseolus acutifolius*; Tumble Mustard *Sisymbrium altissimum*; Western Wheatgrass *Pascopyrum smithii*; Yellow Sweetclover *Melilotus officinalis*
PCB Polychlorinated biphenyls	1ppm	1ppm	0.1ppm	Historically used in hydraulic fluids, adhesives, plasticizers, paints and electrical equipment. Extremely persistent in the environment. Classified as probable human carcinogens. Can cause reproductive, developmental, immune system, neurological, and endocrine system problems.	Rosinweed *Silphium integrifolium*; Sawtooth Sunflower *Helianthus grosseserratus*; Showy Partridge Pea *Chamaecrista fasciculata*; Switchgrass *Panicum virgatum*; Tall Coneflower *Rudbeckia laciniata*; Wild Bergamot *Monarda fistulosa*; Wild Indigo *Baptisia australis*
TCE Trichloroethene	21ppm	1ppm	0.47ppm	PHYTO DEGRADATION	Eastern cottonwood *Populus deltoides*; Hybrid poplar *Populus deltoides x nigra DN-34*; Hybrid poplar *Populus deltoides x trichocarpa TD-367*; Hybrid poplar *Populus deltoides x trichocarpa TD-367*; Pine *Pinus*; Willow *Salix*
MTBE Methyl tertiary butyl ether	100ppm	62ppm	0.93ppm	Typically used as a fuel additive in gasoline. Extremely dissolves in water that once exposed to leakage from the gasoline storage and distribution system.	Pumpkin *Cucurbita*; Zucchini *Cucurbita pepo*
DDT Dichlorodiphenyltrichloroethane	7.9ppm	1.7ppm	0.66ppm		
PCP Pentachlorophenol	6.7ppm	14ppm	0.8ppm	PHYTO DEGRADATION	White rot fungus *Phanerochaete chrysosporium*; Crested Wheatgrass *Agropyron cristatum*







top 1950- The sewage works next to the site. Excretement and waste used to be dumped into the lagoon.

Far Left page 2008 - Toxic Waste Drum barrells dumped into both lagoons and discarded on the adjacent land.

SITE REMEDIATION HISTORY

Sludge dredging - 2008

AFTER TESTS CONFIRMED THAT A SWAN DIED FROM WHITE PHOSPHOROUS

NO LANDSCAPE PHYTOREMEDIATION BEYOND THE NORTH BANK OF THE LAGOON

ALGAE IS USED FOR PHYTOEXTRACTION



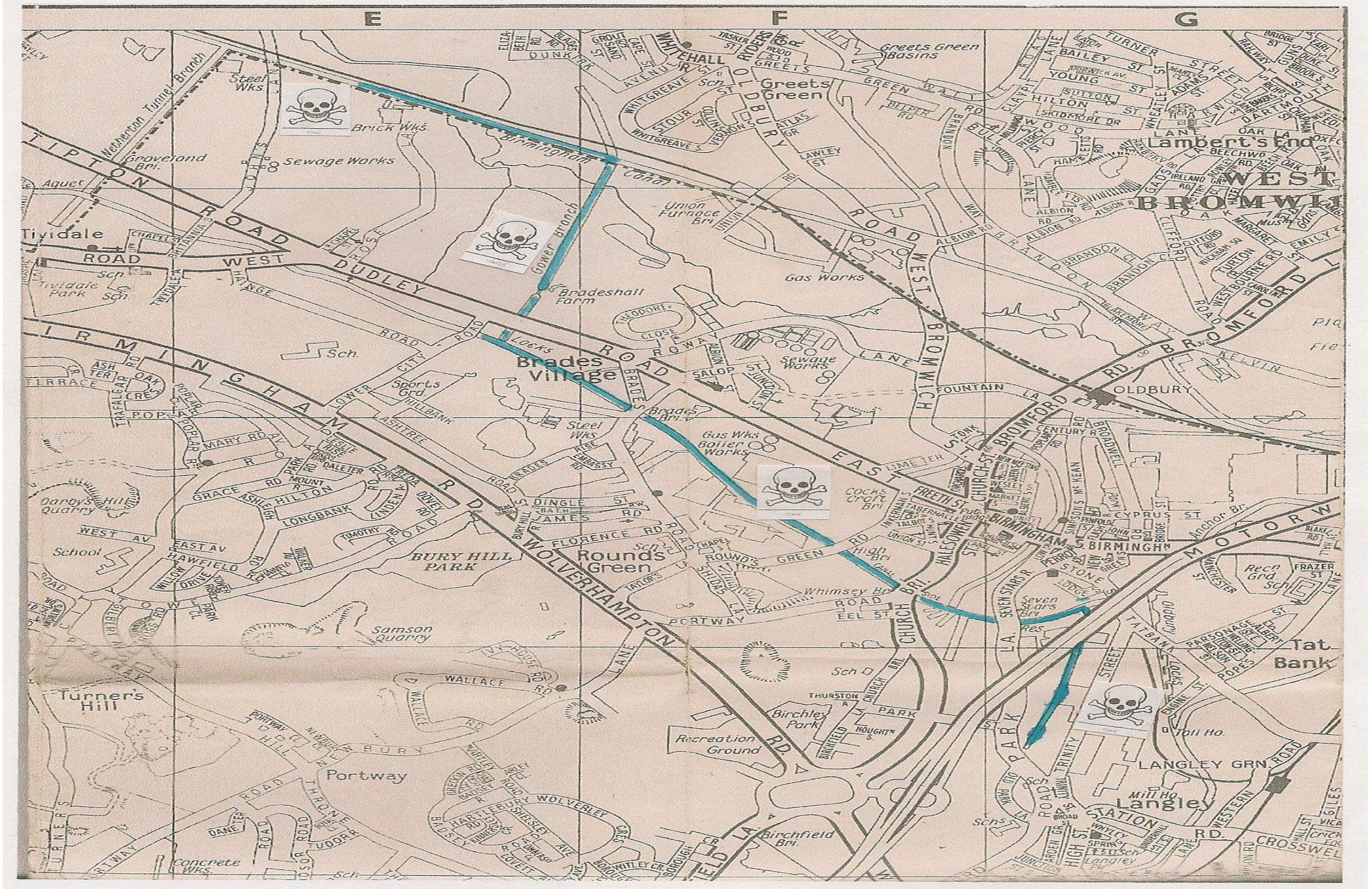




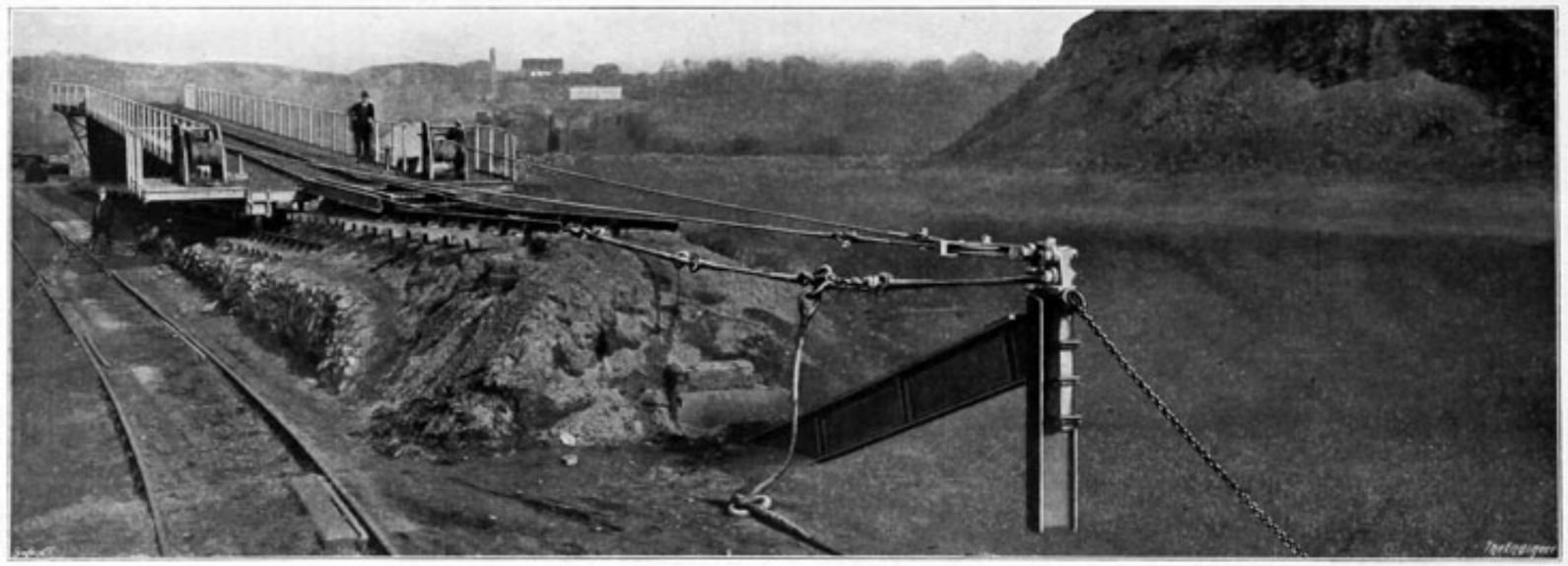





CANAL POLLUTION - THE TOXIC TRAIL



The canal's toxic trail from Trinity Street to Rattlechain Lagoon.



CRADLE ERECTED IN MAKERS' YARD SHOWING SHORE END ADAPTER AND METHOD OF MOORING





Childhood in the Black Country 60 years ago...

"Where the discharge pipe stuck out into the water filled marl-hole, whose water was crystal clear and as blue as the sky. The white sludge was only a matter of inches below the surface and it was this fact that made it such an attraction to young lads.

For if you think back to the experiments that you probably carried out in the school science laboratory using phosphorous for if you keep it under water it is quite stable, but if held in air it would self ignite and flare.

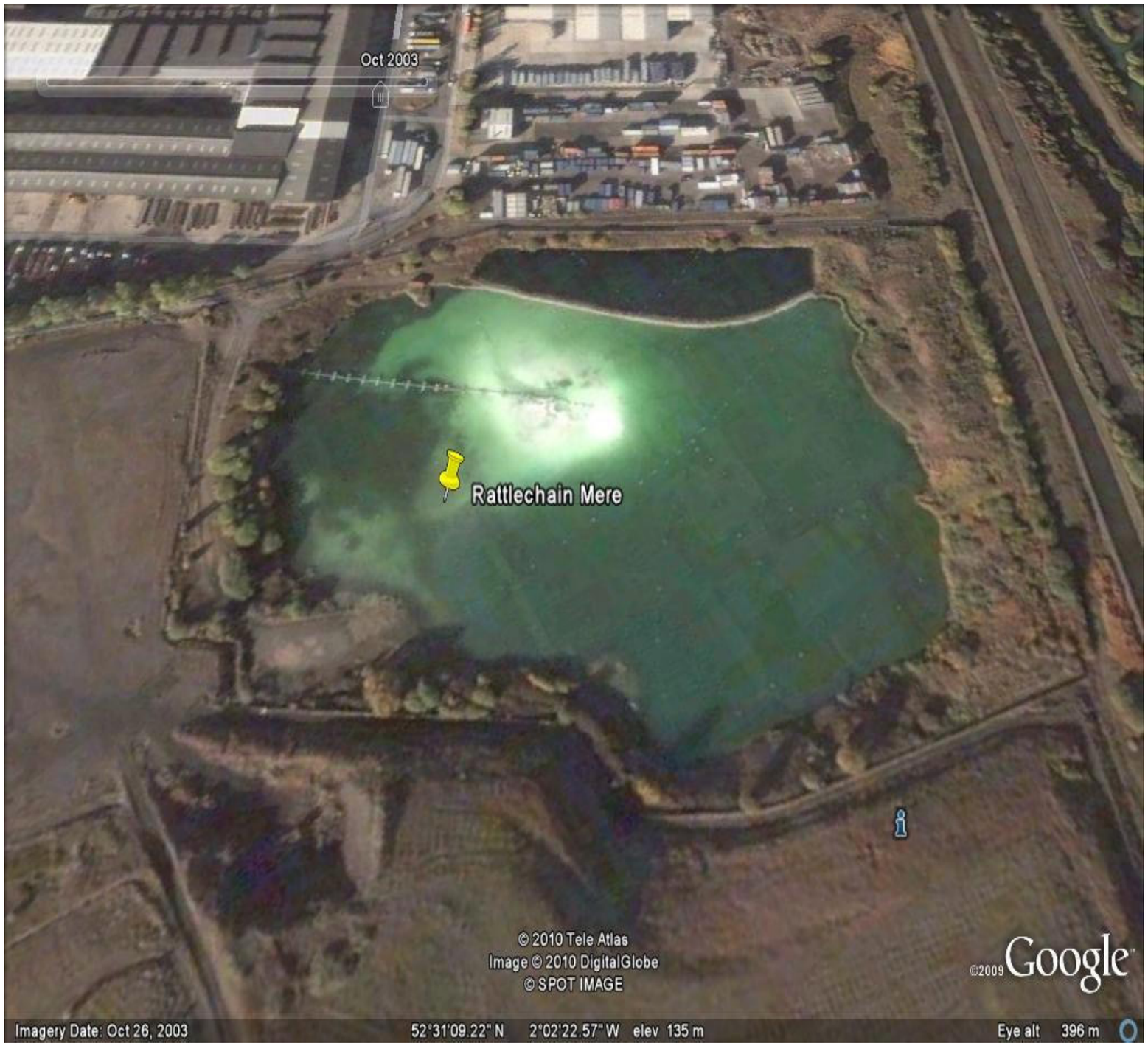
Oh, such fun it was to heave large bricks and rocks from the neighbouring Rattlechain Brickworks, into this sludge and watch in delight as the resulting splash would erupt into flames.

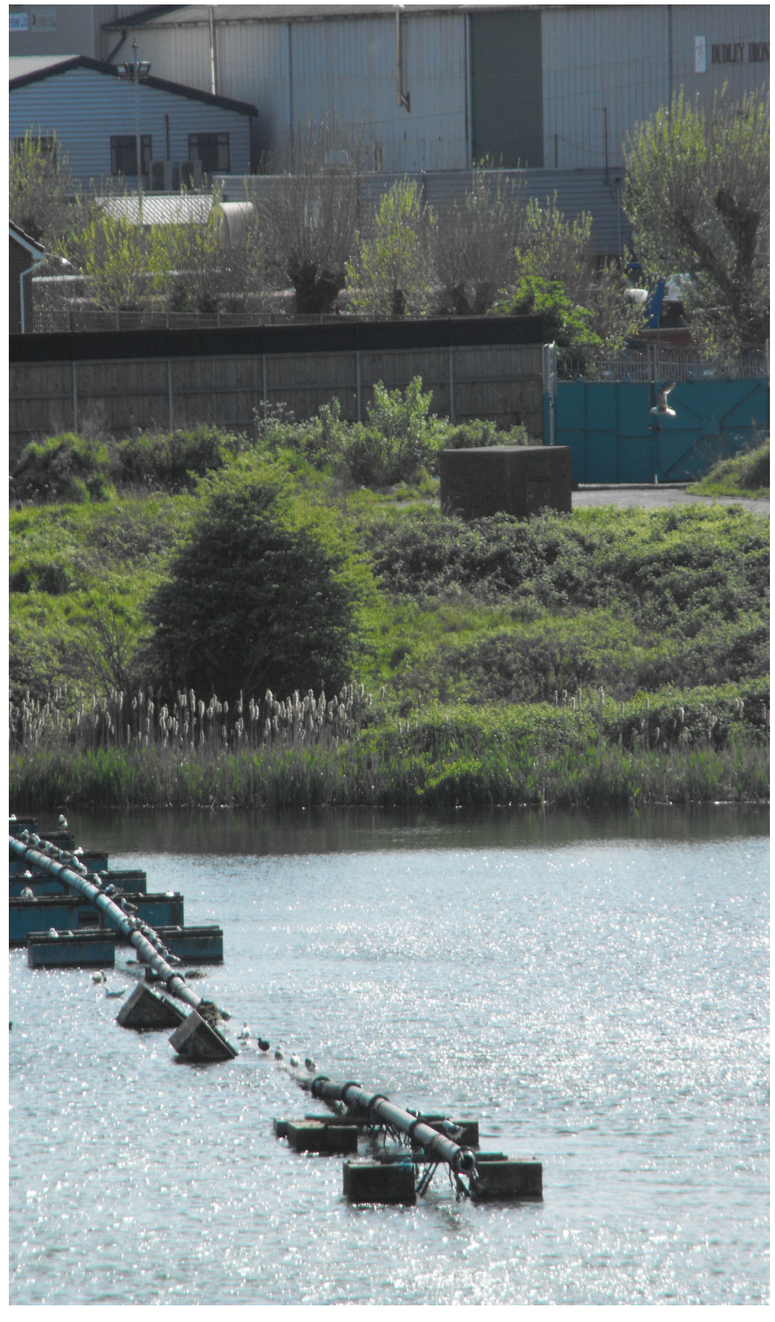
The other favourite pastime was fire-sticks . A length of wood, such as a wooden fencing panel of the type favoured by local councils, would be dipped into this sludge after climbing down the very steep sides of the pit. When once well coated, if removed, would burn vigorously in open air.

This operation called for great skill for if you held the stick upright the sludge would run down towards your hand.When I look back now at the consequences of somebody falling into it, it is frightening especially when you think of the boat-men working with it every day and walking from stern to bow along planks!

As children we were told that this company made the smell for cheese and onion crisps and although I don't think it was true, it does give you some idea of the stink that the canal did suffer from.

All around the area it could be detected in the air and water. I should think that more must have 'accidentally' gone into the canal than went down to the tip for disposal at this time.
After passing through this area and churning up the bottom with a motor boat the canal water would turn grey and the smell was horrendous. In fact if you journeyed through Oldbury after dark the canal to the rear of the boat would become illuminated with a violet/pink phosphorescent glow.
It was not far from here that as a child that I learned to swim, and go fish-ing, or as I should say 'not catching', (as it should have been called.)I often wonder now if the people who will buy houses that they will probably build on the site after it's filled in, will be told about its former use and exactly what lies at the bottom of the garden! And it's not fairies!"





"By barge, the toxic waste cargo would be discharged into the open and unfenced marl-hole, which I vividly remember as a haven for young lads who used it as an adventure playground."

'Area badly polluted by soda ash and phosphor, Albright and Wilson.'

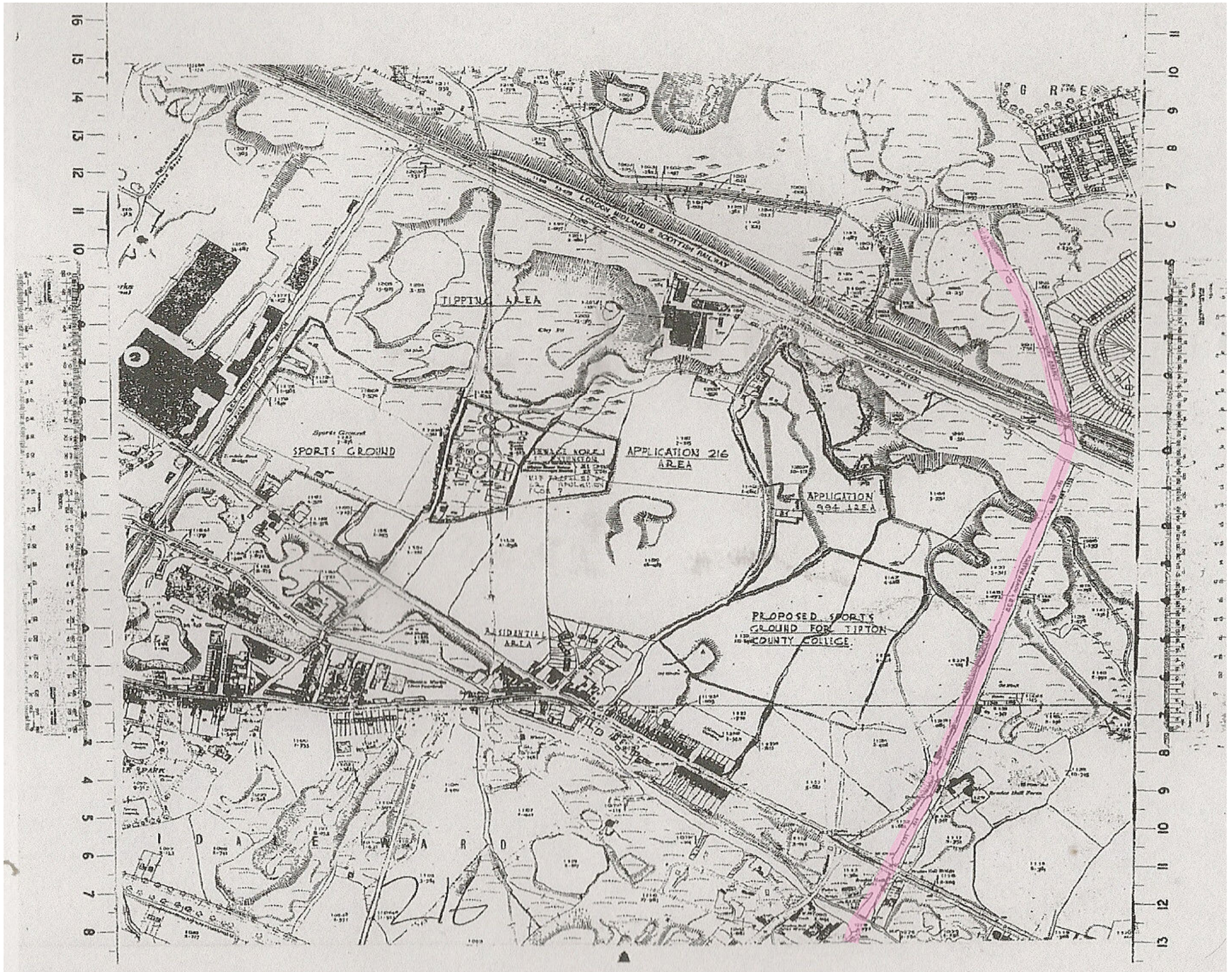


'Accounts of pollution around the Houghton chemical arm from where Albright and Wilson historically loaded their waste materials for disposal at Rattlechain are confirmed in a British Waterways canal inspection report dated 16th November 1961.'



Looking towards High Bridge, Oldbury,
with the firm of Accles & Pollack's on the left.

Taken from The Birmingham Canal Navigations Through Time by R H Davies, published by Amberley Publishing. (Image: Amberley Publishing)

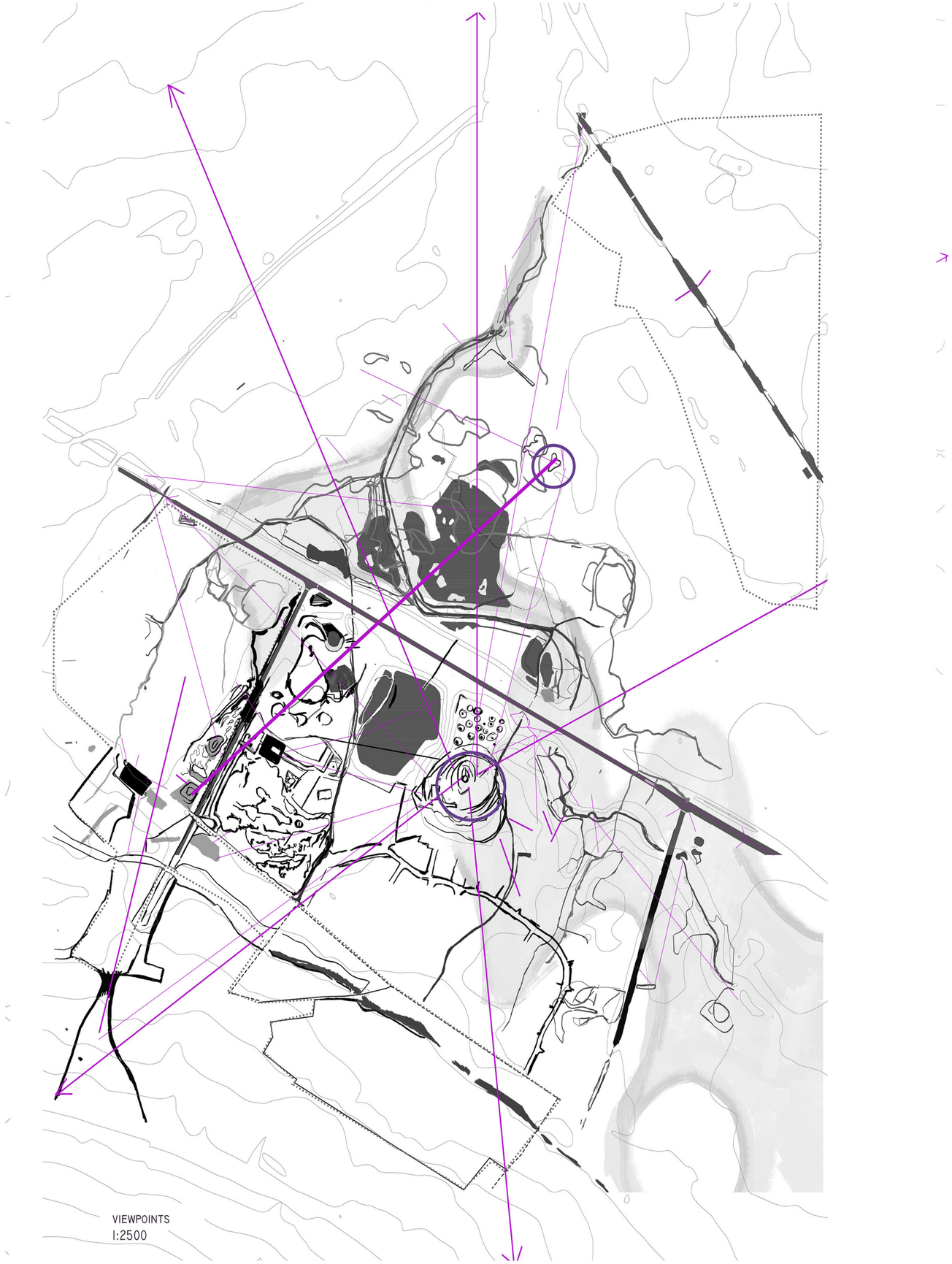

LONDON MIDLAND & SCOTTISH RAILWAY
TIPPTON AREA
SPORTS GROUND
APPLICATION 216 AREA
APPLICATION 994 AREA
PROPOSED SPORTS GROUND FOR TIPTON COUNTY COLLEGE
RESIDANTIAL AREA
I D A E W A R D


TIPPTON AREA

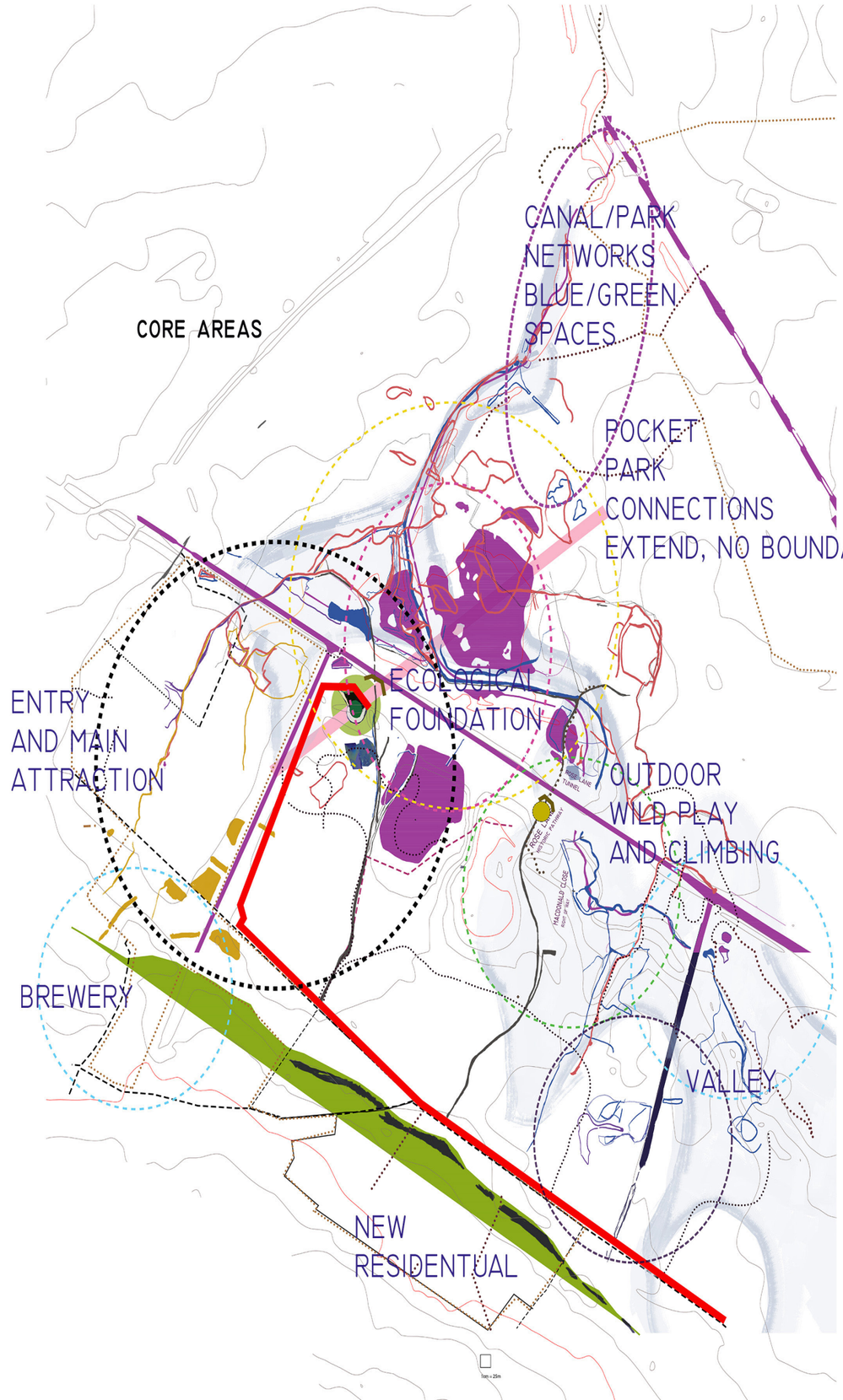
Rose Lane







VIEWPOINTS
1:2500


CANAL/PARK
NETWORKS
BLUE/GREEN
SPACES
CORE AREAS
POCKET
PARK
CONNECTIONS
EXTEND, NO BOUNDARII
ECOLOGICAL
FOUNDATION
ENTRY
AND MAIN
ATTRACTION
OUTDOOR
WILD PLAY
AND CLIMBING
BREWERY
VALLEY
NEW
RESIDENTUAL

:S







ROSE LANE TUNNEL
20M LEVEL CHANGE

VIEWS FROM ROSE LANE LEADING TO THE TUNNEL

VIEW FROM EXISTING NEWBUILD ESTATE



WALKWAY FROM MACDONALDS
CLOSE TO ROSE LANE



INCREASE COLOUR VARIATIONS

INCREASE SITE ELEVATION

IMPROVE PLANTING FOR BIODIVERSITY

ADD GREEN WIND AND ELECTRICITY

SUITABLE FOR DOMESTIC SITES

CREATE A MORE STREAMLINED ENTRANCE INTO THE SITE

PRIORITISE THE PATHWAY AND EMPHASISE

THE SENSE OF DIRECTION BY CREATING AN ATTRACTIVE PATHWAY VIA ROSE LANE

CREATE OPPORTUNITIES FOR PLAY

























...RECALLS THE LANDSCAPE HE GREW UP IN.

"WE WENT TO SCHOOL IN OLDBURY, AND OUR PARENTS CAME FROM OLDBURY.
THERE WERE A LOT OF MARL HOLES AND QUARRIES, EVERYWHERE YOU LOOKED SOMEBODY'S
DUG DOWN FOR SOMETHING. IT WASN'T GREEN, ALTHOUGH THERE WERE A LOT OF FARMS NEARBY.
YOU'D SEE COWS OCCASIONALLY COMING DOWN TOWER ROAD. I DON'T THINK THERE WERE MANY TREES ABOUT,
IF THERE WERE YOU'D HAVE THEM FOR BONFIRE NIGHT. IT WASN'T GREEN, IT WAS GREY. THERE WERE A LOT OF
SMELLS. SPALDING'S WAS TERRIBLE, IT WAS LIKE A KNACKERS YARD REALLY. OH, THE SMELL. WHEN YOU WALKED UP
THE ROAD FROM BIRCHLEY YOU HAD HOLD YOUR BREATH, BECAUSE YOU NEEDED A STRONG STOMACH TO WALK ON THAT
SIDE OF THE ROAD. IT WAS NAUSEATING."

FIRST IMPRESSIONS

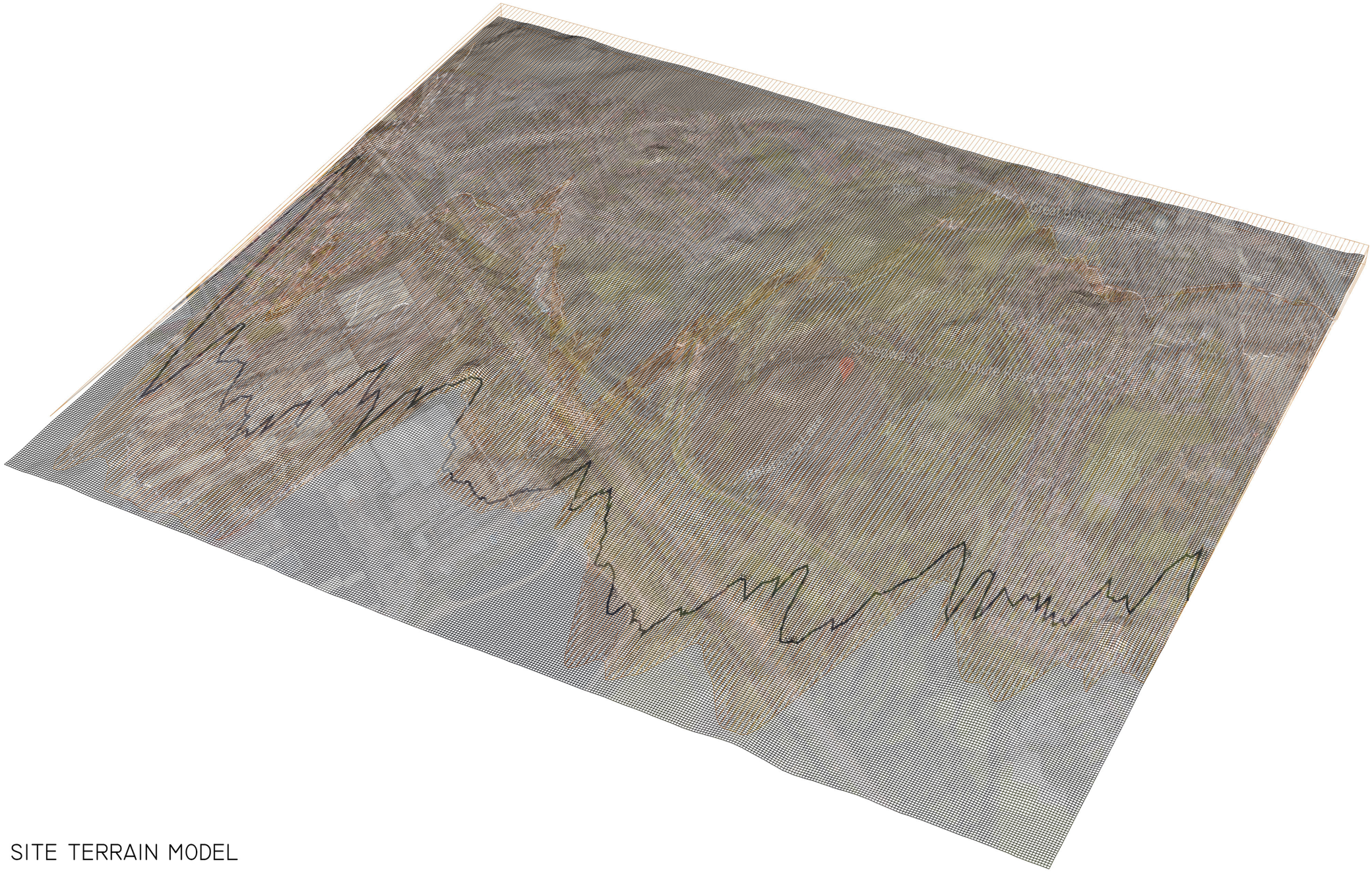
FOLLOWING THE TAME RIVER FROM SHEEPWASH RESERVE TO RATTLE CHAIN LAGOON





JOURNEY IN SEARCH OF SPRING-HEELED-JACK (THE TAME RIVER)

FOUND - BURNT LITTER, GLOOMY LANDSCAPE, CREEPY TUNNEL, DISCARDED STEEL WIRE,
DISCARDED HAZARD WASTE DRUMS, ABANDONED TIP,
LARGE CONCRETE BOLLARDS, WASTE DRUMS USED AS FLOOD WALL FOR THE RIVER



SITE TERRAIN MODEL

"£100,000 to end smell at Oldbury!"
The Birmingham Post 23 August 1957

13th May 1958

PROBE LAUNCHED IN CHEMICAL LORRY FIRE

Sandwell Mail Reporter

AN OFFICIAL INQUIRY has been launched into the incident in which highly combustible phosphorus waste caught fire in Oldbury while being transported by open lorry to a tip.

A full-scale police and fire brigade alert was started when a 40-gallon drum containing the waste burst into flames. It was being driven through Oldbury to a Dudley tip from the Langley works of chemical manufacturers Albright and Wilson Ltd.

Mr. Ken Harvey, the County Council's waste disposal officer, said: "I would not consider this a satisfactory method of transporting such materials.

"I am aware of the Albright and Wilson waste tipping operations but I am not aware that waste is being handled in this manner.

"We intend to pursue this matter through discussions with the company because after this incident one must accept that present transportation arrangements are not entirely satisfactory."

Senior waste disposal officers were sent to the scene of the incident in Shidas Lane, Oldbury.

SEALED DRUMS

There they met fire officers and safety officers from the company who had earlier used water from fighting equipment on the spot.

Mr. Harvey said the firm had complied with laid down procedures for transporting such materials.

"It is normally regarded as safe to move such materials in sealed drums, as Albright's were doing, but the incident has highlighted a weakness in the rather loose legislation which exists," he said.

"We don't have the power to impose conditions on companies moving their waste and we have only limited power controlling disposal of wastes.

Stringent

"But under new legislation given to this effect sites like The Delphs one will have to be licensed with the council and comply with stringent conditions on tipping and type of materials."

Mr. Harvey said inquiries had indicated there were a number of factors which had led up to yesterday's incident.

They would be discussing road every day — in fact it is more satisfactory method of transporting wastes could be found.

The company's divisional secretary, Mr. Raymond Woodhead, said the material concerned was completely safe as long as it was not exposed to air.

Tankers

They were carrying out a full investigation to see how and why one drum ignited.

This material is no more dangerous than thousands of other substances carried by it with the firm to see if a no more dangerous than a petrol tanker or a private car, and when it is dumped underground it remains safe," he added.



Helmetted workmen wearing protective clothing tackle th... Flanagan.

Smell May Linger Over City

Many Complaints: Goods Returned to Bakers

The unpleasant smell which caused a large number of complaints in Birmingham city centre and suburbs yesterday may linger to-day.

A meteorological officer at Elmdon Airport explained that there was an "inversion"—a cold layer of air over a warmer layer, preventing smells and smoke rising. With the city's smoky atmosphere trapped under a cold layer of air there was also the risk of fog.

A large firm of Birmingham confectioners, A. D. Wimbush & Son, stated yesterday that the smell was clinging to their products. A spokesman said: "There was a shocking smell when we started at our Small Heath premises this morning and now we are having complaints over a very wide area that a catty smell has been carried with our confectionery. More than 40 have already been received, representing orders of all sizes. Goods are being returned."

An official of Albright and Wilson chemical manufacturers of Oldbury, said: "We always get blamed when there is a smell like this about. Early to-day there was a slight emission of gas from our plant. It lasted for only a few seconds but it may have caused the smell."

Not Injurious

The Medical Officer of Health for Oldbury, Dr. H. Talash, said: "The smell is certainly the worst it has been since I came to Oldbury in 1952. It can be absorbed by cream and fats but it only gives a taste to them and does not make them injurious to health. I understand that the cause was a breakdown, but the plant has been temporarily stopped and it is being rectified."

The chief public health inspector, Mr. W. J. Mason, said: "This smell does taint food but it does not cause any harm. The people who work at the factory are bursting with health."

Cause of Smell

Reporting on the smell which emanated from the chemical works of Albright and Wilson Ltd., on Friday, the chairman of the Health Committee, Ald. S. T. Melsom, said that the firm had bought a new piece of equipment and the escape of gas was unlikely to happen again.

The smell had caused tainting of chocolate confectionery in the town and in Birmingham. A report by a Ministry inspector showed there had been a breakdown in the oil additive process and the chemicals which resulted were being put in barrels before being dumped in the sea.

source of the smell and, if possible, take action to stop it.

Coun. J. Churchman said: "I felt it came from the brook course which runs between Dudley Port and Great Bridge through Denbigh estate."

"But a fellow councillor seems certain it comes from a manhole near the corporation refuse tip at Sheepwash Lane," he said.

"Its presence depends very much on the weather. It is at its worst when the atmosphere is humid."

The chairman of the Hygiene and Cleansing Committee, Coun. E. Clarke, said further investigations were being made.

Tipping misery goes on despite promises

E+STAR. 12-8-99

POISON PROBE AS SWANS DIE IN LAKE



EXCLUSIVE
BY TONY LARNER

A CHEMICAL firm is at the centre of a pollution probe after the death of eight swans at a Midland pool.

The birds, a protected species, have all died in the past three months at the small lake – along with seven coots, three ducks and two geese.

Now the Environment Agency has launched pollution tests at the pool which is used by chemical manufacturers Rhodia to dump waste by-products.

The last two dead swans to be discovered are also being sent for post mortem to see if they have been poisoned.

The swans died at the Rattle Chain Mere pool in Tividale, near Dudley.

The pond is owned by Rhodia, based in Oldbury, which has a licence to dump factory waste by-products into the water. It has launched its own investigation.

Friends of Swan Watch, a wildlife protection group, discovered the first two swans on January 21 and the last a week ago..

Group spokesman Ian Carroll, of West Bromwich, said: "To lose one swan is sad but to find eight dead in just three months is a real tragedy.

"There is the possibility one of the birds died from a pellet gun wound but the remaining deaths are a mystery. The only link we can determine is that all of the birds died at the Rattle Chain Mere pool which is a favourite spot for wildlife.

"We need to find out if there is something in the water poisoning them.

"The company sent a couple of the dead swans away for post mortem but the findings were inconclusive.

"Now we plan to send the latest two dead birds away for independent post mortems to try to determine the cause of death.

"We also plan a further meeting with the Environment Agency and Rhodia later this week. We just hope no more fatalities occur before then."

An Environment Agency spokesman said: "We are aware of the deaths of a number of swans at this pool.

"Our officers have taken water samples and autopsies have been carried out on swans – but at this stage we are still unable to determine the cause of death. Our investigations are continuing."

John Scott, operations director for Rhodia, said: "We simply don't know what is killing these birds but they could just have died of natural causes.

"We have a waste licence to dump calcium phosphate – a waste product from our Oldbury factory – into the pool which has been used for years.

"But calcium phosphate is not harmful to wildlife. It is found in everyday products like toothpaste and animal feed. .

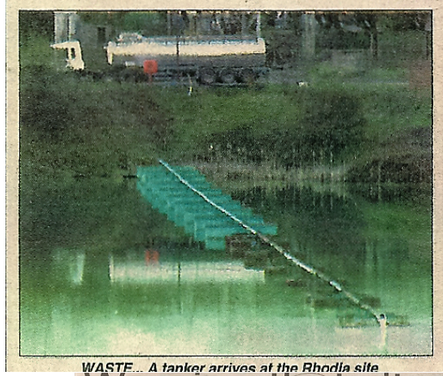
"After the first swan deaths, we carried out post mortems but the results were inconclusive and there was not a precise cause of death.

"We genuinely do not believe the pool is killing these birds as we have also taken water samples which showed nothing.

"However, we will continue to co-operate with the Environment Agency and liaise with Friends of Swan Watch."

tony_larner@mrn.co.uk

POLLUTION INVESTIGATION... the site where waste is pumped into the pool and (inset) two of the swans found dead at the lake. PICTURES Sam Bagnall



WASTE... A tanker arrives at the Rhodia site

Chemical leak shuts dock

AN area of Avonmouth docks has been sealed off and Doomwatch experts called in after a container ship was found to have on board damaged boxes containing a mix of potentially volatile chemicals.

A spokesman for the Maritime and Coastguard Agency, assisting the port authority, said the broken boxes were discovered on the container ship Dutch Navigator when it arrived from Bilbao in Spain.

The nine boxes contain a range of substances and goods, including acid, sodium chloride, marble salt, slate and confectionery.

He said none of the boxes had leaked on to the ship or into the water but there were fears that if they did, the different substances could combine to become volatile and dangerous.

The Maritime and Coastguard Agency's chemical strike team has been called in to assist port staff in making the area safe.



Wildlife campaigners fear sediment could contain pollutants

Action plea over pool as birds found dead

By Rebecca Jones

Wildlife campaigners are calling for action at an Oldbury pool after a number of birds were found dead, sparking fears they could have swallowed toxic materials.

Fifty swans, ducks and geese have been found dead in the past nine years at Rattlechain Mere Pool according to campaigners. Ian Carroll, of Sandwell Swanwatch, said he first noticed dead birds at the pool in 1999. Last Monday a very ill bird was spotted in the water which was then taken to a swan sanctuary in Droitwich where it later died.

He said: "There have been a lot of dead birds found at the pool since 1999. Although the Environment Agency has carried out tests on the water I believe the sediment could be polluted. I am now asking for that to be tested."

The pond is owned by Rhodia UK Limited, formerly Albright and Wilson, which previously had a licence to dump waste from the production of calcium phosphate.

This is a chemical which is not harmful to wildlife, and is found in everyday products like toothpaste and animal feed. However, the company no longer uses the pool.

'Madness' to build homes on ex-dump in Dudley

By Richard Guttridge | Tipton | News | Published: Jul 20, 2017

Campaigners have labelled plans to build hundreds of homes on a former dump 'total madness'.

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Rattlechain Lagoon

Sandwell Council wants to create a development at the Rattlechain Lagoon site as part of its Dudley Port 'garden city' masterplan unveiled this week.

But there are already fears the land could be contaminated from years of waste dumping, while there are also calls for the land to be preserved for wildlife.

The site, off Temple Way, Tividale, is among sites to have been identified for housing under plans to transform the area over the coming years. The council has targeted building 250 homes there.

Express & Star Wednesday April 2 2008

Chemical can burst into flames

Worries over toxin in pool

By Richard Williams

A highly dangerous chemical has been found at the bottom of a Black Country pool, sparking fears for children and wildlife.



Rattlechain Mere Pool in Oldbury

Unstable

Warning that site could burst into flames if water level drops

Safety demand over chemical pool dump

By Chris Moriarty

Campaigners today renewed calls for action to be taken over chemicals dumped in a Sandwell pool which could burst into flames if the water level drops.

Rattlechain Mere Pool in Oldbury has been used as a landfill site for decades for the Rhodia chemical plant and contains substances including yellow phosphorous, similar to that which formed a poisonous cloud over the town following a fire earlier this month. The chemicals in the pool have been linked to the deaths of scores of birds found dead there.

And now, wildlife cam...

EXPRESS AND STAR
13/1/2009

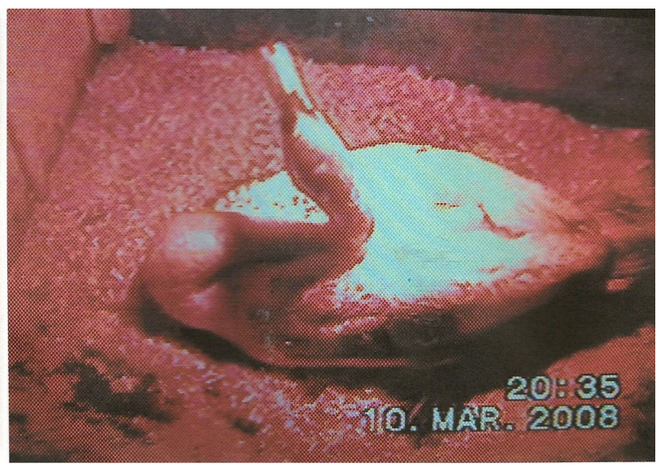
Former sewage works in Wednesbury could be transformed into 750 homes

By George Makin | Wednesbury | Property | Published: May 31, 2019

More than 700 new homes could be built in Wednesbury if senior councillors back a joint plan by Sandwell Council and the West Midlands Combined Authority.







'THERE IS NO DOUBT THAT THIS SWAN INGESTED A LETHAL DOSE OF WHITE PHOSPHORUS.'

'I DISAGREE WITH THE STATEMENT THAT THE AMOUNT DETECTED IS VERY SMALL. THE LAB HAD TO DILUTE THE SAMPLE 100 TIMES PRIOR TO ANALYSIS. THE MASS FOUND IN THE GIZZARD TISSUE IS THE MASS NOT ABSORBED BY THE SWAN.'

'...IN DUCKS FOUND AT EAGLE RIVER FLATS, WE COLLECT THE GIZZARD CONTENTS THAT GENERALLY CONSISTS OF SANDY GRIT MATERIAL. WE DETECT VARIABLE AMOUNTS OF WP (MICROGRAM TO MILLIGRAM QUANTITIES.)

'BOTTOMLINE, WHITE PHOSPHORUS IS EXTREMELY TOXIC BY INGESTION. ANY WHITE PHOSPHORUS FOUND IN A SWAN IS EVIDENCE THAT WHITE PHOSPHORUS POISONING IS THE LIKELY CAUSE OF DEATH.'



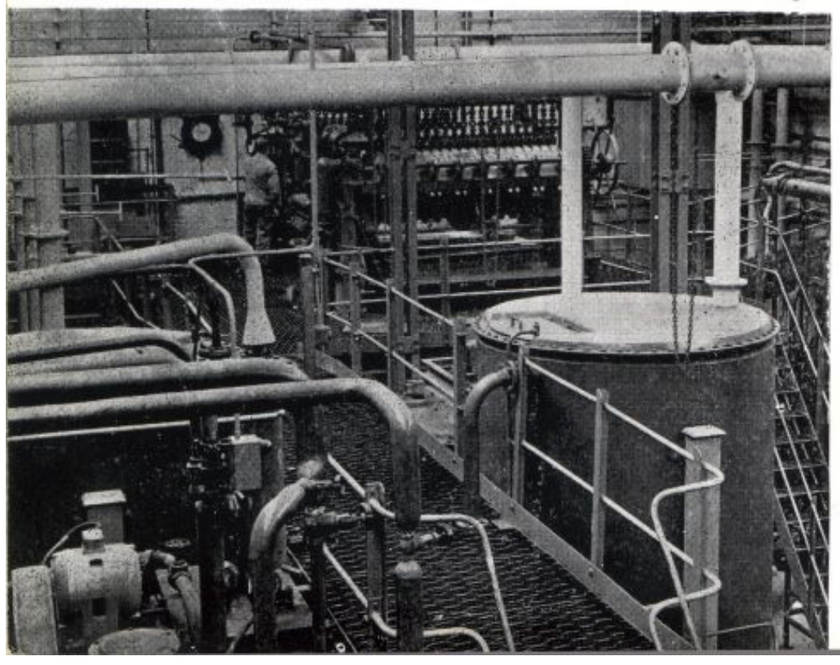
ALBRIGHT & WILSON, LIMITED

They made a new industry

ARTHUR Albright first made phosphorus at Birmingham in 1844 and a few years later "The Phosphorus Works" of Albright and Wilson were established at Oldbury, near Birmingham. From that time the quantity of phosphorus handled daily upon the same site has increased rapidly. The tradition of Albright and Wilson extends unbroken across almost a century, in which the first commercial production of phosphorus in England was followed by the growth of the large-scale industry of to-day, an international industry which the firm has done much to create.

In 1844 phosphorus was little more than a chemical curiosity, and only the yellow form was known with certainity. It was a difficult and dangerous material to deal with, not merely because of its inflammability, but also on account of the serious industrial disease which too often accompanied its manufacture. A year or so later Arthur Albright investigated properties of amorphous phosphorus, and began the manufacture of this less inflammable and nonpoisonous kind of phosphorus on a commercial scale. His exhibit of it as a novelty at the Great Exhibition of 1851 marked the beginning of the modern match industry, and the emergence of phosphorus as an important chemical product.

The years since the Great Exhibition have seen many phosphates and other phosphorus compounds attain commercial importance and in this development Albright and Wilson have played a leading part not only as manufacturers but also as scientific investigators. Among the food phosphates, Puron, Antelope and Ibex are well-known as aerating materials in the baking and milling trades, and calgon, another type of phosphate, conditions industrial and municipal water supplies all over the world. Washing powders, plastics, lubricants and insecticides also use Albright and Wilson products.



Modern chemical plant at Albright and Wilson Ltd.

A tale of the Ego

'People don't realise how much that this area contributed to the economy and the social fabric of the country, and Oldbury in particular - the breadth and depth of industry here was a great example of that. Even locally now, people don't know enough about this history.'

Percy Eamus
retired engineer
MadeinOldbury



Disposal of a cache of their manufactured WW2 grenades containing benzene and white phosphorus into Rattlechain lagoon. Albright and Wilson claim to have disposed of these weapons into the pool 'from time to time.'

Councillor E.N Thorne "This is a menace to the youngsters of the area."

"It is also alleged that the phosphorus gives off a nasty smell."

"It is brought to the marlhole by canal barge. Sometimes it is brought by lorry and dumped on the side of the marlhole where it burns itself out."

THE BIRMINGHAM POST & GAZETTE, MONDAY, NOVEMBER 4, 1957

GLOWING WATER 'PERIL TO CHILDREN'

CHILDREN at Tividale, Rowley Regis, have discovered a new game. Bricks thrown into the water of a marl-hole cause phosphorus that has been dumped there to burn brightly while the water ripples.

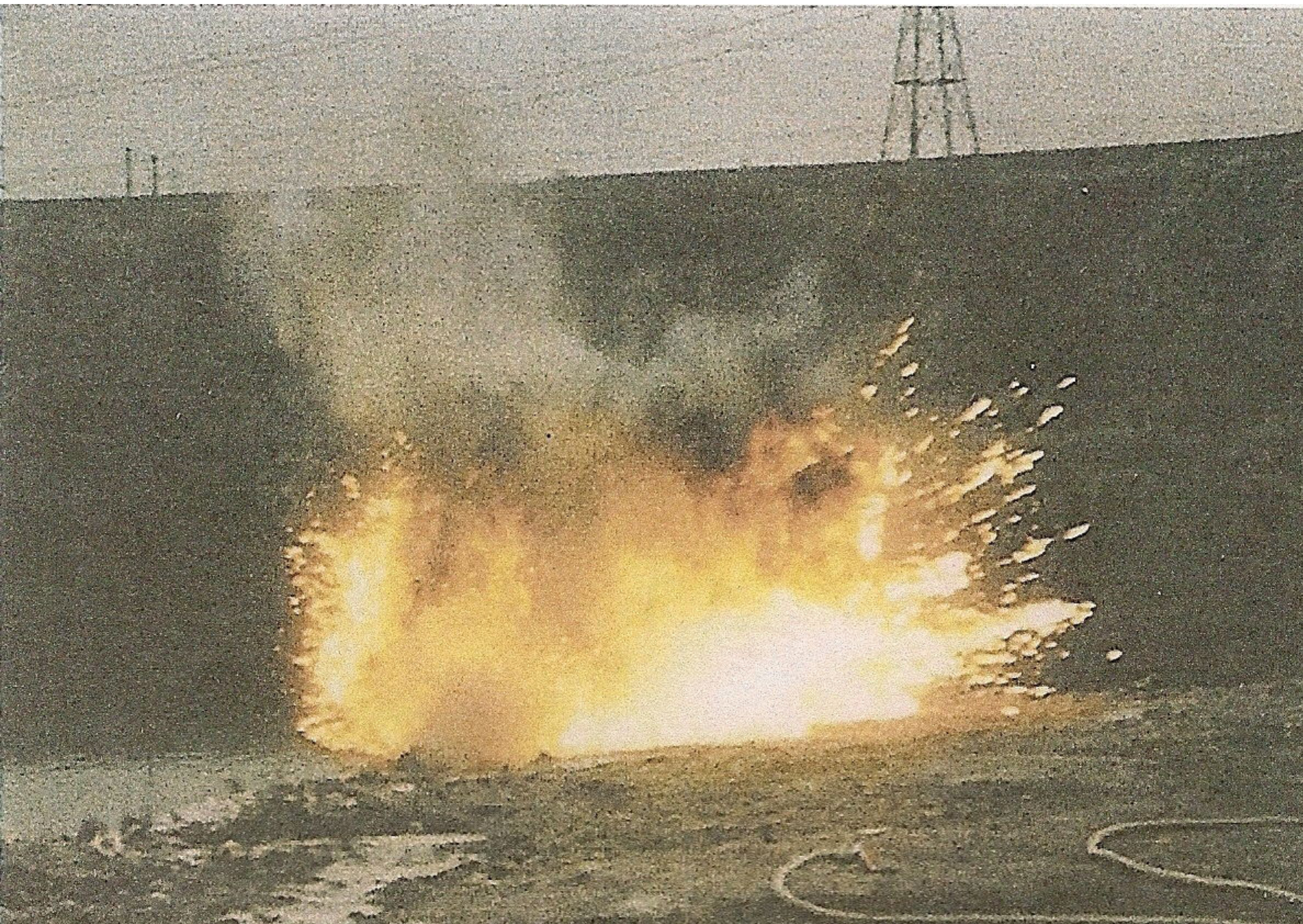
Rowley Regis Council foresees danger and is trying to stop an Oldbury firm depositing phosphorus there.

Policemen 'Injured in Struggle'

TWO police constables had to go to hospital after arresting two youths, it was

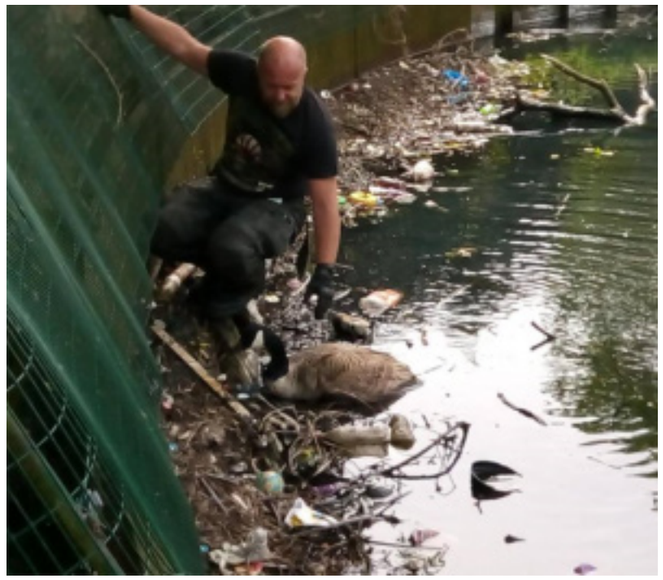
Councillor E. N. Thorne said on Saturday: "If any child happened to fall into the marl-hole it would never come out alive. This is a menace to the youngsters of the area."

It is also alleged that the phosphorus gives off a nasty smell. It is brought to the marlhole by canal barge. Sometimes it is brought by lorry and dumped on the side of the marlhole where it burns itself out.



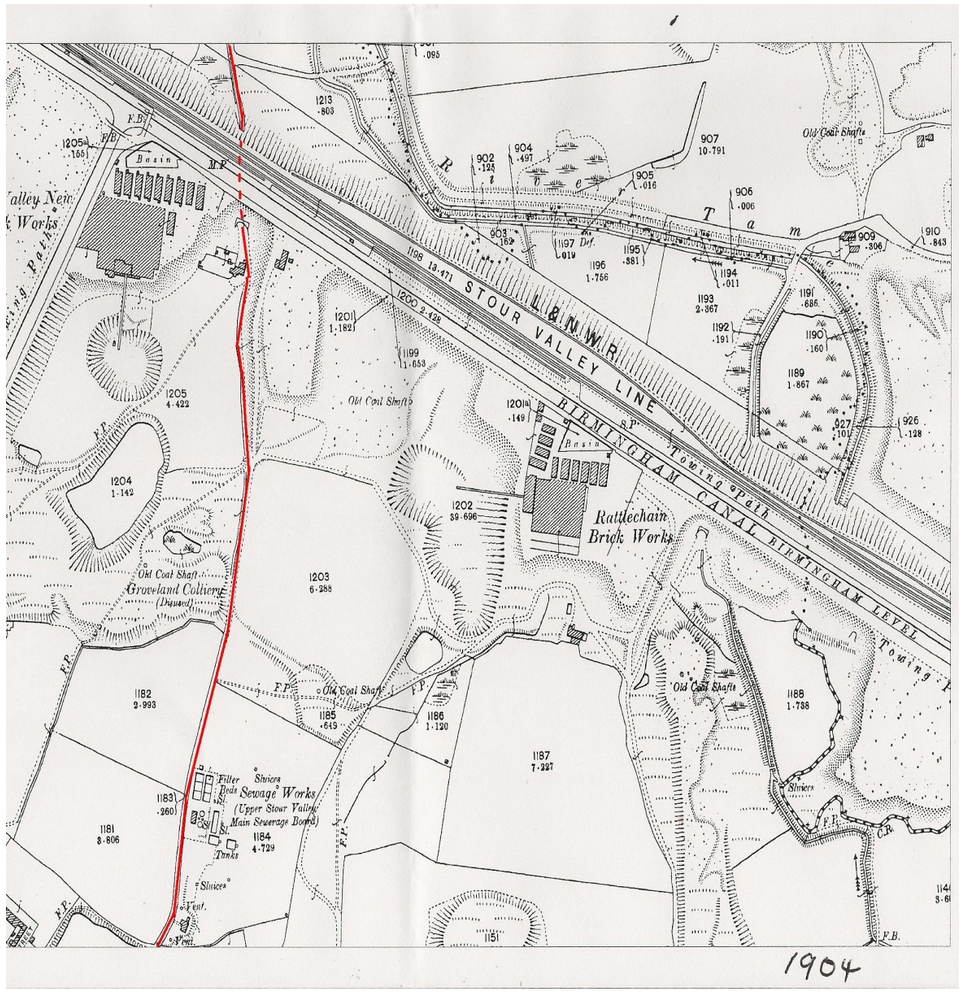
Degradation of the Land





'It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness....'




STOUR VALLEY LINE
BIRMINGHAM CANAL
Towing path
Rattlechain Brick Works
Old Coal Shafts
Old Coal Shaft Grovelands Colliery (Disused)
Filter Beds Sewage Works (Upper Stour Valley Main Sewerage Board)
Tanks
Sluices
Vent.
Basin
F.B.
F.P.
1904

John's Lane







2006 Barratt Homes building their houses on the former sewage works.



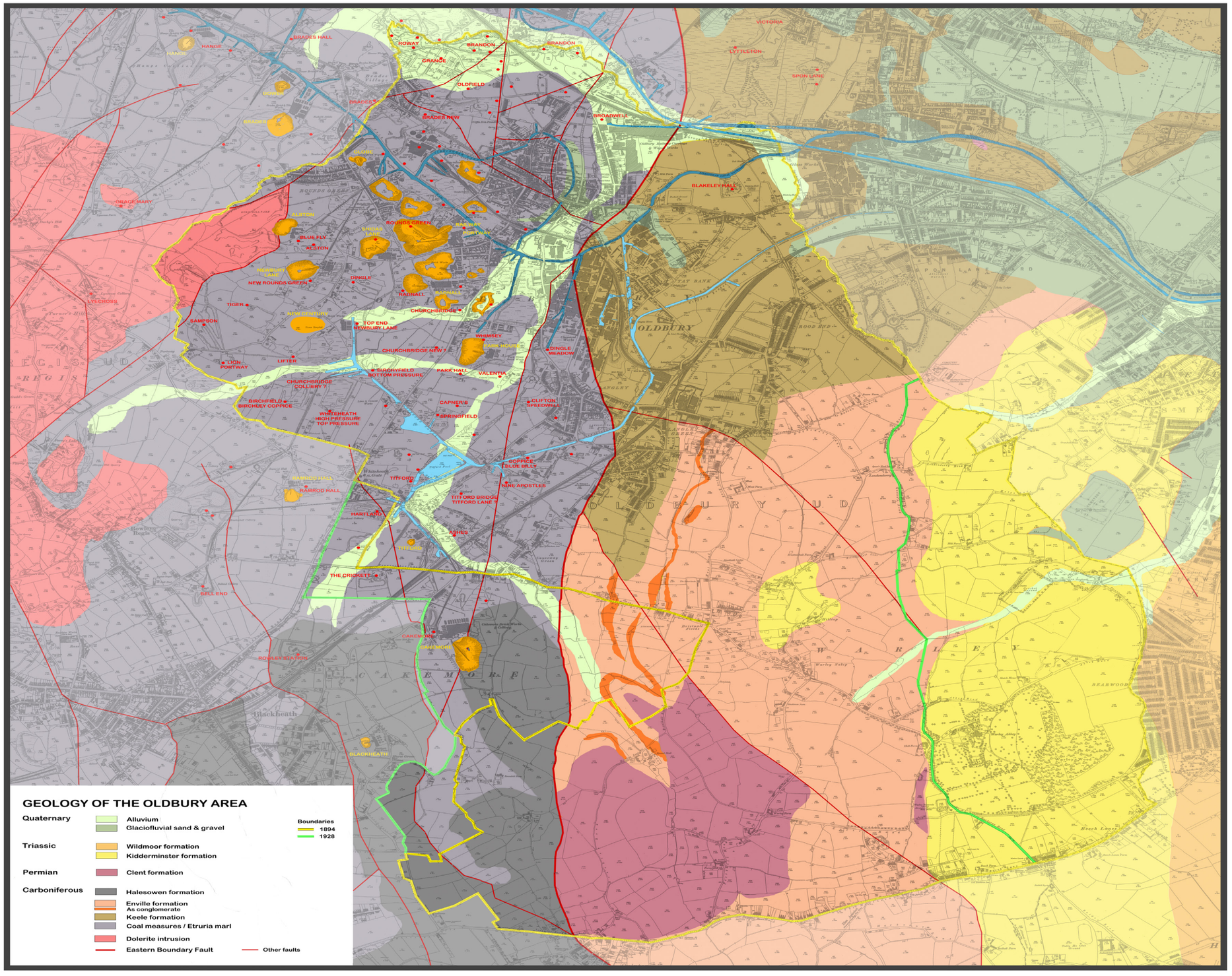
This is a map of Oldbury from 1835. It shows the town arm as well as industry arms and basins.

Taken from The Birmingham Canal Navigations Through Time
by R H Davies
(Image: Amberley Publishing)

right: Made in Oldbury, souvenir brochure, 1949

MADE IN OLDBURY

SOUVENIR HANDBOOK 6D



Geology of Oldbury, 1894+

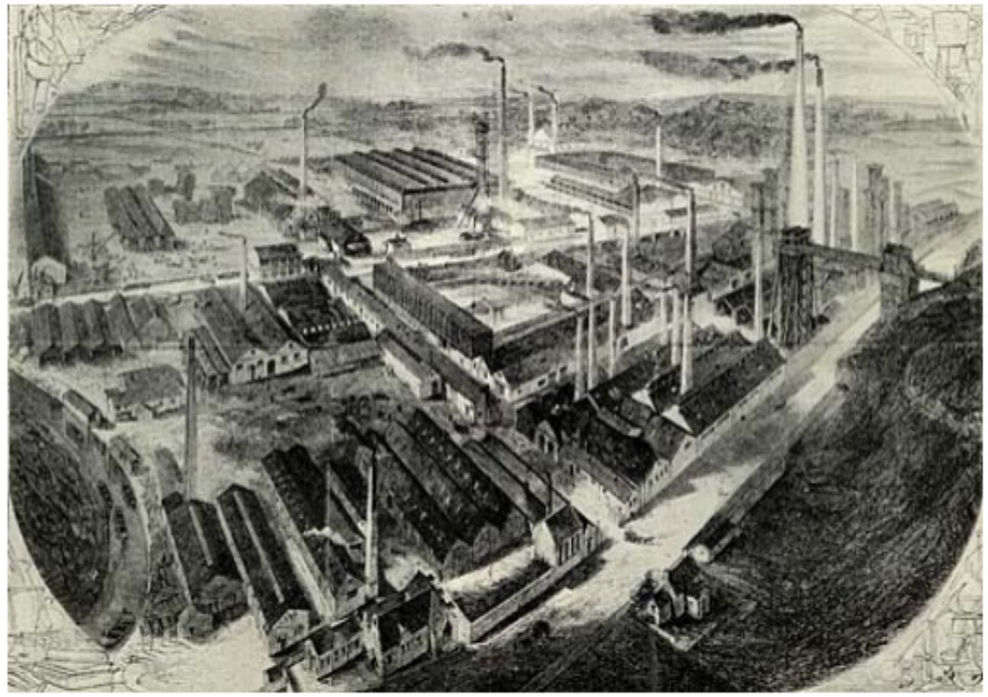


Figure 35 View of Chance Brothers Alkali Works Oldbury (1862) [86]



Figure 36 Oldbury viewed from Barnford Park (c.1930) [87]



DATA SHOWS THAT THOSE WHO LIVE IN THE SURROUNDING COUNCIL HOUSING HAVE LOW WAGES, HIGH DENSITY, 3+ CHILDREN HOUSEHOLDS AND LACK FORMAL EDUCATION.

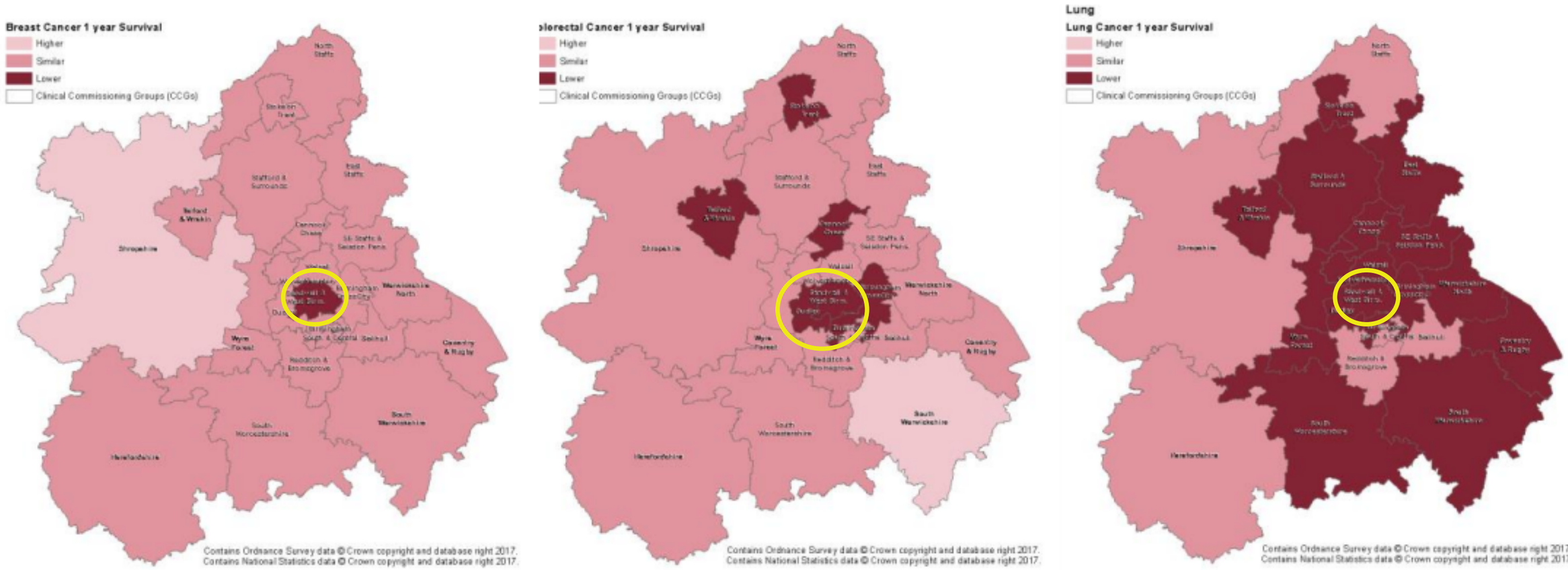
WHEARAS THE MAJORITY OF THOSE IN THE LOCAL NEW BUILD HOUSING ESTATES HAVE HIGH ETHNIC MINORITY RATES, DEGREES AND PROFESSIONAL JOBS.



Figure 31 Image of the Black Country from *Illustrated London News* (1866) [4]

Figure 20: West Midlands Clinical Commissioning Group one-year net survival rates benchmarked against the England average [breast, colorectal, lung; 2014 diagnoses, experimental statistics]

a) breast cancer b) colorectal cancer c) lung cancer



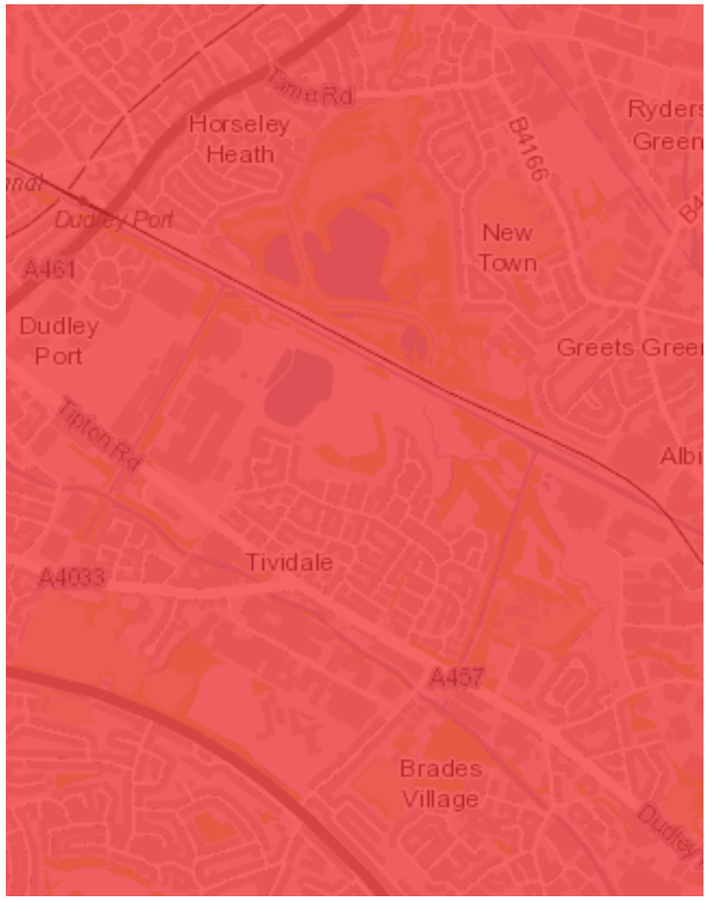
Source: London School of Hygiene and Tropical Medicine, analysis LKIS (WM)

Survival by deprivation

Across the West Midlands, there is also a strong relationship between cancer survival rates and deprivation (Figure 21).



Pollution 2019



UK NAEI - National Atmospheric Emissions Inventory

RATTLECHAIN LAGOON
PROJECT SITE
CHEMICAL WORKS WHO OWN RATTLECHAIN LAGOON
PULMONARY CONGESTION
BRONCHITIS
ASTHMA

Deaths from diseases associated with polluted air in Oldbury (1855)



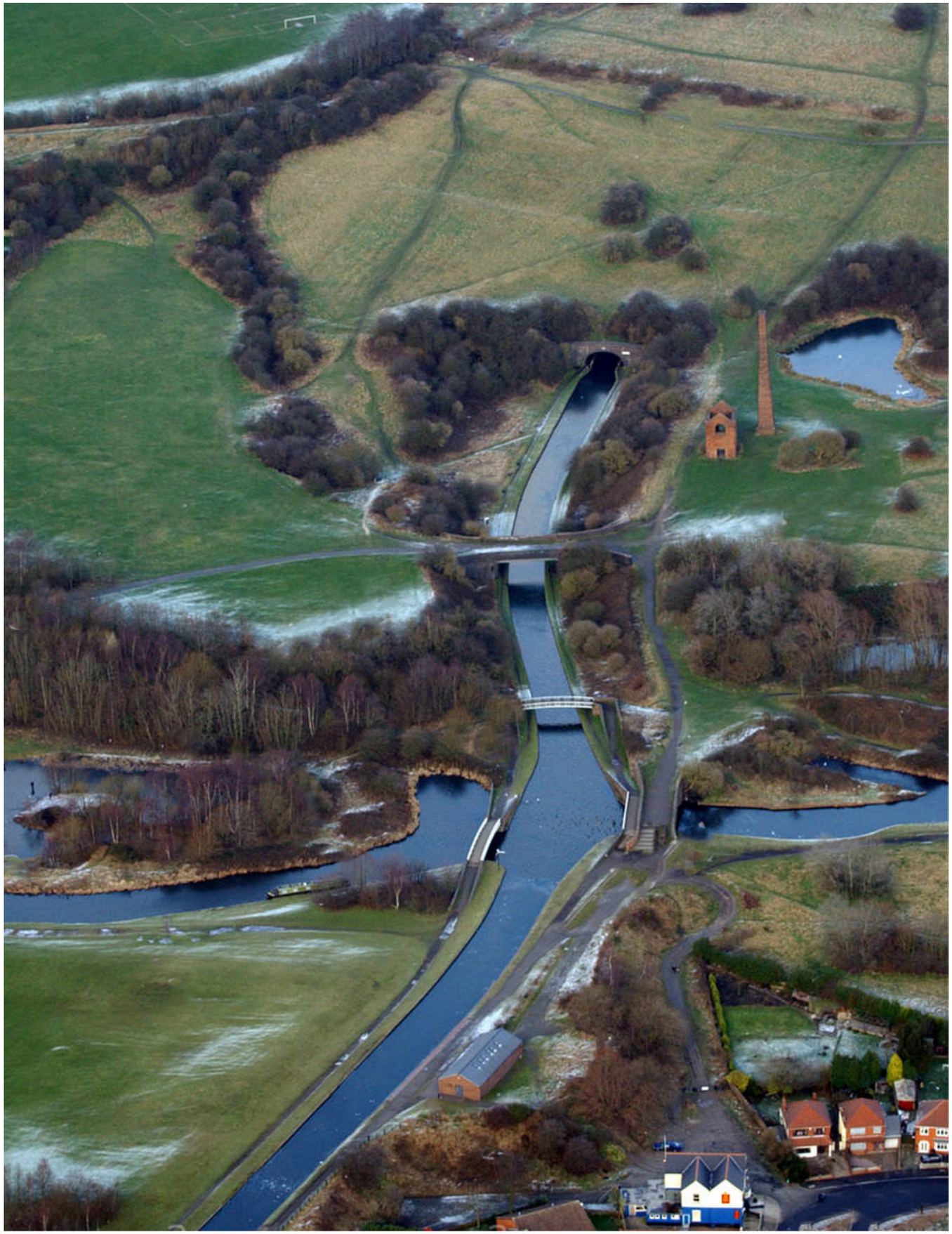
- 3,058yd (2.8km) long
- Completed in 1858
- The last major tunnel to be built on the UK's canal network.



THE DUDLEY NO 2 CANAL AT THE SOUTHERN ENTRANCE TO NETHERTON TUNNEL AT WINDMILL END JUNCTION IN 2003

THE AIM IS FOR THE WASTELAND LEADING FROM THE NORTH FACE ENTRANCE OF THE TUNNEL TO MERGE FROM THE TUNNEL INTO A SUBLIME, AESTHETICALLY PLEASING LANDSCAPE RATHER THAN A BARREN, CONTAMINATED WASTELAND.

IMAGE SOURCE:UNKNOWN





NETHERTON TUNNEL : NORTH ENTRANCE





NETHERTON TUNNEL VIEWPORTS



13th February 1968

Deadly fumes in tunnel 'chased' three on canal

Birmingham Post Warley Staff

A warning to Inland Waterway enthusiasts not to use the Netherton Canal tunnel which runs from Warley to Dudley was issued yesterday by Mr. Kenneth Dunham, chairman of the Staffordshire and Worcestershire Canal Society. Mr. Dunham and two other members of the Society had a narrow escape from deadly phosphorus fumes as they travelled through the 1¾-mile tunnel at four miles an hour.

"We were followed by spiralling clouds of phosphorus which made us cough," said Mr. Dunham.

"The phosphorus was only a few yards behind and it was quite an alarming experience. We decided that if the fumes caught up with us we would abandon the boat and run out along the towpath.

"If any others had followed us into the tunnel they would probably have been overcome before they knew what was happening."

Severn ban on water skiers?

Birmingham Post Worcester Staff

A ban on water ski-ing on the rivers Severn and Avon in Worcestershire

Tests

Mr. Dunham urged Inland Waterways enthusiasts not to use the tunnel until full analytical tests had been carrried out

"I hope to meet public health officials to discuss the matter," he said. "This tunnel has been designated as one of the recreational cruiseways of the future, but at the moment it seems to be a definite health risk.

A spokesman at the British Waterways Board in Birmingham said the Trent River Authority was discussing the pollution with a firm concerned.

Investigations

The company was carrying out investigations to find out the extent of this problem.

He said it would be holding a further meeting with representatives of the Trent River Authority and the British Waterways Board in about three weeks' time.

Recently the British Waterways Board complained of troublesome effluent being discharged from the company's premises — particularly phosphorus — and asked the company to make immediate arrangements to stop any further pollution and threatened legal action unless this was done.

Canal tunnel fumes

Sir, — Netherton tunnel is the largest and most recently built in Britain's inland waterways system. It is situated on one of the main recreational cruiseways of the Birmingham Canal Navigation.

I endorse Mr. Dunham's report of the extreme danger to health as a direct result of obnoxious fumes from what is obviously large quantities of phosphorous in the waters of this one-and-three-quarter-mile-long tunnel.

Recently, while going through the tunnel with the boat's electric lights off, there should have been pitch darkness, but clouds of phosphorous fumes, luminous and silver in colour, allowed me to see the tow path on both sides of the tunnel.

What can be done to stop any further phosphorous getting into the water, and, even more important, how can the existing stuff be removed? Why doesn't British Waterways take legal proceedings? It is surely a matter of grave urgency.

P. J. FREAKLEY.
Cotton lane,
Moseley,
Birmingham 13.

11 September 1968

'No rest' till tunnel is cleared

Birmingham Post Warley Staff

Members of the Staffordshire and Worcestershire Canal Society have pledged their support for a campaign to get the Netherton canal tunnel cleaned up.

The society is checking with the British Waterways Board to see what steps are being taken to dredge the canal and remove phosphorus.

A spokesman for the society said last night that members "would not rest" until the phosphorus had been cleared from the tunnel and the canal approaches to it.

"Phosphorus fumes have nearly choked people going through the Netherton tunnel. The fumes are extremely bad and could be dangerous to an inexperienced person going through.

Vital part

"We hope that the canal will be cleaned up soon and pollution halted," he said.

He pointed out that the tunnel was a vital part of the canal network in the Black Country.

British Waterways Board - Engineering Department

Area Engineer, Birmingham Area, RESERVOIR HOUSE, ICKNIELD PORT ROAD, BIRMINGHAM 16

Tel. 021-454 7091

YOUR REF.

OUR REF. BhD/Dredging Tips/K/W

3rd March, 1970

Mr. A. Walters,
Engineering Manager,
Albright & Wilson Limited,
P.O. Box 3,
Oldbury,
Warley,
Worcestershire.

Dear Sir,

Rattlechain Tip, Tividale

With reference to my call at your office on 2nd instant, I would confirm that it is our intention to only discharge material into the Rattlechain Tip which has come from those portions of the canal which have been affected by the discharges from your works.

The current exercise in 1970 is to remove material in the Netherton Tunnel Arm, Dunkirk Stop area, where, as you will recall from your cruise along the canal, there was a considerable build-up of light grey silt up to just below water level.

I further confirm that before this exercise is started, we will give you due notice of the starting date so that if necessary one of your representatives can visit the tip, and we will keep a record of the number of boats tipped into Rattlechain Tip, and from where the silt was obtained.

The quantities to be tipped during 1970 will not exceed 2,500 tons.

Yours faithfully,

L.P. WALL
Birmingham Area Engineer

"People don't realise how much that this area contributed to the economy and the social fabric of the country..."

RATTLECHAIN LAGOON



TAME RIVER



CANAL



LAGOON

"There had been a lot more trees before the war, but a lot of them were cut down and used for fuel. In 1948, when we had that big winter, where I lived you could walk down through some fields to the canal and there were pit banks that were grown over; people were mining into there to dig out what we called 'nutty slack' – it would burn sufficiently. How people weren't killed I don't know, as they went in quite deep. There was an outlet there from the nut and bolt factory and the pipe had broken open and you used to get untreated sludge from the machining operations forming pools and puddles or rivulets. There was a structure over the top of old pit and we used to love throwing a brick over it and counting how long before you heard it go splash. That's what finished the pits here - they were all wet pits."

Percy Eamus -MADEINOLDBURY

CONCEPT



HTTPS://MADEINOLDBURY.CO.UK/ARTICLES/PERCY-EAMUS/


Danger
Razor wire
Rhodia Ltd
Oldbury

ALBRIGHT & WILSON
CHEMICALS

Albright & Wilson have been producing phosphorus compounds and other chemicals for over 100 years. The knowledge and experience gained throughout this period is available to all chemists and engineers.

Albright & Wilson's representatives will be glad to talk to you about the application of their products to your particular problems.

*

PHOSPHORIC ACID

PHOSPHATES · PYROPHOSPHATES

ORGANIC PHOSPHATES · METAPHOSPHATES

SODIUM ALGINATE · CARBON TETRACHLORIDE

HEXAETHYL TETRAPHOSPHATE

ALBRIGHT & WILSON Ltd

49 Park Lane, London, W.1

WORKS: OLDBURY AND WIDNES

THE RIVER TAME, CALLED 'THE BLACK BROOK'

“THE TAME WAS FOUL AS FOUL COULD BE,
WITH SEWAGE BLACK AS DYE;
IT RAN WITH GARBAGE IN THE WET,
AND STANK WHEN IT WAS DRY;
NO FISHES LAY BENEATH ITS BANK –
THERE WERE NO FISH TO LIE.' -
AUTHOR UNKNOWN, 1880



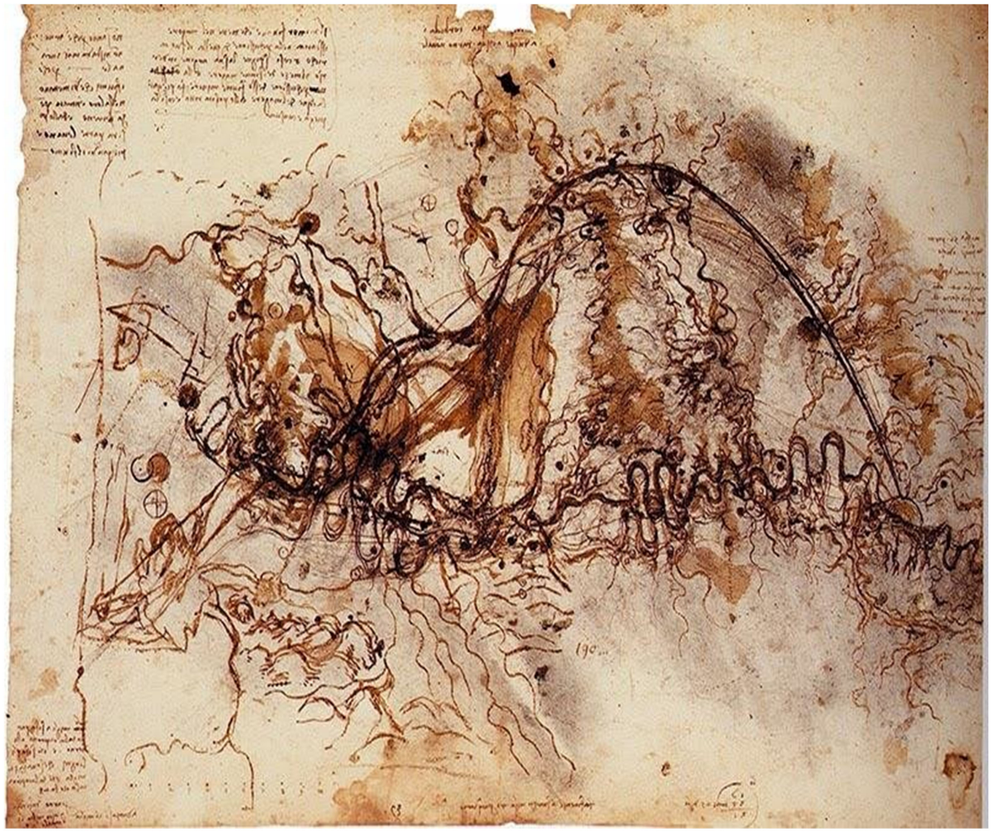
"REMNANTS OF OLDBURY'S CHEMICAL INDUSTRIES CAN
BE FOUND ALONG THE RIVER; ALBRIGHT & WILSON
AND CHANCE & HUNT."

"CORRODING GASES EMITTED FROM THE CHEMICAL WORKS
IN THE HEART OF THE TOWN SO COMPLETED THE BLIGHT
THAT EVEN GRASS AND THE HARDIEST OF PLANTS FAILED
NOT TO SUCCUMB." - 1915, OLDBURY, THE HISTORIAN FREDERICK HACKWOOD

DYNAMIC INTERACTIONS BETWEEN COMMUNITIES AND NATURE







Leonardo's deviation of the Arno River; bypassing a stretch of the river with an artificial canal (never put into practice).
(Source:
Royal Collection Trust at https://www.royalcollection.org.uk/collection/912279/a-scheme-for-a-canal-to-bypassthe-arno).

Tracada, Eleni & Varone, Francesco. (2018).
"Renaturalising the water courses:
dynamic interactions between communities and nature. In ecology, an ecosystem is defined as a system of interconnected elements formed by the interaction of a community of organisms with their environment. In all ecosystems,
communities of organisms include people as main actors, either as designers of its infrastructure or as participants in its upgrading. Combined with urban design, landscape architecture has the power to stimulate human experiences by
alluding to dynamic patterns of still or rushing water. We love landscapes as physical spaces and we also respond to landscape beauty with immense appreciation; our urban cultural ecosystems blend harmoniously with water.
By being transformed into polluted artificial waterways or fiercely running rainwater discharges, sometimes our meandering water courses can endanger people as well as the environment. How can we re-establish a balance between our ecosystems
and the anthropocentric remodelling of our cities?
The authors discuss the trends of renaturalisation/renaturation of water courses in some European countries, where previously water management has implied working against nature to ensure progress for mankind.
Instead of only containing rivers, the new paradigm shift makes nature an ally to stabilise water levels, prevent floods in densely urbanised areas, and safeguard water uses. Water managers and city planners pursue
water systems with water rules and policies backing their claim: 'living with water' and 'building with nature'. Recent projects could be easily compared with Leonardo's hydrology ideas in Renaissance. In his Treatise on Water, Leonardo focuses
on moving waters and trained rivers in relation to their water cycles and the tectonics of the earth's surface with the aim of benefitting cities and people."



REINTRODUCING THE COMMUNITY TO THE LAND - DISCOVERY -
CREATING PERSONAL CONNECTIONS TO THE LANDSCAPE AND THE PEOPLE AROUND US

THE RIVER IS DESIGNED AS AN EXPRESSION OF FREEDOM FROM EXPLOITION,
BREAKING FREE FROM THE TOXIC CHAINS THAT WAS PRODUCED WITHIN THE HIGHLY POLLUTED LANDSCAPE OF THE BLACK COUNTRY. A SYMBOLIC PROTEST OF THE REMNANTS OF THE BLACK COUNTRY,
WHERE THE LOCAL COMMUNITY AND ALSO THE ECOSYSTEM HAD TO EVOLVE AND ADJUST TO LIVE WITHIN THE INDUSTRIAL LANDSCAPE.



'MAPPING OUT FREEDOM:
ESCAPED SLAVES USED BRAIDS FOR DIRECTION' -
SURVIVAL MECHANISM, FREEDOM
- INDUSTRIAL REVOLUTION -
BLACK COUNTRY METAL USED IN SLAVERY
THE MEANDERING RIVER, AS AN ODE OF REGRET IS DESIGNED WITH CONSTRAINED
SEGMENTED SECTIONS WHICH BREAKS FREE AND INTERWEAVES INTO LOOSE BRANCHES.

THE RIVER IS THE PRIMARY NAVIGATIONAL TOOL AROUND THE SITE, BRINGING THE VISITORS TO EACH LANDMARK FROM THE VALLEY AND RATTLECHAIN LAGOON TO SHEEPWASH RESERVOIR.

EXAMPLE OF RATTLE CHAINS

FLAG OF THE BLACK COUNTRY







3 year old Arabella Leads the way





The story of spring heeled jack
in the black country



Ancient black country myth



Spring-heeled Jack. He is **unpredictable, elusive and frightening without being life-threatening.**
His appearance from the 1830s is **almost always in urban areas, but that in itself means little**; Victorian Britain had urbanized at a remarkable speed and those moving into the towns from the countryside inevitably brought their old superstitions with them. The historian, Charles Phythian-Adams calls this phenomenon **'prior culture'**, the survival of the previous age into the Victorian system of belief.
The Black Country of the 19th Century was a somewhat **superstitious**, inward-looking place; some would say that it still is.
Sightings of Spring-Heeled Jack are recorded across England, from London and Chichester up to Liverpool, but they were especially prevalent in the Black Country, where they peeked in the 1880s. Descriptions of the **creature** vary, but the **salient characteristics** were his goatee beard, **pointed ears and horns, and flashing, fiery** eyes. Illustrations in the popular (and sensationalist) magazines called Penny Dreadfuls, show him as a kind of Hispanic version of the Devil.
The one feature that never varied was his **ability to jump; to leap over rooftops and across hedges. Such agility always allowed him to terrify his victims and to escape his pursuers**. A bounder, indeed.

Jack was up and about in the Black Country, at least from 1855, when he was reputedly **seen in Old Hill, leaping from the roof** of the Cross Inn onto the roof of a butcher's shop across the road. This sighting was typical of many, and was invariably followed by a spate of further sightings, until the panic died down. However, after a few months or sometimes years, he returned. There were numerous other sightings at Blackheath in 1877 and again around Dudley and the Acocks Green district of Birmingham in the 1880s.

As the Birmingham Post reported in September 1886:
"First a young girl, then a man, **felt a hand on their shoulder**, and turned to see the infernal one with **glowing** face, bidding them a good evening."

ALLEGORICAL CONNECTION TO SITE- VIEWING THE SITE FROM THE CHILD'S PERSPECTIVE

It was very easy for **stories - true or imagined** - to spread like wildfire and, as is the case in a largely oral culture, to become **embellished** along the way.
Nor is it surprising to read of Spring-Heeled Jack being seen on the roofs of pubs or churches; his image was certainly being employed by local preachers as a warning against the perils of drink.

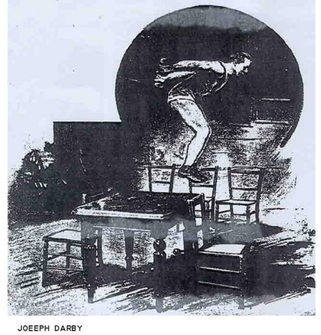
However, such stories were not limited to the pulpit. Very rapidly Spring-Heeled Jack was **added to the arsenal of the beleaguered parent**, labouring to get their child to behave. In short, Jack was recruited to the company of bogeymen.

What is surprising is how quickly panic could set in. This seems to have happened in **Netherton (netherton tunnel - link to site)** in 1877. A terrifying creature with one flashing eye had been spotted by a number of witnesses **leaping hither and thither near the canal.** The police were summoned to the spot, **surrounded the creature and detained it.** It did not take long to realize that Jack was in fact Joseph Darby, later to be the **World Spring Jumping Champion**, who had been **practising at night** in a pit helmet.

Spring-Heeled Jack has still not entirely deserted the region, though his appearances are now only part of an **agreed code** of behaviour **between mother and child**. Older Black Country residents still recall being **threatened** with an appearance by Jack if they failed to go to bed on time. The last publicly testified sighting that reached the newspapers was in September 1904, when the newspapers reported a figure seen "jumping over a building in William Henry Street".



JOEEPH DARBY





JOEEPH DARBY

HTTP://WWW.BBC.CO.UK/LEGACIES/MYTHS_LEGENDS/ENGLAND/BLACK_COUNTRY/ARTICLE_3.SHTML

'I came from Pandemonium,

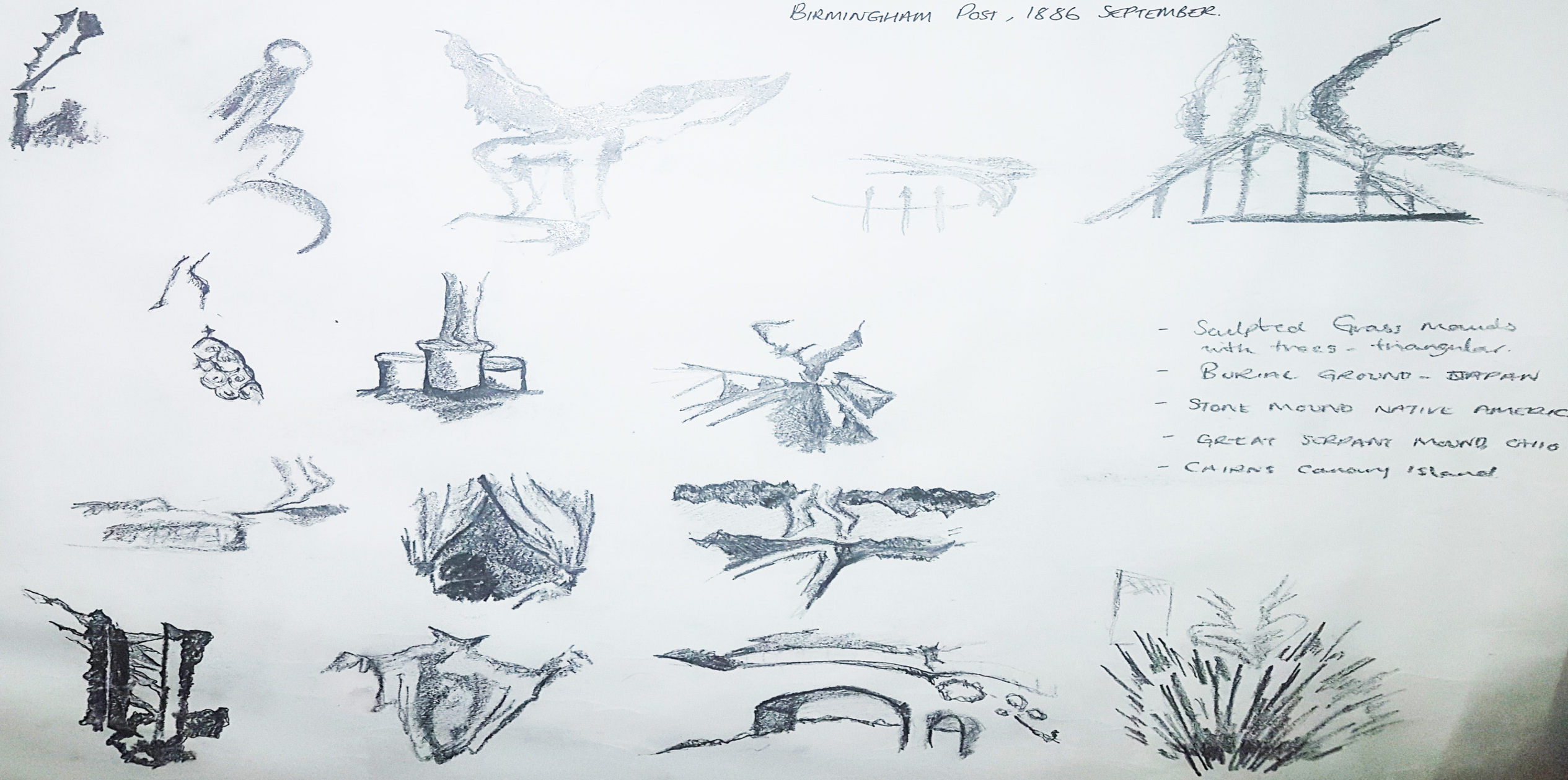
If they lay me I'll come back,

Meanwhile around the town I'll jump,

Spring Heeled Jack!' - Seen on a hill, leaping from roof to roof etc.
Seen jumping over the Canal: Jumped over a building in William Henry St'

" First a young girl, then a man, felt a hand on their shoulder, and then turned to see the infernal on with glowing face, biding them good evening!"

Birmingham Post, 1886 September.



- Sculpted Grass mounds with trees - triangular.
- Burial Ground - Japan
- Stone Mound Native Americ
- Great Serpent Mound, Ohio
- Cairns Canonry Island

FOREST GARDEN/AGROFOREST







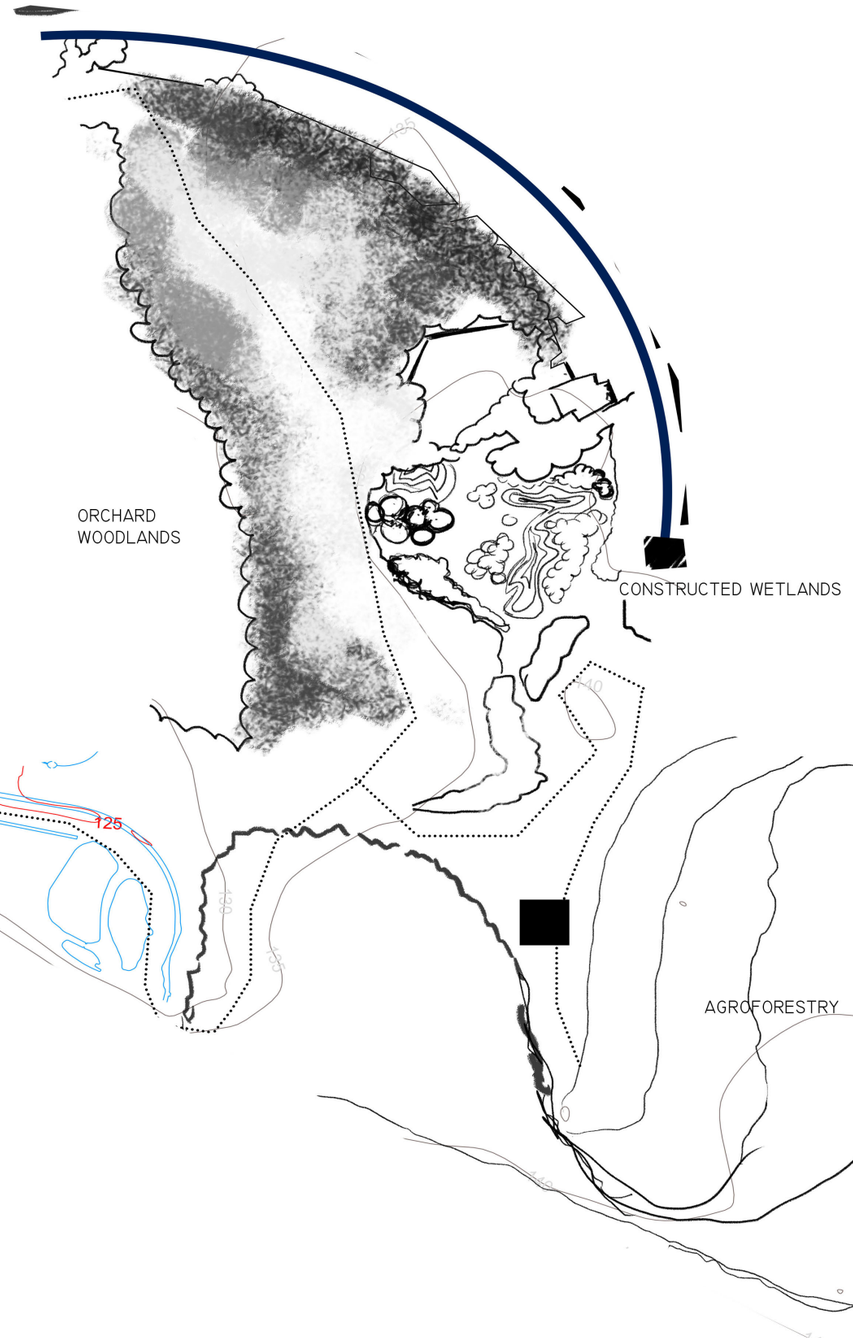


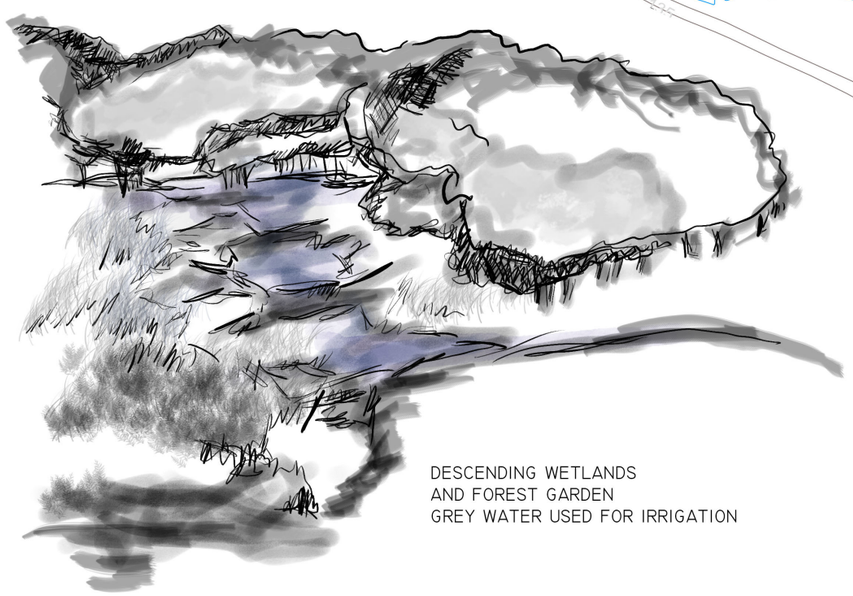












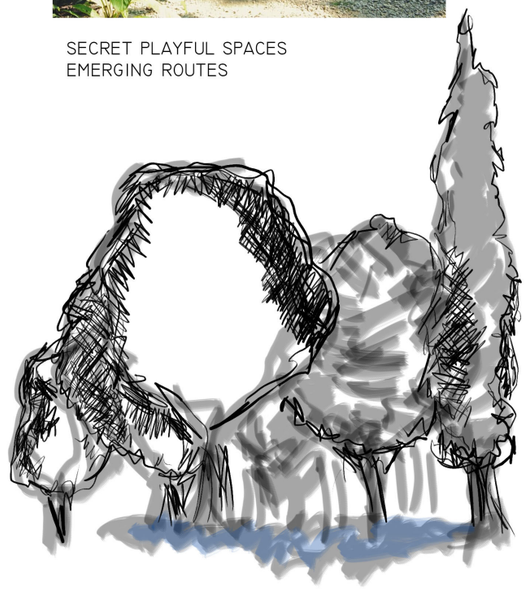
DESCENDING WETLANDS
AND FOREST GARDEN
GREY WATER USED FOR IRRIGATION



INDIGINOUS MAP AND ECOLOGICAL PRINCIPLES
INFORMED DESIGN
BALTALTJARA 1997-1999. ESTELLE HOGAN



SECRET PLAYFUL SPACES
EMERGING ROUTES



500 TREE TYPES AND PLANT VARIETIES
LAND NEEDS MINIMAL REMEDIATION

Sheepwash Urban Nature Reserve

CREATING A NEW CONSERVATION CENTRE, WETLAND PARK AND AGROFOREST









LAND RECLAIMATION 1981-2005

Existing main access to sheepwash nature reserve




BRIDGE




TESCO

Planting Concept



Public Garden with a Corner of the Yellow House.
Vincent Van Gogh



A group of Pine trees


TEMPLE WAY

CONCEPT - 8 ELEMENTS OF ART



TEXTURE -
REPETITIONS THAT ENHANCE THE SURFACE
OF PAINTINGS OR SCULPTURE'S TEXTURE

VALUE - REFERS TO DARK AND LIGHT QUALITIES OF THOSE COLORS



IMAGEN MOHSIN A. SOOMRO

LINE -
POINT THAT MOVES THROUGH SPACE



SPACE -
3 DIMENSIONAL
VOLUME THAT CAN BE
EMPTY OR FILLED



FORM - DESCRIBES VOLUME AND MASS



COLOR -
DEPENDS ON REFLECTED
LIGHT AND HUE





SHAPE -
GEOMTERIC OR FREE FORM (ORGANIC)







PATTERN - REPETITIONS THAT ENHANCE THE SURFACE OF PAINTINGS OR SCULPTURES

SERRANÍA DE HORNOCAL
THE FOURTEEN COLOURED MOUNTAIN
UNESCO WORLD HERITAGE SITE -
NORTH-WEST ARGENTINA

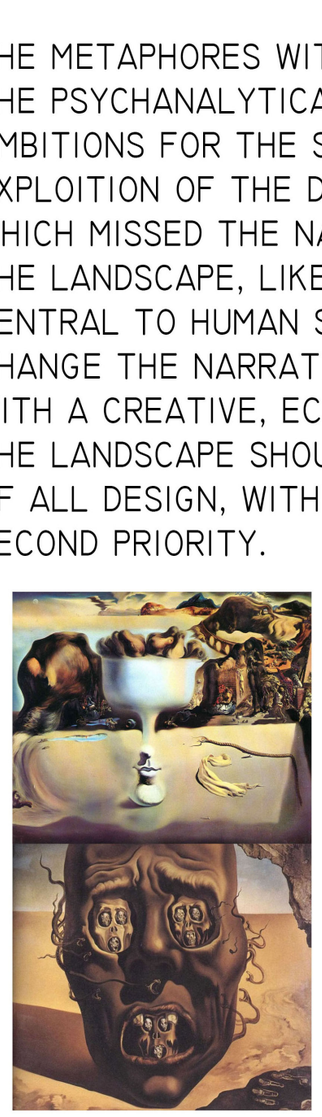
THE KEY ISSUE WITH THE SITE IS THAT IT IS A HIGHLY CONTAMINATED, EXPLOITED, SPARCELY VEGETATED LANDSCAPE. THE JOURNEY FROM THE SHEEPWASH NATURE RESERVE IS HINDERED BY THE POOR WALKABILITY, TARMAC PATHWAY, ELEVATED WALLS AND BLOCKED, RAILINGS WHICH OBSCURES THE VIEWS, THE AIM IS TO OVERTURN THE PRIORITIES OF THE SPACE AND ALLOW THE LANDSCAPE TO HAVE DOMINANCE RATHER THAN THE HEAVILY ENGINEERED, INDUSTRIALSITE. THIS WILL BE DONE BY DISMANTALING THE FORCIBLY REGEMENTED SPACES AND THEN APPLYING THE SPACIAL PRINCIPLES TO ART LANDSCAPE.

HTTPS://INSPIREDBYMAPS.COM/FOURTEEN-COLOURED-MOUNTAIN-ARGENTINA/

MIGRATING FROM THE UNCONCIOUS TO THE CONCIOUS: BEING AWARE AND IMMERSED INTO NATURE, CREATING A NEW NARRATIVE OF SANDWELL

ART, PSYCHOANALYSIS & LANDSCAPE

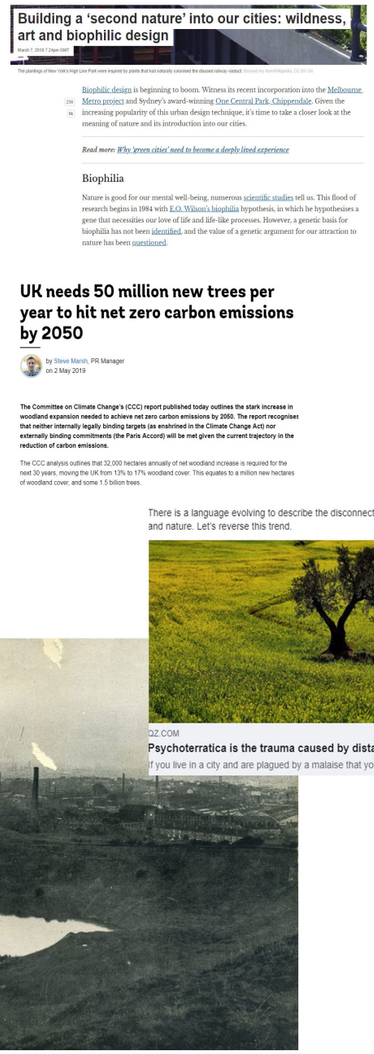
THE METAPHORES WITHIN DALI'S WORK WHICH EXEMPLIFIES THE SUBLIME & THE PSYCHANALYTICAL THEORY OF THE SUBCONCIOUS RESONATES WITH THE AMBITIONS FOR THE SITE. IT IS COMPARITIVE JUXTOPOSITION OF THE EXPLOITION OF THE DYING, DESOLATE, HIGHLY CONTAMINATED LANDSCAPE - WHICH MISSED THE NARROW WINDOW OF TIME TO REGENERATE. HOWEVER, THE LANDSCAPE, LIKE THE IMAGINATION, DREAMS AND IMAGINATION ARE CENTRAL TO HUMAN SURVIVAL AND THOUGHT. AS SUCH, WE NEED TO CHANGE THE NARRATIVE OF THE URBAN ENVIRONMENT AND DESIGN WITH A CREATIVE, ECOLOGICAL FIRST APPROACH. ART, NATURE AND THE LANDSCAPE SHOULD HAVE INTRISIC VALUE, AT THE FUNDEMANTAL OF ALL DESIGN, WITH THE BUILT ENVIRONMENT BEING THE SECOND PRIORITY.



THE FACE OF WAR, 1941
OR THE FACE OF
POLLUTION



MOUNTAIN LAKE', SALVADOR DALÍ, 1938



VIEW OF OLDBURY
IN THE 1940S.

THE TRIANGULAR HOUR, 1933 - SURREALISM PERIOD

STORIES AROUND THE SITE

BIOPHONY

BIRDS CHIRPING, INSECTS FLUTTERING,
CRICKETS STRIDULATING, BOARS GRUNTING,
BEAVERS CHOPPING



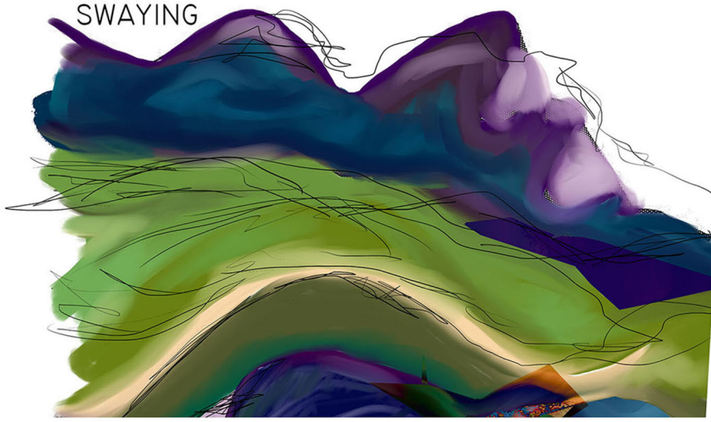
ANTHROPHONY

CHILDREN LAUGHING
RUNNING, GOSSIPING



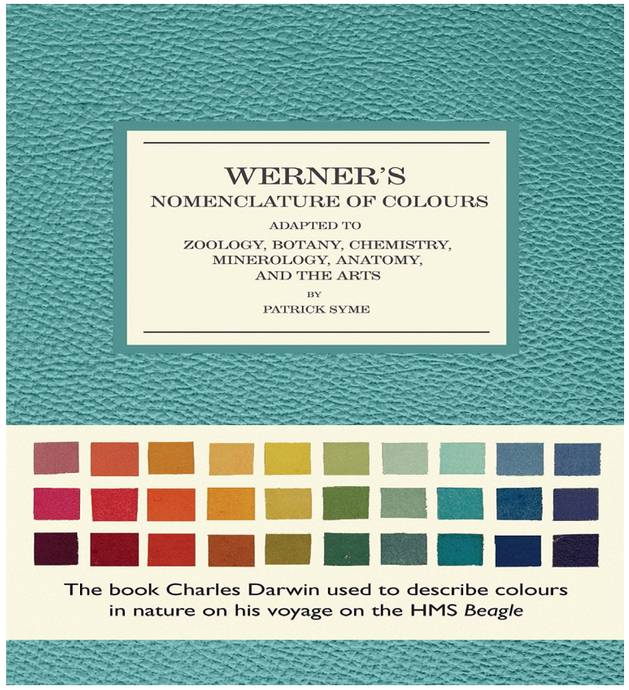
GEOPHONY

THE RIVER CHURNING
LEAVES RUSTLING, BRANCHES
SWAYING

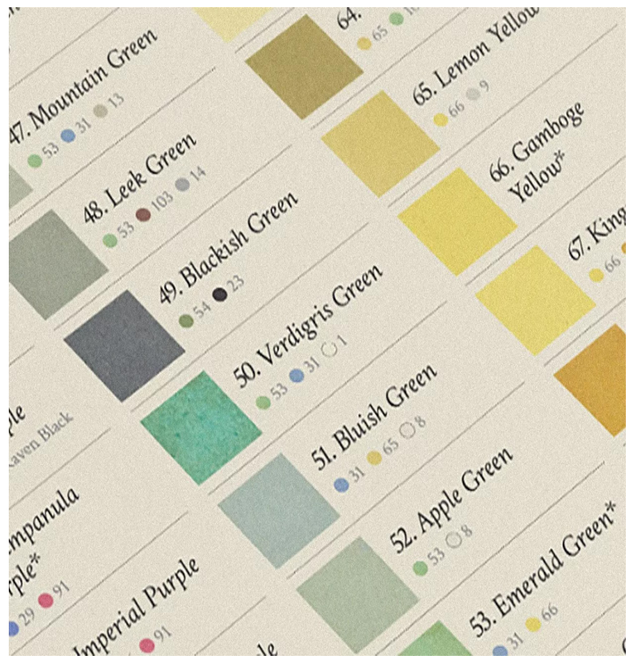


ATTEMPTING TO CAPTURE
THE EPHEMERAL ESSENCE OF NATURE

THE CEREBRAL LANDSCAPE

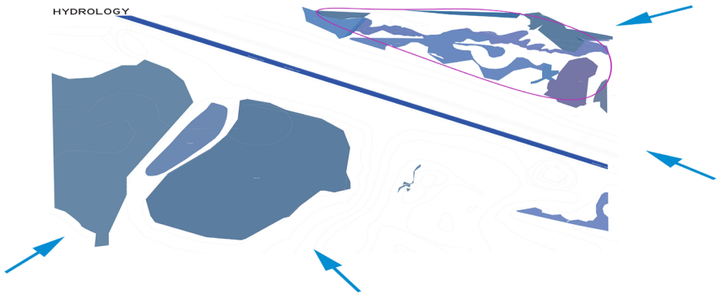






1814, Werner's Nomenclature of Colours
Adapted to Zoology, Botany, Chemistry, Mineralogy, Anatomy, and the Arts

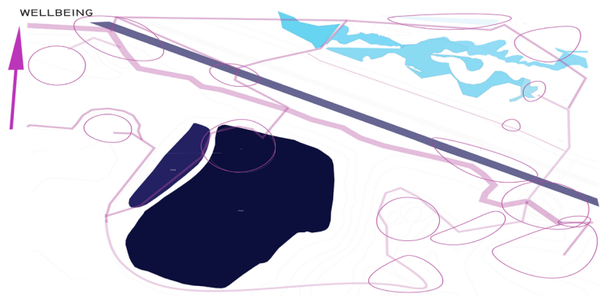
HYDROLOGY



EDUCATION

Continuous Boardwalk Loop Contains Varied Interpretation Pertaining to Pond Ecosystems and Learning Pavilions that Serve as On-site Laboratories For Local Students.

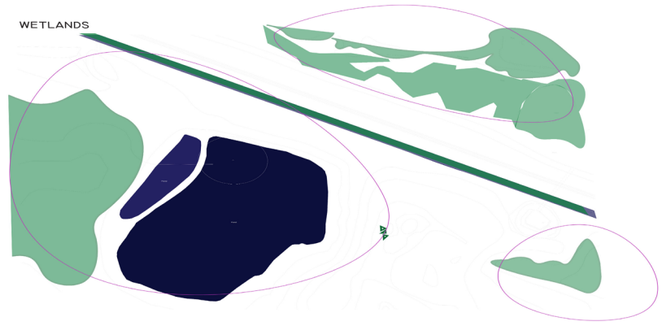
WELLBEING



WETLAND

New Zone of Wetland Plants Replaces the Existing Engineered Edge. Wetland Plant Shelf Filters Surface Runoff and Native Prairie Grasses Establish a Varied Habitat for Native Animals.

WETLANDS

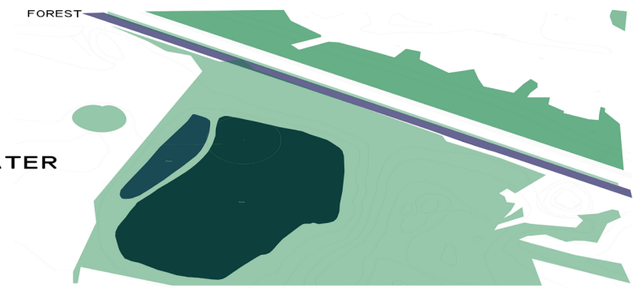


HYDROLOGY

Increasing Pond Depth and Expanding Local Watershed Improves Water Quality and Creates a Balanced Pond Ecosystem. Excavated Fill is Reused to Aid in Surface Flow.

FOREST

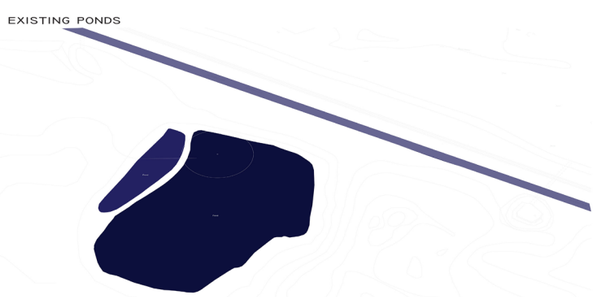
DENSE NEW FOREST LAND PHYTOREMEDIATES/PHYTOEXTRRACTS TOXINS BEFORE THE CONTAMINATED WATER SEEPS INTO THE EXISTING WATERWAYS



EXISTING POND

Fully Engineered Edge, Shallow Pond Depth, & Nitrogen Rich Pollutants Contributed to an Unhealthy Pond and an Unbalanced Ecosystem.

EXISTING PONDS

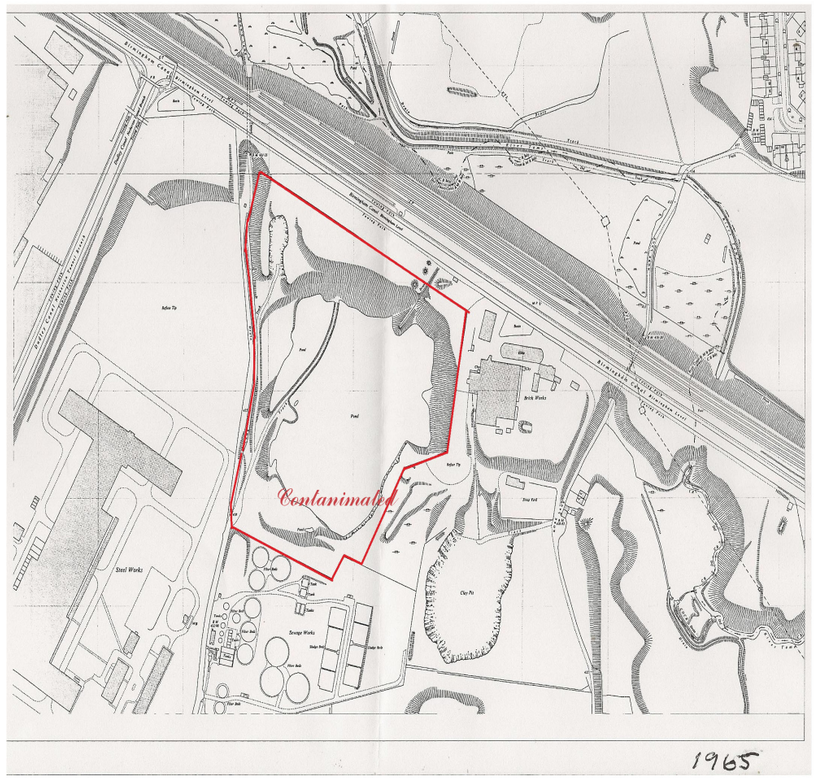


FULLY ENGINEERED EDGE DEEP POND DEPTH & NITROGEN AND (WHITE) PHOSPHATE RICH POLLUTANTS CONTRIBUTED TO AN UNHEALTHY POND AND UNBALANCED

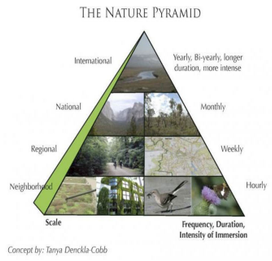
https://www.archdaily.com/83676/lincoln-park-zoo-south-pond-studio-gang-architects/boardwalk-complete/

THE RESTORATIVE LANDSCAPE: TIME

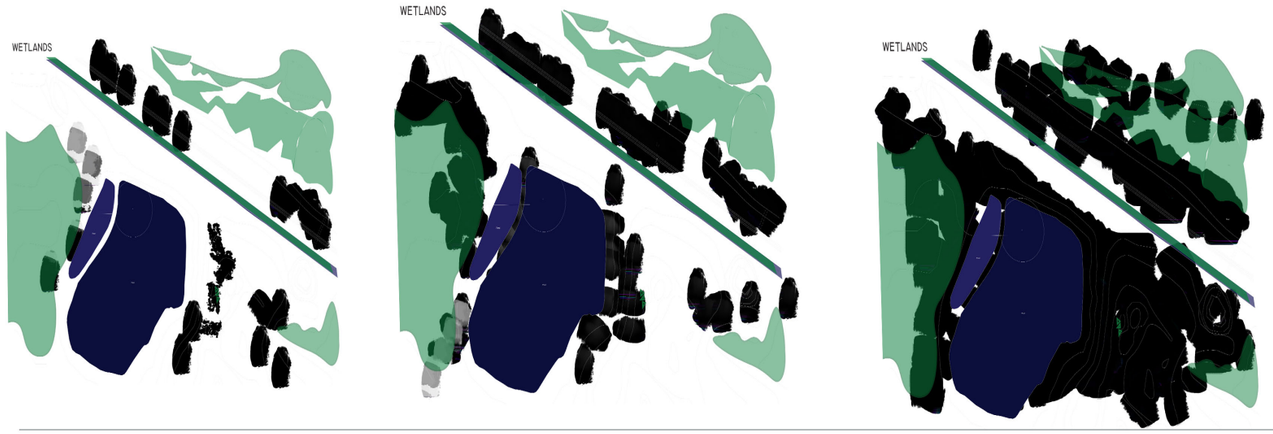
'REGRESSION IN THE SERVICE OF EGO' AS A NECESSARY CONDITION OF DESIGN



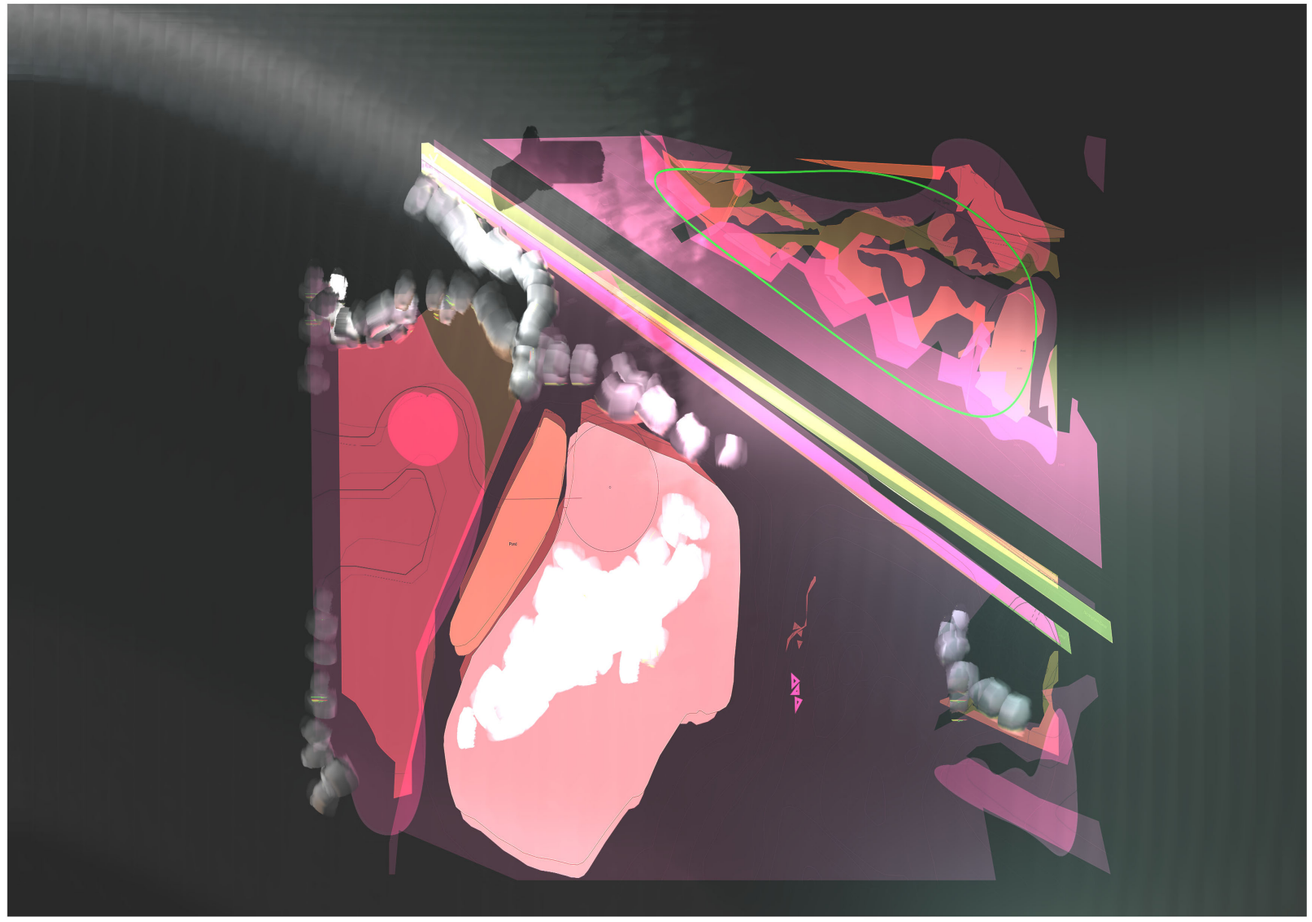
YOU'RE MORE LIKELY TO DIE FROM AVOIDABLE CAUSES IN SANDWELL THAN ALMOST ANYWHERE ELSE IN THE COUNTRY (MORE THAN 2 PEOPLE PER DAY.)
- OFFICE FOR NATIONAL STATISTICS



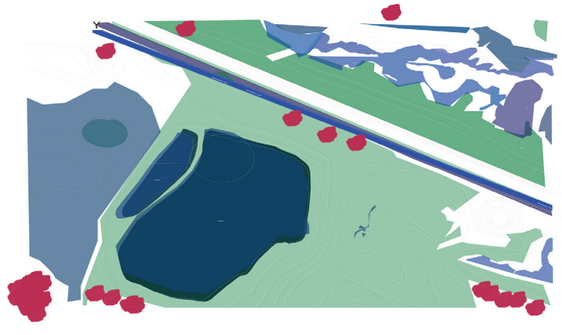
REMEDIATION SUCCESSION



Remediation Goal Met - 150 Years - Contaminant Free



DIGITAL ENGAGEMENT



LEGIBLE LONDON, UK





VORTEX WIND POWER FOR ON-SITE GENERATION

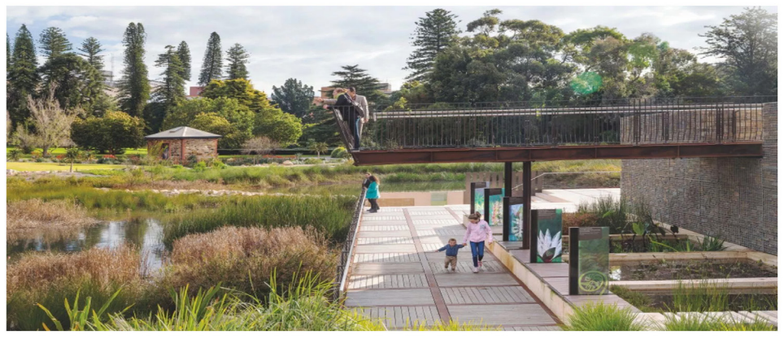


FORMER BP PARK AND BALLAST POINT PARK SIGNAGE, AUSTRALIA



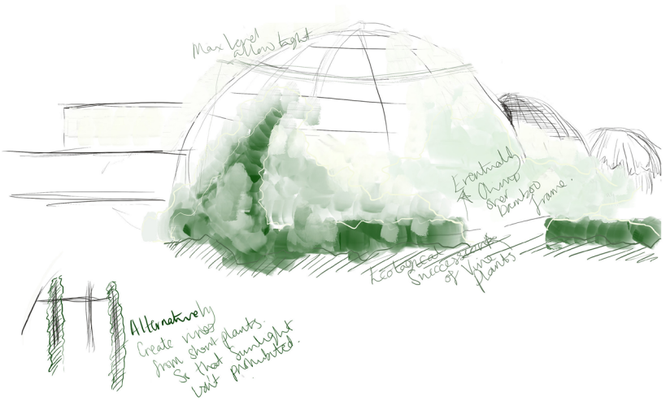


INTERPRETIVE DESIGN AT ADELAIDE BOTANIC GARDEN BY DAVID LANCASHIRE



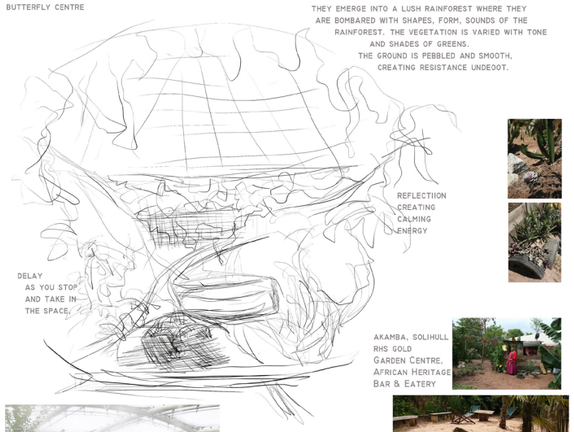


CONCEPTS
THE REINVENTED LANDSCAPE



BAMBOO ECO DOME
RAINFOREST CAFE
BUTTERFLY CENTRE

EXPERIENCE
AS THE CHILDREN EMERGE FROM THE DIMLY LIT TUNNEL, THEY EMERGE INTO A LUSH RAINFOREST WHERE THEY ARE BOMBARDED WITH SHAPES, FORM, SOUNDS OF THE RAINFOREST. THE VEGETATION IS VARIED WITH TONE AND SHADES OF GREENS. THE GROUND IS PEBBLED AND SMOOTH, CREATING RESISTANCE UNDEOOT.



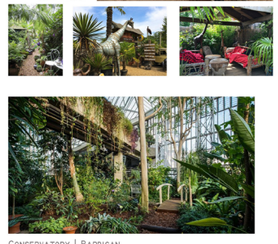
AKAMBA, SOLIHULL
RHS GOLD
GARDEN CENTRE,
AFRICAN HERITAGE
BAR & EATERY



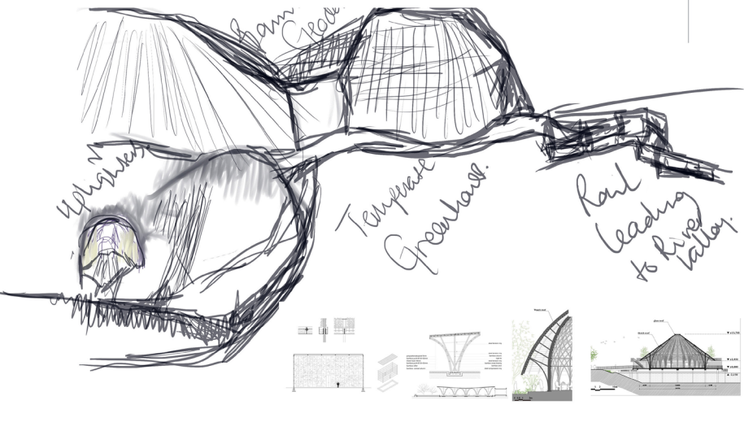
GREENHOUSE IN THE BOTANIC GARDEN
UNIVERSITY OF AARHUS, DENMARK
C.F. MØLLER ARCHITECTS



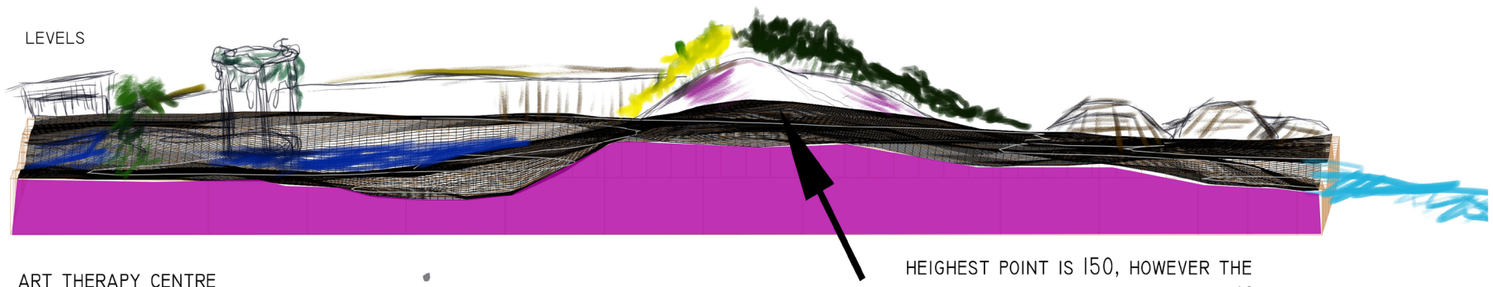




CONSERVATORY | BARBICAN
THE BAMBOO EXOSTRUCTURE WILL ENCASE THE ETFE AND STEEL FRAME.
GREENERY AND PLANTS IN THE BARBICAN CONSERVATORY



LEVELS



ART THERAPY CENTRE
HANGING GARDEN ABOVE THE POND
ELEVATED WALKWAY
FOREST
TEMPORATE GARDENS

HEIGHEST POINT IS 150, HOWEVER THE LAND LEVEL WILL BE INCREASED BY 10M TO IMPROVE THE CHARACTER, WALKABILITY AND CREATE THE HEATHER COVERED MOUND.

THE HANGING GARDENS OF BABYLON



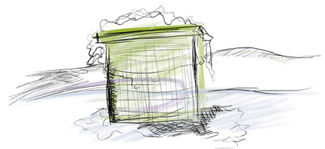






FRANK LLOYD WRIGHT,
GORDON STRONG AUTOMOBILE OBJECTIVE AND PLANETARIUM,
SUGARLOAF MOUNTAIN,
MARYLAND.

ARQUITECTONICAGEO
EXTERIOR LANDSCAPE
DESIGN OF THE PÉREZ ART MUSEUM MIAMI (PAMM) IN MIAMI, FLORIDA.

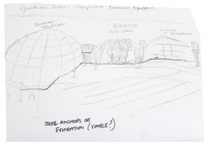


THE HANGING GARDEN REPRESENTS THE HUMAN'S DESIRE FOR PERFECTION, IMMORTALITY, GREATNESS AND SACRED SPACES.

"BUILT ON A LOW TERRACE OF RAMMED EARTH MEANT TO REPRESENT THE SACRED MOUND OF PRIMORDIAL LAND WHICH EMERGED FROM THE WATER ..."



LAKE MEAD, HOOVER DAM





MEMORY -
SINGING CHILDREN'S HYMNS IN A BARN PERCHED ON TOP OF A HAYSTACK, THEN PADDLING IN THE STREAM NEXT TO A FARM WITH HORSES AND COWS FREELY ROAMING THE FIELDS OF WARWICKSHIRE'S COUNTRYSIDE

HOME.

ALL THINGS BRIGHT AND BEAUTIFUL,
ALL CREATURES GREAT AND SMALL,
ALL THINGS WISE AND WONDERFUL,
THE LORD GOD MADE THEM ALL.

EACH LITTLE FLOWER THAT OPENS,
EACH LITTLE BIRD THAT SINGS,
HE MADE THEIR GLOWING COLORS,
HE MADE THEIR TINY WINGS.

THE PURPLE-HEADED MOUNTAIN,
THE RIVER RUNNING BY,
THE SUNSET, AND THE MORNING,
THAT BRIGHTENS UP THE SKY.

THE COLD WIND IN THE WINTER,
THE PLEASANT SUMMER SUN,
THE RIPE FRUITS IN THE GARDEN,
HE MADE THEM EVERY ONE.

THE RIVER TAME, CALLED 'THE BLACK BROOK'

"THE TAME WAS FOUL AS FOUL COULD BE,
WITH SEWAGE BLACK AS DYE;
IT RAN WITH GARBAGE IN THE WET,
AND STANK WHEN IT WAS DRY;
NO FISHES LAY BENEATH ITS BANK –
THERE WERE NO FISH TO LIE.' -
AUTHOR UNKNOWN, 1880



THE SITE WILL HAVE PEBBLED WALLS AND CIRCULAR COBBLED FLOORS AS AN ARGUMENT AGAINST THE CIRCULAR CHEMICAL DRUMS.

"REMNANTS OF OLDBURY'S CHEMICAL INDUSTRIES CAN BE FOUND ALONG THE RIVER; ALBRIGHT & WILSON AND CHANCE & HUNT."

"CORRODING GASES EMITTED FROM THE CHEMICAL WORKS IN THE HEART OF THE TOWN SO COMPLETED THE BLIGHT THAT EVEN GRASS AND THE HARDIEST OF PLANTS FAILED NOT TO SUCCUMB." - 1915, OLDBURY, THE HISTORIAN FREDERICK HACKWOOD

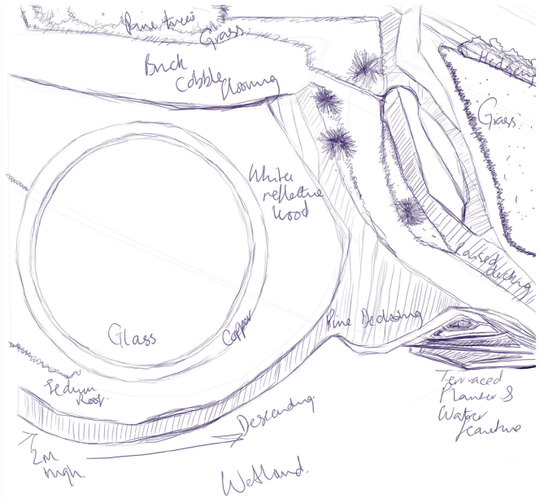
PATHWAY THROUGH THE DEER MOAT
PRAGUE, CZECH REPUBLIC

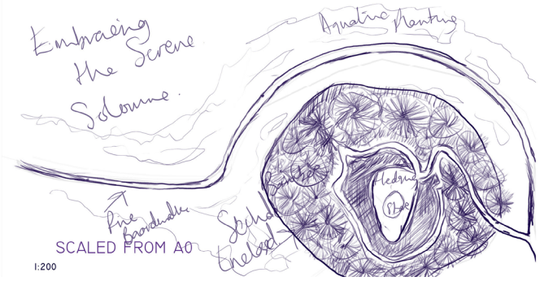


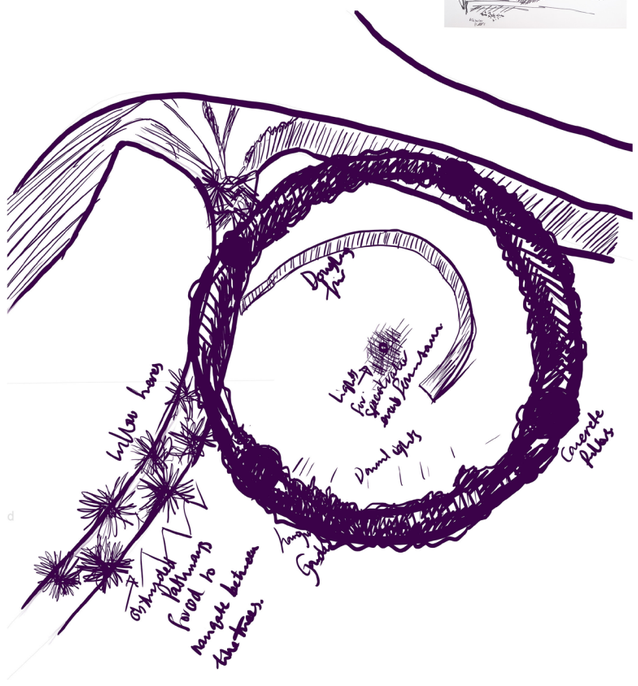












CIRCULAR THEME AS A PROTEST AGAINST THE CHEMICAL EXPLOITATION OF THE LANDSCAPE IN LIGHT OF THE DISCARDED CHEMICAL DRUMS ON THE SITE, CHEMICAL DRUMS USED AS WALLS AND AS A SYMBOL OF CIRCULARITY WITHIN NATURE.

THE RIVER TAME

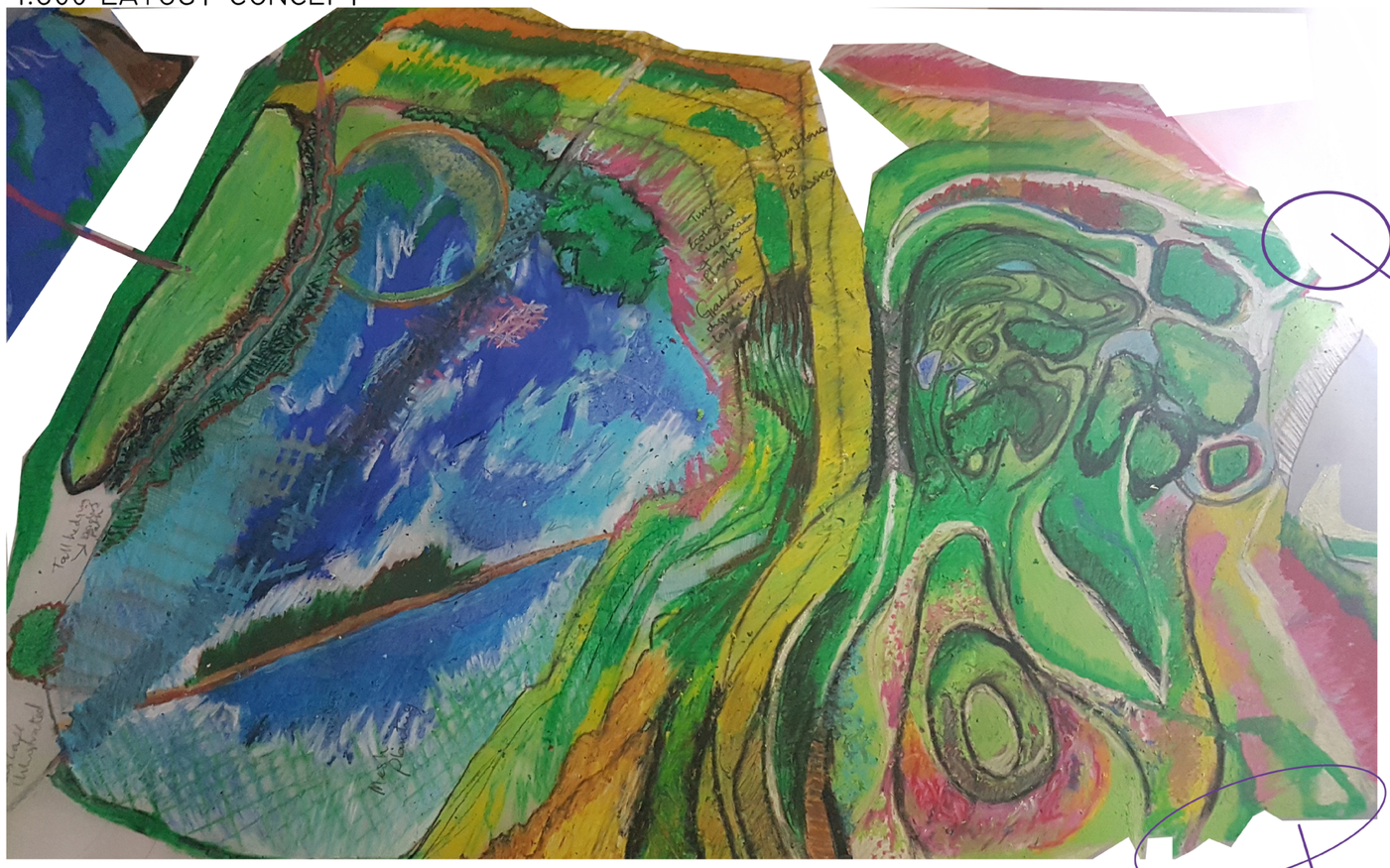


'IT MEANDERS THROUGH THE LANDSCAPE
AS A LIMPID HEM TO A LAWN,
GROVE, GARDEN AND FOREST; NOW FLASHING
A SILVER RADIANCE,
NOW ONE OF GOLD UPON THE ROBE IT ADORNS,
JUST AS THE SUN'S RAYS VARY I
THEIR FALL
AND FLOOD...THE RIVER
FORMS A GREAT BROOCH OF EMERALD, OR A LITTLE
GREEN ISLAND, WHICH MAY
BE TAKEN FOR ITS
COAT OF ARMS.
THEN THE SOFT
AND LEVEL RIVER.
LOOKING HALF ASLEEP
OR CHECKING ITS
FLOW IN THE PRESENCE
OF THESE
...HUMAN ANTIQUITIES...'

ELIHU BURRET
'WALKS IN THE BLACK COUNTRY AND IT'S GREEN BORDER-LAND'1868

IN THE EXTRACT, ELIHU WAS DESCRIBINGTHE SENSATION OF THE RIVER MEANDERING THROUGH THE LICKEY HILLS, BROMSGROVE. HOWEVER, WHAT IF THE BLACK COUNTRY WAS DESIGNED BY NATURE AND WE COULD SAY THE SAME FOR THE BIOPHILIC HEART OF THE BLACK COUNTRY WITHIN THE 'CITY OF MANY LAKES AND RIVERS?'

THE REINVENTED LANDSCAPE
1:500 LAYOUT CONCEPT





ROSE LANE

BEFORE



MOTORBIKE BARRIER

BRICK TUNNEL

EERY, TEXTURED, DARKNESS

UNSETTLED SAND BUILD UP- REMNANTS FROM HISTORICAL CLAY FOUNDRY. STEP HAD BEEN PLACED IN 2017, HOWEVER IT HAS BEEN COMPLETELY COVERED BY THE SAND.

DISCARDED METAL WIRE. VISUAL INTEREST CHILDREN DRAWN TO IT. DESPITE DANGER

PEDESTRIAN TUNNEL PROPOSAL



MOSAIC TILED COVERED INNER TUNNEL

THERE WILL BE MOTIONED SENSORED LED'S IN THE CENTRE OF THE TUNNEL, WHICH REFLECT FROM COLOURED MIRRORS, MOSAIC/COBBLED PAVING THE GROUND WILL BE LOWERED WITH A BORDERED MOSS AND MUSHROOM RED. ONCE THE CHILD NEARS THE EXIT, THEY WILL SEE GREEN VEGETATION AND HEAR SENSORY SOUNDS OF NATURE
BUT IT WILL ONLY AS THE CHILD EMERGES WILL THE TRUE SCOPE OF THE SPACE BE REVEALED AS THEY ARE DRAWN INTO A TROPICAL 'SECRET GARDEN' WHICH FORCES THE CHILD TO LOOK UP AT THE VASTNESS OF THE SPACE. AHEAD, SEVERAL METERS AWAY IS A DEAD END, WHERE THE ONLY ALTERNATIVE IS TO CLIMN THROUGH THE PLANGTS IRREGULAR TERRACING, VIA A RAMP WHICH WINDS AROUND THE CRATERED SPACE OR A METAL SPIRAL STAIRCASE WHICH CREATES A SECOND LEVEL..
VIEWING STATION WITHIN THE SPACE.

USING THE SITE'S UNIQUE TOPOGROPHY AS REFERENCE AND COLOUR THEORY WITHIN ART IN CREATING A SPACE WHICH PROMOTES WELLBEING AND GOOD HEALTH. THE TUMBLING CONTOURS, (BOTH ARTIFICIAL AND NATURAL) WITHIN EACH SPACE, ENABLE VISITORS OF THE SITE TO BE ACTIVE. FURTHERMORE, THE REWILDED LANDSCAPE ACTS AS A BARIER AND CLEANSER TO THE CONTAMINATED LAND.

VIEW FROM EXISTING NEWBUILD ESTA



AOKIGAHARA 青木ヶ原
SEA OF TREES 樹海, JUKAI



INCREASE COLOUR VARIATIONS

INCREASE SITE ELEVATION

IMPROVE PLANTING FOR BIODIVERSITY

ADD GREEN WIND AND ELECTRICITY

SUITABLE FOR DOMESTIC SITES

CREATE A MORE STREAMLINED ENTRANCE INTO THE SITE

PRIORITISE THE PATHWAY AND EMPHASISE

THE SENSE OF DIRECTION BY CREATING AN ATTRACTIVE PATHWAY VIA ROSE LANE

CREATE OPPORTUNITIES FOR PLAY

PRECEDENCE:

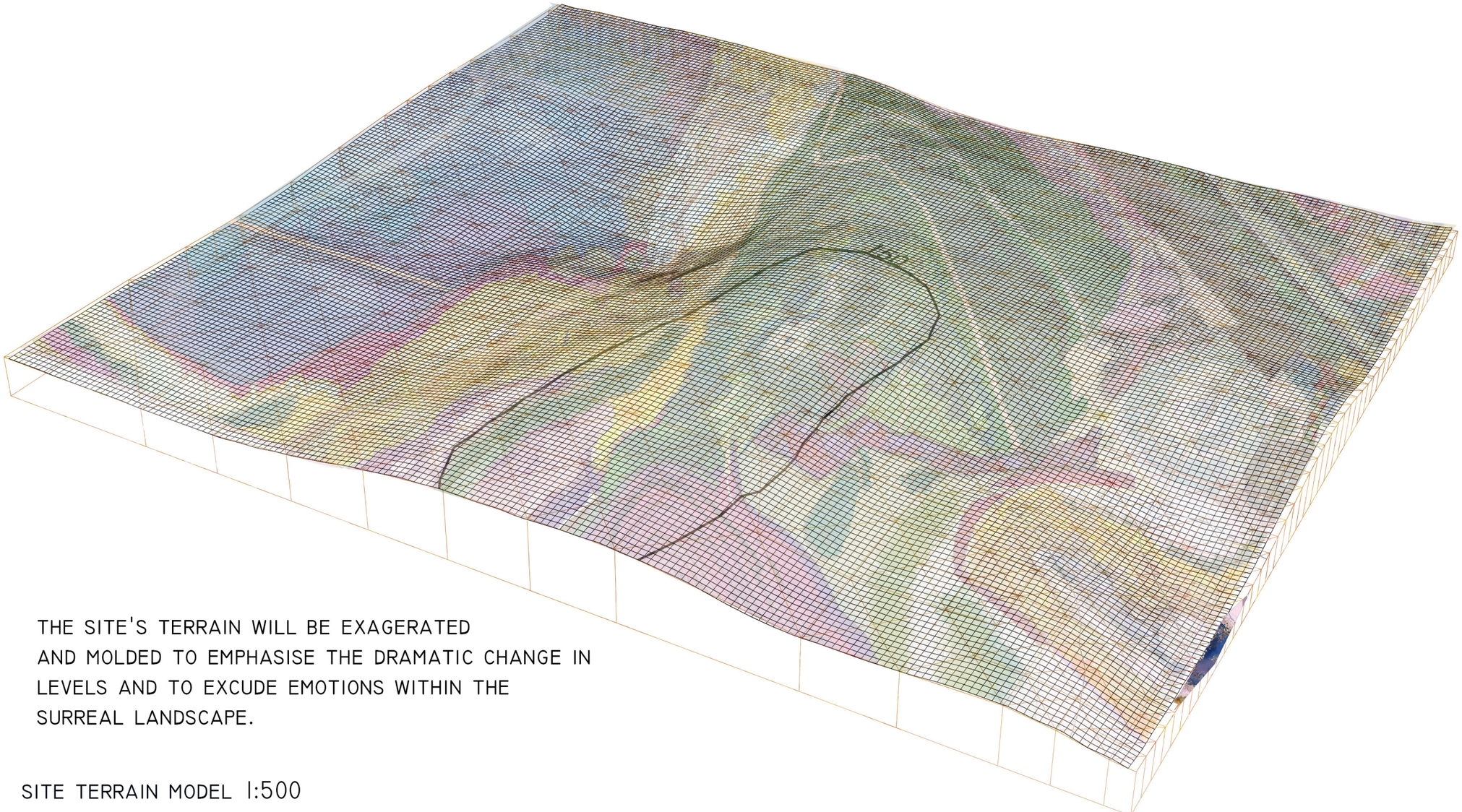


CASA SPERIMENTALE,
AN EXPERIMENTAL CONCRETE TREEHOUSE
GIUSEPPE PERUGINI AND UGA DE PLAISANT



XILITLA, MEXICO
LAS POZAS

EPHEREAL SECTRET WORLD, SUBLIME, SURREAL LANDSCAPE, BUILT FORM MERGES WITH



THE SITE'S TERRAIN WILL BE EXAGERATED
AND MOLDED TO EMPHASISE THE DRAMATIC CHANGE IN
LEVELS AND TO EXCUDE EMOTIONS WITHIN THE
SURREAL LANDSCAPE.

SITE TERRAIN MODEL 1:500

Art Therapy Centre

Trainline

Dense Woodlands

River Tame

Cascading Wetlands

Freshwater Marshes

Birmingham Canal

Cycle Route 81

Cacoon Garden

Pier

Elevated Wetlands

Elevated Pathway

Research Centre

Moss Garden

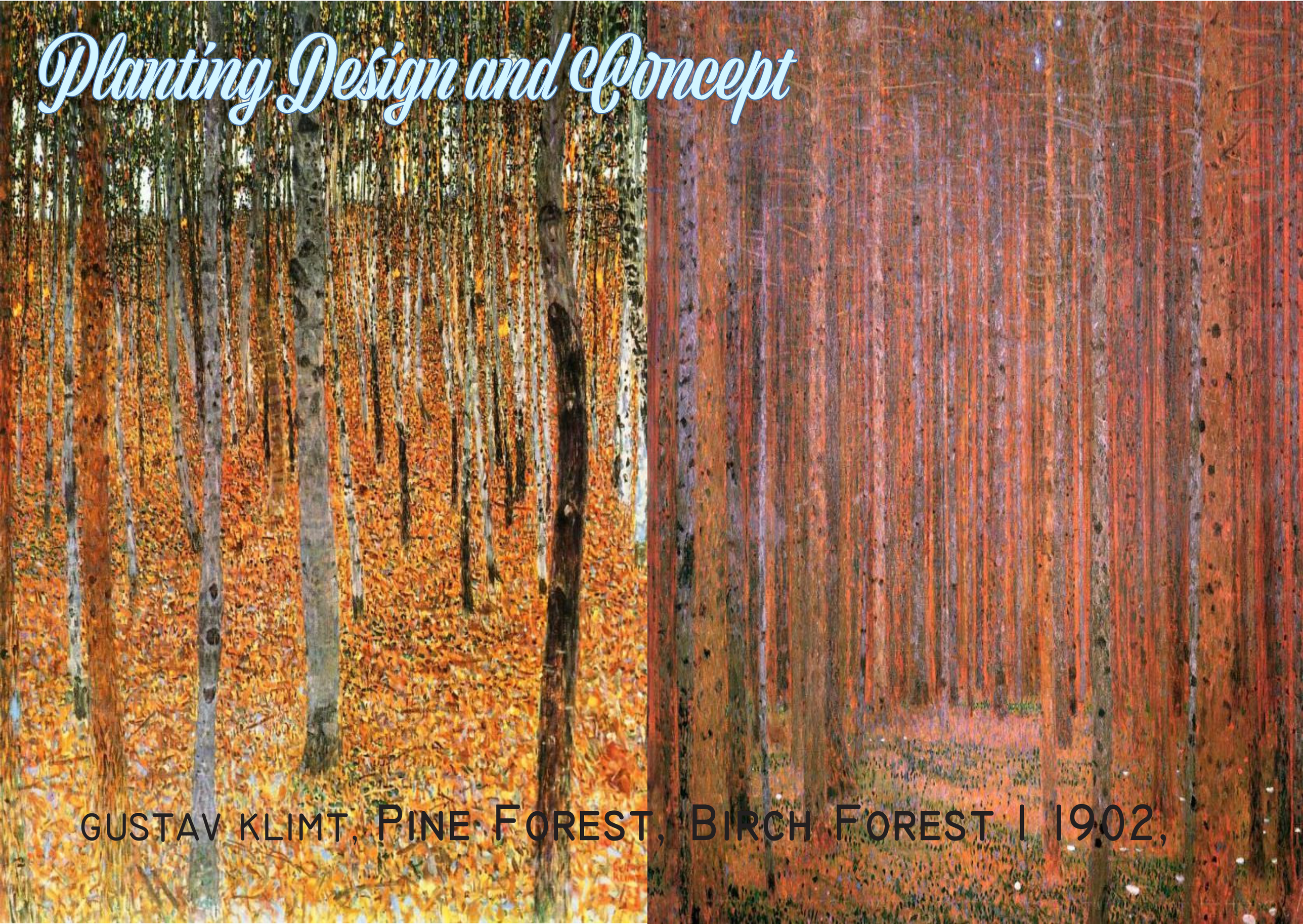
Dense Woodlands

Descending Wetlands

River Tame

1:500

Planting Design and Concept



GUSTAV KLIMT, PINE FOREST, BIRCH FOREST I 1902,

SWALE
GRASSLAND

PLANTING STRATEGY

ART THERAPY CENTRE

INTERIOR LANDSCAPE

GRASSLANDS

MOSAIC LANDSCAPE LEAPING FROM THE RIVER AND IT'S MEADOWS TO BEING FORCED ALONG THE PEBBLED MEMORIAL WALL, CONFRONTED BY SEGMENTED WETLANDS INTO DEEP WOODLANDS MET BY

PRAIRIE, TUMBLING, SOFT NATURALISTIC GRASS AND FLOWER MIXED COVERED HILLS

WET MEADOW

DISTINGUISHING FORM
BILLOWING, FLOATING MEADOW
WETLANDS DRIFTING DOWNSTREAM

SHAPE/FORM

TREATMENT
WETLANDS

PROTECTIVE HILLS, SWALES AND MEADOW
MIMICKING THE COLOUR, TONE,HUE AND
CONTOURS OF THE NATURALISED
RIVER,AND IT'S SURROUNDING WETLANDS

EDGE

LAYERS

ASPEN WOODLANDS

BIOPHILIC JEWEL

JOY AS THE CHILDREN SMELL THE HERBESCENT PLANTS

SOFT AND CLOUDY

SCREEN

STRETCHED WOODLAND
EDGE
DENSE WOODLANDS

PICTORAL

RAILWAY OVERPASS BUFFER

WALK ON THE CANAL
SMELL THE AQUATIC PLANTS

TREATMENT WETLAND

ANOMOLY

HANGING GARDEN

VERTICAL FORMS
CONTRAST WITH
THE WEEPING
WILLOW

IMPRESSIONISTIC

FLOWING
CLUMPS
BETWEEN
THE GRASS

SMART,VAST, COMPACT, DISTINCT

REMEDIATION BASIN
FLOATING WETLANDS

HAZY LAYER

DESCENDING
WETLANDS

ALLEGORICAL
MOSS GARDEN

AFFOREST

HIDE AND SEEK

TEMPORATE
GARDEN
(GREENHOUSE)

PAULOWNIA TOMENTOSA
TUNNEL

ASPEN HYBRID FOREST

FRESHWATER SWAMP
TO BREAK THE RIVER'S
EDGE

PLANTS PEEKING
BETWEEN THE
STONES

SUN DAPPLED

SCULPTURAL BORDERS

EXPERIMENT
HUB SECTIONED
LANDSCAPE

SPONGE MOUNTAIN

ENCLOSED SPACE
MEDIUM HEIGHT WOODLAND SHRUBS AND FLOWERS
LOG PILES FOR SEATING AND BIOMASS
TALL EVERGREEN TREES FOR SCREENING - RAILWAY BUFFER ALLOWING CONTINUITY OF THE TWO SPACES

ARCHITECTURAL
GRASSLANDS

PRAIRIE MEADOW
CLUMPING, WOODLAND MIX

WETLAND
MEADOW

ASPEN WOODLAND CORE
DENSE CARPET FLOOR

BAMBOO
SCREENING
QUIET

WETLANDS

WILLOW - SALIX SPECIES
PHYTOEXTRACTION EXPERIMENT
DENSE CANOPY OVER PATHWAY

VERTICAL
GARDEN AND
WETLAND

FRESHWATER
SWAMP

FLOATING AND SITUATED WETLANDS
CONTINUE 2012'S REMEDIATION
PROCESS AND
RESEARCH THE EFFECTS OF
PHYTOREMEDIATION USING
HYPERACCUMULATOR PLANTS

SALIX X SEPULCRALIS
SALIX BABYLONICA

DENSE TREE CANOPY,
GLOOMY SPACE
DAMP, LIMITED LIGHT,
THRIVING REWILDING
AS THE ALGAE SPREADS

ASSYMETRICAL SHAPES

BAMBOO
SCREENING

ORNAMENTAL
TREE TUNNEL
WITH CONNECTIONS

ASPEN WOODLAND
ARTILLERY WITH
NATURALISTIC DIVERSION TO
THE CANALISED RIVER.
MARSH EDGES

JOHNS LANE
VARIED HEIGHT PLANTS

HEATHER CARPET

SCENTED
ROSE LANE

1:500

PLANTING PLAN

PHYTOREMEDIATION OF CHRONIUM, ARSENIC, CADMIUM, CESSIUM
LEAD, ZINC & PHOSPHOROUS

1. ROSE LANE

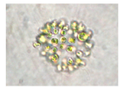

ROSA


PAULOWNIA TOMENTOSA


SYRINGA VULGARIS

2. WATERBODIES - RIVER, DRAINS, CANAL, WETLANDS, LAGOON


PHRAGMITES AUSTRALIS /KARKA


MICROCYSTIS SP (LAGOON ONLY)


AZOLLA CAROLINIANA

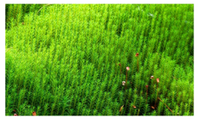

POTAMOGETON CRISPUS


STRATIOTES ALOIDES


PISTIA STRATIOTES


NYMPHAEA (VARIETY)

3. MOSS GARDEN


S. ACUTIFOLIA


MNIUM HORNUM


DICRANELLA HETEROMALLA


CORTINARIUS VIOLACEUS


ARAUCARIA ARAUCANA


PINUS SYLVESTRIS


CRYPTOMERIA JAPONICA


ACER PALMATUM

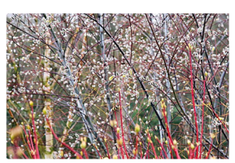
4.JOHNS LANE AND NORTH SIDE OF THE LAGOON

EXPERIMENT OF THE EFFECTIVENESS OF WILLOW VARIETIES
AND THE PHYTOREMEDIATION OF CHRONIUM ARSENIC CADMIUM CESSIUM LEAD ZINC PHOSPHOROUS


SALIX ALBA L


(HYBRID)
1.SALIX × SEPULCRALIS
2.POPULUS TREMULA × POPULUS TREMULOIDES


SALIX ACUTIFOLIA


SALIX SCHWERINII


SALIX BABYLONICA

5.WOODLAND MEADOW, PATHWAYS AND CYCLE ROUTE


HYBRID ASPEN (POPULUS × TREMULOIDES


MAGNOLIA GRANDIFLORA


SORGHASTRUM NUTANS


FESTUCA GLAUCA


LAMPROCAPNOS SPECTABILIS


L.SPECTABILIS 'ALBA'


HELLEBORES


GALIUM ODORATUM


SILENE DOCA

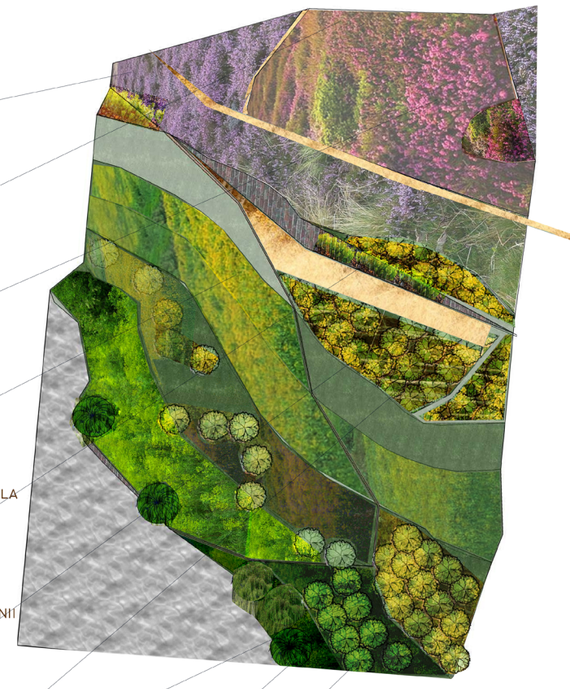

TIARELLA


PHLOX DIVARICATA


EPIMEDIUM 'FROHNLEITEN'

6.PURPLE HILL

EDGE OF LAGOON



CALLUNA VULGARIS



DABOECIA



ERICA CARNEA



BRASSICA JUNCEA L



BRASSICA OLERACEA ACEPHALA

EUPHORBIA CHARACIAS WULFENII

POPULUS TREMULA × POPULUS TREMULOIDES (HYBRID)

SALIX ALBA L

HELIANTHUS ANNUUS L.

EFFECTIVE HYPERACCUMULATOR OLANTS

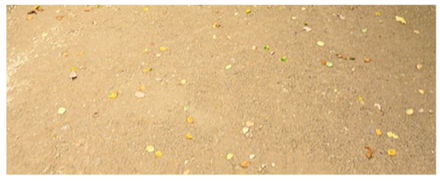


MATERIALS

SANDSTONE BLOCKS



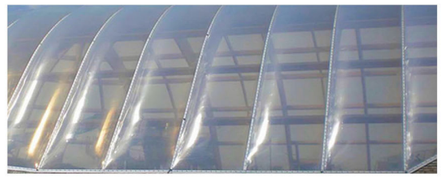
SANDSTONE GRAVEL



CLAY BRICK PAVING



ETFE, (ETHYLENE TETRAFLUOROETHYLENE)



BAMBOO



DOUGLAS FIR DECKING



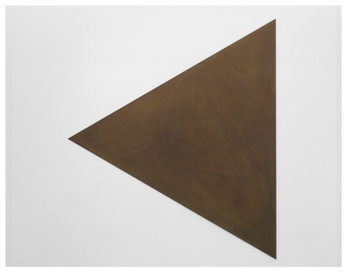
CLAY, GLASS MOSAIC



COBBLESTONE (FLOOR)



COR-TEN STEEL



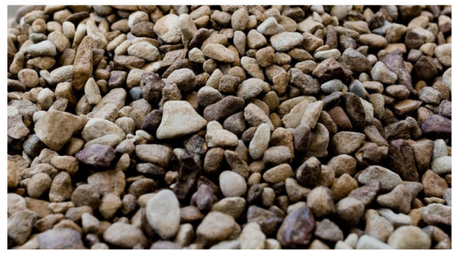
LARGE COBBLESTONE (WALL)



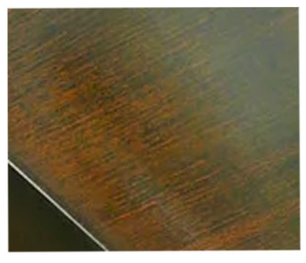
PORTLAND STONE



SANDSTONE PEBBLES



RUSTED STEEL (COATED)



MATERIALS SPECIFICATION

PRECEDENCE GREENFIELD OVERKILL

'RECLAIMING A TOXIC LEGACY THROUGH ART & SCIENCE'

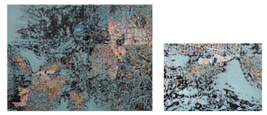
MAPPING

WILLAMETTE RIVER HISTORICAL STREAM CHANNELS, OREGON,
17 X 38 INCHES, 2013, DANIEL E. COE



PROJECT: THIS LIDAR IMAGE OF THE WILLAMETTE RIVER WAS ORIGINALLY THE RESULT OF VISUAL EXPERIMENTATION WITH COLOR RAMPS AND LIDAR ELEVATION RANGES. THE IMAGE IS A DIGITAL ELEVATION MODEL OF THE CENTRAL WILLAMETTE VALLEY FROM MONMOUTH/INDEPENDENCE IN THE NORTH TO ALBANY IN THE SOUTH. THE REPRESENTATIVE COLORS ARE COMPRESSED TO A 50-FOOT ELEVATION RANGE FROM WHITE IN THE LOWER ELEVATIONS TO DARK BLUE IN THE HIGHER ELEVATIONS.

MY WHOLE FAMILY IS FROM PHILLY, 2014, MARK BRADFORD
MIXED MEDIA ON CANVAS, PHOTO: EDUARDO ORTEGA



ART

REVIVAL FIELD – MEL CHIN
1991-ONGOING

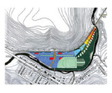






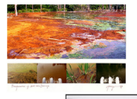


MEL CHIN REVISITING ST. PAUL AND THE SITE OF "REVIVAL FIELD" IN 2017.























VINTONDALE RECLAMATION PARK,
DIRT STUDIO, VINTONDALE, PENNSYLVANIA, USA,
1994-2004

35 ACRES OF ENVIROMENTALLY DEVASTATED FLOODPLAIN
ACID MINE DRAINAGE - PREVIOUSLY A VINTON COLLIERY
AMD- BIGGEST ENVIROMENTAL PROBLEM IN THE REGION
DESIGNERS, ARTISTS, SCIENTISTS, HISTORIANS, LOCAL COMMUNITIES
COLLABORATIVE DESIGN AND BUILD TO RECTIFIY SOCIAL ABANDOMNENT TO THE MINE

STRATEGY - REMEDIATION THROUGH A PASSIVE WATER TREATEMENT SYSTEM

HTTPS://ORIONMAGAZINE.ORG/ARTICLE/RECLAIMING-A-TOXIC-LEGACY-THROUGH-ART-AND-SCIENCE/

POST INDUSTRIAL REMEDIAL PROJECTS







BAYTON NATURE CENTRE, SWA,
BAYTOWN, TEXAS, USA 1977

MARSH, WETLANDS RESTORATION

"LANDSCAPE SHOULD BE SEEN AS THE PRIMARY INFRASTRUCTURE WHICH CREATES VALUE DIRECTLY AND INDIRECTLY."
FARRELL REVIEW

"NATURE CANNOT BE MANAGED, NOT BECAUSE WE LACK MANAGEMENT INTELLIGENCE, BUT BECAUSE MANAGED THINGS ARE ARTIFACTUAL, THAT IS, PRECISELY NOT NATURAL (THEY ARE CULTURAL); AND ANY AND EVERY ATTEMPT TO PASS OFF THE CULTURAL AS THE NATURAL NECESSARILY MOBILIZES THE GRAND EDENIC ILLUSION WITH ALL ITS FEINTS."
DENNIS WOOD, UNNATURAL ILLUSIONS (1998)









DUIRSBURG- NORD LANDSCAPE PARK,
LATZ & PARTNER, DUISBERG, GERMANY, 1990-2002

FORMER IRONWORKS AND BLAST IRON FURNACE PLANT INTO A DRAMATIC 568 ACRE LANDSCAPE PARK.









ZHONGSHAN SHIPYARD PARK, TURANSCAPE 2001-2002

1950'S SHIPYARD AND BROWNFIELD SITE NATIVE PLANTS AND BENEFICIAL WEEDS















THE HORSELEY CO., LTD., TIPTON, STAFFORDSHIRE,

MAKERS OF

GASHOLDERS & GAS PLANT.

PURIFIERS, SCRUBBERS, CONDENSERS, WASHERS, TANKS, VALVES,

PIPES, LAMP PILLARS, RETORT-FITTINGS, ETC.

ALSO ALL KINDS OF

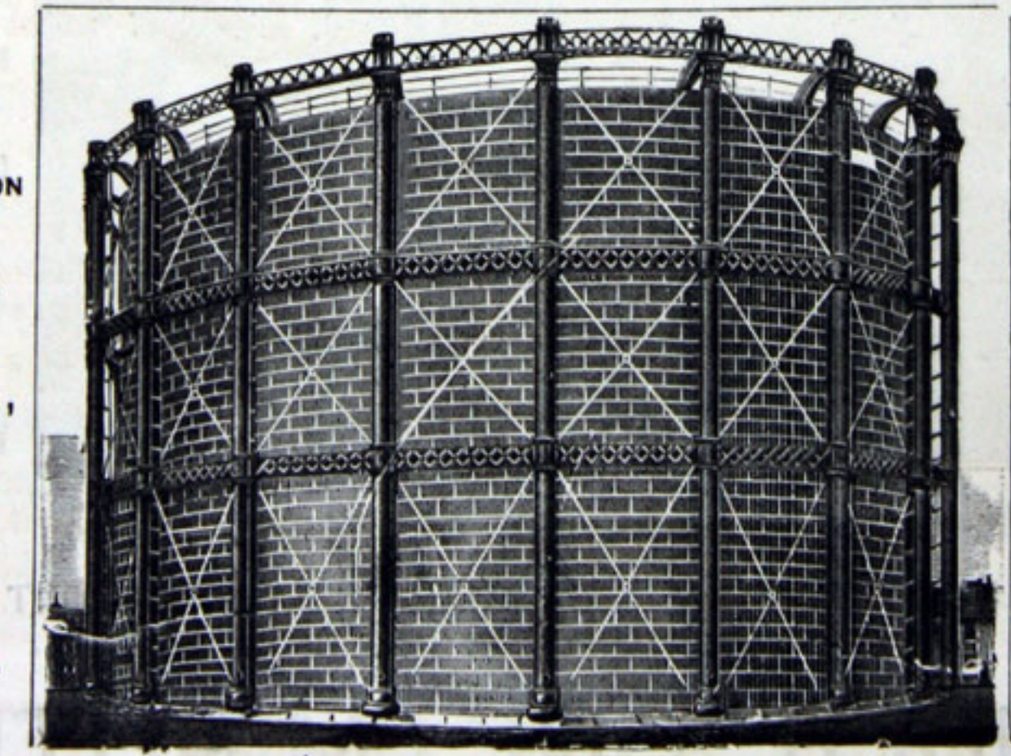
STRUCTURAL IRON

AND STEEL WORK.

BRIDGES,

ROOFS,

PIERS, ETC.



WORKS AND HEAD OFFICE

TIPTON,

STAFFORDSHIRE

LONDON OFFICE:

11, VICTORIA ST.,

WESTMINSTER.

TELEGRAPHIC ADDRESSES

"HORSELEY, TIPTON."

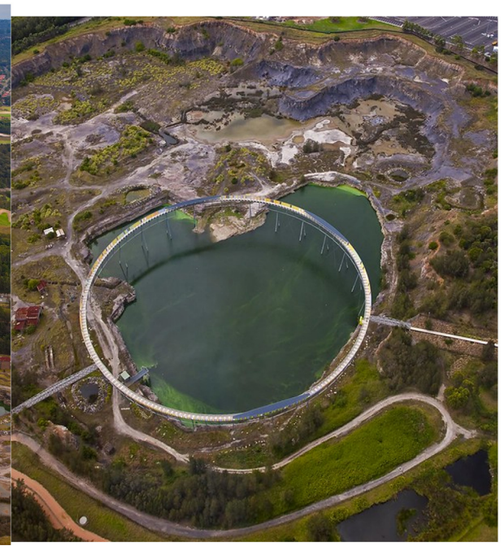
"GALILEO, LONDON.

RATTLECHAIN LAGOON PRECEDENCE

SENSITIVE DESIGN - EXTENDING BEYOND THE REACHES OF THE IMMEDIATE SITE
SOURCING, EXTRACTING, PROCESSING AND THE TRANSPORTATION OF MATERIALS.









PETER LATZ
RECLAIMING AND REWILDING



100 YEARD OF PRODUCTION AND PRODUCED 3 BILLION BRICKS. THE BRICKWORKS CLOSED IN 1988 TO BE COLONISED BY THE ENDANGERED GREEN AND GOLDEN BULLFROG. INITIALLY PROPOSED FOR THE GAMES' TENNIS FACILITY.
A $6.5 MILLION DESIGN 18.5M HIGH ARIAL WALKWAY AND OUTDOOR EXHIBITION BUT EXCLUDES GROUNLEVEL ACCESS. FROG POPULATIONS EXPANDED TO 700 IN 15 FRESHWATER PONDS FEATURING BOULDER SHELTERS, GRASSES AND REEDS.
THE BRICKPIT RING WALK AT THE SYDNEY OLYMPIC PARK, AUSTRALIA (2005); PHOTO FROM DURBACH BLOCK ARCHITECTS

THE NATIONAL GRID IS DISMANTLING THE DISTINCTIVE GRIDS OVER THE NEXT 20 YEARS. THE AIM IS TO UTILISE THE RUSTING GAS HOLDER - STARK SYMBOLS OF A BYGONE AGE WITHIN THE CITY SKYLINE, REMNANTS OF THE INDUSTRIAL REVOLUTION, INSPIRED BY BIRMINGHAM ENGINEER WILLIAM MURDOCH WHO DISCOVERED GAS LIGHTING.
THE GRIDS, AESTHETICALLY A UNIFORM, MONUMENTAL AND PARADOXICAL OBJECT -
BOTH DELICATE AND FOREBODING AS A FRAME FOR THE FLOATING WETLANDS, VERTICAL PLANTING AND ALSO LIGHT INSTALLATIONS.

THE INTENTION CONTRASTS FROM THE BRICKPIT RING WALK, AS THE AIM IS TO CREATE A SPACE OF ENCLOSURE, OVER TIME,
THE GRID ITSELF BECOMES ENGULFED WITH VEGETATION. THIS INCLUDES BOTH DENSE FLOATING WETLANDS AND THE TRAILING PLANTS WHICH HANG FROM EACH SECTION OF THE GRID. AS THE PROCESS OF REMEDIATION ENABLES THE WATER TO DETOXIFY, THE STRUCTURE WILL GRADUALLY CHANGE FORMS DEPENDING ON THE PLANT GROWTH RATE AND SELECTION.

THE GAS HOLDER WILL HAVE A FLOATING BOARDWALK AND ELEVATED JETTY WITH A WINDING METAL STAIRCASE WHICH GIVES THE VIEWER
A WIDER VIEW FIELD OF THE BIOPHILIC URBAN EDGES OF THE SITE AND BEYOND. THE GRID WILL BE BALANCED ON 150FT UNDERWATER CONCRETE BLOCKS AND PILLARS. THE GRID WILL BE A SAFE REFUGE FOR BIRDS RATHER THAN THE CONTAMINATED LAGOON DURING THE REMEDIATION PROCESS.

THE LOCATION OF THE GAS HOLDER WAS SPECIFIED DUE TO THE EXPANSE OF THE SITE IN COMPARISON TO THE GASHOLDER ENSURING IT DOES NOT OVERWHELM IN ITS DOMINANCE - HAVING A LANDSCAPE THAT FRAMES THE GAS HOLDER. FURTHERMORE, THE SITE CURRENTLY HAVING DETERIORATING,
DISCARDED TOXIC SEWAGE DRUMS DAPPLED THROUGHOUT THE SITE AND ALSO THE USE OF CHEMICAL DRUMS AS RIVER WALLS.



WASHWOOD HEATH GAS HOLDER/GASOMETERS:BIRMINGHAMMAIL

BIRMINGHAM CITY University

ALGAE POND

RATTLECHAIN LAGOON

Ordnance Survey | Sandwell | Birmingham City Council | The Wildlife Trusts Birmingham & Black Country

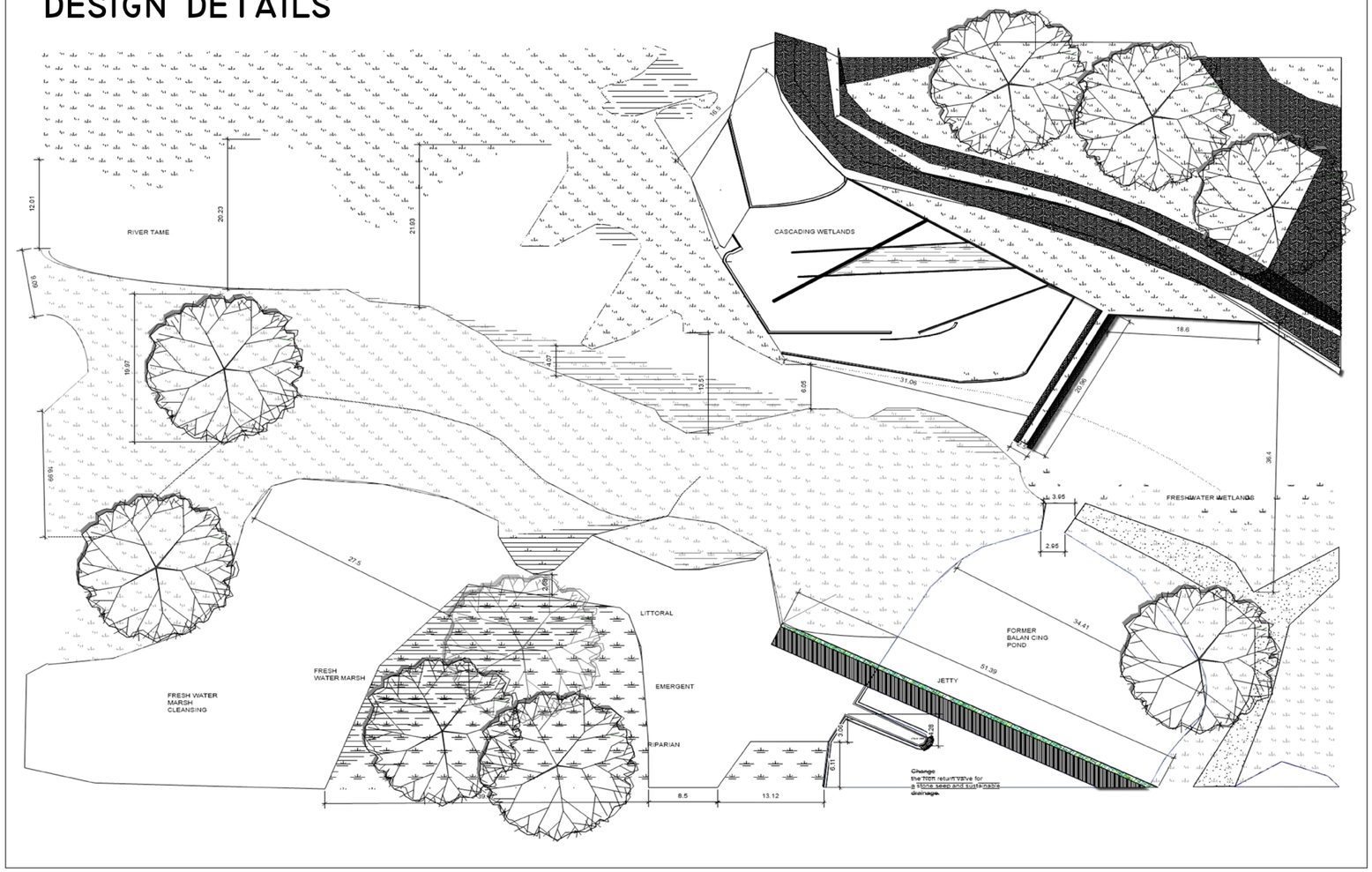
Scale 1:200

0 2 4 6 8 10 12 14 16 18 20 m

Projection: British National Grid

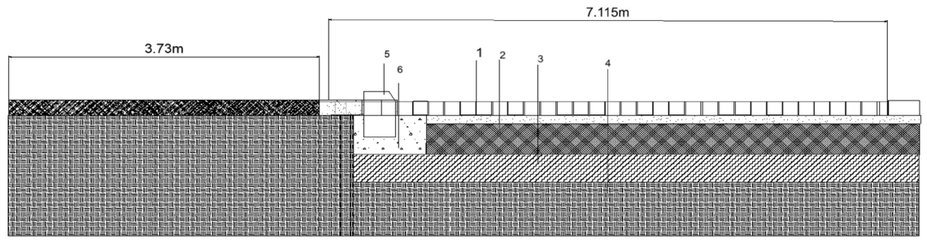
May 07, 2019 15:33
Chandelle Harris
Birmingham City University

DESIGN DETAILS



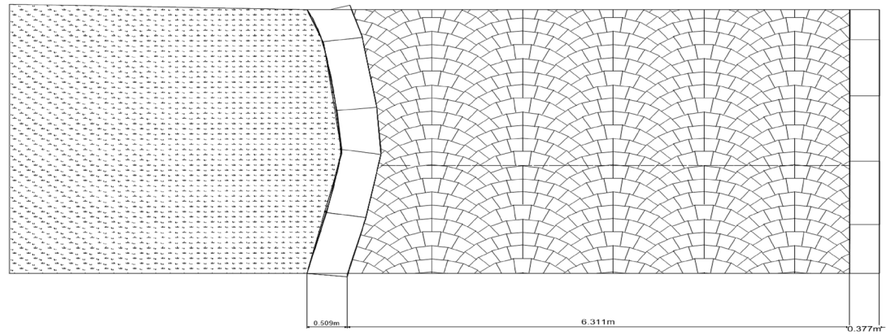
1:200 RESIZED FROM A1

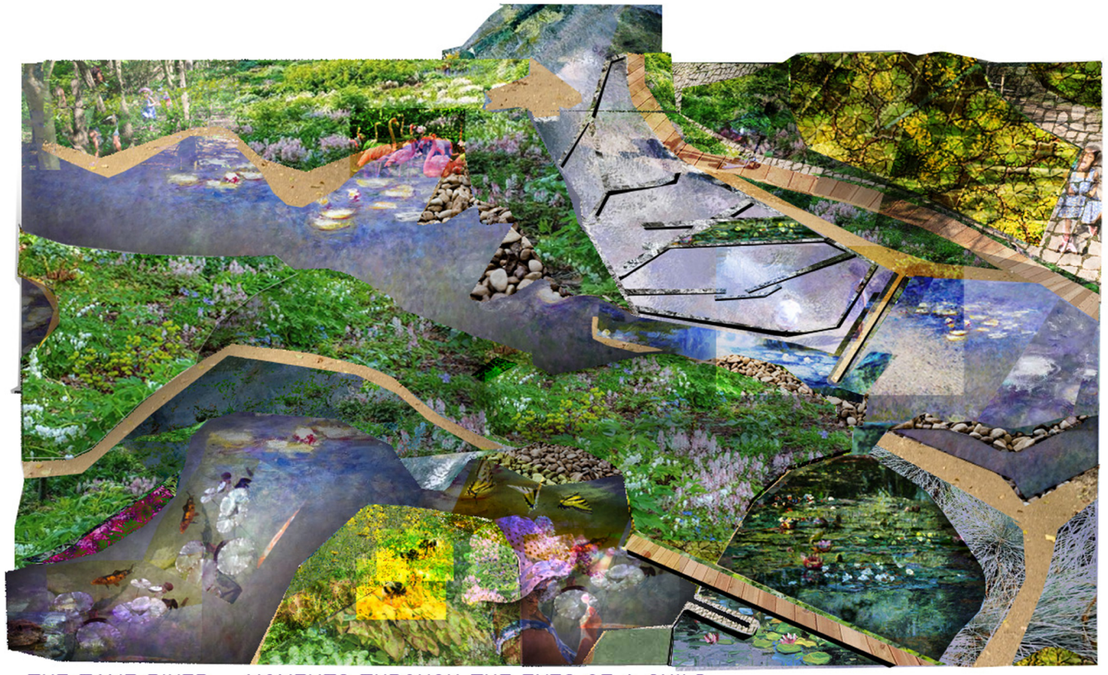
1:10 RESIZED FROM A0



1. 8cm clay paving on 0/3 crushed sand, 4cm
2. 0/32 ballast base course, 15cm
3. 0/45 frost protection course, 18cm
4. Building ground as subsoil
5. High curb, made from 15x30 concrete
6. 16x16x4 gutter channel
7. Vegetation

Figure 1: Paved surface, standard construction according to RSto for load class 0.3 and F2 soil
Integrate SUDS where necessary.





THE TAME RIVER - MOMENTS THROUGH THE EYES OF A CHILD

THE BLACK COUNTRY URBAN BIOPHILIC PARK

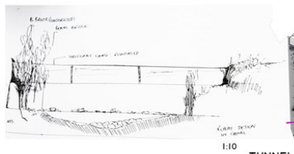
1:100 RESIZED FROM A1

DETAILED DESIGN OF THE CONNECTIONS INTO THE SITE



1:20

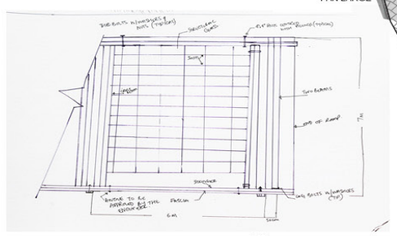
SLIDING DECKING
12" LAP



1:10

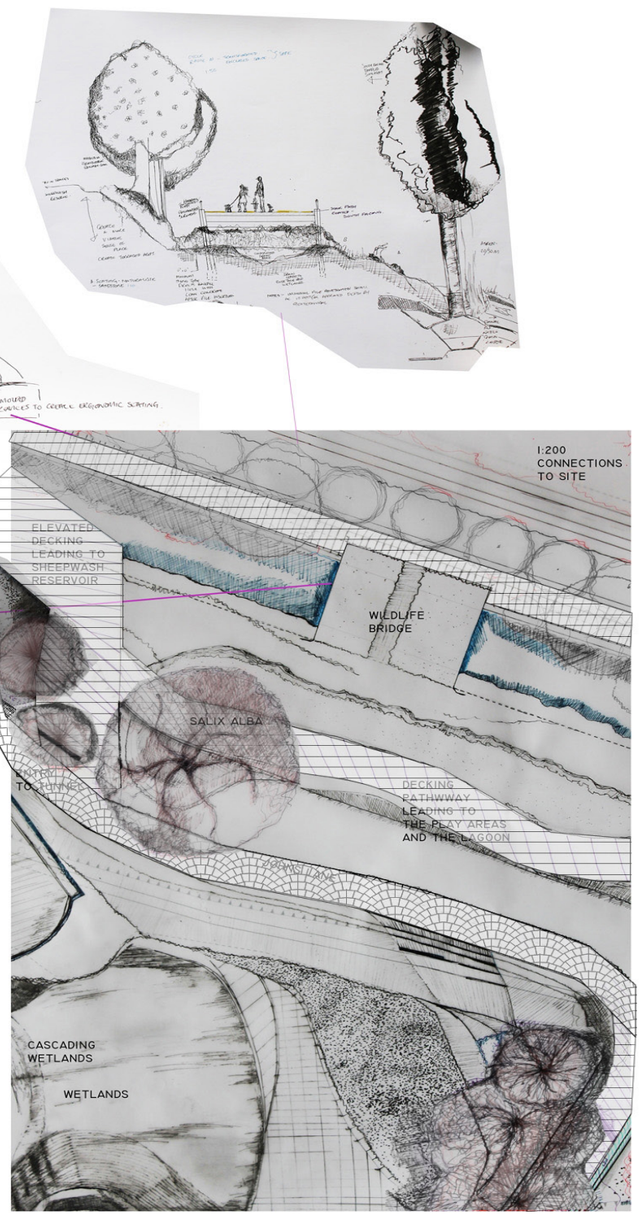
TUNNEL

PAVER
FAN LARGE



1:10

PLAN VIEW OF A SECTION OF CYCLE ROUTE 81



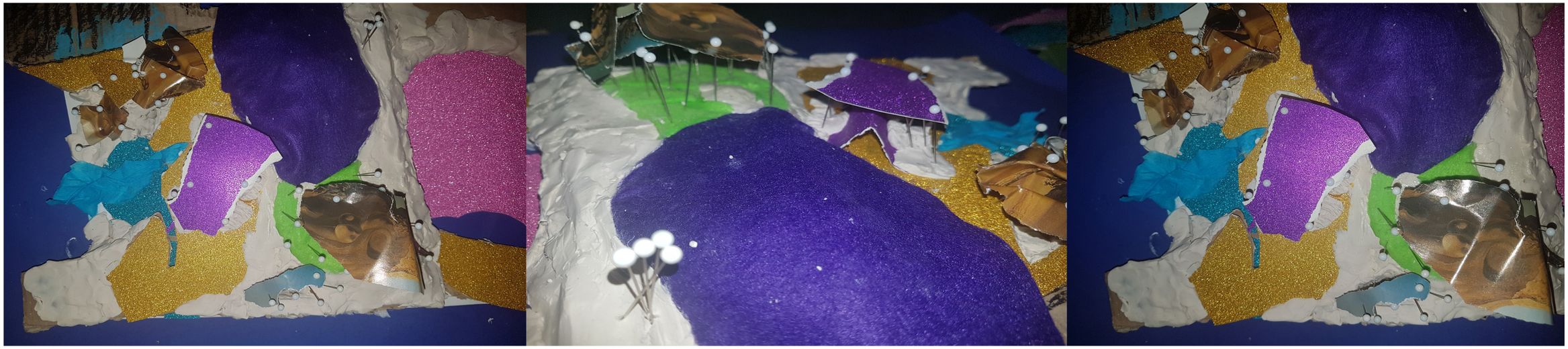
REDUCED FROM A1

CONCEPT MODELS



VIEWING THE
LANDSCAPE
THROUGH A
CHILD'S PERSPECTIVE

RATTLECHAINLAGOON - SURREALISM











Lighting Concept and specifications



Kazue Taguchi, Eloquent Silence, 2009

Cave paintings - lighting inspiration

Concept Model *The landscape through the eyes of my children.'*



Lighting -
yosemite valley

DARK SKY ASSOCIATION



1. ADAPTIVE LIGHTING - REDUCE AMOUNT OF LIGHT AND COLOUR OF LIGHT DURING THE NIGHT
2. YOSEMITE STANDARD PRODUCTS - LED LUMINIERES WITH A CONTROL CIRCUIT WHICH AUTOMATICALLY REDUCES LIGHTING SIMPLE TIME DELAY CIRCUIT OR CONTROLED BY CLOCKS OR MOBILE PHONES
3. DOWNLIGHTS WHERE SUITABLE, TO REDUCE LIGHT POLLUTION AND PROTECT HABITATS
4. MOTION LIGHTS WHERE SUITABLE
5. MAKE USE OF NATURAL OPPORTUNITIES TO CREATE LIGHT EVENTS

FOR EXAMPLE - CREATE A LAVA EFFECT ON WATER AS THE SUN SETS AND LIGHTS A REFLECTIVE SURFACE

'LIGHTING FOR THE PARK SHOULD BE DESIGNED TO STRIKE A BALANCE BETWEEN THE DARKNESS OF NATURE AND THE MINIMUM LIGHTING NECESSARY FOR THE HUMAN ACTIVITIES OCCURRING AT NIGHT.
WHEN UNDERTAKING A DESIGN, FIRST ESTABLISH WHETHER LIGHTING IS NEEDED. FOR MOST OF THE HUMAN ACTIVITIES IN THE PARK, THE RECOMMENDED LIGHTING APPLICATION IS LISTED IN TABLE A. OTHER APPLICATIONS SHOULD BE WEIGHED CAREFULLY. DO NOT ASSUME THAT LIGHTING IS ALWAYS NEEDED.'
- YOSEMITE LIGHTNG GUIDELINES













Lighting Situation Type	*Lighting Recommendations*	*Representative Locations*
Roads posted 25 mph or less	Lighting only at shuttle stop and conflict zones; shut off after shuttle hours.	Roads leading into and throughout the Valley floor
Roads posted >25 mph	At only at intersections and conflict zones; consider adaptive lighting	Highways
Parking Lot - High Activity	Relatively uniform illumination for the entire lot, driveways and surrounding walkways; shut off after use hours	Parking lots adjacent to Yosemite Lodge, Yosemite Village, The Ahwahnee, and Wawona; day use and employee lots
Parking Lot - Moderate Activity	Illumination for most of the lot, drives and surrounding walkways, but not necessarily uniform; use adaptive lighting	Parking lots adjacent to Curry Village and Yosemite Lodge
Parking Lot- Low Activity	Little or no lighting; use adaptive lighting for accessible parking stalls and accessible ramps	Parking lot adjacent to Housekeeping Camp
Walkways and Bikeways – High Night Activity	Relatively uniform lighting for walkways and bikeways; use adaptive lighting. Consider extremely low level wayfinding lighting.	Within Yosemite Lodge, Yosemite Village, The Ahwahnee, Wawona; between Village and Lodge.
Walkways and Bikeways – Medium Night Activity	Lighting for main and secondary walkways and bikeways, but not necessarily uniform. Use adaptive lighting.	Within Curry Village including employee housing; between village and NPS offices and residential areas
Walkways and Bikeways – Low Night Activity	Minimal wayfinding lighting for main walkways only. Use adaptive lighting.	Within Housekeeping Camp; between major facilities
Gas Station	General and task lighting; shut off or reduce lights when gas station is unattended. Consider a motion-controlled light for a small service area for after hours needs.	Near Wawona, Tuolumne Meadows (seasonal)
Service Yard	Minimum safety lighting; adaptive or motion controlled lighting.	NPS/DNC Area near Yosemite Village
Outdoor Eating/Patio Area	Relatively uniform lighting for dining area and access path; off after use hours. Consider adaptive lighting for extended use areas.	At Yosemite Village, Yosemite Lodge, The Ahwahnee, Curry Village
Lodging Building Entry	General lighting under canopies and portes cochere; uniform lighting of approach drives and surrounding area; consider adaptive lighting.	Wawona, Lodge, The Ahwahnee, Curry Village
Cabin and Guest Room Exterior	Wall mounted lighting; adaptive lighting.	Wawona, The Ahwahnee, Lodge, Curry Village
Retail Exterior	General lighting under canopies and areas around store entry; turn off after business hours	Yosemite Village, Lodge
Shuttle Stop	Lighting under canopy; spill light limited to immediately surrounding area; turn off after shuttle hours.	Throughout Valley floor
Remote rest and visitor support facilities	Adaptive low level lighting, confined to the interior spaces and exterior areas at entrances. Motion controlled interior lighting.	Throughout park
Bulletin board/kiosk	Adaptive low level lighting; only for signage critical to night uses and wayfinding	Throughout park



Figure 2 - Color Scale of White Light (K)

LIGHTING SPECIFICATION FOR GOOD PRACTICE FOR OUTSIDE LIGHTING IN THE BLACK COUNTRY URBAN NATURE RESERVE - INTERNATIONAL URBAN STAR PARK



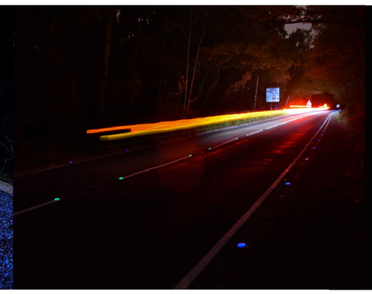
'FURNITURE MEETS LIGHT' CONCEPT CREATED FOR VIBIA. THE EMPTY OUTDOOR LIGHTING COLLECTION INTEGRATES SEATING AND LIGHTING FOR BUILDING AREAS AND HIGH TRAFFIC SPACES

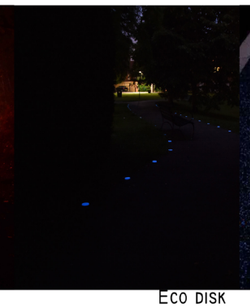


THE BREAK OUTDOOR FLOOR LAMPS XUCLÀ & ALEMANY DESIGN FOR VIBIA. MINIMALIST AESTHETIC/ARCHITECTURAL EMITTING A SUSTAINABLE AMOUNT OF LIGHT DUE TO IT BEING ANGLED ONTO GROUND







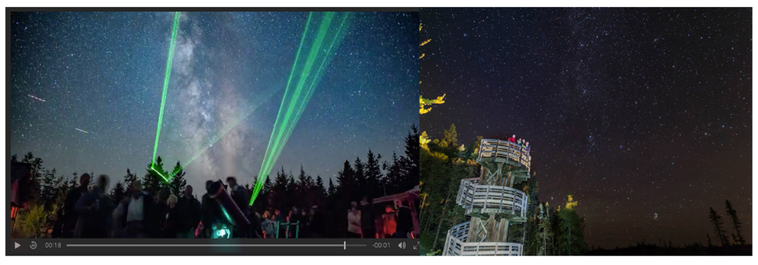




Eco disk

STARPATH SPRAY ON COATING - APPLY TO ANY HARD SURFACE AND IT DOESN'T USE ELECTRICITY

TYPE	LOCATION	DESCRIPTION	FITTING	REF	KELVIN (k)	LUMEN & WATTS	Dark Sky Approved	OPERATION	
L1	BRIDGES & ROUTES	Luminescent Pathway	Starpath	BESPOKE			Yes		Bespoke photolumincent 10 hours in a range of colours.
L2	PAVED PATHWAYS	Outdoor bollard light 54	"Various Break Outdoor bollard light 54 - Xuclà & Alemany design for Vibia Oxide lacquer Concrete 027 80 Concrete Natural finish"Oxide lacquer Concrete 027 80 Concrete Natural finish	Bi-Pin LED	2700K	3W GU4/220 Lumens	Adapted to comply	exposure to ambient light	Bespoke photolumincent 10 hours in a range of colours.
L3	ARRIVAL ENTRANCE	Luminescent Pathway	Starpath	Bespoke			Yes	exposure to ambient light	
L4	TUNNELS	LED Strip	various	single colour 10mm LED strip	2200	400 Lumen/m,4,8w	Yes		
L5	CANALS	Luminescent Pathway	Starpath Technology	BESPOKE			Yes	exposure to ambient light	Bespoke photolumincent 10 hours in a range of colours.
L6	BUILDINGS	Outdoor bollard light 54	"Various Break Outdoor bollard light 54 - Xuclà & Alemany design for Vibia Oxide lacquer Concrete 027 80 Concrete Natural finish"	Bi Pin LED	2700	3W GU4/220 Lumens	Adapted to comply		



IRVING NATURE PARK (URBAN STAR PARK)



BRECON BEACONS DARK SKY RESERVE



GALLOWAY FOREST DARK SKY PARK



NORTHUMBERLAND NATIONAL PARK (DSP)

LIGHTING PRINCIPLES

NATURALISED URBAN NATURE RESERVE CONTEXT

AIM: DARK SKY PRESERVE, ENVIROMENT RESPONSIVE -
PROMOTE ASTRONOMY AND MINIMISE ARTIFICIAL LIGHTING/LIGHT POLLUTION

LANDSCAPE AS ART ENHANCED BY AMBIENT LIGHTING WHICH IS SENSITIVE TO THE NATURAL ENVIRONMENT

*INTERNATIONAL DARK SKY ASSOCIATION

STRATEGY

FACTORS -

A) SITE IS SPLIT INTO A THROUGH ROUTE WITH A TRAINLINE,
CANAL AND A CYCLE HIGHWAY.

B) SITE IS USED FOR ACCESS FROM TIPTON TO OLDBURY HIGH STREET

C) RESIDENTIAL NEW BUILD ESTATES SURROUNDS THE SITE AND REQUIRE ACCESS

D)SHEEPWASH NATURE RESERVE IS OPEN 24 HOURS

D)FISHERMEN AND LOCAL YOUTHS ARE AN ISSUE WITHIN THE PARK CAUSING LOITERING, THREAT TO WILDLIFE, LITTERING AND PUBLIC NUISANCE

AIM -

A) BRING PUBLIC SPACES TO LIFE WITH DYNAMIC LIGHT INSTALLATIONS, LIGHT SHOWS, AND SPECIAL EVENTS

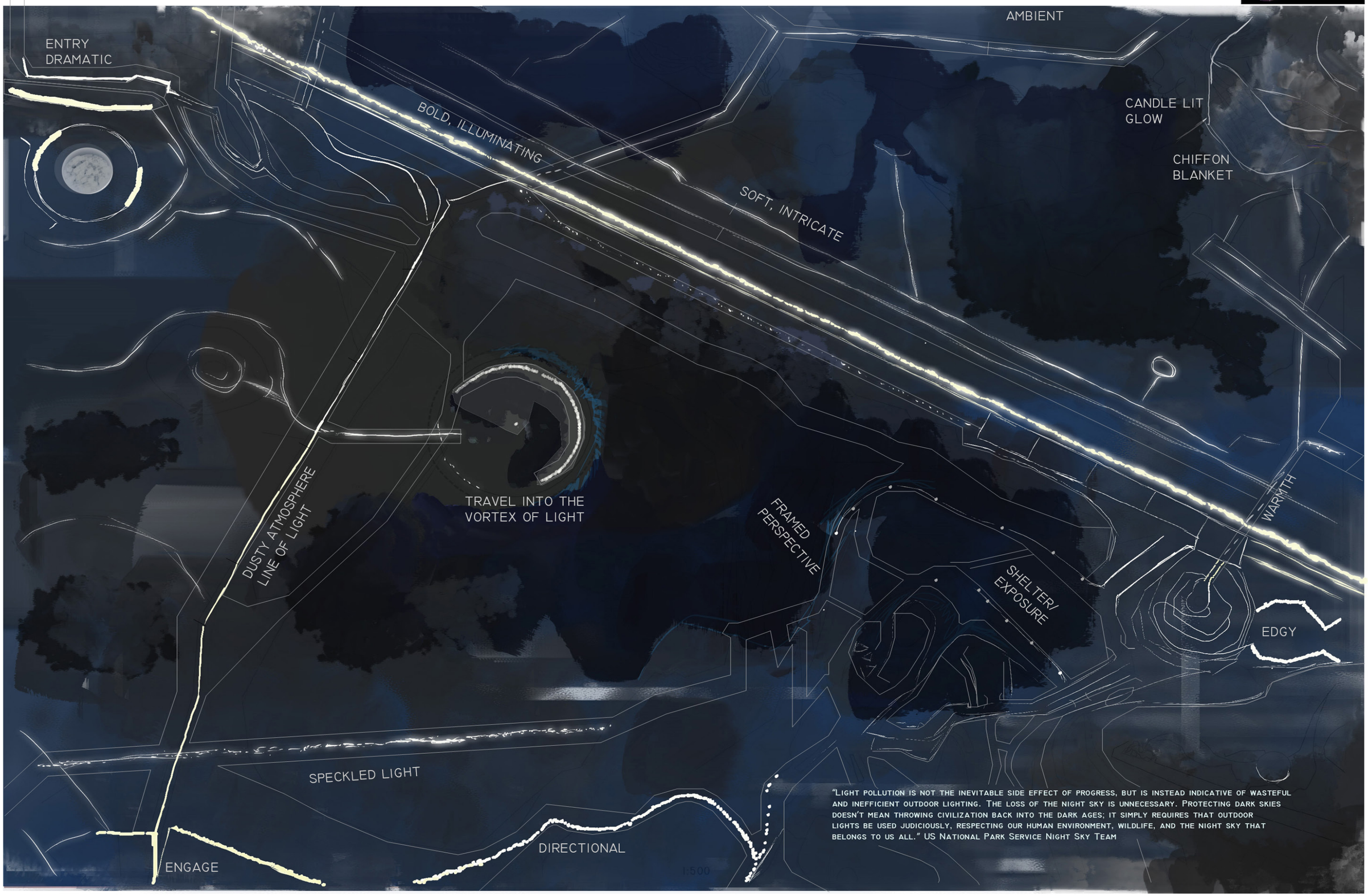
B) CREATE AMBIENT WAYFINDING LIGHT THROUGH THE HISTORIC TUNNELS/STREETS, CYCLE ROUTES AND INTEGRAL PARTS OF THE SITE

C) USE LIGHTING TO CREATE SAFE ACCESS ROUTES AND SPACES

D) USE LIGHTING FROM MAIN LANDMARKS TO CREATE BEACONS

E) UTILISE THE USE OF REFLECTIVE SURFACES

F) CREATE PLAYFUL SPACES WITH THE USE OF LIGHT, MIST AND WATER



"Light pollution is not the inevitable side effect of progress, but is instead indicative of wasteful and inefficient outdoor lighting. The loss of the night sky is unnecessary. Protecting dark skies doesn't mean throwing civilization back into the dark ages; it simply requires that outdoor lights be used judiciously, respecting our human environment, wildlife, and the night sky that belongs to us all." US National Park Service Night Sky Team



Timeline Summary

ALBRIGHT AND WILSON AND RHODIA
60 YEARS OF PHOSPHORUS DUM PING

1. c1942 The UK's only phosphorus manufacturer Albright and Wilson, of Langley, Oldbury, use and subsequently 'acquired' a clay pit at the former Rattlechain brickworks for disposal of effluent waste. No licence, regulation, waste limit, health and safety or conditions attached. Most importantly no records exist of what they dumped for the next 32 years. Waste was carried by canal barge contractors Alfred Matty of Coseley and tipped into pool manually and in barrels.

2. c1940's Albright and Wilson were producing white phosphorus weapons direct for the Ministry of Supply including experimental weapons and Molotov cocktail style grenades in the millions at their Oldbury factory for WW2 as they did in WW1. The Home Guard were issued these weapons butconveniently no official records “exist” of where they were disposed of.

3. 1950/60’s Children reported playing in this unfenced dangerous site, “lighting sticks” dipped in phosphorus which caught fire when oxidising. Many eye witnesses recall skimming stones in “blue lagoon” which produced sparks across the water when thrown. This was white phosphorus (P4) reacting. Gravity fed pipe and then electric pipe added to pool for convenient dumping. Eye witness recalls seeing dozens of dead birds on embankment. British Waterways Board also using site as a dredging tip for canal areas polluted by Albright and Wilson operations on a pay as you tip basis.

4. 1963 Site boundary changes creating a subsiduary lagoon to operate a canal discharge within the contaminated lagoon area.

5. 1970 Waste disposal switches to road tanker, large discharge pipes added to south of site.

6. 1974 First “claimed” records of what Albright and Wilson dumped. Site boundary change to add concrete panel fencing, and change to the existing subsidiary lagoon and pumping equipment.

7. 1978 Waste management licence SL31 granted by West Midlands County Council. Licence allowed them to dump

EFFLUENT TREATMENT SLUDGE- 140 TONNES PER DAY
WASTE CONTAMINATED WITH WHITE PHOSPHORUS- 500 TONNES PER YEAR
WATER CONTAMINATED WITH WHITE PHOSPHORUS,
SULPHUR AND PHOSPHORIC ACID -1000 GALLONS PER YEAR
“SOLID WASTES” -10 TONNES PER WEEK

8. 1983 documented disposal into pool of a cache of their manufactured WW2 grenades containing benzene and white phosphorus Albright and Wilson claim to have disposed of these weapons from time to time after the war, but not how many or when.
No authority from regulator given.

9. 1989 Large phosphorus fire on site after consignment of barrels
containing p4 in sediment is emptied by contractor onto side of pool. Works management try to calm people’s fears with talk of “myths” and “legends” concerning pool. They fool no-one- as Rhodia do not today with their own myth that it contains “harmless calcium phosphate.”

10. 1990-91 Cremer and Warner report carried out on behalf of BCDC. Only tests carried out on information given by Albright and Wilson. White phosphorus confirmed in pool.

11. 1999 first properly documented reported deaths of wildfowl on site, swans dying from violent convulsions. AW and Rhodia do not inform us of the toxic rat poison that is contained in sediment.

12. 2001 Albright and Wilson bought by Rhodia. Meetings held to discuss Rattlechain bird deaths.
Health and safety manager does not reveal what is contained in pool or its toxic effects.
Claims that the site offers “a safe haven” to wildfowl made by works manager! Barrels attached to ropes are put on pool to deter birds landing, which does not work.

13. 2003 Planning permission granted on appeal for Houses on site adjacent to lagoon. Rhodia objected on grounds it could undermine their operations and limit remediation options, but withdraw their objection at last minute, destroying Sandwell Council’s case.

14. 2008 After dozens of bird deaths and inconclusive post mortems, research by swanwatch uncovers link with white phosphorus and wildfowl deaths from papers published at Eagle River flats in Alaska- a US Army firing range. Clinical signs of dying swans are exactly the same as at Rattlechain.
Experts here confirm similarities in symptoms after viewing our footage. Rhodia undertake a report into “bird deterrence”, but do not say why they want to deter birds from landing on the pool.

15. 2009 Rhodia remove barrels from pool but do not give reason why. These then catch fire after drying out. P4 confirmed in gizzard tissue of a dead swan and Canada goose

16. 2010 P4 confirmed in tissues of a dead mallard and coot

17. 2011 P4 confirmed in two dead mallards and Canada goose, two more mallards awaiting testing

18. 2019 Creation of the Black Country Urban Biophilic Legacy Park

19. 2020 Grand opening of the park

20. 2020 The park is granted an Urban Sky park status

With a special thankyou to Professor Kathryn Moore for helping me with the project.

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Made in Oldbury, Black Country Museums, Sandwell Museums,
www.saveoursandwellcanadageese.org.uk, Green Party Sandwell,
Dr Janet Christine Sullivan, The University of Birmingham

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For this book chapter, data on the whole green-space resource, and more specifically, on urban woodlands was obtained from a few existing surveys of selected cities and towns. Therefore, case studies have been chosen with which the authors are familiar through their own work in order to characterize the urban forest in more detail for a range of large urban areas. The case studies chosen are Oslo (Norway,

DR JANET CHRISTINE SULLIVAN, PAYING THE PRICE FOR INDUSTRIALISATION: THE EXPERIENCE OF A BLACK COUNTRY TOWN, OLDBURY, IN THE EIGHTEENTH AND NINETEENTH CENTURIES, January 2014