ALONG THE CUT:
AN ADAPTIVE REUSE OF AN 18TH CENTURY CANAL SYSTEM IN BRIERLEY HILL, ENGLAND

by
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A thesis submitted to the
Faculty of Architecture
in partial fulfilment
of the requirements
for the degree of

MASTER OF ARCHITECTURE (FIRST PROFESSIONAL)

Major subject: Architecture

DALHOUSIE UNIVERSITY - DALTECH

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DEDICATION

To Will and Brainard

The diary has been stopped
As the pages slip through my hands
You pick them up and remember them.
From simple and gentle knowing
Although many precious moments were lost
Fallen words and pictures conjure up a history
Revealing another, more meaningful world.

CONTENTS

ABSTRACT

Along the Cut -
How can the Stourbridge/Dudley canal enhance the cultural identity of Brierley Hill and act as a catalyst for urban renewal and community development, with methodologies applicable to the entire canal network?

This thesis studies the utility of the canal infrastructure in Brierley Hill, England, in enhancing cultural identity and the sense of place. It reads the existing architectural language of the canal and the adjacent urban conditions and interprets and transforms the findings into architecture.

Three sites were chosen to investigate three different canal and town conditions. As the waterway's character was historically determined by the adjacent industrial potential, this thesis develops program by interpreting existing site conditions. Just as the building of a waterway generated further industrial growth, so these architectural seeds, once planted, will initiate urban renewal.

Urban infrastructure functions as an engine for economic and community growth. This thesis discusses whether the canal could, once again, act as a spine for such development. It addresses developing home businesses and community buildings along an environmental transport/recreation system that would enhance the cultural identity of Brierley Hill. As a method of urban renewal, this project could be a useful model along the entire canal network.

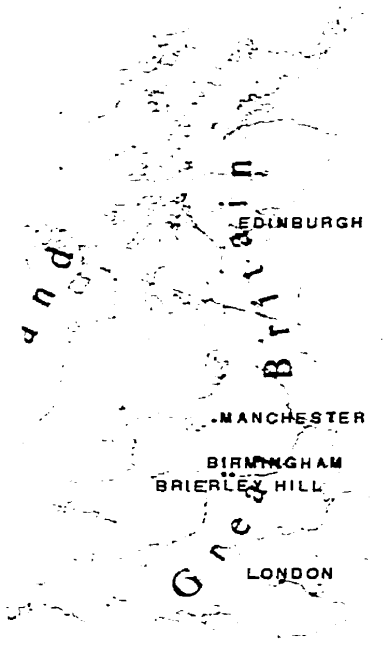
ACKNOWLEDGEMENTS

I would like to thank Christine Macy and Essy Baniassad for their guidance throughout this thesis.

I would also like to thank my mother, Dr. Margaret Porter, for her constant help and support.

INTRODUCTION

Area of Study



Location of Brierley Hill in England. Map from *Philip's Atlas of the World*, edited by author.

The "Black Country" in the West Midlands of England was my home for twenty years and is where much of my family still lives and works. Beauty is often hard to find in these coarse, once industrial, Midland towns. However, the many canals that snake through the region display a sturdy functional design and mastery of materials that warrant further investigation.

The Industrial Revolution in England relied upon canals to transport raw materials and goods economically. This allowed inland cities to prosper and grow. Brierley Hill, a typical Black Country town, thrived once its mineral resources were linked by waterway.

Once the railways arrived transport was taken into a new era and many canal companies were swallowed up. A depleted barge trade struggled on in the area for another hundred years, but today what remains of the canal system, although a source of pleasure to some canal enthusiasts, contributes little to the town. Recent development along the waterway has further weakened this relationship.

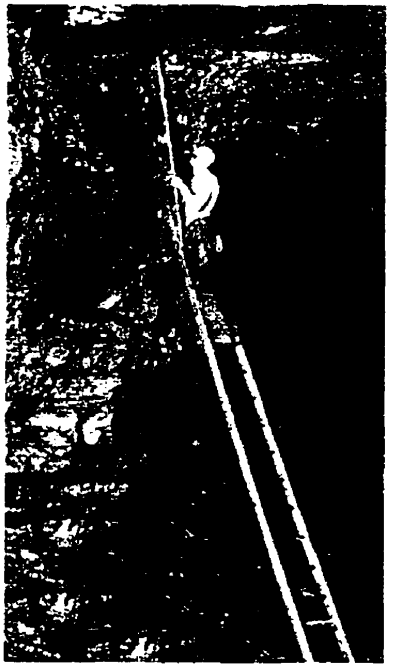
This thesis evolved out of a study of Brierley Hill, a typical Black Country town, and the adjacent Stourbridge/Dudley canal. Time was spent drawing, mapping and studying the history of the place and the canal as a way of understanding how this infrastructure helped shape the town. The design that results from this demonstrates how introducing the waterway back into the town will initiate urban renewal.

> The women sat among the doomed things, turning them over and looking past them and back...No there isn't room...How can we live without our lives? How will we know it's us without our past?[1]

Industrial canal landscape along Stourbridge Canal. Drawing by author.

Brierley Hill - Layers of the Town

Industry



Mining the Black Country thick seam in the 19th century. Illustration from Jon Raven, *The Book of the Black Country*.

The town of Brierley Hill is located to the west of the Black Country. The word "brierley" is derived from the Anglo-Saxon *brer*, meaning scrub or rough pasture. Coal and ironstone have been extracted from here since at least the reign of Edward III (1327-77).[2]

Although the Black Country is a culturally distinct area it is not named on any map. Topographically it straddles the ridge of hills running southeast from Wolverhampton. It gained its name from the thousands of furnaces and chimneys that filled the air with smoke, and the mining of coal, ironstone, fireclay and limestone that turned the earth inside out to extract valuable minerals, creating vast expanses of dereliction. Beneath the Black Country lay the "Staffordshire Thick Coal," a seam averaging 30 feet thick and often only a few feet below the surface. The iron and steel industry were fuelled by this coal and created the livelihood for the town of Brierley Hill.

Lime kilns were located along the canal to process the limestone found in the area. Lime was the flux for iron smelting in blast furnaces, an ingredient in mortar, and a protective coating for stone buildings. The kilns were fuelled by thick layers of coal and limestone poured into the top. The burnt limestone was removed at the bottom.[3]

Rural landscape along the Stourbridge /Dudley Canal. Drawing by author.

Urban landscape along the Stourbridge/Dudley Canal. Drawing by author.

Palette of materials. Drawing by author.

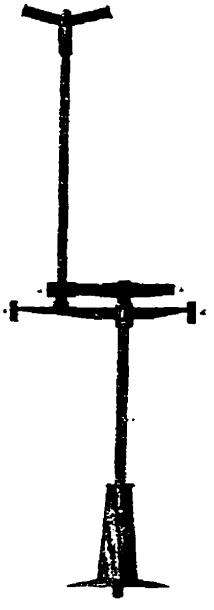
Transport

The turnpikes were inadequate to carry the heavy loads of these supplies, but the emergence of artificial rivers and canals in the 1770s created the arteries for this industry, transporting raw materials and manufactured goods along the three thousand mile network.

Today the canals no longer have any industrial use and have, for the most part, been allowed to decay. They have, however, been preserved as historical, recreational amenities in some areas. Likewise, the freight railway has vanished from this region as commerce requires the convenience of the roads for direct delivery.

The canals are much the same throughout England, a thin strip of water about 40 feet wide with an additional 10-15 feet at one side to form the towing path. The overall character varies considerably, but one can distinguish three types: rural, intermediate and urban canals.

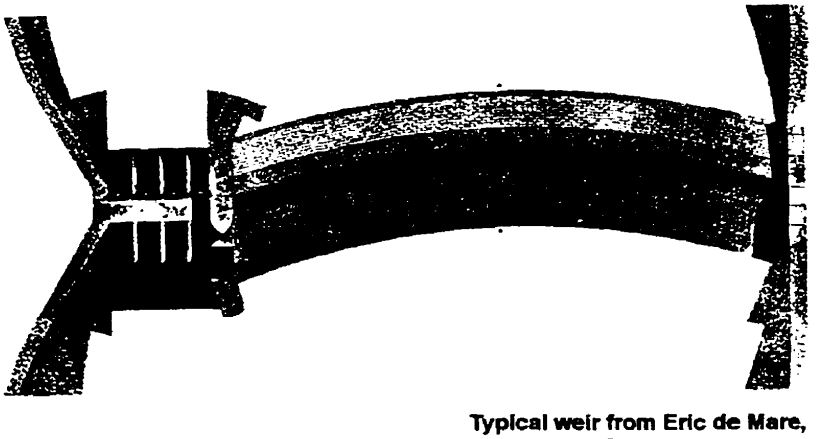
Cutting through the countryside, the rural canals conform to the romantic canal image, and have no buildings along their banks.



Machinery for opening and shutting lock gates, by Thomas Telford from Eric de Mare, *The Canals of England.*

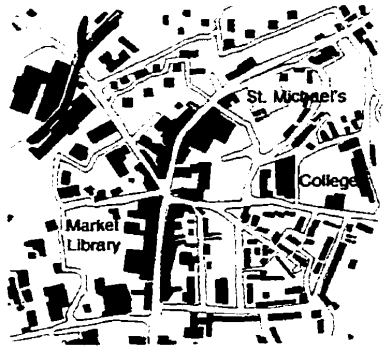
Closer to urban settlement, there is an intermediate type. These canals are bordered by derelict, overmined land, or factories and warehouses sited next to roads and railways. They pass postwar council housing estates, from which the canal is fenced, as canals are associated with risks of drowning and filthy water. The canals around Brierley Hill are predominantly in this category.
The urban canal is enclosed by continuous buildings on either side, and runs within the inner city area. As the canal was built to service industrial premises, the majority of buildings are factories and warehouses. However, with escalating land prices and the de-industrialization of England, it is today being replaced by commerce.

As a piece of continuous industrial/urban infrastructure the architecture of the canal displays a sturdy, functional design and mastery of materials: lockgates, balance beams, masonry lock chambers, weirs, aqueducts and cross-over bridges. Its details are hewn and fixed to do a job and to last.



Typical weir from Eric de Mare, *The Canals of England.*

Civic



The Town Centre. Drawing by author.

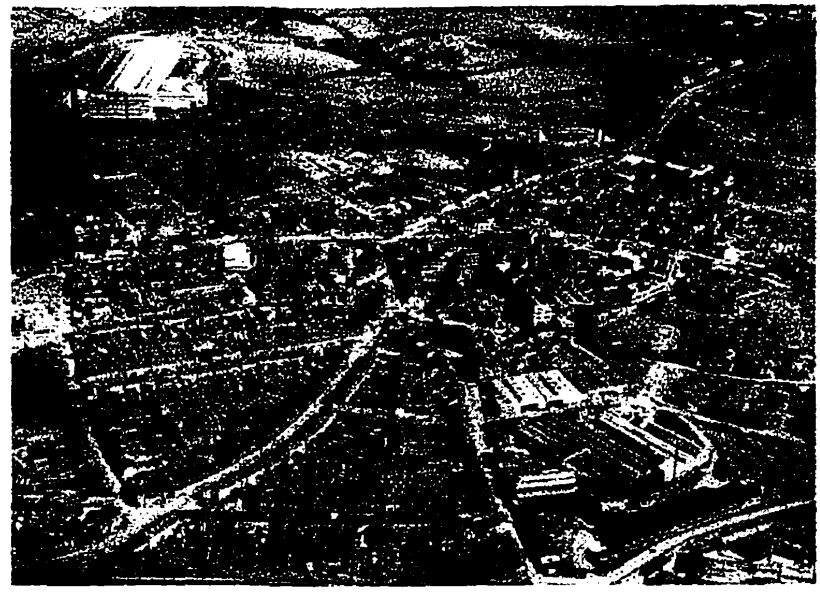
The naturally hilly topography originally shaped the town of Brierley Hill. The parish church of St. Michael's is at the highest point, demonstrating the dominance of the sacred in the seventeenth century, when the church was built. The High Street, close to the church, acts as the spine for the town, with the centre clearly defined at the convergence of five roads. The Town Hall, market, college and library are all in close proximity. The map from 1901 (see page 6) reveals the civic, almost medieval quality of the town, with dense urban fabric clustered around the central market, quickly changing to industry along the perimeter sites of the mineral seams. The canal corsets the town like a medieval wall.

Today the town is subsumed in a conurbation of urban sprawl. An indication of this was the change in name from Staffordshire to the generic name West Midlands when Metropolitan Boroughs were formed in 1974.

Market Day. Drawing by author.

New developments have respected neither the clear boundaries nor the topography of the town. Motivation is generated partly by abstract planning ideals, road networks and profit. In 1982 the Round Oak Steel Works was finally closed after many years of operation, and a shopping mall was put in its place. This has had a considerable effect on neighbouring towns, from which national chain stores have moved their business to Merry Hill Shopping Centre. This complex has further necessitated the use of the car.

Aerial photograph of Brierley Hill in 1950 from Jon Raven, *The Book of the Black Country.*



Map of Brierley Hill in 1901 from *Old Ordinance Survey Maps*.

Map of Brierley Hill in 1999. Drawing by author.

St. Michael's Church, once the centre of the community. Drawing by author.

Present

Development in Brierley Hill, like towns globally, has been influenced by two trends: speculative development based upon market demand, and conservation.

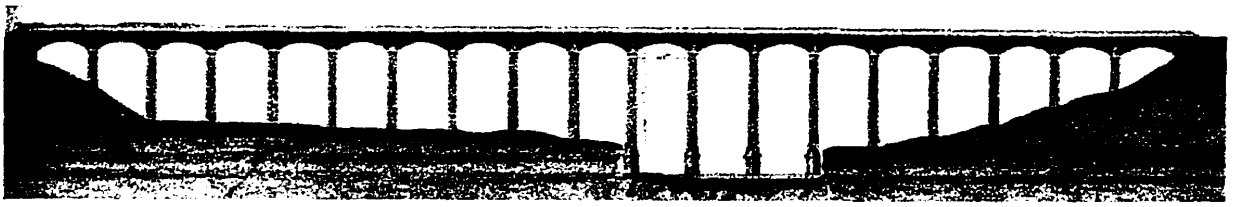
Speculative development, spurred by the pursuit of personal wealth, has resulted in towns and cities increasingly failing to satisfy the social and human needs of communities.

Conservation of historic sites, on the other hand, ignores the fact that buildings have always been adapted, reshaped and had services updated. It grinds this organic process to a halt. History is fundamentally about creating a dialogue between the old and the new. In fact, juxtaposing the two has an honourable history in forming the world's most beautiful cities and sensitive change breathes continuous life into our towns.[4]

This dialogue that becomes architecture should involve the memory of the place, the realities of the site and

> create embodied existential metaphors that concretise and structure man's being in the world... Buildings and towns enable us to structure, understand, and remember the shapeless flow of reality and, ultimately, to recognise and remember who we are.[5]

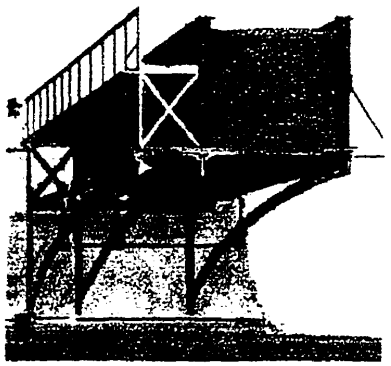
Thus, architecture's role is one of giving significance. To do so, the work must understand the past and look beyond the present. The work must be motivated by the possibilities of change, but knowledgable of memory and experience as the continuum of creative ideas ensures meaning.



Thomas Telford's Pontcysyllte Aqueduct from Eric de Mare, *The Canals of England.*

Canal Architecture

The existing canal architecture was drawn, studied and interpreted to develop the new architecture:

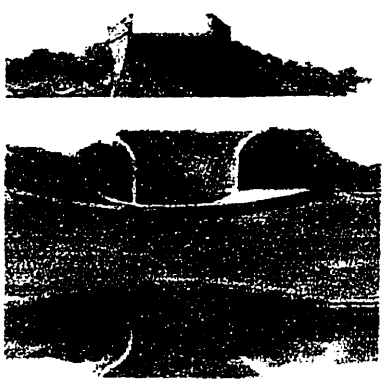


Cast iron aqueduct on the Stourbridge/Dudley Canal.

Locks

The invention of the lock is generally attributed to Leonardo da Vinci. Whether or not this is true, the lock revolutionized inland travel.[6]

A lock consists of a chamber with a gate at each end. When the chamber is "empty," that is, with its water level with the lower pound, a boat going up can enter it. The lower gates shut and the sluices close. The sluices on the upper gates are then opened, and the chamber fills, so raising the boat to the upper pound. The upper gates can then be opened and the boat proceeds. The process is reversed on the descent. The chamber is typically brick or masonry and the gates timber.[7]



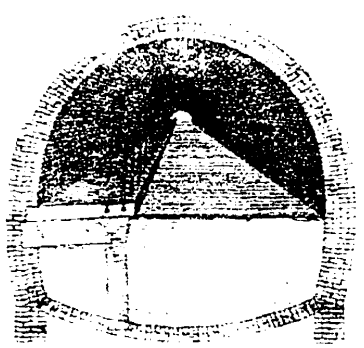
Accommodation bridge on the Stourbridge/Dudley Canal.

Aqueducts

Aqueducts are necessary to carry the canal track across roads, railways and valleys. They are essentially bridges carrying water. Originally the water was contained in a channel of puddled clay contained in a masonry structure. Thomas Telford developed a trough of cast iron to house the water.[8]

Bridges

These are of two main types - accommodation bridges which carry roads across the canal and roving bridges which carry the towpath itself across from one side of the canal to the other. Roving bridges are often split to allow the tow line to pass through. There are regional types of bridges, depending upon the canal.[9]



Engraving of Thomas Telford's Harecastle Tunnel from Eric de Mare, *The Canals of England.*

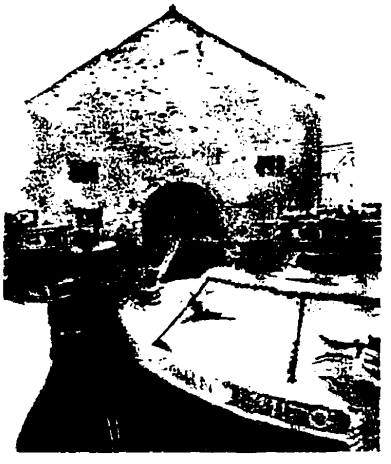
Tunnels

In the early tunnels there was no tow path for the horse and boats were propelled through by legging or shafting. Legging involved two people lying on either side of the barge, pushing against the tunnel side with their feet.

Tow path develops into bridge. Drawing by author.

Canals and Architectural Form

Principles in the existing canal infrastructure were read, interpreted and transformed to develop the new buildings:

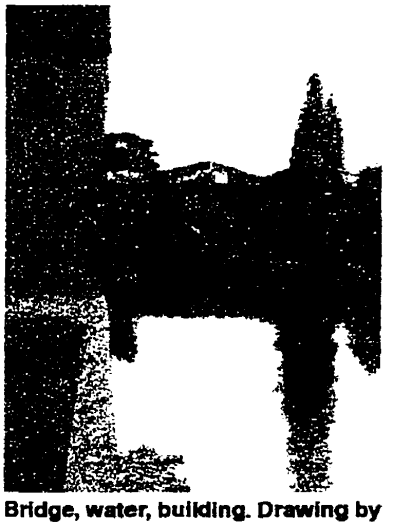


Narrow boats entering building.

Layering and Language

The water is only one layer of a system which consists of bridges, aqueducts, locks, tunnels and tow paths. These often overlap roads, railways and other waterways. These findings developed into an architecture that includes bridges, paths and staircases that develop into buildings.

Historically, this industrial infrastructure was primarily concerned with linear movement. It only needed to link to the town for transportation of goods. Today, however, there is reason to transform the canal infrastructure to encourage pedestrian movement between town and waterway. This thesis develops its program from the adjacent urban fabric and reaches into that fabric with paths and bridges that allow access to the now pedestrian tow path. In turn, the urban fabric will develop along these linking paths.



Bridge, water, building. Drawing by author.

The retaining walls which contain the canal also supported many of the buildings along the canal. Tow paths frequently develop into bridges and canals become aqueducts. This morphing of elements is used throughout the thesis.

Many of the traditional canalside buildings allowed narrow boats to enter for loading and unloading. Wharves lined the banks for moorage. The new buildings engage the water through program and form.

Retaining wall supports the building. Drawing by author.

Sturdy canal architecture. Drawing by author.

Grain

Historically, warehouses ran parallel to the canal to maximise the water frontage for loading and unloading. Later, as railways and roads superseded waterways, this wharfside was abandoned. Today the canal side has been ignored and the waterway has been hemmed in between car parks, barbed wire fences, and dumpsters. This thesis suggests that to utilise the infrastructure of the canal, buildings must allow ready access to it. The new buildings have a bilateral quality with neither the canal side nor the city side taking precedence.

Materials and Form

The canal relied upon local building materials to develop typological ideas of the system. The forms had a sturdy, utilitarian, hewn aesthetic. The architecture developed in this thesis adopts this robust quality. Its materials reference the topography of Brierley Hill and its forms extend the existing canal architecture.

Moving through the lock, the narrowboat fits exactly. There is a precision to the way elements are gauged to pass one another. The buildings adopt a language of sliding forms and planes.

Narrowboat moving through the lock. Drawing by author.

General Project Description

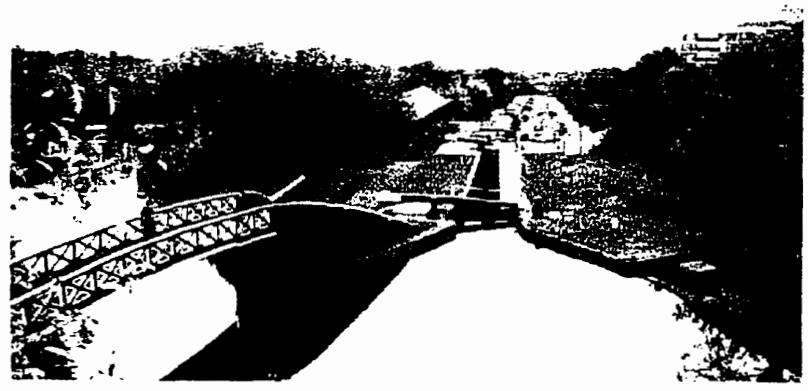
This thesis explores the utility of the canal infrastructure in enhancing cultural identity and sense of place, and generating community development. It reads the existing architectural language of the canal and the adjacent urban conditions and interprets and transforms the findings into architecture.

In effect, this thesis develops two ideas of using the canal for urban renewal. First, by introducing an infrastructure that cuts across the grain of the canals, the urban fabric can be stitched together. Second, the linear quality of the canal and towpath can be enhanced, the towpath serving as a cycling and walking path through the many areas of the town; and the waterway itself introducing needed cultural infrastructure, in the form of theatres, galleries, education and health services on narrowboats which can travel from town to town.

The architectural tectonics of the thesis aims to enhance the memory of the individual sites and the canal through the process of abstracting the industrial and mineral culture of the place.

Three sites were chosen as case studies of the intersection between canal and town. The first, the Nine Locks Delph, links existing urban conditions to exceptional existing canal infrastructure. The second, Grove Pool, re-inhabits an overmined, wrecked, semi-rural area. The third, Merry Hill, stitches together urban fabric.

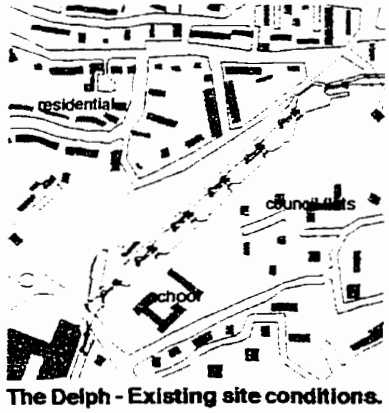
In each case the architecture acts as a seed for future community development. Studies are made of possible future urban renewal, as a result of the architecture.



Photograph from the top of the Delph site.

THE SITES

The Delph



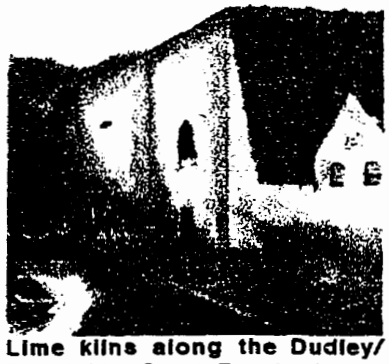
The Delph - Existing site conditions.

This site was chosen as it has existing urban fabric and exceptional canal infrastructure that do not respond to one another.

Urban Reading

The Delph is not easily accessible. The roads at either end bridge above the grade of the canal. The adjacent middle class neighbourhood can access the Delph through paths and parkland, while the deprived council flats and school are fenced off from the area and have no way of reaching the canal. The water separating these two areas increases the barrier.

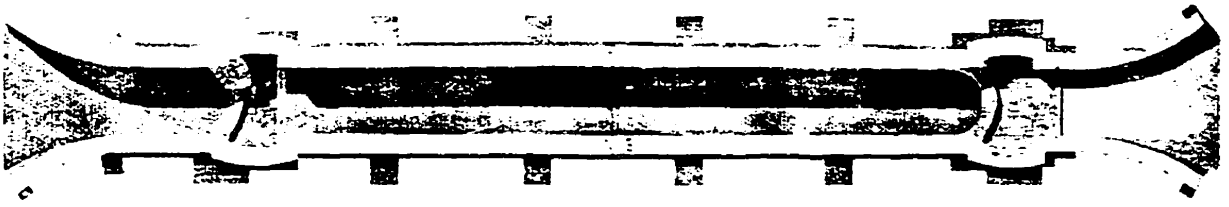
The Delph can be a model for similar sites. Bridging the water engages the entire place in a linear network and allowing access enables the Delph to become an invaluable, accessible resource for the town.



Lime kilns along the Dudley/ Stourbridge Canal. Drawing by author.

Cultural Memory of the Site

Lime kilns were located in the Delph to process the limestone found in the area. Lime was the flux for iron smelting in blast furnaces, an ingredient in mortar, and a protective coating for stone buildings. The kilns were massive, hollowed out stone structures at the edge of the canal. Fuelled by thick layers of coal, limestone was poured into the top and, when burnt, the limestone was removed from the bottom. The kilns in the Delph were destroyed when the site was developed as a conservation area.



Plan of a lock by Thomas Telford. Drawing by author from Eric de Mare, *The Canals of England.*

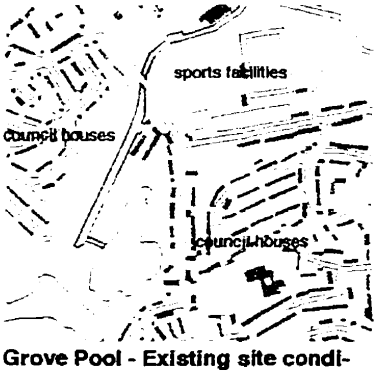
Tectonics of a lock gate. Drawing by author.

The line of the locks was altered in 1857, reducing the number of locks from nine to eight. This impressive flight of locks carries the Dudley Canal up the hill to the town of Brierley Hill and eventually to the Birmingham Plateau.

The locks are used only by holiday makers during the summer months. The wooden lock gates are damaged if they are not used frequently.

19th century photograph of pit head close to Grove Pool from A.J.R. Hickling, *Black Country Pits*

Grove Pool



Grove Pool - Existing site conditions

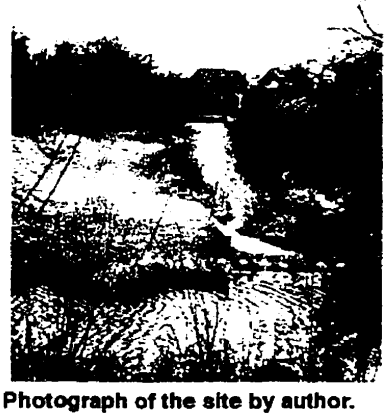
This site was chosen because it represents a typical Black Country scarred, overused landscape that could be converted to much needed rural recreation areas.

Urban Reading

The site is the end of the Stourbridge Canal in a deprived part of town. The three reservoirs are fenced off from adjacent council estates. What should be an invaluable park area linking to the sports facilities feels isolated and threatening.

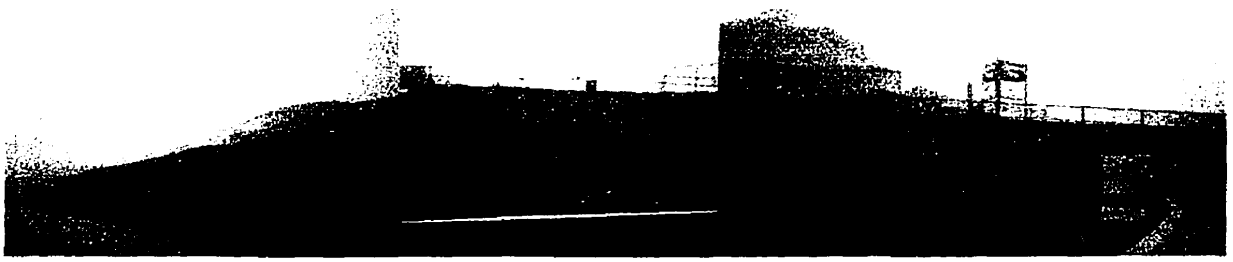
Cultural Memory of the Site

This area was extensively mined as the Thick Coal was only 500 feet below the surface. Much of the canal in this area was flanked by coal wharves. Those at the head of the canal had sidings to the mineral railway, linking it to collieries, ironworks and other enterprises in the region.



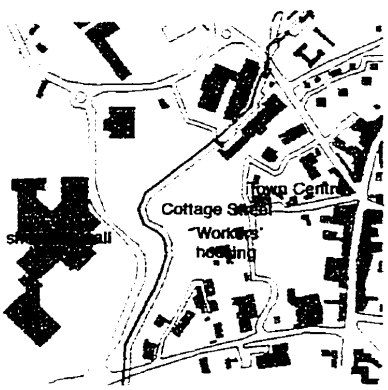
Photograph of the site by author.

Grove Pool was built at the same time as the canal, but it immediately became apparent that this could not meet the water requirements of the sixteen locks in Stourbridge. The supply was increased a year later by Middle Pool and Fens Pool. All three are linked by an intricate system of culverts and weirs. The final part of this system links to the end of the canal, and this is the site for the building.



Photograph by author of Merry Hill site.

Merry Hill



Merry Hill - Existing site conditions

This site was chosen as it demonstrates large scale urban renewal along the canal that has not engaged the waterway.

Urban Reading

The Merry Hill Shopping Centre lies adjacent to the vast acreage of derelict land created by the demolition of the huge Round Oak Steel Works in the early 1980s. This works was once the livelihood for the town. Although close to the town centre, Merry Hill is accessible only by car, surrounded by a sea of parking lots and unserved by pedestrian routes.

Merry Hill Shopping Centre is typical of much speculative development in England. As there is much vacant land along the canal one can expect to see projects of this type along the waterway. Introducing a finer grain and linking these schemes back into the existing urban fabric could engage the place in the many layers of the town.

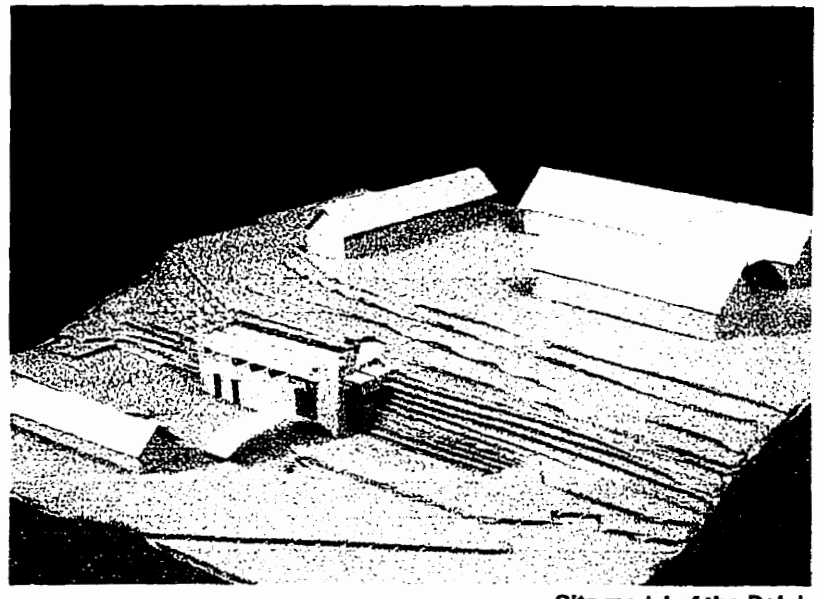
Cultural Memory of the Site

Round Oak Steelworks. Photograph from 1870 in Stan Hill, *Britain in Old Photographs: Brierley Hill.*

Large scale ironworking has existed on the Merry Hill site since 1784, followed by steel manufacture when the Bessemer process was developed in 1894. The Round Oak Steel Works was established by the Dudley Estate on the site of the New Level Ironworks. The works employed several thousand personnel and at its peak produced 10 per cent of the nation's steel.

Many of the employees were housed in company accommodation along Cottage Street. This road extended from the canal to the centre of town. One of the blocks of cottages still remains.

The Brierley Hill Football Grounds was originally located on this site, close to the centre of town. This provided the main leisure activity for this working town.



Site model of the Delph

THE DESIGN

The Delph - urban *parti*

The Delph

The Program - A Boat Shed

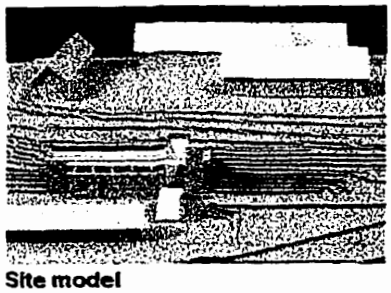
A boathouse for the repair of narrow boats and the storage of rowing boats, brings together two different worlds, the gentrified sport of rowing and the grit of the canal, while also offering an amenity to the school and community. Actively using the water would alleviate fears surrounding the waterways and introducing traffic onto the water would substantiate their existence and keep the locks working.

The Urban *Parti*

The building forms the "missing part" of the school courtyard. It links the council flats and school to the canal tow path.

Form

The building uses the technology of a lock to act as a dry-dock for boat repair and becomes the elusive ninth lock of the site.



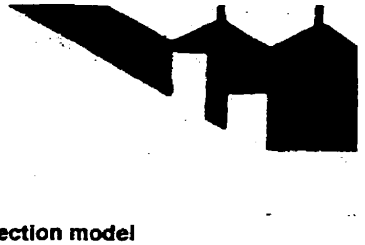
Site model

The form of the building references the destroyed lime kilns. The land side of the building is tunnelled out of the limestone bands and the interconnected spaces have a cave-like quality, while the waterside becomes a massive loadbearing masonry wall built from the mined material. One of the "caves" becomes a tunnel up to the school, while a bridge crosses over the water to link the council flats and the school to the canal. The building buries the

Section through building and site

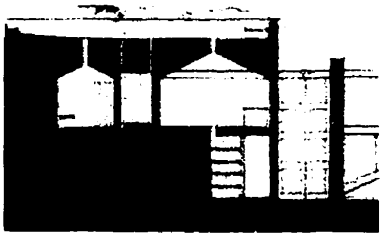
traditional form of a boathouse and internalises it. The roof of the boathouse becomes a courtyard playing area for the school.

The building is conceived as a hewn slab of stone on the site. The building feels expertly worked with precise, careful, even old-fashioned craftsmanship. The building will have a timeless quality. As the vegetation once again overgrows the site, it will appear as if the building has always been there.



Section model

The building details are essentially about light and water. It is detailed to remove the ground water by sloping floors and ceilings. Internal drains remove the water to the canal. Light slits in the ceiling delineate between materials and cast pools of light over the spaces. The changing areas, deep in the hillside, are only lit by cuts in the roof, while the work spaces are more open to the canal.



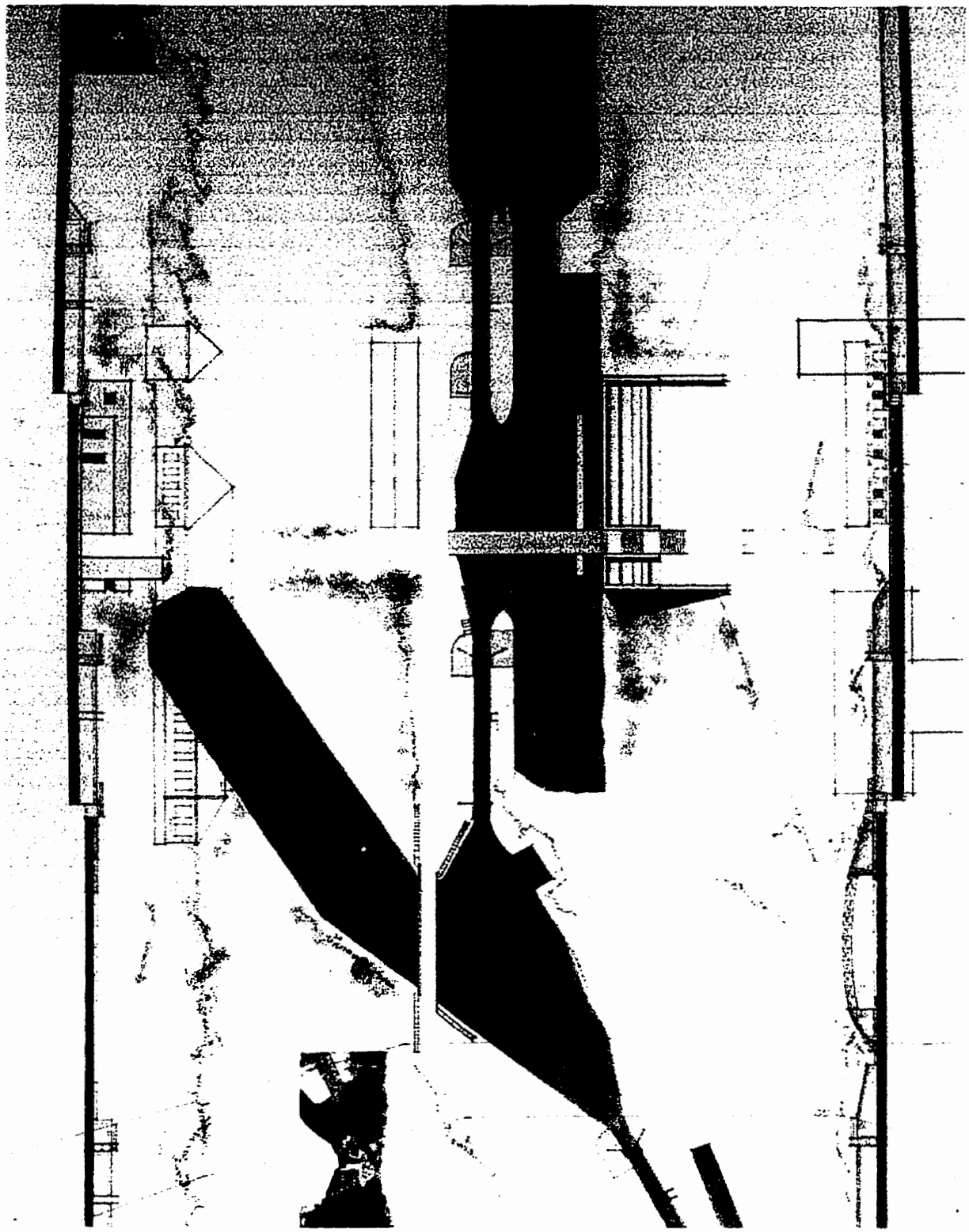
Cross section through building

The building has a bilateral quality, offering a plaza to the school and a boat shed to the canal. One can easily move between these two aspects and neither takes precedence.

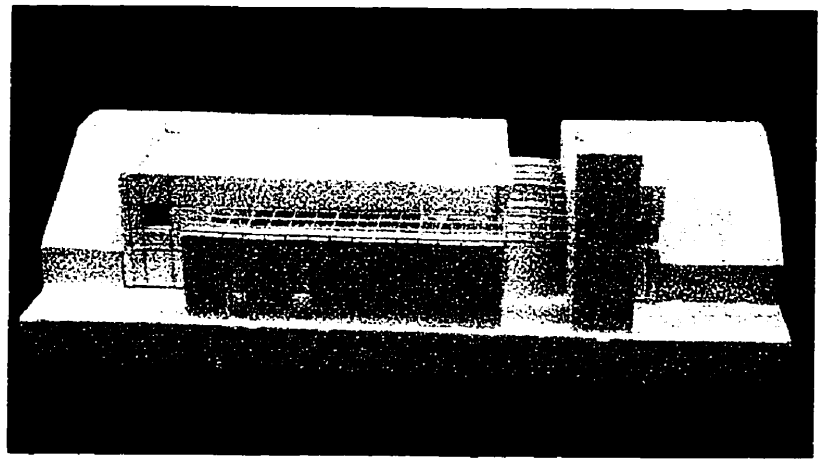
The design actively uses the architecture of the canals and develops a new use for it. The dry-dock uses the lock mechanism and the difference in water levels to contain and remove water.

Urban Renewal

The gesture of bridging the water brings the whole canal to this deprived part of town. Likewise, the boat shed will draw narrowboats to the area for repairs and moorage. Bringing together these elements would generate the energy such a spectacular part of town deserves.

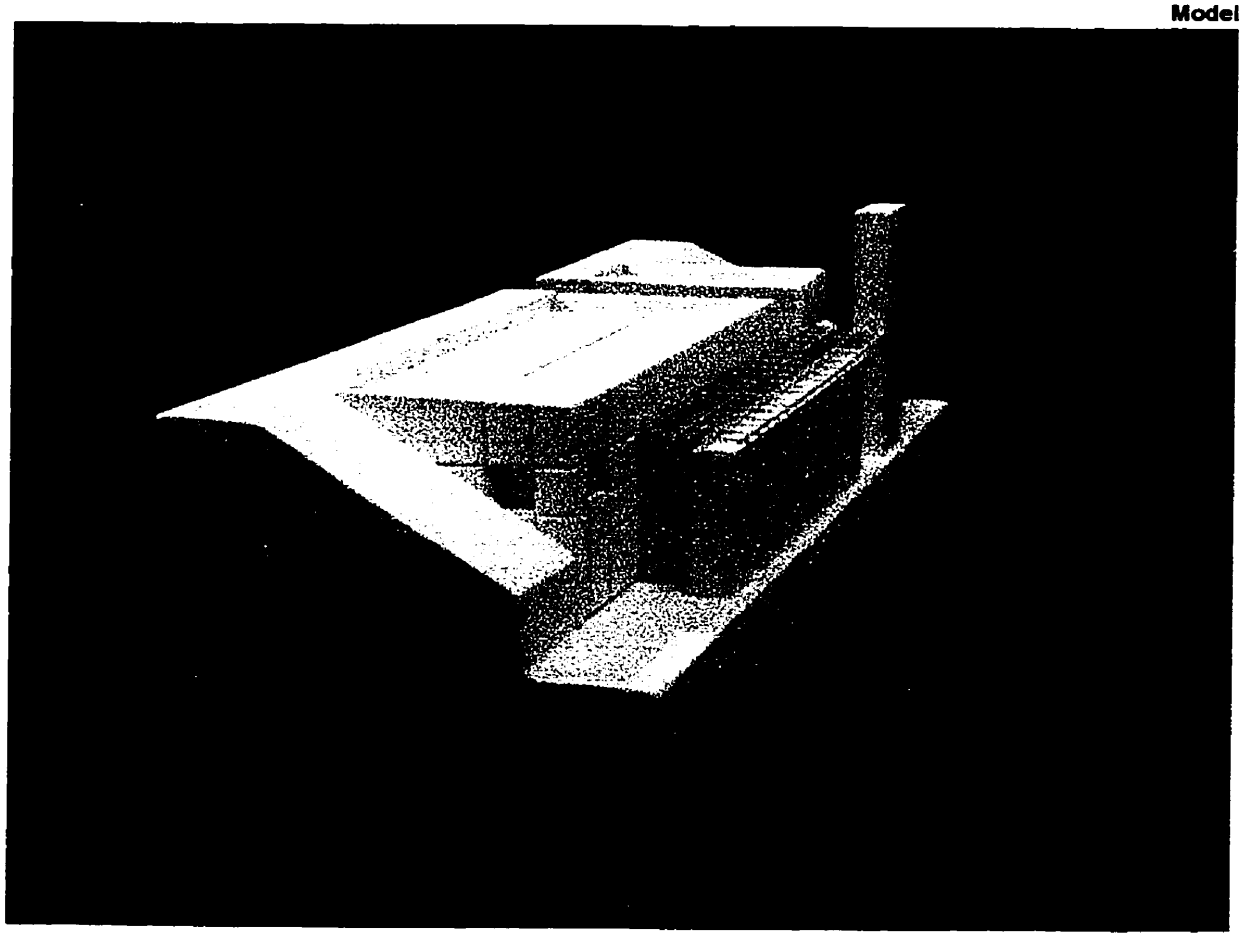


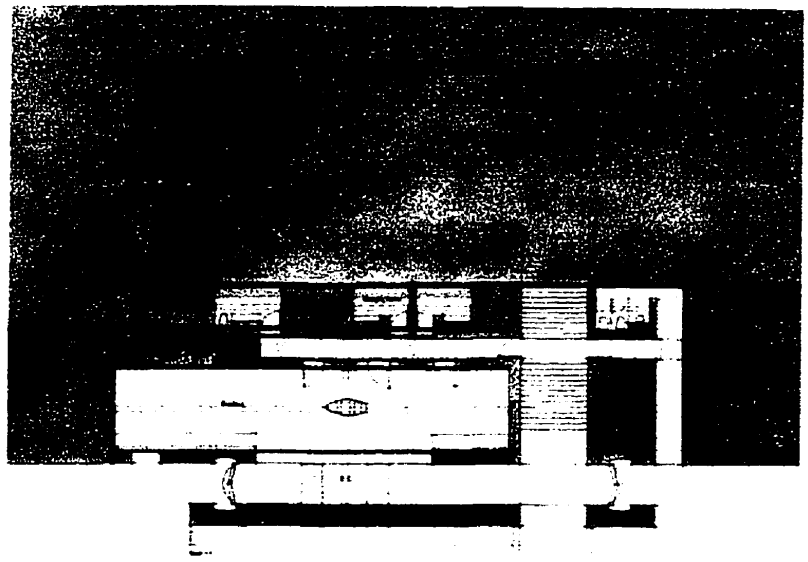
Site plan and site sections of the Delph



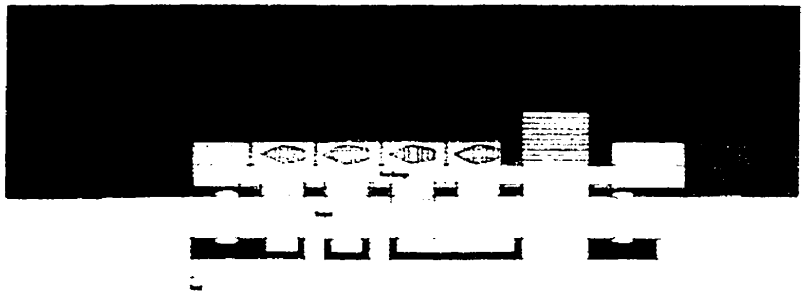
Model

Model

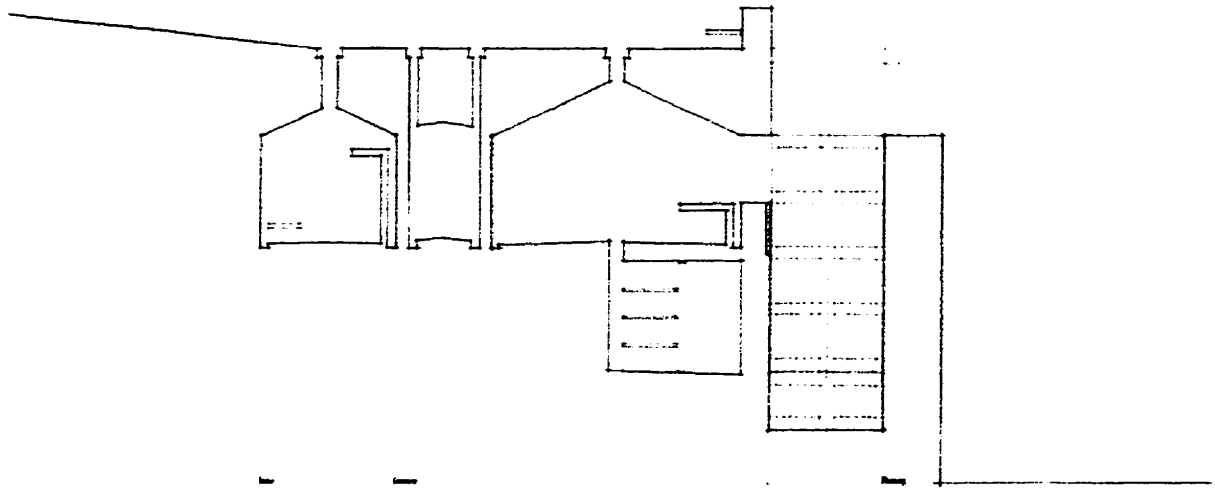


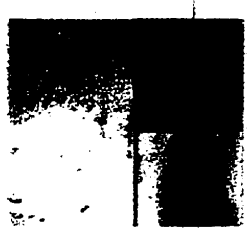


Canal +1

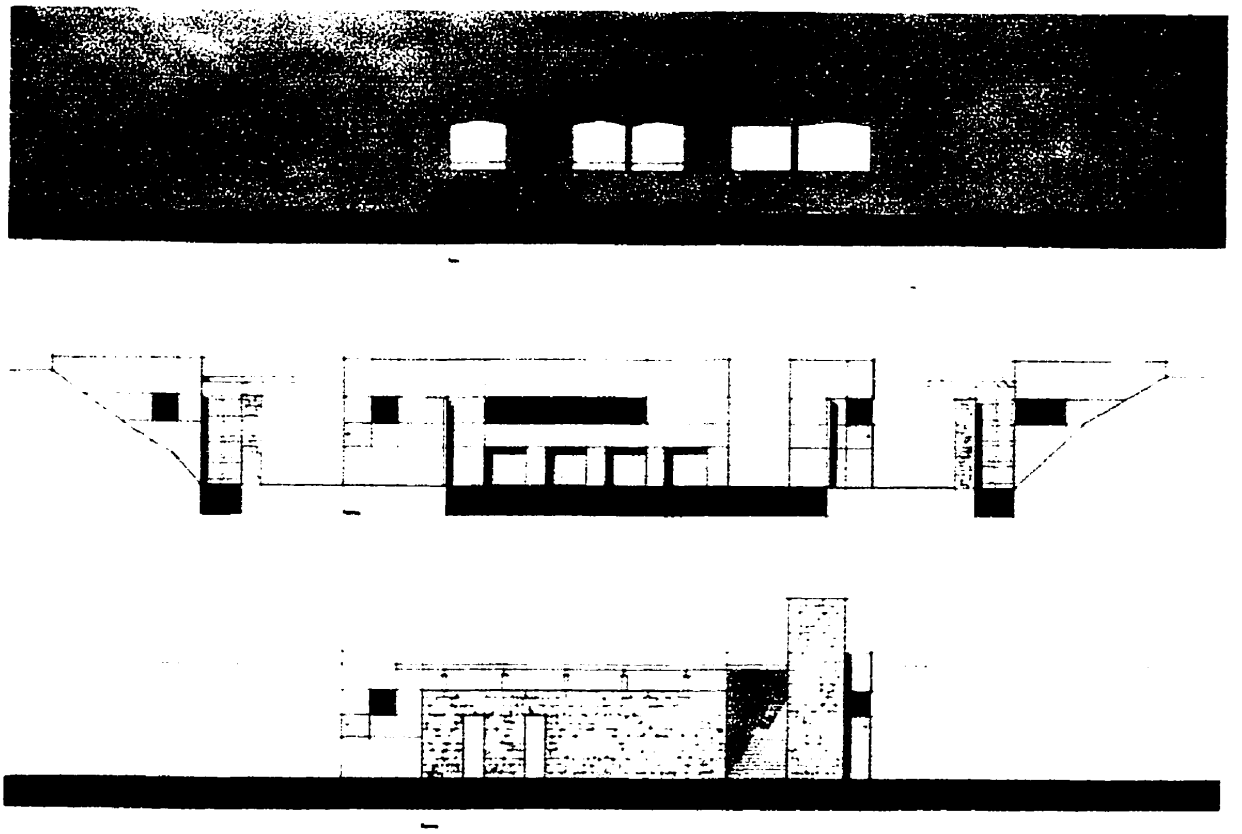


Canal Plan

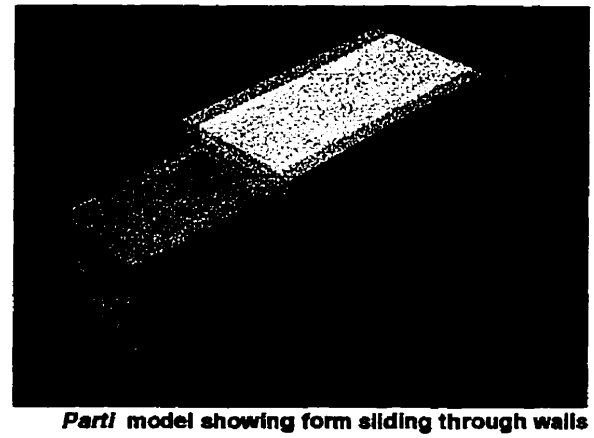




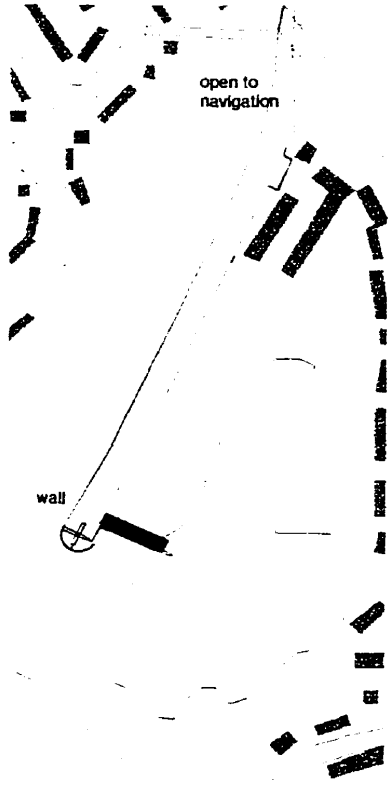
Cross section showing light and water within the building



Elevations/sections through building from changing area to boat shed showing progression from stone to masonry wall.



***Parti* model showing form sliding through walls**



Grove Pool - *parti*

Grove Pool

The Program - Community Centre, Changing Rooms and Pool

The sports area requires facilities while the surrounding council estates need a community focus. Building in this open area humanises the place and makes it less isolated and threatening while also providing a necessary link across the water.

Opening up this stretch of the canal to navigation would also bring narrowboats to the area. A circular stone wall would be built at the end of the canal, with the exact radius necessary for "legging" the boat around.

A tow path would be added to the other side of the canal to link the building to the sports facilities and the tow path.

The Urban *Parti*

The building bridges across the site, carrying the water from the reservoir to the canal. Water and building interact at different levels while providing crossing over and under the water.

Form

The building refers to the freight trains that connected to the canal. The containers become the upper floors of the building lifted above the stone base.

The sliding of planes and forms depicts the barge moving through the lock. There is a precision to the elements passing one another.

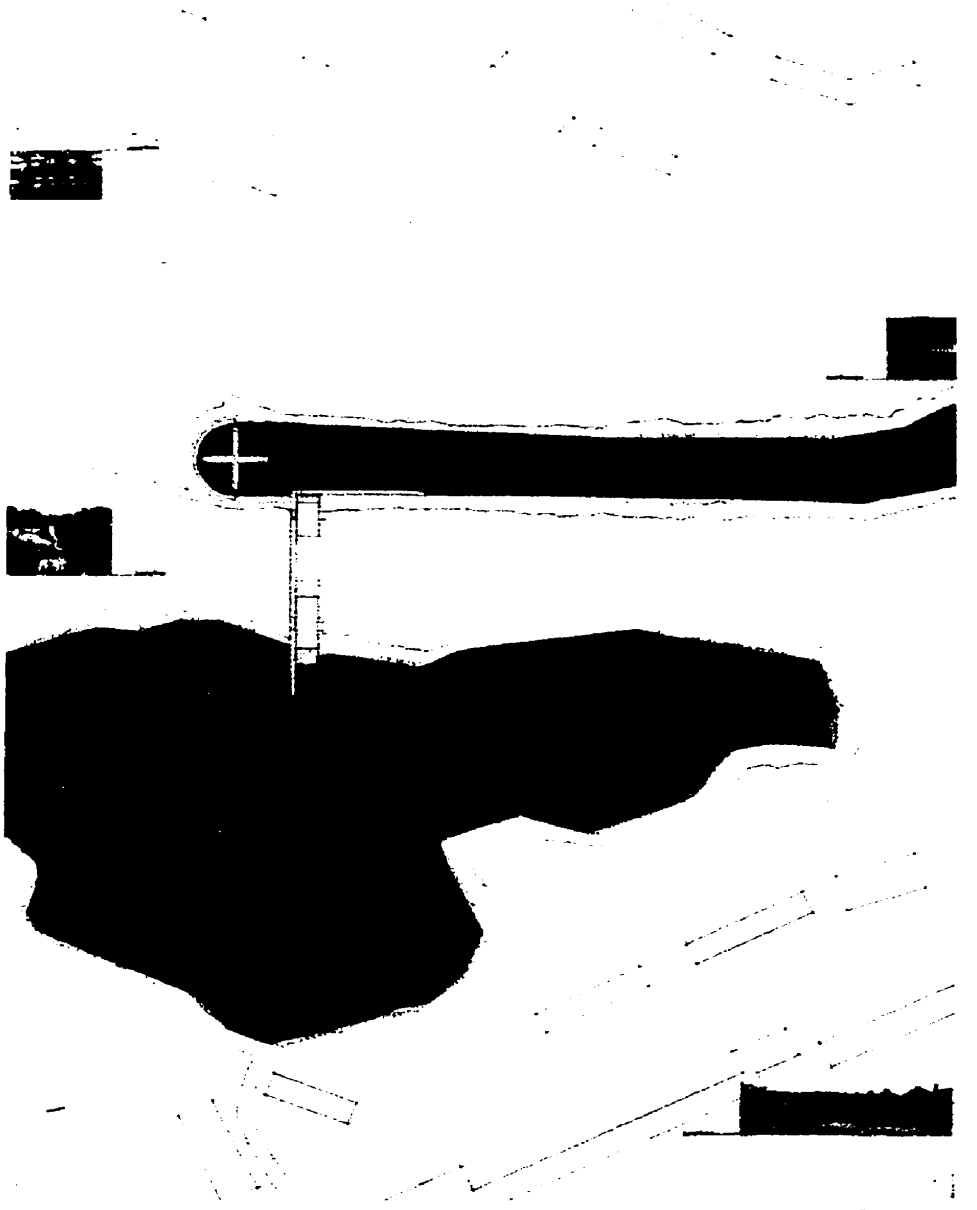
The design actively uses the architecture of the canals and develops a new use for it. The building is conceived as an aqueduct that carries the water through the building and across the site. One moves under and over the water through a series of tunnels, bridges and paths.

The building addresses both the reservoir and the canal, with neither taking precedence.

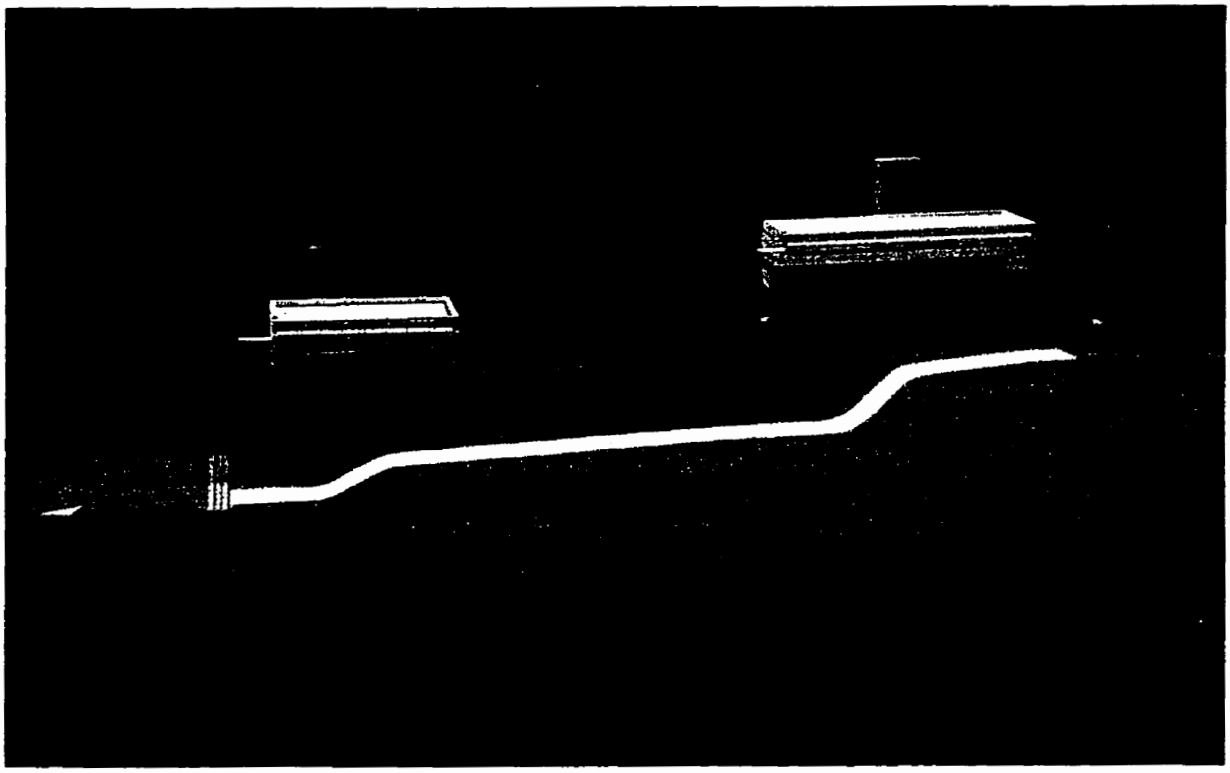
Urban Renewal

Inhabiting the canal with a building will make the area feel less isolated. Opening up the tow path and the canal for navigation enables this deprived part of town to access the entire canal network. A network of paths will start to develop between the canal, the housing estates and recreation area.

Possible urban renewal

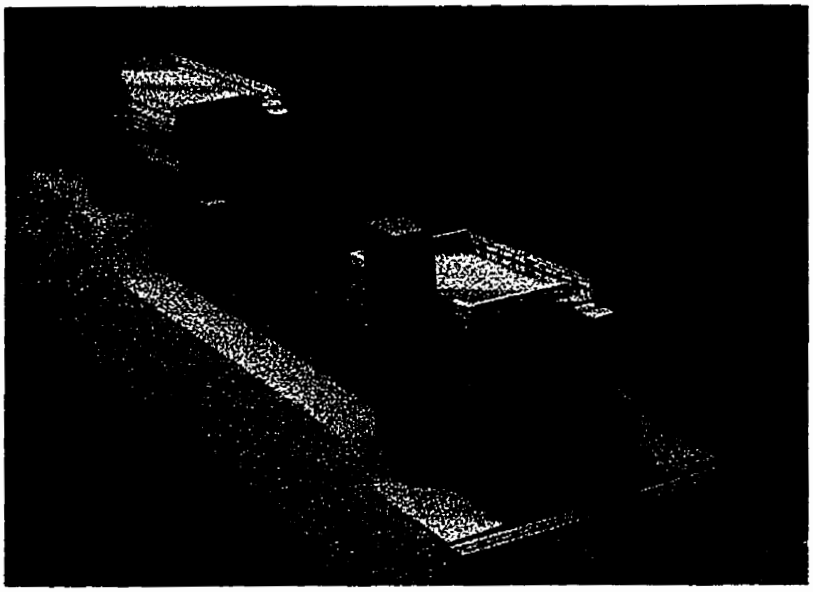


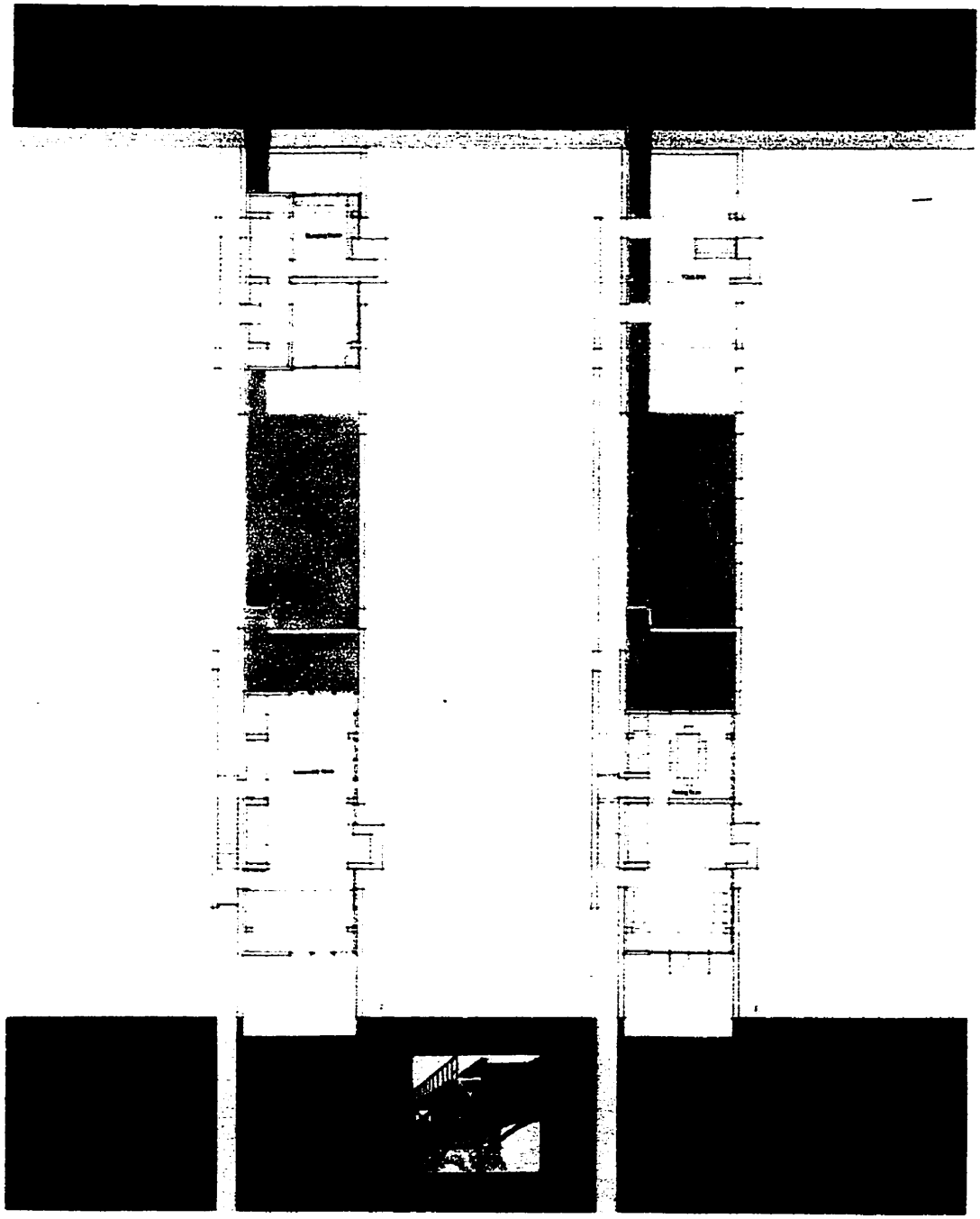
Site Plan



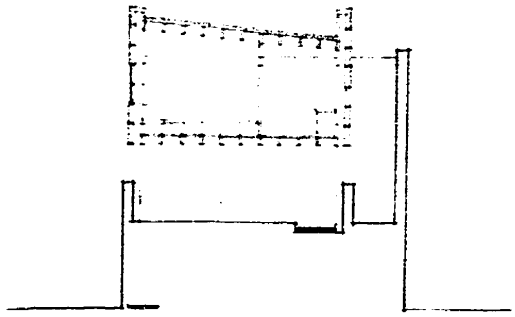
The building stretches from reservoir to canal

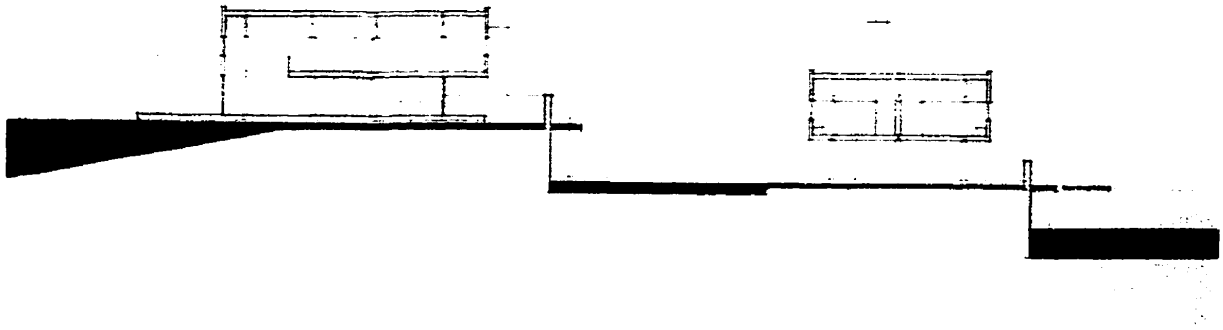
Water moves under upper building and through the lower building



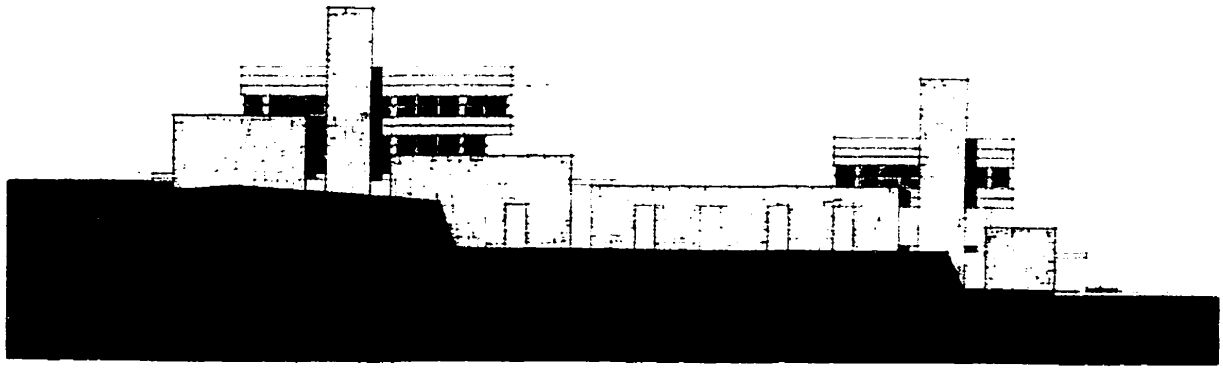


Plans

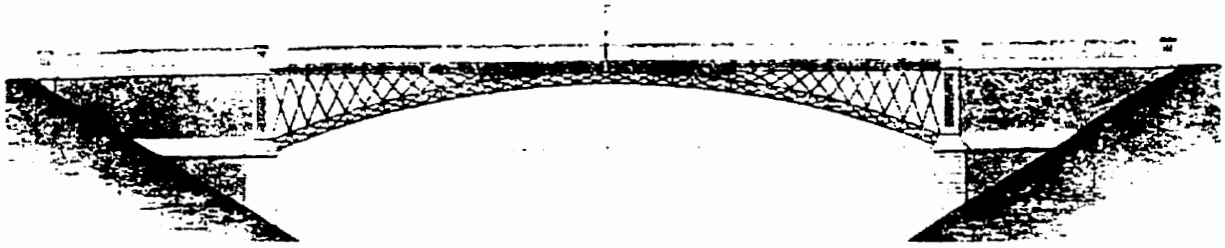




Sections

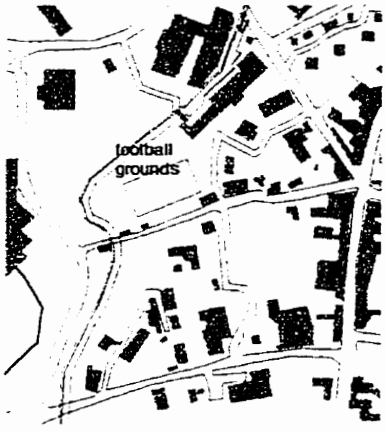


South elevation



Cast iron bridge over the Birmingham canal.
From Eric de Mare, *The Canals of England.*

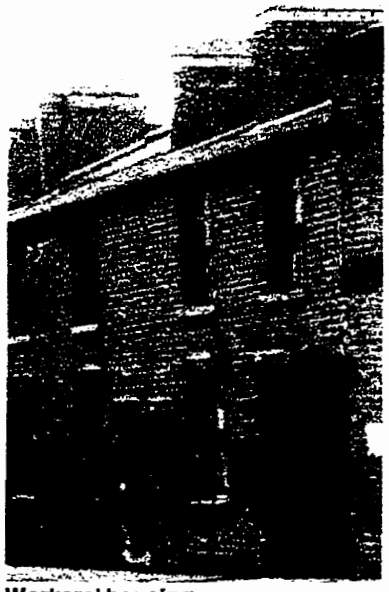
Merry Hill



Merry Hill - urban *parti*

The Program - An Inhabited Bridge

The Steel Works historically provided subsidised worker housing for employees. This housing was predominantly along Cottage Street which stretched from the centre of town towards the Steel Works. Since the closure of the Round Oak Steel Works many families in the area have relied on the welfare state for housing. This need for council housing is continually growing. Housing associated with work spaces could start to provide an alternative to this subsidised housing. Council accommodation based upon working and living could help break the cycle of high unemployment in this area and restore the memory of a working town.



Workers' housing

The football ground is close to the location of the old pitch. This community facility will, along with the bridge, encourage the building of a neighbourhood linking the old urban fabric with the new layer of the town.

The Urban *Parti*

The project links one of the main roads, Cottage Street, from the town centre to the shopping mall. Over the canal it forms a bridge. This bridge is buttressed by buildings. This bridge acts as a catalyst for similar projects and encourages urban growth along the canal. Inhabiting this area with houses adds a finer grain to the neighbourhood.

The location of the football ground starts to define a neighbourhood in this neglected and isolated part of town.

Form

The bridge and the buildings are dependent upon one another. The bridge develops into the buildings and vice versa.

Again the buildings are bilateral, facing both the canal and the shopping centre/town.

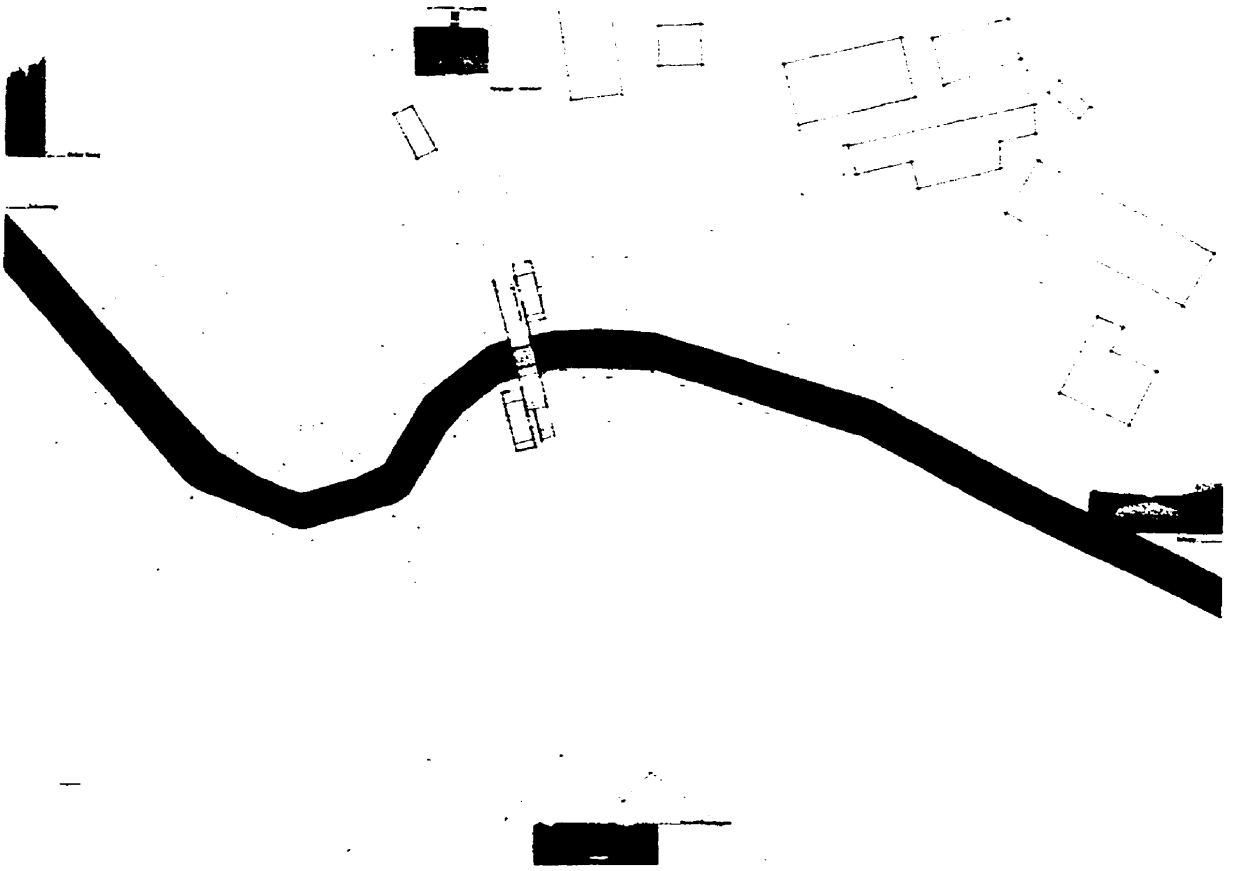
The base of the building is local ironstone and the skyward reaching parts of the design are steel. Just as iron ore was once extracted from this stone and processed into steel, the building discusses the memory of steel production on this site.

The design actively uses the architecture of the canals and develops a new use for it. The bridge is inhabited and generates urban renewal.

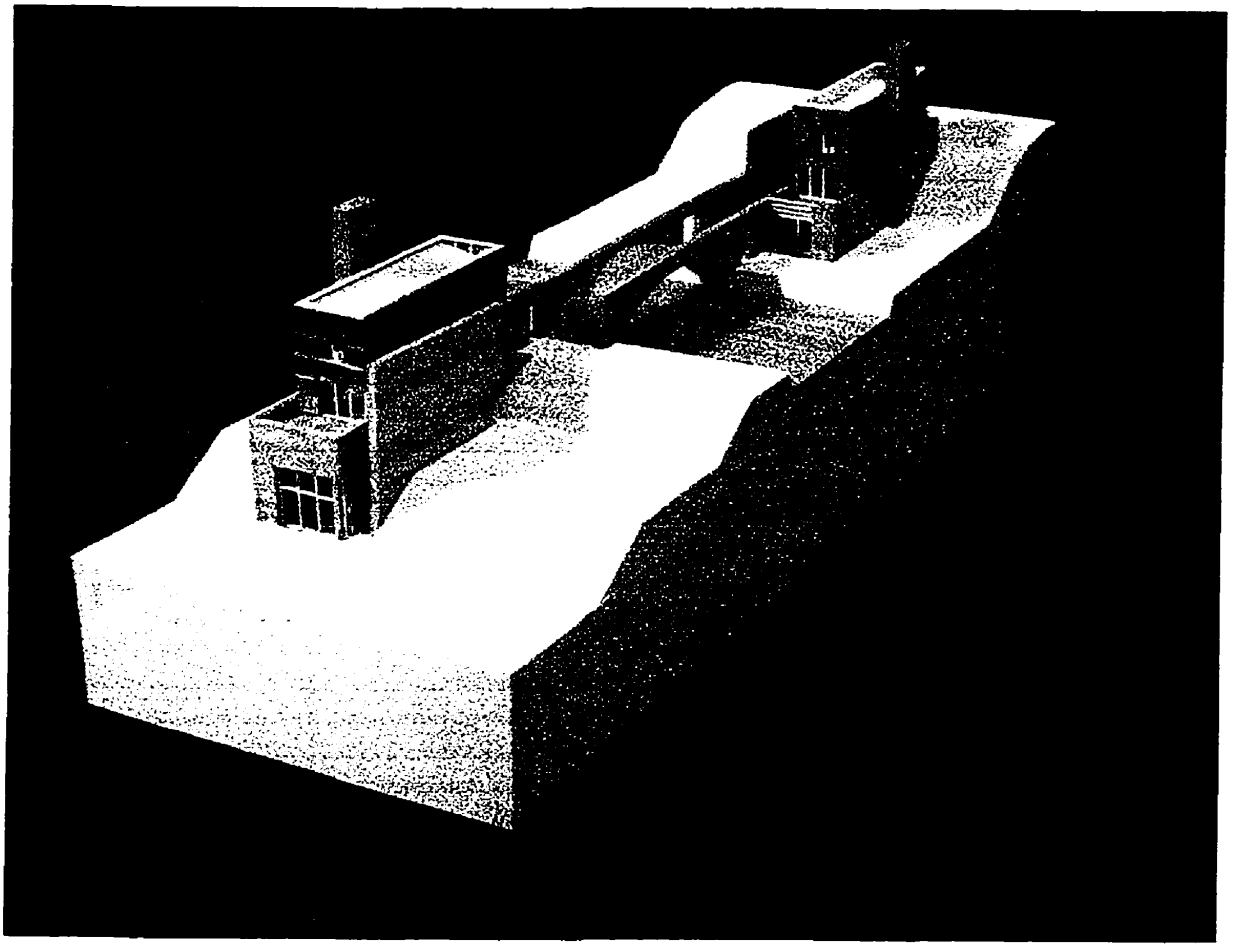
Urban Renewal

The gesture of bridging the water links the existing town to this large development. The bridge, the tow paths and the football grounds start to define a neighbourhood. As the community grows linearly along the canal it extends the urban grain of the town centre to the shopping mall.

Possible urban renewal

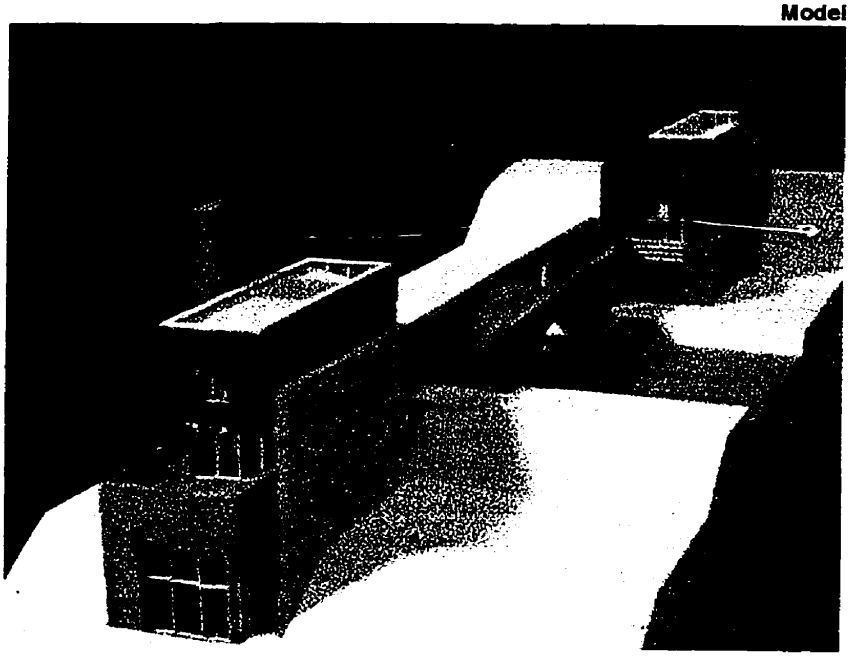


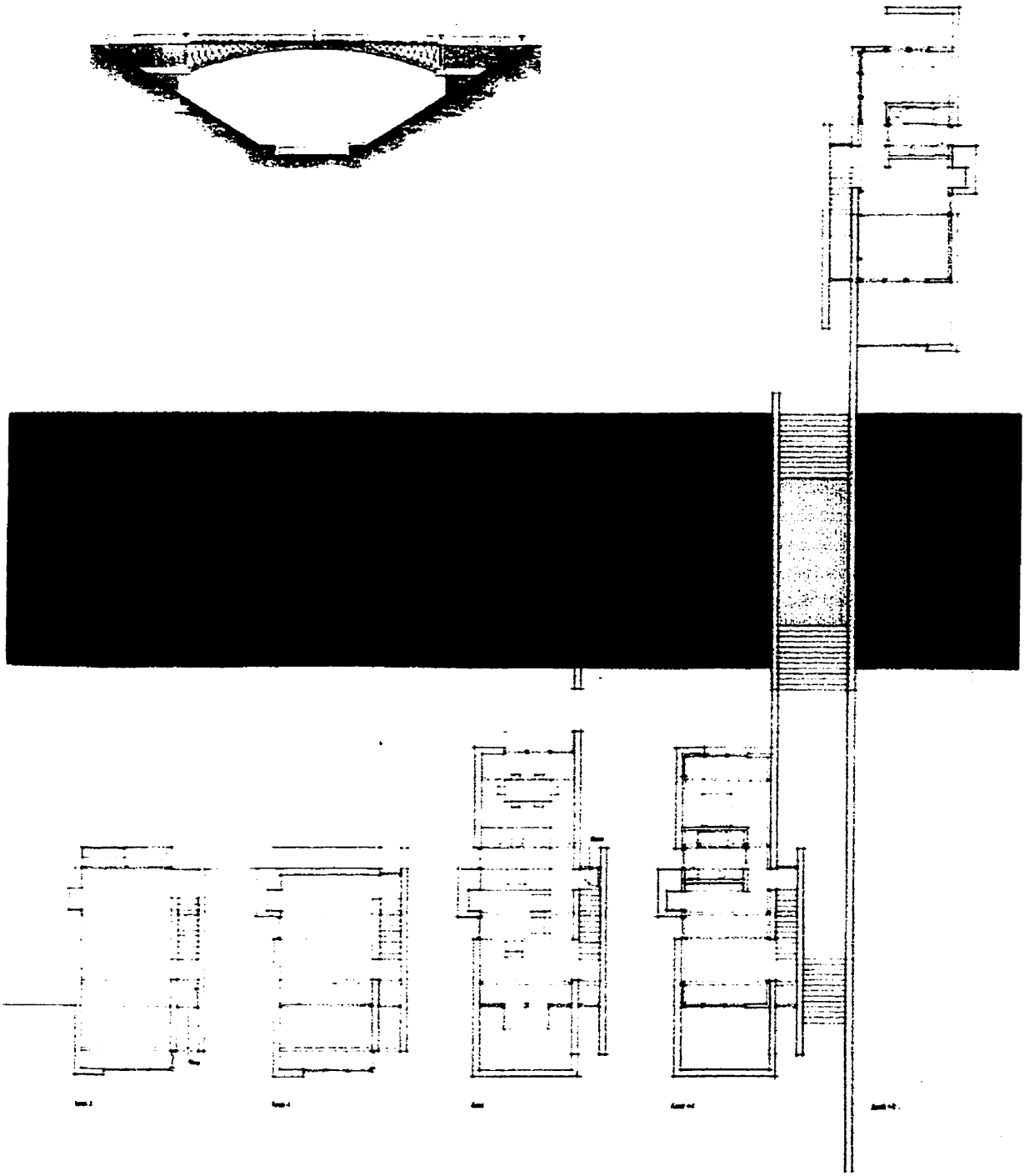
Site Plan of Merry Hill.
Dashed lines indicate potential future growth



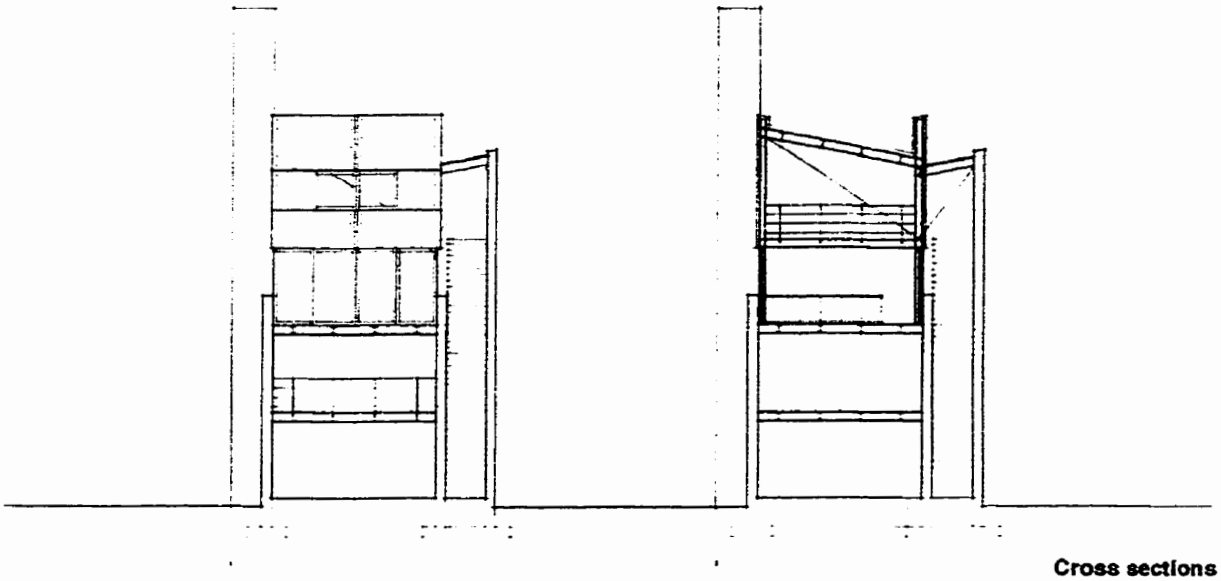
Model

Model

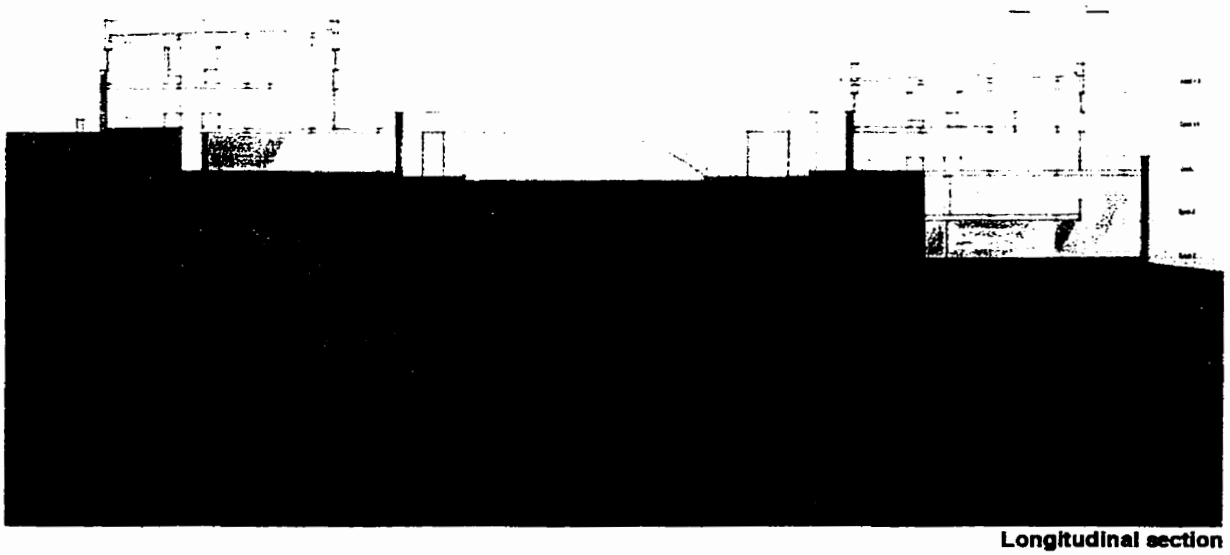




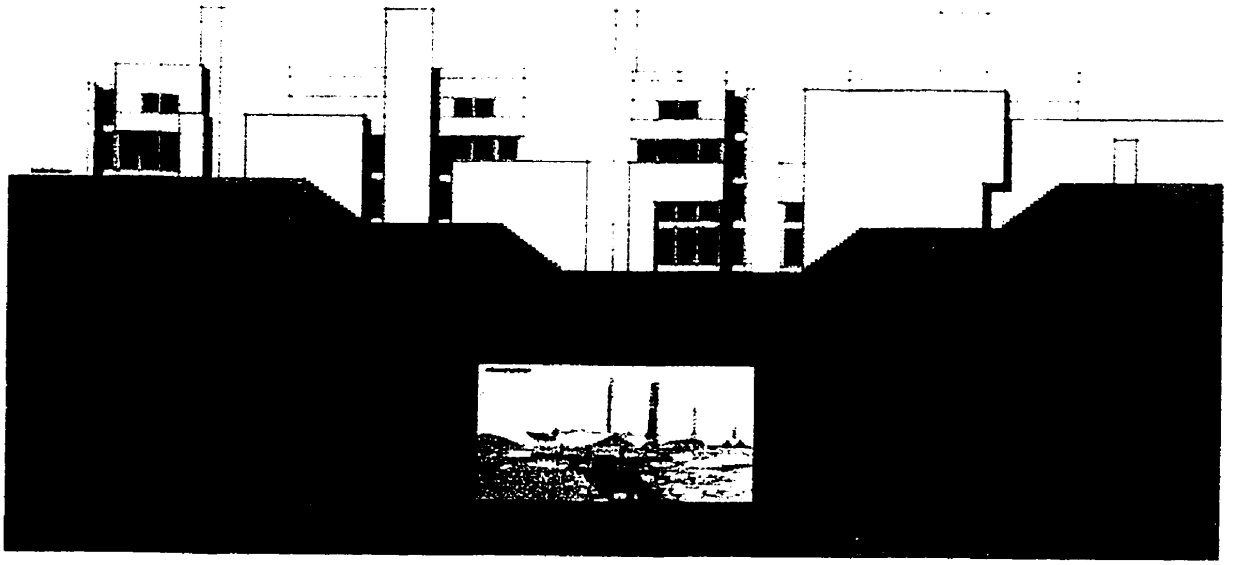
Plans



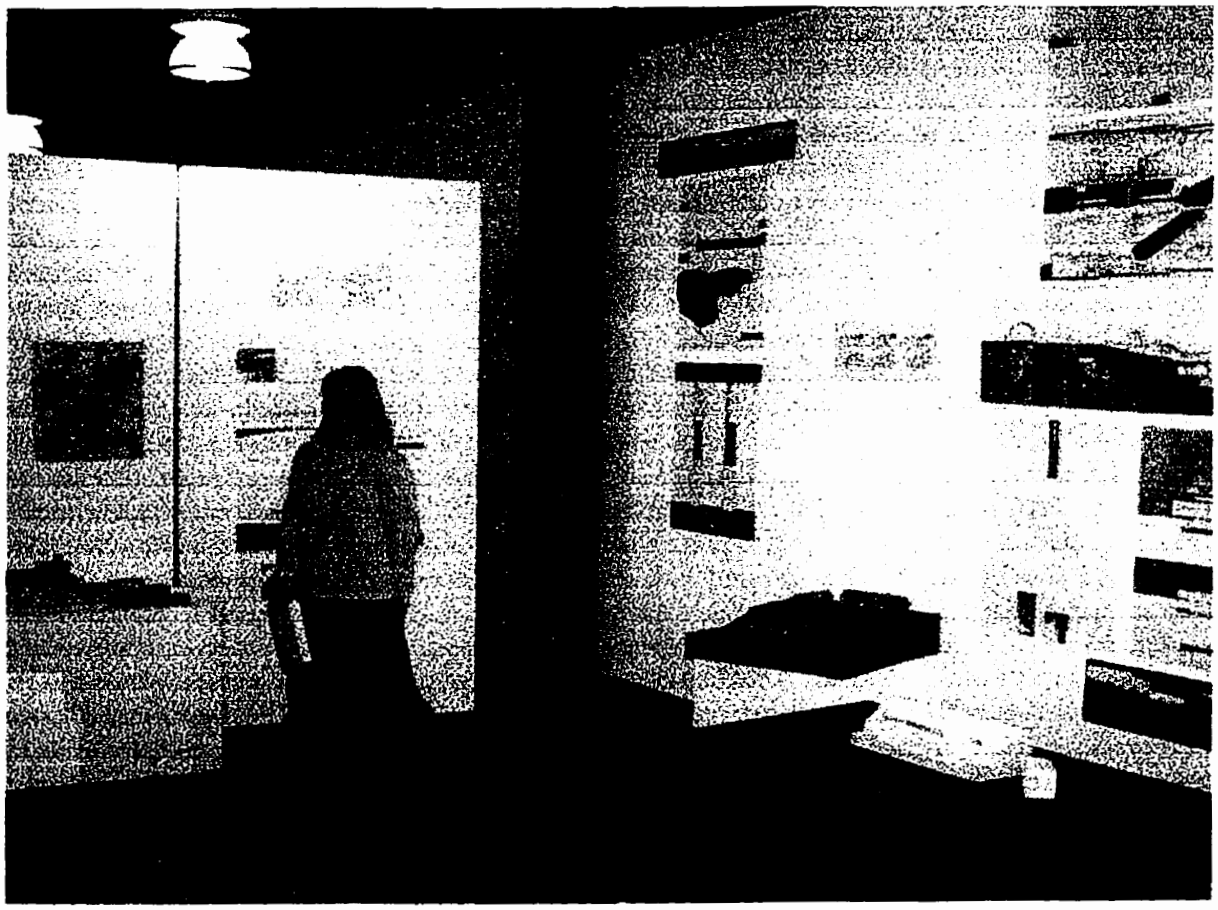
Cross sections



Longitudinal section



Unfolded elevations



Final presentation

SUMMARY

Response to the Thesis Question

How can the Stourbridge/Dudley canal enhance the cultural identity of Brierley Hill and act as a catalyst for urban renewal and community development, with methodologies applicable to the entire canal network?

The richness of the canal convinced me long ago that it could enhance the cultural identity of Brierley Hill. The path I have taken to uncover a method for that enrichment, while precarious during the process, now seems very clear. I have studied the situation, interpreted my findings and used them, with specific site information, to create a design.

In each case the work acts as a seed for further development that would be completed by the community. The seeds are minimal, but, it is hoped, have far reaching implications for urban renewal between the town and the canal.

The programmes and sites developed simultaneously from issues surrounding each instance. In many ways a larger or more complex programme would have advanced the study.

My reading of the canal is based upon the cultural memory of the Canal Age. The resulting work is an optimistic architecture that does not dwell on the horror of industrial England in the eighteenth and nineteenth centuries, or the England described in Orwell's *The Road to Wigan Pier*. The design does, however, address some of the issues. Taking the energy that fuelled the Industrial Revolution's passion for advancing technology would have been another clear way to proceed.

Personally, this thesis has been extremely fulfilling. Prior to this study I knew little about my home and was not knowledgable of the town's industrial past. Through study I have found the place compelling.

I have recently heard that the Dudley/Stourbridge Canal is looking for input as to how it can be improved. I will be submitting this thesis as my recommendation.

APPENDICES

Case Study 1

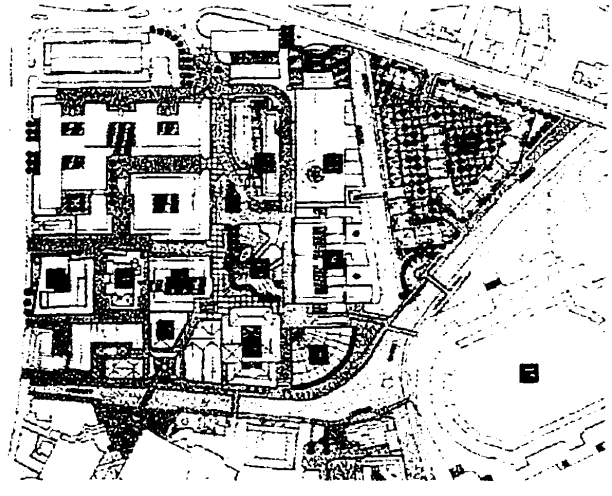
Canalside Site Development
Brindley Place, Birmingham, England (1990-Present)
Masterplanners: Terry Farrell and John Chatwin

3, Brindley Place, designed by Porphyrios Associates

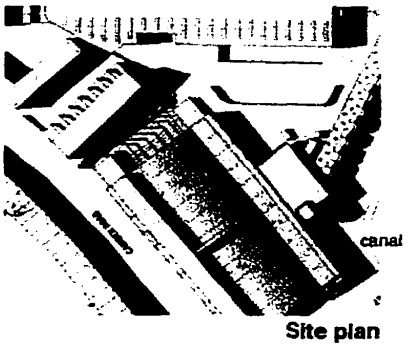
Brindley Place is a semi-derelict site close to the centre of Birmingham, at the heart of the country's canal network. A masterplan has been drawn up by Terry Farrell and Co. that includes office space, retail, leisure, housing, a symphony hall, convention centre, public square and parking for 2500 cars, although vehicles cannot access much of the development. It appears that the main objective of this project was to house the office expansion of Birmingham's business district from Colmore Row and to offer modern facilities that the Victorian buildings lack.

A diverse group of architects, including Norman Foster, have designed the buildings and public spaces, many of which have been completed.

The project has tremendous potential, especially given the rich program. There is, however, little integration of the program, with buildings reading as isolated objects in this once extremely layered part of the city. The housing, which could have added a finer grain to the project, reads as a private estate surrounded by a moat on the eastern edge of the development. In fact, the whole area, with its controlled entry points, feels a little like an exclusive club. While it is important to invest the area with new meaning, this development appears to erase the entire memory.



Master plan



Site plan

Case Study 2

Nicholas Grimshaw and Partners
Supermarket, Housing and Workshops, Camden Town, London (1989)


Houses along the canal

Supermarkets are generally considered anti-urban due to the associated parking necessary for shoppers and delivery of goods all at one level. Thus, they are often located in leftover land close to major traffic routes. This site in Camden is completely different in that it is one of the most vigorous local communities in London and a shopping centre of immense popularity.

The major strategic issues of the site involved the supermarket which does not relate to the canal. The low income houses required by Camden council are arranged as terrace housing facing the canal and turning their back on the supermarket parking. A private path runs along the edge of the canal, giving access to the front door.

Although the technology is standard cross-wall construction with concrete walls, the appearance is typical Grimshaw high tech.

Although discussed as a canal project there is little reference to the water or the tow path on the opposite side. The presence of a pathway disturbs the homes' private relationship with the water while also excluding the rest of the site from the canal.

This urban scheme is a complete entity that repairs the block successfully and brings the convenience of supermarket shopping into the heart of the city. It is, however, not a project that uses the canal for urban renewal, but for the pleasure of the individuals who live in the houses.

NOTES

1. Spyros Amourgis, ed., *Critical Regionalism: The Pomona Meeting Proceedings* (Pomona, California: College of Environmental Design, 1991), 322.

2. Old Ordinance Survey Maps, *Brierley Hill East 1901* (Newcastle upon Tyne: Alan Godfrey Maps, 1998), 2.

3. The Black Country Museum Information, *Lime Kilns* (Dudley: Black Country Museum, n.d.), 5.

4. Richard Rogers, *Cities for a Small Planet*, edited by Philip Gumuchdjian (London: Faber and Faber Limited, 1997), 23.

5. Juhani Pallasmaa, *The Eyes of the Skin: Architecture of the Senses* (London: Academy Group, 1996), 50.

6. Eric de Mare, *The Canals of England* (Guildford: Billing and Sons Ltd., 1961), 23.

7. Ibid., 37.

8. Ibid.

9. Ibid., 29.

BIBLIOGRAPHY

Canals

Braithwaite, Lewis. *Canals in Towns.* Stroud: Adams and Charles Black, 1976.

Forbes, V.A. *Our Waterways.* London: John Murray Publishers, 1906.

Gladwin, David. *Building Britain's Canals.* Studley, Warwickshire: K.A.F. Brewin Books, 1996.

Harris, Robert. *Canals and their Architecture.* London: Hugh Evelyn Ltd., 1969.

Langford, Ian J. *Stourbridge Canal Towpath Guide No. 3.* Birmingham: Lapal Publications, 1992.

Mare, Eric de. *The Canals of England.* Guildford: Billing and Sons Ltd., 1961.

Smith, Peter. *Canal Architecture.* Princes Risborough, Buckinghamshire: Shire Publications Ltd., 1997.

Local Information

Black Country Museum Information, *Lime Kilns.* Dudley: Black Country Museum, n.d.

Hill, Stan. *Britain in Old Photographs: Brierley Hill.* Stroud: Budding Books, 1998.

Greenslade, M.W., and D.G. Stuart. *A History of Staffordshire.* Chicester: Phillimore and Co., 1998.

Girouard, Mark. *The English Town.* New Haven: Yale University Press, 1990.

Hickling, A.J.R. *Black Country Pits.* Sedgley: Dormston House, 1989.

Old Ordinance Survey Maps, *Brierley Hill East 1901.* Newcastle upon Tyne: Alan Godfrey Maps, 1998.

Raven, Jon. *The Book of the Black Country.* Wolverhampton: Broadside, 1989.

Raven, Michael. *Black Country Towns and Villages.* Wolverhampton: Broadside, 1991.

Other

Amourgis, Spyros, ed. *Critical Regionalism: The Pomona Meeting Proceedings.* Pomona, California: College of Environmental Design, 1991.

Leatherbarrow, David. *The Roots of Architectural Invention.* Cambridge: The Press Syndicate, 1993.

Leatherbarrow, David, and Mohsen Mostafavi. *On Weathering: The Life of Buildings in Time.* Cambridge, Massachusetts: The MIT Press, 1993.

Orwell, George. *The Road to Wigan Pier.* London: Penguin Books, 1937.

Pallasmaa, Juhani. *The Eyes of the Skin: Architecture of the Senses.* London: Academy Group, 1996.

Peters, Tom F. *Building the Nineteenth Century.* Cambridge, Massachusetts: The MIT Press, 1996.

Rogers, Richard. *Cities for a Small Planet.* Edited by Philip Gumuchdjian. London: Faber and Faber Limited, 1997.

Willett, B.M. ed. *Philips' Atlas of the World.* London: George Philip Limited, 1988.

Case Studies

Davey, Peter. "Urban Grimshaw." *Architectural Review* 1112 (October, 1989): 36-49.

Singmaster, Deborah. "Canalside site develops into Birmingham's new West End." *Architects' Journal* (23 March, 1995): 24-26.

Individuals and Organisations

Black Country Museum, Tipton Road, Dudley, England.