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Part 22: Design Summary for Restoration Section 10: Kiveton Park

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22 Design Summary for Restoration Section 10: Kiveton Park

22.1 Overview

Connecting the surface route to the national network

- 22.1.1 The Kiveton Park restoration section commences to the east of Wales Bridge and extends eastwards to the eastern portal of Norwood Tunnel.
- 22.1.2 East of the Wales Locks and Wales Bridge the canal is at the Kiveton Waters pond level. It then skirts the north-west boundary of the former colliery tip utilising the line of an existing trackway and drain before entering the former colliery site itself.
- 22.1.3 The route within the Kiveton Colliery site has already been defined by the construction of a canal channel and deep cutting. This prepared and protected route was built when the landscaping of the former colliery site was undertaken by English Partnerships. At the same time three large ponds, Kiveton Waters, were constructed on the colliery site at the summit level. These ponds are located to the north of the intended “main line” and were cut to a navigable depth profile with the intention that they can be converted into a marina once the canal is restored. In the interim they are let as fishing ponds.
- 22.1.4 Joining Kiveton Waters and the national network will involve use of the eastern surviving fragment of the Norwood Tunnel. This was inspected by British Waterways in 2001. It was found to be intact and in good condition for a distance of around 400 m from the East Portal. The first blockage occurs just to the east of Hard Lane.
- 22.1.5 The link will be made by excavating a cutting to the west of Hard Lane. Within the cutting a three-rise staircase lock will lower the canal to the tunnel pound level. A culvert will take the canal beneath Hard Lane and make a junction with the intact section of the tunnel.
- 22.1.6 The 400 m long tunnel fragment will then bring the canal out of the former eastern portal of the Norwood Tunnel into the cutting west of Kiveton Park Station. This is the current head of navigation from West Stockwith on the British Waterways section.
- 22.1.7 The land corridor required for the new canal, marina and works within the former colliery site, together with the remaining tunnel fragment, are all owned by British Waterways.
- 22.1.8 It is likely that the Kiveton Park section will be the first phase of the Eastern Division to be completed. Reinstatement through the eastern tunnel fragment will enable Kiveton Waters to be developed by British Waterways as a marina and temporary head of navigation prior to the completion of the through connection to Chesterfield. The length of canal through the cutting to the site of the Wales Locks would be used as a further interim fishing pond.
- 22.1.9 There is strong evidence that the development of the Kiveton Waters site as a marina would have considerable economic benefit for the surrounding communities.

22.2 Environment & Ecology

Key Features

- 22.2.1 This section of the route includes both recently restored land and an area of ecological interest:
- 22.2.2 The new surface route commences at the eastern boundary of the former Kiveton Colliery site and follows an alignment already defined by a cutting and earthworks along a reserved corridor up to the west side of Hard Lane. This runs through the centre of the reclaimed colliery site and is composed of a new landscaped surface and stone surfaced towpath. On reclamation the canal line was seeded with a grassland seed mixture and since then it has gradually developed a tall grassland/tall herb community. This has low ecological value at this time.
- 22.2.3 At Hard Lane the proposed canal line will enter the remaining segment of the Norwood Tunnel. The line of the tunnel passes under and to the south of the farm track between Hard Lane and the Eastern Portal of the Tunnel. The line of the tunnel being marked by spoil mounds and upcast from the construction shafts. The farm track is sited on spoil from the tunnel construction and is raised above the level of the ground to the north which forms the Pennyholme Marsh.
- 22.2.4 The Pennyholme Marsh is an area of seasonally flooded shallow-water wetland which is of ecological importance because of its flora and its potential value to birds and herptiles. The south western end of the Pennyholme Marsh site has been damaged by infilling. Following enforcement action by RMBC much of this material has been removed, although the site remains in a fragile condition.
- 22.2.5 There is potential for damage to this site during the construction period.

Mitigation

- 22.2.6 The Norwood Tunnel repair works will be carried out from the Hard Lane cutting and from the Eastern Portal. The work camp for this section will be located on the hard standing adjacent to Kiveton Waters with works access off Hard Lane. There should be no requirement to undertake surface works along the line of the canal adjacent to the Pennyholme Marsh.
- 22.2.7 Limited access will be required along the line of the existing farm track for the period of re-construction. The existing farm track is surfaced by rough stone and earth. It is used by farm vehicles and also forms the line of the Cuckoo Way across the tunnel top between Hard Lane and the Eastern Portal. During reconstruction the farm track will be surfaced with coarse crushed stone on a terram base. Upon completion of works this will be either (a) retained in full and surfaced with finer grave to top provide a combined farm access track and Cuckoo Way or (b) (should farm access not be required) the coarse stone will be partially removed to leave a 2m wide corridor which will be surfaced with finer stone and toptrek to provide a fully surfaced Cuckoo Way through the site. In each case the objective will be to minimise damage to existing local habitats.

Enhancement

- 22.2.8 The creation of new waterspace through the centre of the Kiveton Colliery Site (now Kiveton Community Woodlands) will increase the range of habitats on the site through the use of a channel profile with an off-bank reed shelf.
- 22.2.9 The existing shallow water reserves and ponds adjacent to the canal line will be retained and will continue to take drainage water from the colliery tip. This water after passage through the shallow ponds and reedbeds will be fed into the canal.
- 22.2.10 Additional wetland areas may be created on the off bank of the canal route between the new Kiveton Bridge and Hard Lane.

Engagement

- 22.2.11 The Kiveton Community Woodlands are managed by the Forestry Commission who are working to develop better links with the local community. There is scope to develop these links to manage the wetland corridor which will be threaded through the woodlands site.

22.3 Archaeology & Heritage

Key Features

- 22.3.1 This main heritage features in this section all relate to the Norwood Tunnel and thus the Tunnel forms a natural focus for interpretation. The key features are:
- The last surviving intact length of the Norwood Tunnel
 - Norwood Tunnel Construction Shaft Spoil Tips
 - Norwood Tunnel Construction Horse Gin Site
 - Norwood Tunnel East Portal and the site of John Varley's House

Assessment & Actions

- 22.3.2 The route across the colliery site runs entirely on reclaimed and made ground. There is no scope for built or buried archaeology in these lengths and no action is proposed.
- 22.3.3 The excavation of the cutting for the locks to take the canal down to tunnel level will require breaching through the remains of the tunnel and the creation of a new intermediate western portal. National Coal Board records show that the tunnel was previously breached in this area by a Drift Mine and the tunnel was sealed with mine waste capped with cement (Structural Perspectives 2004). Although it is unlikely that any significant archaeological remains survive a watching brief during excavation is advised. The objective will be to recover additional evidence on the construction of the tunnel which will support long term maintenance.
- 22.3.4 The repair of the remaining tunnel length will be undertaken using the same standards successfully employed by British Waterways and their contractors on the restoration of the canal from Shireoaks to Kiveton Park. As part of this process archaeological recording will be undertaken prior to any intervention and an archaeological watching brief will accompany any intervention.

22.3.5 Restoration will make the remaining fragment of the Norwood Tunnel accessible and thus provide opportunities for interpretation to visitors. The Norwood Tunnel was a remarkable engineering achievement for its day and although eclipsed by other, surviving, monuments it nevertheless deserves to be more widely celebrated.

22.3.6 The original construction spoil heaps and horse-gin sites noted in the Heritage Survey (part 8) above this eastern fragment provide an opportunity to tell the story of the building of the tunnel – how it was built and who did the work. This links to the aspiration to create a series of local history walks (see 22.7).

22.4 Economic & Social Regeneration

22.4.1 The connection of the Kiveton Waters Ponds to the main waterway network will enable the ponds to be developed as a marina. This provides a focus for economic development.

22.4.2 Marina development will be a step wise development: (1) Following construction of the link the first two ponds will be utilised for the marina, the third pond will be retained for fishing. (2) Lengths of the canal channel over the summit line of the canal will excavated and placed in water. These will become temporary new fishing ponds. (3) The locks will be connected and the main line will become accessible to boats. At this time additional ponds will be constructed on the summit level to provide water reservoirs and alternative off-line fishing ponds.

22.4.3 The economic benefits which will accrue to the community from the Kiveton Waters marina will depend upon the scale of development. Initial development of the site will be basic serviced moorings. Further development, such as construction of a slipway and workshops, will enable growth of additional waterway related businesses such as boat hire, boat maintenance and repair with consequently increased economic benefits. The scale of development proposed may be reconsidered in the light of the continuing evolution of the Rotherham Local Development Framework (LDF).

22.4.4 There is also scope for further canal side development. The allocation of housing development areas within Rotherham is still under discussion and no decisions have been taken. Nonetheless, we note that in some allocation models additional housing is allocated to Wales & Kiveton Park. The prospective development areas lie between the recent housing on the south side of Wales and the proposed canal line. There is therefore long term potential for canal side housing development (most of which falls within the Wales section). As waterside housing can command premiums of between 15 and 30% reinstatement of the canal may be of great benefit in helping to drive housing regeneration.

22.5 Planned Works

Earthworks

22.5.1 The major earthworks to create the canal track in this section are already formed to the agreed intermediate base level. The canal channel will need to be excavated

from towpath level to channel base but there will be no additional overburden or cutting to dispose of.

- 22.5.2 Disposal of the channel fill will be via the canal track to the west where it will be used to form the embankments leading to, and around, the Wales and Coalpit Lane locks. The objective is to retain 100% of the fill within the canal site.
- 22.5.3 The fills for the canal channel through the Kiveton section are known; There are no contaminated materials to dispose of and there will be no disposal to landfill.
- 22.5.4 Excavation of the cutting to provide access to the western end of the Norwood Tunnel Fragment is through partially reclaimed land but will break through into infilled tunnel workings. The state of the workings is largely known from the infill records kept by the National Coal Board during development of the Kiveton Drift Mine (Structural Perspectives 2004). Given the recorded fills there is little potential for contamination and on-site disposal is again indicated.

Construction Impacts

- 22.5.5 Hard lane will provide the main access road to the work sites.
- 22.5.6 The primary temporary construction access will be from Hard Lane westwards onto the Kiveton Colliery Site. The existing entrance will be utilised with a temporary restriction on use of the main car park being required at key points.
- 22.5.7 The secondary temporary construction access will be from Hard Lane eastwards onto the farm track leading to the eastern portal of Norwood Tunnel. This will utilise existing farm gates and will only be require infrequently. Some additional ground armouring (crushed stone on terram) will be required on the track (this will be reused in footpath construction, see access).
- 22.5.8 Construction of the Hard Lane Bridge / New Norwood Tunnel West Portal may require short term temporary closure of Hard Lane although staged construction should enable retention of a single carriageway controlled by traffic lights for all but the shortest periods of time. In those circumstances local roads provide appropriate diversionary routes.
- 22.5.9 Construction of the canal will intercept the Broad Bridge Dike and may result in temporary fluctuations in sediment yield flowing into the canal. Use of temporary sediment lagoons on the Broad Bridge Dike downstream of the works should trap sediment and prevent downstream contamination.

Potential Hazards

- 22.5.10 The reclamation of the colliery site has removed the potential hazards east of Hard Lane. The largest remaining risk is in the reconstruction of the Norwood Tunnel fragment and in making the linkage between it and the Hard Lane bridge/culvert.

Utilities

- 22.5.11 West of Hard lane there are no utilities to divert.
- 22.5.12 Hard lane contains both gas and water mains. Runs for both will be incorporated into the bridge structure.

- 22.5.13 East of Hard Lane there are overhead electricity supply cables. The electricity poles are clear of the working areas and canal track, although the positioning of the overhead cable runs may restrict the use of cranes in the vicinity of Hard Lane.

Bridges

- 22.5.14 Kiveton Bridge takes the main internal access track over the canal – it will be capable of taking large maintenance equipment and vehicles and will also function as a canal turnover bridge or change-line bridge taking the canal towpath from the north to the south side. The design is similar to the recently completed Bilby Lane Bridge and features a reinforced cast concrete core clad in hard red brick with stone copings.
- 22.5.15 Hard Lane Bridge will be a standard reinforced concrete box culvert and will also provide the entrance to the western end of the last surviving fragment of the Norwood Tunnel. The design of Hard Lane Bridge is integral to the design of the Tunnel restoration.

Locks

- 22.5.16 Hard Lane Locks are a three rise configuration which will take the canal from the tunnel level (the current summit pound level) to the level of the Kiveton Waters ponds. The locks are designed without a conventional byweir and all excess water flow from the Kiveton Waters Pond level is discharged via the Broad Bride Dike.

Water Supply

- 22.5.17 Water supply for this section comes from the Harthill and Pebley reservoirs. Both reservoirs discharge to the Broad Bridge Dike. This currently flows across the proposed line of the new canal and then flows around the north side of the Kiveton Waters Ponds. Some water is abstracted and later returned from the Kiveton Waters ponds. The Dike then flows under Hard Lane and discharges via a cascade into the canal near Kiveton Park Station.
- 22.5.18 Following restoration the Dike will be interrupted by the new canal line. An inlet weir will be built on the south bank and an outlet or overflow weir on the north bank. This will guarantee continued flow along the Broad Bridge Dike.
- 22.5.19 Provision will be made in the design of the Hard Lane Locks for the addition of back pumping equipment should this be required at a later date.
- 22.5.20 Some additional water inflow will to this section will come from **surface water drainage**: A surface water drain from a new housing estate enters the drain which lies on the canal line between Wales bridge and the entry of the canal to the Kiveton Community Woodlands. It is proposed to continue this arrangement but to construct a reed filter-bed at the point of entry to filter suspended sediment and improve water quality.

22.6 Access Improvements

Towpath & Access Points / Nodes

- 22.6.1 From the site of the Wales Locks the Cuckoo Way follows the approximate line of the new canal into the Kiveton Colliery / Kiveton Community Woodlands site. It is

then diverted north through the Kiveton Community Woodland and around the Kiveton Waters ponds before reaching Hard Lane.

22.6.2 With the construction of the new surface route the towpath will follow the Canal, commencing on the north side of the water at Wales locks and then changing line to the south side at Kiveton Bridge. It will then loop around the Hard Lane locks (giving the visitor an interesting view west over the locks) before crossing the road at the same location as at present.

22.6.3 Following completion of the new waterway line there will be a continuous towpath beside the canal and the formal Cuckoo Way should again be diverted to follow this route. The existing paths throughout the park will of course be retained as part of the park path network.

22.6.4 After crossing Hard Lane the present Cuckoo Way regains the original "Tunnel Top Horse Path". This route will be retained following restoration but will be upgrade to an access for all, all weather, surface.

22.6.5 The key access nodes in this section are located at:

- The western edge of the Kiveton Community Woodlands. Links to a path from the village (Access Node AN 52a).
- The main new footpaths through the Kiveton Community Woodlands linking the Village to the Woodlands and the Canal. (Access Node AN 52b). The woodlands site has good access to local shops and public transport -- Kiveton Bridge Station (500m), buses on Hard Lane (50m) and in the village centre (600m).
- Hard Lane (Access Node AN 53, SK 4930 8245). This node has a public car park located off Hard Lane and adjacent to the Kiveton Waters Fishing pond.
- Kiveton Park Station & Dog Kennels Bridge, Kiveton (Bridge No.31) (access node AN 54, SK 5078 8244) – technically outside the section but the key access to the east end of the restoration.

20.6.6 The Hard Lane and Kiveton Park Station access nodes both have direct access to public transport. The Kiveton Waters parking area off Hard Lane (SK 4930 8245) is one of the few on the canal.

Links to the Wider Foot & Cycleway Network

22.6.7 The Cuckoo Way connects with National Cycle Route Six to the west of this section.

22.6.8 To the immediate east the Cuckoo Way has an primary access point at Dog Kennels Bridge adjacent to Kiveton Park Railway Station. Situated directly adjacent to the canal and road, Kiveton Park Station and adjacent bus stops provides easy access by rail and bus. The station has car parking facilities but they are inadequate to the demand and provision here will need to be examined.

22.6.9 Further east, on the already restored section, there is scope for increased connection with the Archaeological Way and with local paths leading to Anston and Thorpe Salvin. These are the subject of a current RMBC Rights of Way Improvement Plan.

Improvements

- 22.6.10 Re-surfacing of the Cuckoo Way throughout this section to bring it access-for-all standards.
- 22.6.11 Re-grading of access ramps to access-for-all standards.
- 22.6.12 Provision of improved gate/access furniture to restrict inappropriate use (such as motorcycles)
- 22.6.13 Provision of information on route(s), connections and public transport at primary access nodes.
- 22.6.14 Re-signposting to indicate local facilities and links at all other nodes.

Visitor Facilities

- 22.6.15 Development of Kiveton Waters as a Marina.
- 22.6.16 Use the marina as a location to develop of a range of visitor facilities and water-based supporting businesses as are appropriate.
- 22.6.17 Development of new fishing ponds to progressively replace those lost with the gradual extension of Kiveton Waters.

Interpretation

- 22.6.18 Development of interpretative signage along the route to tell the story of the Norwood Tunnel.
- 22.6.19 This to provide the basis for the development of the “Tunneler’s” and “Collier’s” Walks as described below

22.7 Future Aspirations

- 22.7.1 The development of **a new public trip boat** operating on the section from Kiveton Waters to Kiveton Park station and telling the story of the Chesterfield Canal and the Norwood Tunnel.
- 22.7.2 The development of **new waymarked interpretive routes** taking advantage of the local history of the canal and the Norwood Tunnel.
- 22.7.3 Way marking and interpretation both on the ground and in a leaflet of “The Tunneler’s Walk” - a round route linking the Eastern and Western Portals, the tunnel construction evidence between Hard Lane and the Eastern Portal and Harthill where many of the navies who died building the tunnel, and the tunnels on site engineer, John Varley, are buried.
- 22.7.4 Way marking and interpretation both on the ground and in a leaflet of “The Colliers Walk” – a round route linking a series of sites – from Mediaeval Bell pits through to Kiveton Colliery - which together outline the history and development of the coal industry in the area.
- 22.7.5 Both routes would use the canal as one side of roughly triangular routes. Both also overlap with the Wales restoration section.

22.8 Photographic Survey of Route

22.8.1 The plates below illustrate the route. They commence at the western end of the section and conclude at the eastern end. Unless specifically marked “reverse view” all these photographs were taken looking and facing east (towards Kiveton Park) along the canal track.

Figure
22.1



Route of canal
around the base of
the former colliery tip
looking west.

The canal line is to the left
of the trackway.

Figure 22.2



Proximity of new housing to the canal line.

The canal line is behind the photographer.

Figure 22.3



Figure 22.4



Barrier gate at boundary of Kiveton Community Woodlands looking west.

The canal channel will lie on the left of this view. Winter 2008.

Figure 22.5



Kiveton Canal cutting looking east from the boundary of the Kiveton Community Woodlands

The canal channel lies on the right in this view. The path is the Cuckoo Way. The location of Kiveton Bridge lies in the mid distance. Summer 2009

Figure 22.6



Location of Kiveton Bridge looking west towards the canal cutting.

The canal channel is to the left, the Cuckoo Way dead ahead. The access track for which the bridge will be provided runs left to right across the middle of the picture. Summer 2007.

Figure 22.7



Reserved Canal Line looking west towards Hard Lane.

The Broad Bridge Dike passes left to right across the middle of the picture (the handrail of the Broad Dike footbridge can be seen on the left). The reserved line for the canal is in the centre of the image curving to the right below the central woodland.

Figure 22.8



Reserved Canal Line looking east towards Hard Lane.

The Broad Bridge Dike passes right to left across the middle of the picture. The reserved line for the canal is in the centre of the image and the Kiveton Waters ponds are to the left.

Figure 22.9



Kiveton Waters looking north-west over the main pond.

The connection to the new canal will be at the upper left corner of the view. The building in the distance in the former colliery bathhouse which is due to be converted for community use.

Figure 22.10



View from hard standing at Kiveton Waters over the location of the Hard Lane Locks.

The reserved route runs right to left across the picture, with Hard Lane to the left. The cutting for the locks will commence immediately beyond the salvaged stone pile. The hard standing is where the work depot will be situated.

Figure 22.11



View along Hard Lane Looking south towards Harthill.

The site of the proposed Hard Lane Bridge lies behind the photographer.

Figure 22.12



View from Hard Lane Looking east towards East Portal of Norwood Tunnel

Pennyholme Marsh lies to the left of this view, the tunnel top farm track more or less centrally and the construction mounds to the right. This view was taken in 2007 before tipping was carried out in the foreground area.

Figure 22.13



Surface mounding and spoil heaps from Norwood Tunnel construction.

Looking west towards Kiveton Waters. The reinstated canal will use the remaining segment of canal beneath this point.

Figure 22.14



Semi-circular mound around site of construction shaft.

Looking west towards Kiveton Waters.

Figure 22.15



The East Portal of Norwood Tunnel

Looking west. The area was cleared of vegetation for the 2009 Canal Festival at Kiveton Park.