Safe roads, Reliable journeys, Informed travellers

HIGHWAYS AGENCY

improvement

A34 Chieveley / M4 J13

SCHEME

Opening Brochure

Autumn 2004

Early August 2004

An Executive Agency of the Department for Transport

History

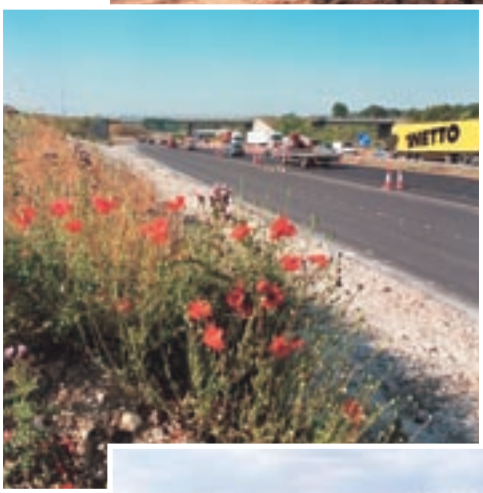
Before Works Commenced

Nearing Completion

History

Since the construction of the Newbury Bypass, the A34 / M4 Junction is the last remaining 'at grade' junction on the A34 between the M40 at Oxford and the M3 at Winchester. During an average day the A34 in the vicinity of Junction 13 carries approximately 60,000 vehicles, of which approximately 50% are A34 through traffic. The subsequent congestion on the A34 can be particularly acute at peak times causing severe delays, and often leads to 'rat running' through local villages such as Chieveley and Beedon.

Earthworks



New Carriageway

Recycled materials

The aims of the scheme were to:

- **Reduce Delays –** by removing half of the A34 through traffic, free capacity and leading to more reliable journeys.
- **Reduce Noise –** by using noise reducing surfacing on all road surfaces and constructing noise barriers and landscape moulding around sensitive locations.
- **Improve the local Environment –** by extensive ground modelling around the village of Chieveley, to shield the villagers from the noise and visual impact of the M4 and A34, much of which will be returned to agriculture. The landscape proposals will include extensive tree and shrub planting. Public rights of way will be improved by the construction of two new bridleway bridges to create the 'Chieveley Community Circuit' linking the villages of Curridge and Chieveley.
- **Improve Safety –** Accidents will be reduced by the removal of a significant portion of traffic from the Junction 13 roundabout.

Scheme in August 2004

Construction Works

The A34 Chieveley/M4 Junction 13 Improvement Scheme has come a long way from the first public enquiry in 1992. The £38.3m contract was awarded in March 2003 and the A34 underpass was opened to traffic 17 months later in August 2004. Undertaking the construction of a project of this complexity in such a short time scale is an achievement the whole site team is justifiably proud of.

Works in Central Reservation of M4

Work has included construction of ten new bridges and 3 km of new dual carriageway. The focal point of the scheme has been the M4 underpass. Here a structure was built beneath the live motorway with an uninterrupted flow of traffic being maintained at all times. This required innovative use of a "top-down" construction technique that saw the concrete deck of the new M4 bridge built first. Working 24 hours a day, 7 days a week this whole phase took only 12 weeks to complete. The A34 underpass was then formed by excavating under the new bridge deck which was carrying the live motorway traffic.

Excavating beneath the new bridge deck

All the other bridges on the scheme have superstructures built with weathering steel beams and concrete decks. The weathering steel is not painted – its not meant to be! This special grade of steel remains protected by its "rusty" patina and avoids the need for future maintenance of more traditional painted beams.

Weathering Steel

The substructure to all the bridges is concrete columns, which are supported generally by bored concrete piles. Wherever the foundations could be made directly on to the underlying chalk, pad foundations were used.

Excavation of the main cutting and the M4 underpass has generated some 900,000 cubic metres of material. The arisings being both chalk from the underlying stratum and clay from the overlying Reading Beds. Some 150,000 cubic metres of the material with the better engineering properties, has been used for the various embankments within the scheme; leaving the majority to be placed in landscape mounding. The landscaping is a integral part of the scheme. It will limit both the noise and visual intrusion of the new road whilst being sympathetic to the North Wessex Downs Area of Outstanding Natural Beauty in which the project is set.

Excavation of the Police Observation Platform

Construction Works

Bulk earthworks were undertaken using both hydraulic excavators and bulldozers. The most significant item of plant was an 80 tonne machine which could excavate and load upto 1000 cubic metres per hour. It took a 12 strong fleet of 40 tonne dump trucks to service this excavator and transport the fill to the landscape areas.

Infiltration pond and Interceptor

Drainage within the cutting is achieved by directing all surface water, via a system of concrete channels and a network of pipes, to a deep sump. From here a series of large pumps raise the water through a pollution control system and into an infiltration lagoon where it soaks away through the chalk. The groundwater levels are generally well below the level of the underpass. However, protection against flooding is also provided with cut-off drains connected to the deep sump.

Surfacing operations

The road pavement is constructed from bituminous bound material on crushed stone sub-base. Wherever possible an insitu stabilisation technique was used to form the founding layer. The final pavement layer, the wearing course, is a proprietary asphalt product that has low noise and low spray characteristics. This will greatly aid the noise mitigation and enhance driver safety.

Lattix Sign Posts

Safety of the final route is fundamental to the design process. Extensive use of safety fence has been specified. However more innovative measures have also been used, such as passive lattix signposts for some of the large direction signs. The route underwent a thorough safety audit before opening, which ensured that the very best standards of safety are guaranteed for all road users.

Construction Team

FACTS&

- *900,000 m^3 of Material Excavated*
- *13,295 m^3 of Concrete*
- *2,000t of Steel Reinforcement*
- *85,000 tonnes of Sub-base*

A34 Underpass looking west on M4

A34 North of Underpass & Radnall

- *70 Million Vehicles Through the Works*
- *1.15 Million Construction Man Hours*
- *270 Workers on Site Daily*
- *160,000 Vehicles Through Works Daily*

- *20,000 Cones Used*
- *521 New Road Signs*
- *1,300t of Structures Steelwork*
- *8 km of Fencing*

Junction 13 slip roads south of underpass

FIGURES

- *11 km of Safety Fencing*
- *700m of Environmental Barrier*
- *250,000m^2 of Surfacing*
- *18 km of Drainage*
- *26,000 Website Hits*

A34 Underpass looking north east

A34 Underpass looking north east

- *100,000 Shrubs*
- *1000 Trees*
- *400m of Badger Crossings*
- *1 Hectare of New Dormouse Habitat*

- *3000 Visitors to site*
- *1823 Hard Hats Issued*
- *2171 No. Total Workforce*

A34 Underpass looking south west

Environment

This scheme has been the subject of three Public Inquiries, the most recent was in early 2003. A great deal of consideration has been given to the potential impact on the environment and a full Environmental Impact Assessment (EIA) has been carried out for the site.

Re-instated Radnall Farm Landscape Area

The Environmental Statement, prepared from the information gathered in the EIA, set the design parameters which have been used throughout the project. It identified elements of the environment which would require specific mitigation measures such as the scheme location within the North Wessex Downs Area of Outstanding Natural Beauty (AONB). It has been important in ensure that the landscape design is in keeping with the landscape character of this area.

Techniques used to integrate the scheme into the surroundings include; earth mounding, screen planting, specialist seed mixes for grasslands, use of locally found native tree and shrub species, planting linked into the existing woodlands and wherever possible returning the landscape area to agricultural use.

Tree and Shrub Planting

Landscape planting forms an important part of the scheme. Planting is used for many purposes, not only for softening the appearance of new engineering features but also for linking the site to existing vegetation, providing new habitat for local wildlife and enhancing the setting of existing developments. In all, 100,000 plants are to be used. Some of the planting is specifically to create new habitat for dormice.

Approximately one third of the planting was carried out in the winter of 2003/2004 with the remainder scheduled for winter 2004/2005.

Southern Marsh Orchid

A number of ponds have been created as a result of the need for drainage management of the scheme. These provide additional wetland habitat in the immediate vicinity. A small colony of southern marsh orchids which were discovered on the line of the scheme, these have been carefully uplifted, held in a nursery and they will be relocated to a suitable position close to one of these ponds.

Many small mammals have remained in residence on site during the course of the works. In order to ensure that badgers maintain access to all existing parts of their territories, 4 safe crossing points have been included in the scheme. These range from dedicated badger tunnels under new sections of the road, to the modification of other features that badgers are already known to use such as existing culverts and foot/equestrian over-bridges.

Badger

In excess of 5.5km of badger-proof fencing will be erected to protect badgers from the busy road corridor and to ensure they use the safe routes provided to cross their territory.

Prior to starting work surveys for bats were undertaken to ensure that no bat roosts would be affected by the scheme. In order to increase the value of the finished scheme for bats, bat-boxes have been placed in appropriate locations in Bussock Wood.

Dormice were found to be using Bussock Wood and parts of the M4 verge close by. A careful relocation exercise to move the dormice to safe areas within the woodland was carried out. The habitat removed has been replaced and enlarged by new habitat creation on the re-modelled M4 verge and in nearby woodland areas. In all more than a hectare of new dormice habitat has been created.

Bussocks Wood Dormouse

The public rights of way network has been enhanced by the replacement of the Bussock Wood Bridge crossing the M4 and the construction of a new dedicated bridleway / footway bridge across the A34. These two enhancements combined create the new Chieveley Community Circuit.

Bussocks Wood Bridge in use

Archaeology Investigations carried out before work commenced show evidence of human habitation from 1500BC through roman and more recent settlements. Details of this investigation are provided in the Popular Archaeology Report available with this brochure.

Popular Archaeological Report

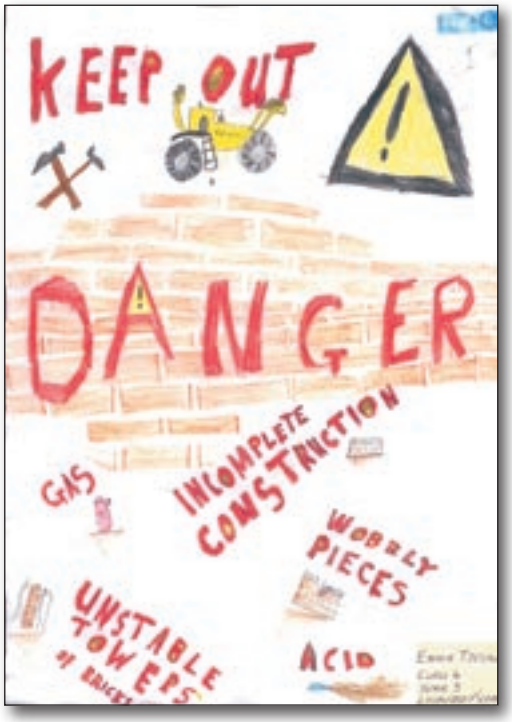
Community

People are part of the environment and a great effort has been made to involve the local community in the scheme.

Given the impact that major works of this kind can have a Community Relations Manager was appointed at the start of the contract. An exhibition was held prior to commencement of the works and regular meetings held with the local community to explain the progress throughout the scheme and answer any questions. Six newsletters have been produced and distributed through the local area. These provide background information on the scheme and give a more detailed look at certain aspects of the construction process.

Public meeting

Newsletters



Danger poster by Emma Tyson

A dedicated website was established at the outset and has proved invaluable in reaching a wider audience. It has been particularly useful in giving advanced warnings of upcoming traffic management alternations and changes in the phases of the works.

An information 'help line', 0845 600 2012, direct into the Project Offices has allowed a personal and speedy resolution of day to day enquiries and complaints.

This feed back is welcomed and allows the continual improvement of the service offered to the local community.

This service has included visits to local schools and businesses and presentations to local groups. This liaison has the benefit of involving the community in the scheme and provides a forum for expression of all the stakeholders concerns and needs.

The whole project team would like to extend their thanks to the local community for their co-operation and understanding throughout the works.

A34 Chieveley / M4 J13 improvement scheme

HIGHWAYS AGENCY

Client

Gifford WSP

Employers Agent

COSTAIN

Principle Contractor

Mott MacDonald

Contractors Designer

WALTERS U.K. Ltd.

Earthworks Partner

COOPER PARTNERSHIP

Gifford WSP Environmental Designer

RPS Group Plc
THE ENVIRONMENTAL CONSULTANCY

Mott MacDonald Environmental Designer

HIGHWAYS AGENCY

Contact the Highways Agency

Highways Agency Information Line
08457 504030 (calls charged at local rate)

Highways Agency website
www.highways.gov.uk

Further copies of this leaflet are available from:

Highways Agency Publications
Telephone: **0870 1226 236**
Please quote reference number: **HA169/04**