

project update

Issue 6

Aberdeen
roads limited

Side roads open up new horizons



One of the key elements of the AWPR/B-T project is the construction of new side roads along the route to maintain local road networks once the new trunk road is complete.

Building these side roads is critical in ensuring the local community and road users can safely cross over the route during works with the minimum of impact to road users and the construction works. Many of the side roads are linked to the new bridges being built along the route and their completion allows the existing roads to be diverted onto these bridges, allowing the old side roads crossing the line of the AWPR/B-T to be removed.

There are around 40km of new side roads being constructed across the project. Some are on key commuter routes while others serve residential properties, where access is essential at all times.

The first new side road and bridge to open was at Pitmillan Farm near Tipperty in the North Section. Other side roads to open include the C5K slip road at Charleston, which takes drivers to Maryculter and has allowed work to begin on the A956 Charleston Junction Overbridge.

Over the next few months more side roads across the project will be completed and come into use, enabling works on the mainline of the project in these areas to progress.

The patience and understanding of drivers and local communities during these essential works is greatly appreciated.

SUSTAINABLE BENEFITS

This infographic outlines the sustainable benefits the AWPR/B-T project has brought so far to the local community. It provides easy to read details at a glance to demonstrate the positive gains brought about by our approach to the project.



Over 6,000 young people engaged with in local schools and clubs



6.7% of our workforce is comprised of apprentices, job starters, graduates and work experience placements



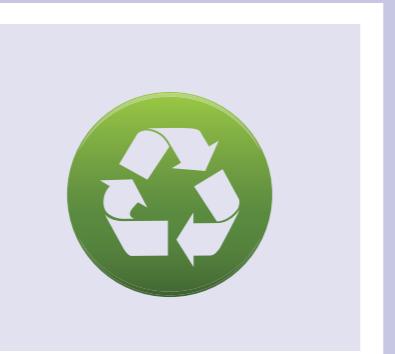
More than 20 community groups given benefits in kind



Over £60,000 donated to local charities



95% of projects surplus materials successfully diverted from landfill



Almost 26T of surplus materials donated to local charities and groups for reuse

Reconstructing the Balmedie Junction



The new Balmedie Junction, which is currently under construction, will provide a grade-separated junction with connections to Balmedie and the A90 in both directions. The new junction includes roundabouts east and west of the A90, which are connected by a road passing beneath the A90 through an underpass.

The eastern roundabout has connections to Egie Road and Old Road as well as the new A90 southbound merge and diverge slip roads. The western roundabout has connections to the B977 Echt to Balmedie road and Milden as well as the new A90 northbound merge and diverge slip roads.

Once complete, the new junction will remove the need to make right turns across oncoming trunk road traffic, which will significantly enhance safety at this location.

Forming a new road beneath an existing road is a significant civil engineering challenge, particularly when it is necessary to keep the existing road fully open for use during construction works. To meet this challenge it is necessary to carry out the works in several stages, moving the traffic around at each stage to create sufficient working space for construction works to progress.

The first stage, which is in progress at present, involves construction of the eastern half of the structure, which will enable the temporary realignment of all four lanes of the A90 to pass over the new structure. Once traffic is transferred, works can begin on the construction of the western half of the structure.

As the bottom of the excavation for the new road beneath the existing A90 is around 10m below the level of the existing road and space is constrained in the area, it has been necessary to install sheet piling to safely retain the side of the A90 carriageway.

A total of 110 sheet piles have been installed, each around 13m in height. Once these sheet piles were installed, excavation works were able to proceed. The volume of material being removed to form this underpass is around 35,000 cm³, which is equivalent to 50,000 tonnes or the same weight as 3,952 double decker buses.

When all of these works are complete, the new underpass beneath the A90 will be 57.8m long, with an opening 14.3m wide and a headroom of 5.3m. The new junction is expected to be completed and operational by Winter 2017/18, including the new links with the B977 and Milden, which will have their existing junctions with the A90 permanently closed, providing further safety benefits.

Works coming soon

All sections of the project will see the continuation of the road pavement being laid on the main AWPR/B-T trunk road along with further progress on side and access roads. Some of these side roads will be opened to the local community and road users in phases.

The North Section will see key side road construction around the major junctions at Goval, Blackdog, Balmedie and Tipperty. Balmedie Junction will also see further progress on construction of the new underpass below the A90 Aberdeen-Ellon road.

Several of the bridge structures across the project will be completed in the coming months, which will allow new side roads to be opened. This in turn will allow earthworks to progress by removing the 'plugs' the old side roads were crossing over.

Work will progress towards completion of South Kingswells Junction on the A944, with the A944 being permanently diverted through the North and South Underbridges. The original route of the A944, between the two bridges, will then be in-filled with earth and the AWPR/B-T mainline will be constructed over the top.

Further works will continue on the A956 Charleston Junction Overbridge and work will begin on demolishing and replacing the bridge over the B979 at Stonehaven Junction. These works will involve temporary traffic management measures on the A90 in the areas affected.

Also in the South Section, work will progress on the Blakewell Burn Underbridge at Cleanhill, which is the third longest bridge on the project, and at the Limpet Burn Underbridge near Coneyhatch.

We are all aware of the potential hazards of a construction site, but with works progressing, this can look intriguing to some people, young and old alike, who may want to take a closer look at what's going on. Can we please remind you that the site is not a safe environment, and if you do enter the site then you are putting yourself at risk.

As always, we thank you for your patience throughout the duration of these works.

Message from Aberdeen Roads Limited



Malcolm Findlay,
General Manager,
Aberdeen Roads Limited

Due to the nature of some of the works undertaken on roads construction projects, it is necessary for some works, such as key earthworks, to stop during winter months; however, as the weather improves and the days get longer you will see lots of new activities taking place across the AWPR/B-T project.

Until now, much of the works have been taking place off-line and are now starting to become visible; structures are appearing up out of the ground; new access roads and side roads are coming into use, and we are now getting ready to tie in some of the new roads to the existing road network in and around Aberdeen, which is all very exciting for us.

With the works coming in proximity to existing roads, for example at Charleston, Stonehaven, South Kingswells and Blackdog, we urge you to please respect any temporary traffic management placed, or average speed cameras installed, as these measures have been undertaken for the safety of the road users and our workforce.

The works at this location will also include the demolition and replacement of the existing bridge carrying the A90 over the B979 and the widening of the B979.

Over recent months around 200,000m³ of earth, enough to fill 80 Olympic sized swimming pools, has been removed from between the A90 and the Aberdeen to Dundee railway line to enable the construction of new slip roads to and from the A90.

This material has been transported in convoy by articulated dump trucks on the B979, through a temporary haul road next to the project's Stonehaven office and on through the site to be processed and reused around the works.

In order to complete this phase safely, it has been necessary to operate manual traffic lights on the B979 Netherley Road to the north, south of the Dundee to Aberdeen railway line and on the A90 northbound slip road/B979 Netherley Road junction, for several months.



STONEHAVEN JUNCTION WORKS

this issue features...

Progress overview

Bridging the gaps in Milltimber

Community and sustainability initiatives

Balmedie Junction reconstruction

Side roads progress



TRANSPORT SCOTLAND
COMHDHAIL ALBA

An agency of Buidheann le Rìaghais na h-Alba

The Scottish Government

continued overleaf...

Aberdeen Western Peripheral Route/Balmedie to Tipperty

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The works at Stonehaven will involve:

- Partial construction of the new slip roads on the south side of the new structure and other enabling works.
- Installation of a contraflow system on the A90, to move southbound traffic, which will be restricted to one lane, on the northbound carriageway. Northbound traffic will operate in two lanes during this time.
- Demolition of the southbound lanes of the existing bridge and construction of the southern half of the new bridge, which will carry the A90 southbound carriageway over the B979.
- Transfer of the A90 contraflow system to the newly constructed southern half of the bridge, still providing two lanes for the northbound traffic and one lane for southbound traffic.
- Demolition of the northbound lanes of the existing bridges and construction of the northern half of the new bridge, which will carry the A90 northbound carriageway over the B979.

PROGRESS OVERVIEW



Pitmillan Overbridge

North Section

Work is complete on the Pitmillan Overbridge near Tipperty, which is the first road bridge to open to traffic on the AWPR/B-T project.

The B999 Aberdeen to Tarves Road Overbridge has also been completed and is now open to traffic as well. Works have also been progressing on other structures including the Foveran Overbridge and the Leuchlands to Cran bog to Sheilhill Road Overbridge.

Works have been progressing at Tipperty on tie-ins for the B9000 Newburgh to Pitmedden road. Traffic management measures continued for the major works at the Balmedie and Blackdog.

Work began on laying Cement Bound Granular Material (CBGM) base layer and Continually Reinforced Concrete Pavement (CRCP) on the mainline route while good progress was made on laying bitumen on side roads.

Construction is now complete on the piers and abutments for the new cantilever bridge crossing over the River Don and works are progressing for construction of the deck. Works on the 'hammerhead' above each of the piers are continuing on the River Dee crossing.



Kingswells heading south towards A944



Haremoor looking towards Charleston

Centre Section

The laying of CRCP is now well established on the mainline across the Centre Section. The new Dykes Roundabout near Kingswells has been formed, which will give direct access to the AWPR for road users.

The temporary bridge over the A96 at Craibstone was removed at the end of November 2016 and the temporary bridge over the A944 at South Kingswells during December 2016. The Craibstone link roads works are now well advanced and the C93C Borrowstone Road at Kingswells has now been permanently diverted.

The C89C Chapel of Stoneywood to Fairley Road permanent closure has also been implemented on a short stretch from north of Kirkhill crossroads to the entrance to Craibstone Golf Course, which will allow the AWPR to be built through the closed section. Traffic can access to and from the A96 Aberdeen-Inverness trunk road via Forrit Brae.

Traffic management measures have also been implemented at Charleston with a 50mph speed limit and average speed cameras have been installed to support the temporary restrictions. Preparatory works are underway for the Stonehaven Junction in readiness for reconstruction of the bridge over the B979.

A total of 16km of CBGM base layer has been laid across the section along with 12km of CRCP and a test section of the bitumen-based thin surface course has been laid on the CRCP near Rothnick.

The C30K Hillside to Batchart Road Overbridge is now open, as is the new C5K link road at Charleston. This has allowed work to begin on the new A956 Charleston Junction Overbridge with the abutments now starting to form.

Traffic management measures have also been implemented at Charleston with a 50mph speed limit and average speed cameras have been installed to support the temporary restrictions. Preparatory works are underway for the Stonehaven Junction in readiness for reconstruction of the bridge over the B979.

- Completion of the new southbound merge and diverge side roads, including tie-ins to the A90. When the southbound merge slip roads open to traffic, southbound traffic using the B979 will no longer need to travel through Stonehaven.
- Construction of the offline elements of the roundabout connecting the AWPR, the A90 and the B979, following which traffic management measures will be in operation to enable online elements of the roundabout to be completed.

Throughout these works, there will be a number of planned traffic management measures implemented to provide safety for road users and construction workers. These will include a series of around eight weekend closures of the B979 in the area of the existing A90 bridge over the B979 to enable demolition and reconstruction works to take place safely.

Detailed information about all of the planned traffic management for Stonehaven or elsewhere on the project can be found on the AWPR/B-T project website, from your Community Liaison Officer on **0800 058 8350**, emailing enquiries@aberdeenroads.com or by visiting the Contact and Education Space at the Project Office in Stonehaven.

BRIDGING THE GAPS IN MILLTIMBER



The construction of two key bridges on the Milltimber Brae section of the project are now well under way.

Work on the A93 North Deeside Road Overbridge brought the delivery of some of the largest beams to be used on the route with six 44m steel beams and six 29m steel beams being transported to the north-east. This involved significant co-ordination with our sub-contractors and stakeholders, such as Police Scotland and Aberdeen City Council, to ensure any potential disruption was kept to a minimum.

Nearby, work is also progressing well on the Milltimber Brae Overbridge, which will connect Milltimber Brae and Station Road to the B979. A dozen 23m-long concrete beams were delivered to this structure and again lifted into place by a 500 tonne crane. Once completed, this bridge will also provide access for non-motorised users, including walkers and cyclists, using the Deeside Way.

Alongside these two bridges is the site of the new River Dee crossing, which will see substantial progress in the construction of the cantilever bridge over the river during 2017. The piers are already a familiar sight and the first concrete pours to form the deck 'hammerhead' above each pier have already taken place.

Community and Sustainability Initiatives

It is important to us that we give something back to the communities in which we are working and, as such, we are engaging with the community and investing in sustainable practices. Some of our recent activities include:

A natural approach to managing drainage

Sustainable Drainage System (SUDS) ponds are being utilised on this project in order to treat, store and discharge water drained from the surface of the carriageway.

SUDS ponds are now the preferred 'end of pipe' water treatment and discharge system, not just for highway construction, but for many other projects such as wind farms, office blocks and housing developments. There are numerous different designs and techniques which can be utilised, dependant on functional, ecological and aesthetic requirements.

All SUDS ponds used in roads schemes serve two main functions: they remove contaminates and store water to allow a more natural release of the water back into the environment.

The SUDS ponds being installed for the AWPR/B-T project enable the removal of any contamination in surface water collected from the carriageway by natural settlement. The drainage from the new road discharges into a series of ponds which allow any contaminates in the water to settle to the bottom of the ponds over time.

During development, areas that were previously open land tend to be covered with surfacing which is less porous.

This means that when it rains, water very quickly enters the watercourses directly as opposed to soaking into the soils and this can increase the flows and volumes in watercourses during storm events - which in turn can increase the risk of flooding.

The SUDS ponds allow a more natural release of the water back into the environment by providing storage capacity.

The SUDS systems on the new roads have been carefully designed to be able to store water so that the water can be released at rates much more in keeping with those that existed before the road was constructed. They are just one of a number of design features to manage flood risk that were agreed with stakeholders during development of the project.



Prince's Trust Gets into Civil Engineering

Encouraging more young people to get into the construction industry has always been a key aim for the AWPR/B-T project's construction contractors. This ambition has been delivered by the 110 apprentices who have already worked on the site together with the provision of work experience opportunities for young people.

As part of this process, the project recently joined forces with the Prince's Trust to hold the first ever 'Get into Civil Engineering' programme in Scotland, with six young people spending six weeks based at the AWPR/B-T main site office at Stonehaven.

The six took part in workshops and presentations on subjects as diverse as surveying and dimensional control, quality control, road design, and construction and maintenance. They also had the opportunity to spend two weeks on site to try out the different types of roles this can offer.

Congratulations go to our successful students Georgia Black, 19, Keiran Wood, 19, Scott Yates, 23, and Rudy Boateng, 20, all from Aberdeen, and Ruaridh Girvan, 24, and Daniel Byrne, 20, both from Stonehaven.

The construction contractor worked with Balfour Beatty, Edutrain, Technical Academy Scotland and Elevator to deliver the free course on behalf of the Prince's Trust.

Following the successful pilot programme, discussions are underway with a view to holding a second similar course later this year.

