A Practitioner's View of CEEQUAL: *'The "Missing Link" and CEEQUAL – Using Version 4 on Scotland's Newest Motorway'*

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Today I will be speaking to you about the background about the need for the M74, the planning process and construction process (including some headline statistics). I will then give you a flavour on how CEEQUAL Version 4 was used on the M74 project.

Introduction & Background

The project completes the missing link between the end of the M74 at Fullarton Road Junction near Carmyle and the M8 motorway west of Kingston Bridge near Glasgow city centre.

Although it is a new road the journey to construction has taken decades, starting with a transport network review in the 1970's. The oil crisis in 1979 affected changes in transport and planning policies which affected the choice of route for the 'south link'. The route chosen closely follows the West Coast Mainline. Reasons for this were to encourage positive change in the surrounding areas which were blighted by contamination. Planning permission was granted in 1995, but when the Scottish Executive decided that Local Authorities would have to fund the project, progress halted.

However, in 2001 the Scottish Executive agreed to progress the project through partnership with Local Authorities and Transport Scotland. The extensive Public Enquiry took place in 2003-2004 and was very extensive a lot of information about and representation of the road. In March 2005 approval was given to the project but was appealed by Friends of the Earth to Cos. Fifteen months later (July 2006) the appeal was dismissed and the construction contract was signed in March 2008.

What will the new link achieve?

The M74 Completion project will:

- alleviate congestion in Glasgow and South Lanarkshire, removing approximately 20,000 vehicle movements per day from the Kingston Bridge;
- improve road safety and reduce journey times – the motorway is currently reducing travel times by approximately 20 minutes;
- aid regeneration in the south and east of Glasgow:
    - o This area is heavily blighted by chromium contamination, solvents and heavy metals;
    - o key link to Clyde Gateway areas and will generate approximately 21,000 new jobs in the next 10 years in those specific areas;
- be a key role in the transport planning for the 2014 Commonwealth Games; and
- contribute to growth in Scotland's economy through improved transport links in the west of Scotland.

Route Alignment

Route of the road dissects Glasgow's two most notable football stadiums: Hampden and Shawfield.
For those who question the link between the route of the road and regeneration the picture below the areas in red signify the 11 most deprived communities in Glasgow. With the completion of the M74 and better transport links we are hoping that the chance of regeneration in these areas will be successful.

Headline Statistics:

- 1,000,000 m3 of General Embankment Fill Material – filling Wembley stadium & Murray field
- 500,000 m3 Premium Quarry Fills
- 94 miles of Structural and Embankment Piles (all types)

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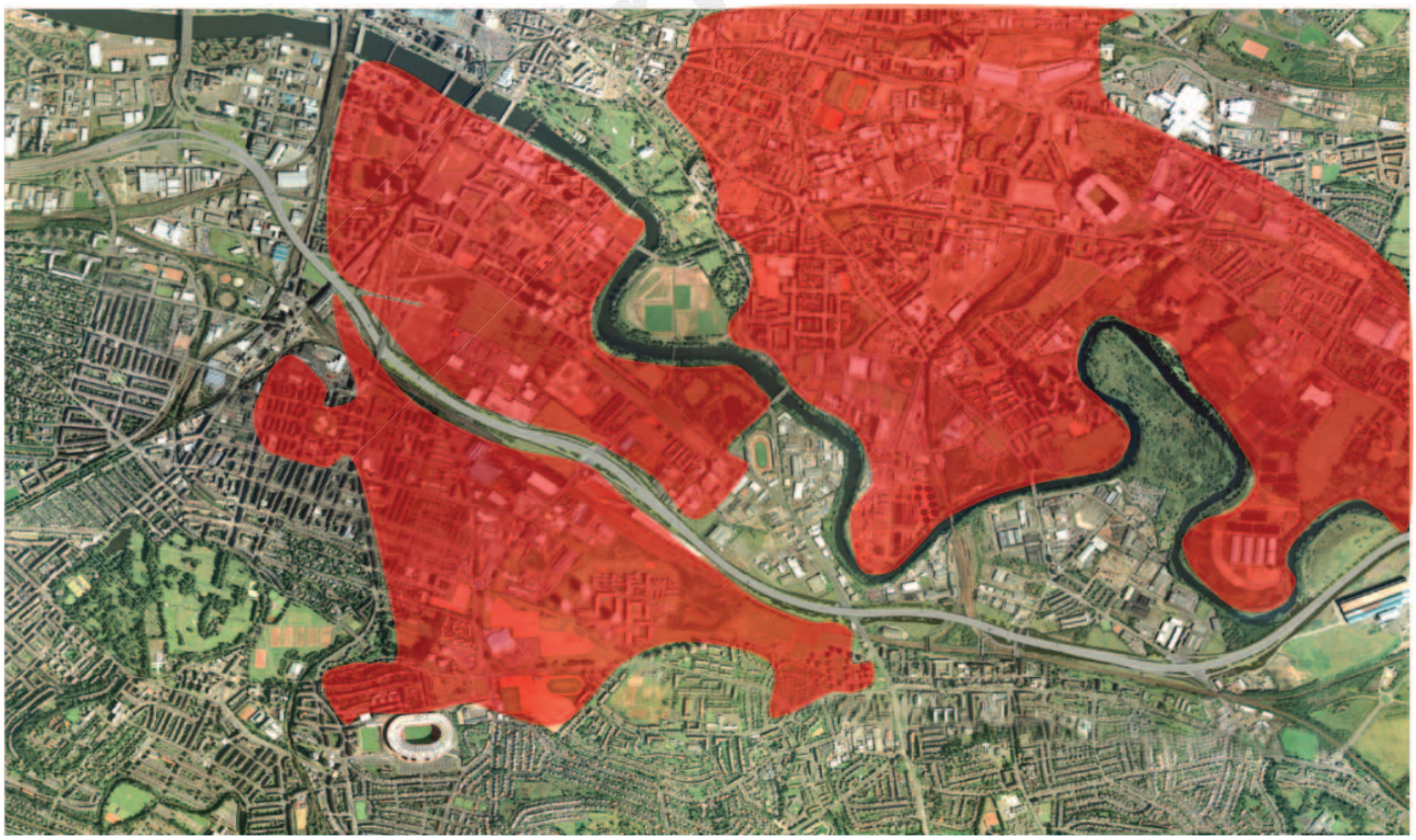
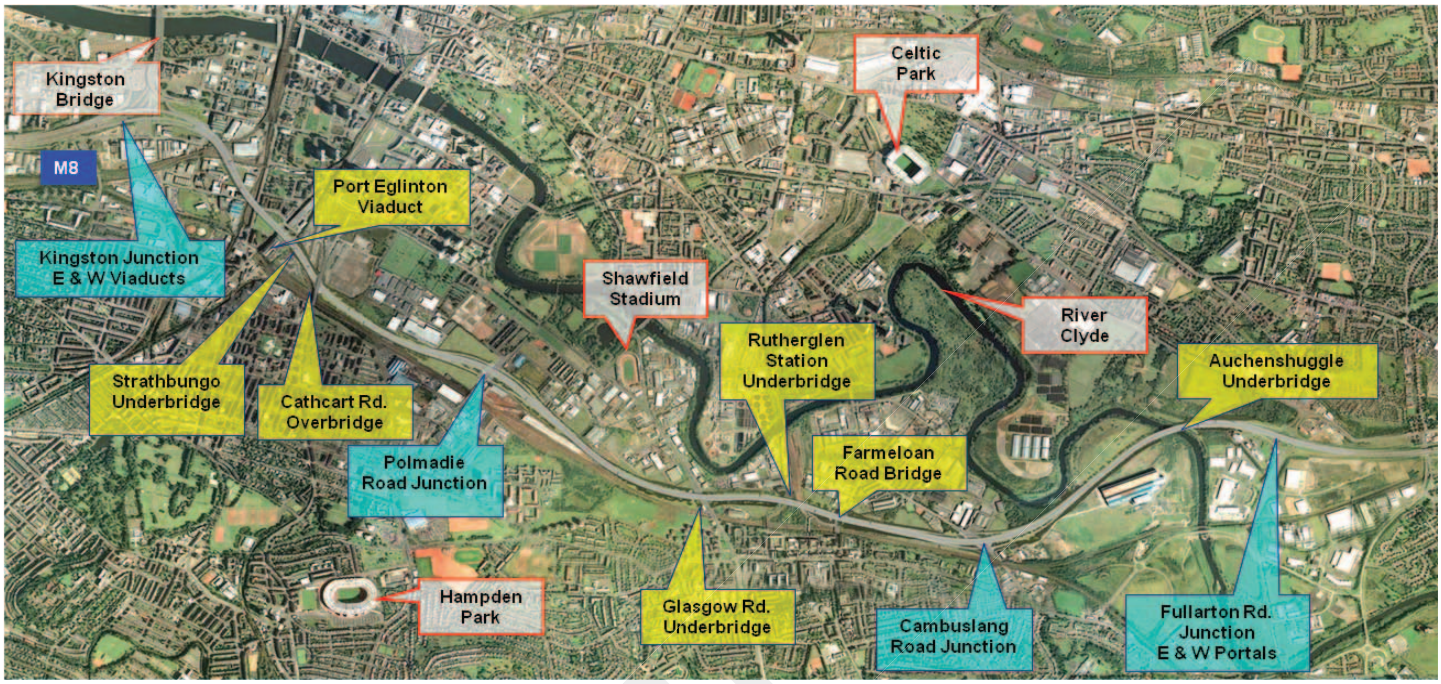


Picture 1: Deprived areas of Glasgow in relation to the M74 route.



Picture 2: Key Indicators of M74 Completion Project.

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- 20,000 tonnes of structural steel
- 517 miles of drilling; vertical (band) drains and mine consolidation – equivalent to drilling from Edinburgh to Newquay.

Major Structures:

Over the course of the project there were four major interchanges constructed:

A. Port Eglinton Viaduct

The construction of the Port Eglinton Viaduct was a major feat of engineering. A specialist contractor was brought in to carry out a launch process. The entire structure was pushed through on wheels at a rate of approximately 2 metres every 15 minutes. This was a momentous job!

Due to the proximity of the Viaduct to the West Coast Mainline the Contractors worked closely with Network Rail. This strong relationship was one of the key successes of the project.

B. Rutherglen Station Bridge

Here is where the road crosses the West Coast Mainline. All beams for the bridge were fabricated on-site. Directly under the bridge is Rutherglen train station so the project team had to be careful not to drop anything on any of the passengers.

C. Auchenshuggle Bridge

To create the Auchenshuggle Bridge a 1,200 tonne mobile crane was brought to site from Poland (the biggest crane in Europe). It is a single spine bridge with the steel beams being 92 metres long and weighing 270 tonnes each. The project team dropped in 1 beam each day over a 7 day period. This is an impressive bit of engineering as it doesn't run in a straight line; there is a slight camber on the bridge as the road wings to the left.

D. Cathcart Road Overbridge

Over 300,000 m3 was removed from the site to accommodate the overbrige which was all re-used.

A common misconception about the project is that is has been built entirely on contaminated ground, which is not the case. However, the one notable success the project team had was at the western embankment on at the 'Glasgow Road Underbridge' where 86,000 tonnes of chromium waste was remediated. All of which was successfully incorporated into the embankment.

CEEQUAL: What? Why? When?

These are the 3 questions asked as awareness grew of the Scheme's value.

CEEQUAL had been promoted by the Project's Environmental Team as being a highly relevant, recognised standard reflecting environmental aims and management of construction. The CSR director was keen for the project to receive as many awards as possible. CEEQUAL was included in a list of potential award applications relating to the Project presented to the construction board. In which the Environmental Team suggested to apply for a 'Whole Project Award' with the aspiration of getting an 'Excellent' rating.

Application was made in July 2010, and with the road due for opening in June 2011, left a very tight timescale even though construction began in March 2008.

Initial Teething

CEEQUAL was not a widely known or recognised scheme with neither the design nor the client team knew much about CEEQUAL or its objectives. From a standing start, and with the timescale given, a Working Group was set up which had key members from the Client, Design and Construction teams. Individual ownership for Sections was given to the members of the team with the most specialised knowledge. For example the client team volunteered to gather evidence for the historic environment section as they had the knowledge of the scheme development, archaeology etc. This allowed them to gather information quickly and efficiently.
After the scoping out meeting it was decided by the Working Group that monthly progress meetings would be held to assess the progress of the CEEQUAL Assessment.

What was done well?

- **Teamwork**: There was superb Teamwork between the Client, Design and Construction teams in true synergy, taking real ownership of tasks and compiling evidence.

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Really effective communication and working across all 3 core elements of the Working Group. For those who are considering to undertake or about to embark on a CEEQUAL Assessment I truly recommend an integrated team as it makes the process a lot easier.

• **Quality of Evidence**: The process of self-assessment had the same rigorous standards applied to it as Project and Environmental Management. The project team and the CEEQUAL Assessor were confident that they had produced a robust Assessment.

• **Allocation of Resources**: The timescales meant that two members of a 4-person environment team worked on CEEQUAL constantly for four months. Without this commitment and dedication to the Project, the application and the CEEQUAL scheme, failure would have been inevitable.

What was done badly?

The project team was late to apply, delays in deciding which Awards to apply for cost the project team months. CEEQUAL should have been incorporated from as early a stage as possible, and especially during detailed design.

How could it have been better?

The awareness of the CEEQUAL Scheme was poor. Whether this is the fault of CEEQUAL marketing or industry awareness of the rating scheme it doesn't really make a difference. The truth is that delays and poor awareness made the project team apply so late for a CEEQUAL Assessment that it was mostly done retrospectively. Unfortunately, the timing eliminated any opportunity for us to improve our standards.

What Version 4 afforded the project team:

The CEEQUAL Assessment gave the project team recognition of excellent performance across a spectrum of topics with relevance to: the project, its environment, and its environmental credentials. The project team found real challenges in some areas, notably carbon and energy; major civils is not very "green" in terms of outputs. While the CEEQUAL Assessment is not an endorsement of project team's management system, it gave us pride in the knowledge that our controls were well managed, effective and implemented.

CEEQUAL gave the Interlink M74 JV industry recognition of achievement for a fantastic project with status, motive, environmental challenge and advanced engineering. It also gave recognition of the CEEQUAL Scheme within the 4 partner companies going forward; continuity and understanding of what can be achieved.

The CEEQUAL Assessment under the Version 4 methodology did not allow the Interlink M74 JV to promote the 'added' sustainability focus given to employability, social inclusion, communities and economic prosperity. These were key motives for Glasgow City Council and Transport Scotland in the development of the project, and throughout delivery.

To meet our vision of sustainability going forward, and to be reflective of public sector drivers, CEEQUAL should seek to evolve the 'Green Agenda' derived image of "sustainability" to reflect socio-economic motives and objectives behind projects.

CEEQUAL going forward

CEEQUAL should be considered for inclusion as a contractual element of all public sector civil engineering projects, with minimum standards set. This will set responsibilities and performance levels from project conception.

CEEQUAL provides consistency in raising awareness and standards across industry, whether it is a public or private sector project. With the inclusion of the new 'Project Strategy' section I think the focus towards socio-economic issues would blend very nicely with public sector contracts containing community benefits clauses.

CEEQUAL allows industry performance to be measured. CEEQUAL is very much a life process, with individual feedback from users of the rating tool welcomed by the CEEQUAL development team.
This aids further evolution of the scheme as differing agendas change over time.

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