



## **CURRICULUM VITAE**      Roger Jan Doubal   MSc CEng MIStructE MICE

**Name** Roger Jan Doubal  
**Title** Mr  
**Year of birth** 1946  
**Nationality** British  
**Profession** Civil Engineer

### **Professional Education**

1967 Diploma in Civil and Structural Engineering, Hatfield College of Civil & Aeronautical Engineering  
1971 MSc Soil Mechanics and Foundation Engineering, University of Birmingham

### **Professional Memberships**

Chartered Engineer  
Member Institution of Structural Engineers  
Member Institution of Civil Engineers  
Member British Geotechnical Association

### **Synopsis**

Roger Doubal is a Technical Director of Scott Wilson having been with them since 1974. He heads the firm's geotechnical section in Scotland which is responsible for all geotechnical and foundation engineering matters Ireland, Scotland and the North of England. His early structural experience and later geotechnical specialism have combined to enable him to provide engineering expertise in the field of engineering involving structures and the ground. Consequently he has undertaken studies, designs and specialist investigations on a wide variety of civil engineering projects involving foundations, including bridges, railway structures, sewers, earthworks, canals and other infrastructure.

He is currently a committee member of the Scottish Geotechnical Group of the Institution of Civil Engineers, and a past chairman.

He served as a member of the Advisory Works Group advising SCOTS on the course of research on the design and use of natural stone setts in trafficked areas.

He has given 4 presentations in Scotland to Scottish Branches of the Institution of Civil Engineers on various geotechnical matters.

### **Present Position**

Technical Director, Geotechnical Division, Scott Wilson Scotland

### **Years with present firm**

33

**Employment and Experience****Principal Engineer initially, now Technical Director, Scott Wilson Scotland Ltd**

*1986 – present  
Scotland*

Roger Doubal joined the Glasgow office of the firm in 1986 to develop the geotechnical division, which has now comprises some 20 members. His experience here can be grouped broadly into categories of roads, railways, marine works, special reports, and other. Not all projects he has been involved with are listed.

*Road Schemes*

Responsible for the geotechnical design of the A68 Dalkeith Bypass currently under construction.

Undertook geotechnical design of 14 km long M77 (Fenwick to Malletsheugh) for 15km new motorway construction, in part through deep peat bogs requiring specialist excavation techniques.

Responsible for geotechnical checking of the Glasgow Southern Orbital Route involving high embankments on deep deposits.

Undertook checking of the piled foundations subject to lateral loading at the Inchtute and Inchmichael interchanges on the A90.

Responsible for earthworks design of the A96 Fochabers Bypass which involved a deep cutting through saturated sands requiring hydrogeological analysis. Gave evidence at a public enquiry on the design aspects.

Responsible for geotechnical design of A1 Haddington to Dunbar Expressway Design of 13.5km dual carriageway including foundation assessment for integral bridges and "TechSpan" arch culverts. Designed remedial piling scheme following test failure of piles due to delayed installations.

Designed the piled foundations for the two 700m long viaducts and associated embankments (some piled) and retaining walls structures at St James Interchange on the M8 at Glasgow Airport. This was the first major design and build contract in Scotland. The piles were a mixture of precast driven piles, steel H piles and bored concrete piles, all totalling a length of some 15km. Surcharging and preconsolidation of the embankments were undertaken to minimise settlements.

Undertook reconnaissance of both West and East Falkland Islands in order to locate a new road alignment network. Carried out sample investigation and design of representative sections including those over deep peat deposits. Gave presentation on the scheme to the Institute of Civil Engineers at three branches in Scotland.

Presented the geotechnical design of the Geotechnical Design of St James Interchange to the Scottish Geotechnical Group and presented a paper at a TRL seminar on Observational Methods.

Undertook design of the retaining walls at Gogar Interchange.

Carried out geotechnical checking of foundation proposals for the remedial works to Kingston Bridge and the associated quay wall.

Responsible for the geotechnical design of the M8 interchange at Ratho including reinforced earth walls, cuttings in rock and for the major upgrading of the A8 between Newhouse and Baillieston.

Responsible for design of A96 Blackburn Kintore dual carriageway. Soil nailing was incorporated in a steep cutting approach to an overbridge. Special measures were incorporated into the design to accommodate a large cutting through an old land fill site.

Design of ground investigations, then earthworks and bridge foundations for three sections of the M74 between Beattock and Lockerbie.

Designed road formation, pavement and earthworks for the 14km Glen Fruin haul road including locating suitable construction materials, and supervision.

*Rail Schemes*

Overseeing the geotechnical design of elements of the Airdrie to Bathgate Railway reopening.

Designed 1km of new earthworks and bored piles for the 180m long new Portrack viaduct with a 90m main span near Dumfries. Special architectural features designed by Charles Jenks were incorporated. The scheme won a National Rail award and the Saltire award.

Undertook preliminary design work for the Borders Railway reopening including participating in questioning by parliamentary committee at a public hearing.

Design and construction of the 4 tracking of the Trent Valley section of the West Coast Main Line. This involved the widening of the railway in very restricted space utilising soil nailing, large bored piling and a variety of retaining walls. The extending of underbridges required complex foundations. Undertook design of remedial drainage measures to a number of flood-prone sections of railway in Scotland including pipejacking and slope remedial works

Designed small diameter driven tube piled foundations for the reconstruction of Float railway viaduct on the West Coast Main Line near Carstairs.

Investigated and designed emergency internal strengthening to arrest outward movement of masonry walls supporting a railway in Inverness. Construction was carried out during operation of the railway.

Responsible for the investigation and design of the reopening of the Larkhall – Milngavie Railway. Extensive earthworks including mine working remedial work and reconstruction of cuttings and embankments were required.

Outline design of tunnelling options and earthworks for realignment studies for the East Coast Main Line.

Marine Investigation and design of temporary and permanent measures to arrest settlement of Montrose railway viaduct on the East Coast Main Line.

Investigation and design of remedial works to prevent leakage into the Knightswood Tunnel from the Forth & Clyde Canal.

*Marine Works*

At the 15 span Montrose Railway Viaduct, where one of the piled supports in the estuary was settling excessively, he devised and organised marine investigations determined the failure mechanism and designed remedial measures to arrest the movement. Continuing monitoring confirmed success.

Designed steel tubular piling and a large combi-wall tied back anchor quay wall at Campbeltown.

Responsible for geotechnical design of new quays at Muck, Eigg and Rhum to enable ferry access.

Responsible for investigating and assessing existing quay and dry dock walls at Rosythe naval dock yard for earthquake loading.

*Special Reports*

Reported on the failure of a thrust bore for a 1.5m sewer under the West Coast main Line north of Lockerbie.

Responsible for analysis of failed sheet pile harbour wall in Dundee. Results used in Adjudication case against the designers.

Acted as a man of skill in reporting on the causes of a failed railway cutting resulting in the derailing of a train at Neilston.

Assisted in investigation into a failed anchored sheet pile wall at Faslane

Investigated cause of settlement of a motorway embankment and designed and supervised remedial measures to rectify damage caused by internal erosion.

Reported to insurers on collapse of deep sewer formed by tunnelling machines for the Kelvin Sewerage project.

Reported to Scottish Water on cause of collapse of sewer chamber in Kilmarnock

Undertook analysis of driven precast concrete pile failures at IBM Greenock where fill over soft deposits and gravel had caused excessive settlement of the piles during construction of the

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superstructure. Results of analysis used in determining outcome of court proceedings.

*Other works* Responsible for design of structures for new leachate treatment facilities including a marine outfall at Lingerton Landfill site, Argyll.

Undertook design of formation works for Faulds Park Computer Plant in Inverclyde involving earthworks to form a 3 ha cut fill platform

*1982-1985  
England*

**Assistant Principal Engineer, Scott Wilson Kirkpatrick & Partners Basingstoke**

As a senior member of the Basingstoke office geotechnical section, was involved in numerous projects involving general geotechnical advice.

Responsible of the geotechnical checking of the road works for the Conwy submerged tube tunnel estuary crossing. The design involved 10m high embankments on 12m deep soft alluvial deposits.

Responsible for the design of bridge foundations, earthworks and retaining walls on two road projects, including the investigation of mine workings beneath structures and roads, and the design of remedial measures He co-authored a paper for the ICE publication Building on Derelict Land on the investigation and remedial works to extensive mineworkings beneath the Stocksbridge Bypass.

Acted as an expert geotechnical witness in a case involving a slope/retaining wall failure. The case was settled in the corridors of the court.

Undertook research study of pavement behaviour of low cost tropical roads in Kenya involving field investigations using the Clegg Hammer and Dynamic Cone Penetrometer.

*1980-1982  
Hong Kong*

**Senior Engineer**

Scott Wilson Kirkpatrick & Partners, Hong Kong  
Responsible for a team of engineers vetting designs of site formation on behalf of the Hong Kong Government to ensure that appropriate standards of design and safety were met. The site formations were for government buildings including large multi-story housing estates and involved high steep cut-slopes in residual soil and rock. Latterly the team advised on the adequacy of the design of the mass Transit Railway underground stations

and reported on predictions of settlements and effects of construction of tunnels and deep stations and shafts (up to 45m deep diaphragm walls) on adjacent buildings.

1976-1980  
England

**Senior Chartered Engineer  
Scott Wilson Kirkpatrick & Partners, Basingstoke**

Responsible for site investigations for Heathrow Terminal 4 and the design philosophy of the substructure including deep diaphragm walls, underpasses and bridges. Undertook design of associated embankments (13m) high. Carried out site investigation and design of substructures for three high-rise buildings in London and a low level piled slab roadway in Stafford over very weak ground.

Undertook design and production of contract documents for two dams, 22 and 55m high, in Nigeria, the latter catering for water supply irrigation and hydroelectric power. Responsible for the hydrological calculations for yield analysis and run-off. Supervised site investigations on site.

1974-1976  
Kenya

**Chartered Engineer, Scott Wilson Kirkpatrick & Partners  
Kenya And Malawi**

Responsible for design, including alignment, drainage, material sources and geotechnical aspects of 200km of Low Cost Roads in Aberdare Mountains, Kenya. Subsequently responsible for materials search and assessment of a feasibility study for a road in northern Malawi. Both schemes involved the investigation of lateritic soils characteristics.

1973-1974  
England

**Engineer, Septimus Willis & Partners, Birmingham**

Design and supervision of a piled 3-span prestressed simply supported concrete road bridge. Investigations into settlement problems of a large factory on alluvial gravels and sands.

1967-1973  
England

**Assistant Engineer, Oscar Faber & Partners, St Albans**

Preparation of bills of quantities for concrete bridge and design of telephone exchange including anchored diaphragm walls to deep basements. Investigations into settlements of hospital structure on clay. Prepared slope stability program in Fortran.

Post-graduate course in Soil Mechanics and Foundation Engineering. Awarded MSc 1971.

Design of reinforced concrete structures for shopping centre, 110m high chimney and access road layout.

Supervision, measurement and certification, setting out, survey work and testing of materials at new cement works in Northfleet for a road over peat, three rail tunnels in chalk and a 2m diameter sewer outfall diversion.

Precise survey and appraisal of a 6-storey out-of-plumb steel-framed building. Design and detailing of reinforced structures, checking slope stability

**Certification:**

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.

A handwritten signature in black ink, appearing to read "R Doubal".