

BRITISH GAS PRODUCTION AND SUPPLY DIVISION  
CONSTRUCTION DEPARTMENT  
THE DESIGN GROUP

I joined the Design Group in 1981 from the Engineering Planning Department under Bob Hackett and Brian Isherwood. I had had a varied path through British Gas HQ to get there, starting in the embryo Engineering Research Station in London back in the early 1960s before it moved to the purpose-built Engineering Research Station at Killingworth outside Newcastle upon Tyne. After 10 years I left Killingworth to join the Transmission Planning Group under Hugh Jones and within the Engineering Planning Department. After 4 years' apprenticeship, as I saw it, I moved on to be a Regional Planning Engineer within Engineering Planning. It was there that I saw the advertisement for the Design Engineer in Construction: only of passing interest, as the grade was the same, until a phone call from the Engineering Director, Cedric Brown. It then became of pressing interest.

The Design Group provided the engineering design and drawings to support the construction contractors for all the National Transmission System (NTS) projects managed by the project Groups. Within Design Group were several well established sections for, architects, piping, mechanical and civil engineering. All sections were supported by drafting sections and a large contractor drawing office in the Holborn area. The group had grown from John Hollis being one of the early members of Denis Rooke's original Gas Council team. There were other groups that had grown from early members of the Gas Council team and although they were essential contributors to the overall project design they were separate from the Design Group when I joined. Notable were Environmental Planning, who established planning authority, Machinery Department who managed the power plant and compressor design and contracts, and the Electrical Group. There were also other small independent groups such as cartography drafting. A valuable asset to the Design Group was the Photographic Department led by Peter Burnett and Stewart Burness. It provided not only services to Construction but also to the Chairman downwards for lectures, presentations and passport photos!

It must be remembered that, at this time, there was a large and hectic NTS project programme to support the rapid growth of British Gas with the growing deployment and use of North Sea natural gas. It is not surprising, at least in retrospect, that any time and cost overruns were viewed with concern right the way up through Construction, P&S to the BGC Board. One significant cause of friction was any delay on the production of specifications and drawing from Design and then any inaccuracies found on site.

Both problem areas arose from the fragmentary nature of the Design Group organisation and the design process. As a small example from the compressor station side, the design started with Environmental Planning with the Architects and Machinery planning the site location. It progressed from the architects and site layout by the civil engineers to the piping engineers but with growing input from Machinery and then detailed engineering design by the Electrical Department, Instrumentation as well as the other sections.

One major 'fly-in-the-ointment' was that, at the same time, contracts were being placed for major components such as gas turbines, compressors, valves, instrumentation, and electrical equipment. 'Holds' were put on the detailed design while definitive data came from the successful suppliers. Unfortunately, if this detail conflicted significantly with the initial guesses, the project might be changed right back to the site or building layout. Delay immediately becomes an issue but coordinating changes through all the other sections and their drafting sections becomes a major concern and any omissions may only be found by the contractor on site. This was likely to cause more delay and cost but also considerable friction between Projects and Design.

Coping with all this were Michael Leese, Projects-Compressors, Tony Ward, Projects- Storage, and Ron Attfield, Design Engineer. Ron had a long gas industry career and HQ involvement from the Gas Council days. He was now retiring and hence my appointment.

A small problem, that loomed large at the time, came from the impact across British industry of the Flixborough disaster. A chemical plant had exploded with extensive and widespread damage and death. Its cause was a minor design change which had not been approved or carefully enough considered. The response from the P&S Director, James McHugh was to have four Design Approval Engineers appointed into Design Group for Civil, Mechanical and Piping and one into Electrical Department. They were intended to approve all drawings in their discipline. Three of the Design Approval Engineers protested through the Grievance Procedure that this was not feasible, practical or reasonable as a job requirement. The issue was resolved over time by a more pragmatic approach over how they and the section heads shared responsibility. Another beneficial change was to create a new level of Senior Design Engineers in all sections who had the responsibility to direct and lead the detailed design processes. To achieve this required a detailed knowledge of the job evaluation scheme and several helpful colleagues in the Personnel Department, including Phil Perry and Sarah Copeland.

I was the Design Engineer for 4½ years and, in the time, all the design and drafting sections were consolidated into the Design Group, with considerable benefit to the design process and its efficiency. Another very significant aid to improvement was the introduction of Computer Aided Design (CAD) into all the various drawing offices. Another initiative by Cedric Brown! CAD was in its early stages and the two main suppliers, Intergraph and Computer Vision were American. An approval paper was successfully steered through the Special Expenditure Committee which was a bit thin as it had to rely on the improvement to drawing efficiency, but the real potential gain was improving or even eliminating the confusion between the many design sections which I have described earlier. We had a trial installation of about 10 Computer Vision terminals and, on the back of this success, a full installation from Intergraph was installed in all the sections. It did all that we had hoped from it and was well received by the drawing office staffs. The final accolade was that CAD was made an integral part of the design and construction contracts for the Morecambe Stage 2 project.

When I left, to go to the Morecambe Bay stage 2 project as the engineering manager, the Design Group was a very large but well run body of very experienced and knowledgeable men and women who could successfully handle a steady flow of projects. They were managed by very able section heads led by Terry Wilson, head of the Civil Engineers and my deputy and Tony Nixon, manager of the Drawing Offices. This was in November 1985 and in 10 years it would all be gone!

Derek James

Design Engineer 1981-1985