

## The Maintenance of Silver Jubilee Bridge, UK

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### Abstract

The Grade II listed Silver Jubilee Bridge is a two-pinned steel arch bridge with continuous side spans spanning the River Mersey. With a main span of 330 metres, it is the seventh largest steel arch bridge in the world. Since original construction in 1961, Mott MacDonald has been employed on numerous commissions and frameworks on the bridge providing technical and commercial advice to the maintainer, currently Halton Borough Council.

This paper presents a case study highlighting challenges associated with maintaining a historical bridge. Maintenance works include painting the arch steelwork, protection and monitoring of the hanger cables, installation of shock transmission units and an innovative cathodic protection system.

**Keywords:** Historic structure, long span arch bridge, maintenance, joint replacement, cathodic protection, arch painting, cable replacement.



Figure 1. Elevation of the Silver Jubilee Bridge

### 1 Introduction

Since original construction in 1961 [1], Mott MacDonald has been employed on many commissions and frameworks on the Silver Jubilee

Bridge providing technical and commercial advice to the various maintainers. Since 1998 the maintainer has been Halton Borough Council (HBC). This long span steel arch bridge, the seventh largest of its type in the world, is of major strategic