

Urban Freight Distribution by Light Rail

Freight distribution is an important part of economic and national development in the UK. Small and large businesses in Newcastle rely on goods to be distributed into the city, usually via heavy goods vehicles (HGVs).

The problem of increasing congestion and pollution in urban centres is a growing concern for cities in the UK. In 2015, 1.65 billion tonnes of goods were lifted by lorries in the UK, this was up 11% on previous years, during that time a distance of 18.4 million kilometres was travelled by domestic freight in the UK.

Every year, businesses in the UK lose £10 billion due to congestion. If lorry usage can be reduced by using more sustainable forms to distribute goods to city centres, then this could cause major benefits economically and environ-

mentally. The Tyne and Wear metro service in Newcastle upon Tyne acts as a case study for this project, outlining the potential for light rail services to be adapted to be suitable for a coinciding freight delivery service.

This project focuses on how the interior of the metro can be adapted to operate as a freight service. Various designs are discussed and analysed along with a review of the safety and security considerations. Autodesk Inventor is used to develop visual models, showing how the interior of the metro carriage could be adapted without major changes to the existing rolling stock construction. The advantages and disadvantages of such a system are highlighted in this project, developing conclusions about the effectiveness of this innovative idea •

