

An Introduction to Highway Design and Construction



Overview

Continuing cut-backs and restraint in funding of highway construction and maintenance has led to even greater need for practitioners to gain an appreciation and understanding of cost-effective highway design, specification and implementation. The principles of highway engineering apply not only to the construction of major new road schemes, but also to smaller improvements, deconstruction and on going road maintenance. Design approaches are related to DMRB, also to the Manual for Streets. This two-day course will consider the roles and responsibilities of highway authorities and consultants. Additionally it will guide participants through highway design and construction of new or remodelled roads.

Outcomes

On completion of this course, delegates will have:

- An understanding of current legislation and standards relating to day-to-day management and maintenance of public highways
- An awareness of current design guidance concerning capacity and layout of Links & Junctions based on DMRB
- An overview of Tender & Contract procedures, Private Finance Initiative & Partnerships
- An understanding of the structural design and construction of road pavements and supporting foundations, based on DMRB
- As well as an awareness of the options and benefits of recycling road materials
- An awareness of the current requirements of CDM, and Health and Safety at Work and the Safety Audit Procedure based on DMR

Target Audience

The course is particularly appropriate for recent recruits to consultancies, developers and highway authorities working in design and maintenance departments, also to engineering graduates and technicians working with highway engineers. As well as experienced engineers and technicians requiring an update of current legislation, processes and technology.

Topics Covered

- National and Local Highway Networks
- Hierarchy and Classification
- Statutory Procedures and Duties
- Design Standards
- Pavement Construction and Drainage
- Overview of Safety Audits
- Forms of Financing
- CDM Regulations, Health and Safety and the respective responsibilities

Programme*

Registration

Introduction, Questionnaire and Overview

National and Local Highway Networks
Highway hierarchy and classification
Statutory Procedures

Break

Well Maintained Highways
Management and Maintenance of Public Highways
Highway Links and Junctions
Types and capacity of links and junctions (based on DMRB)

Lunch

Highway Layout
Design standards for links and junctions

Break

Tutorial on stopping sight distances
Pavement Construction
Earthworks and foundations; Capping and sub-Bases; Structural layers

Close of Day One

Day Two

Pavement Structure
Thickness Design; Strengthening Overlays

Break

Highway Drainage
Surface and subsoil systems; Pavement edge and drainage details

Lunch

Road Safety Audit
Overview of Road Safety Audits
Tender and Contract Procedure
Documents; Specification; Quantities; Working drawings

Break

Highways Financing
Private Finance Initiative; DBFO Contracts; Best value and Partnerships
CDM Regulations, Health & Safety; other respective responsibilities
Recycling and Sustainability
Recycling Construction and Secondary Materials
Closing Discussion and Evaluation

Close of Day Two

*Please note this is a preliminary programme and is subject to change

