

# 2.8

## MANAGING SAFETY IN ROAD CONSTRUCTION FROM THE CLIENT'S PERSPECTIVE

### Instituto das Estradas de Portugal (Portuguese Road Institute)

Praça da Portagem,  
2804-534 Almada  
Portugal

Tel.: (351- 21) 294 76 75



### Issue

Development and implementation of a worker safety management system for new road construction projects.

### Problem

Road construction is a potentially hazardous occupation involving different phases and parties. An analysis of accident records showed that the main hazards included falls and being hit by objects, with most accidents occurring in the morning and mainly on viaducts and bridges. A system was needed that ensured effective health and safety coordination of contractors during road construction while at the same time covering project planning and construction work. In particular it was essential that this system:

- provide a common safety framework for all parties involved in a road construction project;



*Bridge under construction*

- systematically establish the health and safety obligations and responsibilities of each party;
- require contractors to have health and safety systems in place that comply with IEPs own management system;
- incorporate an effective monitoring system;
- promote a safety culture within the organisation and with contractors;
- be integrated with other management activities such as quality assurance and cost-effectiveness.



*Use of fall arrest equipment, before edge protection is in place.*

### Solution

The Portuguese Road Institute (IEP) established a health and safety department to coordinate its health and safety management activities in all construction projects initiated. In addition, safety experts were employed in each project management department and the technical support department. The role of the health and safety department is to:

- provide technical support to other departments;
- prepare policies and procedures;
- prepare training and information resources and coordinate the provision of training;
- liaise and coordinate with external organisations;
- carry out safety audits during the design and construction phases;

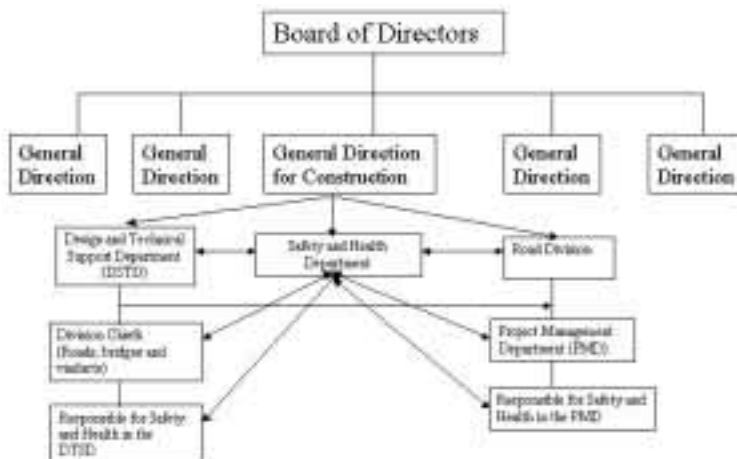
- prepare regular reports;
- support the board of directors.

To back-up the introduction of the management system, the health and safety department prepared a comprehensive health and safety manual. They engaged the support of an external expert from the Technical Institute of Portugal, and during the development phase they held a series of meetings with the board of directors, and heads of departments to ensure their commitment and ownership to the system and procedures being developed.

The manual specifies all the key health and safety management areas, including: statement of overall policy and commitment; safety management structure, and safety responsibilities of different post holders; health and safety specifications for tendering organisations, including designers, main contractors and subcontractors. It also contains specifications for all of the elements to be covered in safety plans and documentation and specifications for monitoring and making health and safety reports.

The implementation of the system has involved two elements. All new projects must comply with all aspects of the system, and with all the procedures in the manual. Regarding those projects already running, the system has been applied retrospectively as far as possible, with all of the existing contractors being asked to update their safety plans accordingly.

Part of the implementation and the promotion of the system involve training for all IEPs own employees and the different participants in the construction process.



*Integration of health and safety into the organisation structure of the construction area of IEP*

**Results**

- Accident rates were reduced by 30–40%.
- The seriousness of accidents and the number of days of absence were reduced.

**Structure of the reference model of the Safety and Health Plan (SHP)**

<b>SAFETY AND HEALTH PLAN (SHP)</b>	
<b>1. INTRODUCTION</b>	1.1 Organization of SHP
	1.2 Adaptation / complement of SHP
	1.3 Identification of archives
	1.4 Changes in SHP
	1.5 Delivery of SHP
	1.6 Organizational chart and Job Descriptions
	1.7 Control of Signatures and rubrics
<b>2. DESCRIPTION</b>	2.1 Safety and Health at Work Policy
	2.2 Definition of targets
	2.3 Action Principles
	2.4 Prior Notice and Immigrant Workers Declarations
	2.5 Applicable Regulations
	2.6 Work Timetable
	2.7 Control of Subcontractors and related chain of subcontracts
	2.8 Accidents insurance
<b>3. CHARACTERIZATION OF THE WORKS</b>	3.1 Main characteristics of the work
	3.2 Bill of Quantities
	3.3 Local Conditions
	3.4 Planning
	3.5 Plan and Chronogram of the workmanship
	3.6 List of works with special risks
	3.7 List of materials with special risks
	3.8 Work phases
	3.9 Construction procedures and methods
<b>4. ACTION TO PREVENT RISKS</b>	4.1 Construction site design
	4.2 Access, Circulation and road-signs Plan
	4.3 Control of support equipment
	4.4 Collective protection Plans
	4.5 Control of materials and equipment reception

	4.6	Plans and Registration of monitoring and Prevention
	4.7	Registration of non-compliances and corrective/preventive actions
	4.8	Identification and health control of the workers
	4.9	Protection of Individuals Plan
	4.10	Training and Information of the workers
	4.11	Registration of accidents and indices Plan
	4.12	Visitors Plan
	4.13	Emergency Plan
	4.14	Excavations Plan
	4.15	Plan of execution of piles
	4.16	Plan for forms and placing concrete
	4.17	Plan for setting metal structures
	4.18	Plans for pre-stress application
	4.19	Plans for assemble, use and disassemble of scaffolds
	4.20	...
<b>5. MONITORING AND FOLLOW-UP</b>	5.1	Monthly supervising
	5.2	Committee for Safety and Health at the work site
	5.3	Internal audit

### Comments

This is a good example of a safety management system that should be used by organisations that are running construction projects that involve their own staff and various contractors, and in order to comply with legislation.

An important part of the development of the management system was the internal consultation process with the different departments in the organisation.