IMPROVEMENT OF CYPRUS INTERPRETATION OF THE EU DIRECTIVES FOR HEALTH AND SAFETY IN CONSTRUTION INDUSTRY THROUGH THE CDM REGULATIONS

By

ANNA - IOANNA TOUMBA

Master of Science in Construction Management

Neapolis University Pafos

Pafos, Cyprus

2012

Submitted to the Faculty of Neapolis University of Pafos

in partial fulfillment of

the requirements for

the Degree of

MASTER OF SCIENCE

IMPROVEMENT OF CYPRUS INTERPRETATION OF THE EU DIRECTIVES FOR HEALTH AND SAFETY IN CONSTRUTION INDUSTRY THROUGH THE CDM REGULATIONS

Dissertation Approved

Supervisor/ Advisor

Martin Ball

Committee Member

Program Director

Prof. Cleopatra Karaletsou

Acknowledgements

This dissertation is the final document for the completion of the Master of Science degree of the program *Msc in Construction Management* of the Neapolis University in Paphos.

The completion of my dissertation would not be possible without the assistance and contribution of my supervisor and advisor Mr. Martin Ball who has given a lot of his time, his guidance and his support, during the whole process for my work to be fulfilled, and I thank him for this.

I would also like to thank Mr. Nikos Kelepeshis for providing to me all the needed information, knowledge and academic material during the course *Construction Safety and Health* of the first semester of the above program, as these have been very helpful for the preparation of this work.

Additionally, I would like to thank the staff of the Library of the Neapolis University for their assistance during my desk research, and all the organizations and companies for their time and the information provided for my field research.

Ending, I would like to my family and my friends for their support and patience shown towards me the past eight months, during this effort.

Table of Contents

IMPROVEMENT OF CYPRUS INTERPRETATION OF THE EU DIRECTIVES FOR HEALTH AND SAFETY IN CONSTRUCTION INDUSTRY THROUGH THE CDM REGULATIONS...1
IMPROVEMENT OF CYPRUS INTERPRETATION OF THE EU DIRECTIVES FOR HEALTH AND SAFETY IN CONSTRUCTION INDUSTRY THROUGH THE CDM REGULATIONS...3
CHAPTER 1: GENERAL BACKGROUND AND RESEARCH GOALS 9
Introduction 9
Problem Identification 9
Aim of the Work 10
The Objectives 10
Hypothesis and Proposal for Research 11
CHAPTER 2: DESK RESEARCH AND LITERATURE REVIEW 13
Cyprus Law for Health and Safety in Construction Industry before Cyprus Entering EU 13
Cyprus Law for Health and Safety in Construction Industry after Cyprus Entering EU, and Interpretation through this of the Relevant EU Directives 16
Accidents' Statistics in Cyprus Construction Industry before and after Cyprus Entering EU ... 21
The CDM Regulations Applying in UK and UK Law for Health and Safety in Construction Industry, and Interpretation through these of the Relevant EU Directives - Brief Approach 29
Comparison of the Interpretation of the EU Directives for Health and Safety in Construction Industry through Cyprus Law with the one through the CDM Regulations Applying in UK ... 34
CHAPTER 3: FIELD RESEARCH 37
Interpretation of the EU Directives for Health and Safety in Construction Industry at the Field, in Construction Sites in Cyprus 37
Research Methodology 37
General Rationale of Research Methodology, Sample Groups, and Data Collected. 40
CHAPTER 4: RESEARCH FINDINGS 49
Desk Research Findings 49
Field Research Findings…. 49
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS. 53
Evaluation of Research Findings 53
Conclusions and Recommendations - Identification of Possible Gaps in Cyprus Interpretation of the EU Directives for Health and Safety in Construction Industry, Potentiality for Improvement and Possibility for Improvement through the CDM Regulations 55
REFERENCES 59
APPENDICES 65

List of Tables

Table 1: …. 22
Table 2: …. 22
Table 3: …. 25
Table 4: …. 25
Table 5: …. 26
Table 6: …. 31

List of Graphs

Graph 1: 23
Graph 2: 23
Graph 3: 24
Graph 4: 24
Graph 5: 27
Graph 6: 27
Graph 7: 43
Graph 8: 43
Graph 9: 44
Graph 10: 44
Graph 11: 44
Graph 12: 45
Graph 13: 45
Graph 14: 45
Graph 15: 46
Graph 16: 46
Graph 17: 46
Graph 18: 47
Graph 19: 47
Graph 20: 47
Graph 21: 48
Graph 22: 48

List of Figures

Figure 1: ….....30
Figure 2: ….....30
Figure 3: ….....56
Figure 4: ….....56

CHAPTER 1: GENERAL BACKGROUND AND RESEARCH GOALS

Introduction

Cyprus Law for Health and Safety in Construction Industry is a part of Cyprus Law for Health and Safety at Work. This law has been built through the decades under a series of additions, repeals and modifications made by the establishment of the Republic of Cyprus in 1960 and even before that, up to 2004 when Cyprus became a member of the European Union (EU) and the various EU Directives were introduced through the EU Law. EU Directives for Health and Safety in Construction Industry, a part of the EU Directives for Health and Safety at Work, were also introduced, and they apply since then with continual updating, additions and modifications.

Although the EU members have to harmonize with the EU Law and to follow the EU Directives, they have the flexibility to interpret the EU Directives through their national law. In Cyprus, the EU Directives for Health and Safety in Construction Industry apply through the latest law for Health and Safety at Work of 2003, a review of all the previous laws and regulations from 1996 up to 2002, including all the relevant basic legislation of the past. In other EU members, the same EU Directives apply through their national law, and in some cases this is done under the control of specific organizational systems and regulations developed in relation with the Construction Sector. Such an example is the CDM (Construction, Design and Management) Regulations applying in the United Kingdom (UK), a country with a strong Construction Industry, in accordance with the UK Law for Health and Safety of 1974.

Problem Identification

The numbers of the accidents given by statistics for Construction Industry in Cyprus before and after Cyprus entering EU state that there is a problem regarding Health and Safety of people involved in this Sector. The average of these numbers has remained in the same

levels, although a kind of improvement was expected, through the introduction of the EU Directives for Health and Safety at Work in Cyprus Law. A possible cause for this could be some gaps that might exist in the way the EU Directives are interpreted in Cyprus, through Cyprus Law or at the field, in Cyprus construction sites.

Aim of the Work

The aim of the work for this dissertation is to be examined whether there are any gaps in the way in which the EU Directives for Health and Safety in Construction Industry are interpreted in Cyprus, and in such case the gaps to be identified, and also, to be checked whether there is any possibility for improvement, and a way for improvement to be recommended, as for example improvement through the CDM Regulations.

In order to reach the aim of a work, it is necessary, first, *the objectives* to be set. The objectives are the keys/ means for reaching the aim of the work. The objectives generate some questions in a form of goals requiring some answers, *the hypotheses and proposals*, and, they determine a research process needed to be followed so as these answers to be given. The research process includes an extensive research of the subject of the work, consisting of two main parts: i) *the desk research and literature review*, and, ii) *the field research*. The desk research and literature review includes examination of relevant *secondary sources*, sources that are relevant to the subject of the work and already exist in a written form, in bibliography or in other documents, such as legislation and comparisons. The field research includes examination of relevant *primary sources*, sources that are relevant to the subject of the work and do not exist in a written form, but come from other fields, such as information by people having knowledge and experience on the subject of the work. When both parts of the research are completed, *the research findings* should be gathered and analyzed. The last step is *the evaluation of the research findings* which will identify whether the research has lead to possible answers to the questions-goals/ objectives and, through these, to the aim of the work.

The Objectives

Considering the above and regarding the aim of this work, the following objectives for research are set:

- To examine Cyprus Law for Health and Safety in Construction Industry before and after Cyprus entering EU, and how through this the relevant EU Directives are interpreted.
- To analyze accidents' statistics in Cyprus Construction Industry before and after Cyprus entering EU.
- To examine the CDM Regulations applying in UK and how through these the relevant EU Directives for Health and Safety in Construction Industry are interpreted, with reference to the relevant UK Law.
- To compare the way the EU Directives for Health and Safety in Construction Industry are interpreted through Cyprus Law with the one through the CDM Regulations applying in UK.
- To examine how the EU Directives for Health and Safety in Construction Industry are interpreted at the field, in construction sites in Cyprus.

Hypotheses and Proposals

The hypotheses and proposals generated from the above objectives are the following:

- *Are there any gaps in the way the EU Directives for Health and Safety in Construction Industry are interpreted in Cyprus, and if yes, where do these gaps appear?*
- *Is it possible to improve the way the EU Directives for Health and Safety in Construction Industry are interpreted in Cyprus?*
- *Could the improvement of the way the EU Directives for Health and Safety in Construction Industry are interpreted in Cyprus be achieved through the CDM Regulations?*

CHAPTER 2: DESK RESEARCH AND LITERATURE REVIEW

Cyprus Law for Health and Safety in Construction Industry before Cyprus Entering EU

Cyprus Law for Health and Safety in Construction Industry before Cyprus entering EU (2004) was only a small part of legislations regarding Health and Safety at Work and according to a report prepared by a Safety Officer in Cyprus, a person qualified by Cyprus Law to deal with relevant matters, the implementation of this law used to be neglected, especially up to the mid 1990's. The report was published in 2004 through the European Industrial Relations Observatory (EIRO) research for Cyprus Health and Safety at Work, under the responsibility of the National Centre of Cyprus.

The first legislation in Cyprus for Health and Safety at workplaces was introduced in 1956, before the establishment of the Republic of Cyprus and under the Great Britain (GB) sovereignty over Cyprus, as *Factories, Chapter 134 of the Laws, Cyprus*. The initial edition was published in English language, and included, among others, general and special provisions about Health, Safety and Welfare, legal proceedings about factories and, finally, offences and penalties regarding all the previous. After the establishment of the Republic of Cyprus in 1960, this was translated in Greek language as *The Factories (Modifying) Law of 1964, L (Law).43/64* which marked the beginning of the relevant Cyprus Law, and which at a later stage was updated and modified several times.

During the next decades, Cyprus Law was extended with additional parts of law and regulations, in the form of Laws (L.) or in the form of Regulatory Administrative Acts (R.A.A.). These, could be introduced by Cyprus Ministerial Council and be approved by the House of Representatives of the Republic of Cyprus. They could force obligations regarding the Law, define and broaden the principles of its implementation, under the Department of Labour Inspection supervision, a department of the Ministry of Labour and Social Insurance of Cyprus, created to regulate the organization and the management of all workplace issues regarding Health and Safety. An example of a R.A.A. is *The Building*

and Mechanical Projects' Construction (Safety, Health, and Welfare) Regulations of 1973, R.A.A.161/73 which included: a) obligations for the contractors of building and mechanical projects, b) special provisions for scaffoldings, hoists, cranes and, generally, plant and equipment, c) machinery storing advices, d) rules about good execution, operation and protection for the construction of site access, excavations, working platforms, roofs and openings on platforms/ roofs and e) first aid and other Health and Safety instructions.

In 1996, *The Health and Safety Law at Work of 1996, L.89 (I)/96* was introduced, in order to replace the previous laws dating from 1988 to 1993, which were abolished. The main purpose of this law was ''to secure the employees' Safety, Health and Prosperity in all Economy Sectors and to protect any other people from the risks, generated from the employees' activities regarding Safety and Health at Work''. The implementation of it was obligatory for all workplaces or wherever a profitable business was taking place. It included the establishment of various institutional regulatory organizations, and, mostly, obligations, roles and responsibilities for people involved in activities at workplaces, regarding Health and Safety. It also included the roles, responsibilities and obligations of: a) the employers, including contractors and subcontractors, in relation with Safety, Health and Prosperity of other people, such as the preparation of a *Risk Assessment*, an estimation of the risks that allows the grading of the risks in various levels, as for example low, medium or high, b) the employees, c) the self employed persons, d) the designers, e) the constructors and suppliers of anything used at workplaces, and f) other persons executing any activity at Workplaces. Ending, it included various workplace regulations for Health, Safety and Prosperity, provisions, measures and codes of guidance and practice.

In 2002, 23 more regulations regarding Health and Safety at Work were introduced such as a) *The Health and Safety at Work (Minimum Requirements for Temporary or Mobile Construction Sites) Regulations of 2002, R.A.A.172/2002,* b) *The Management of Health and Safety Issues at Work Regulations of 2002, R.A.A.173/2002,* c) *The Minimum Requirements for Health and Safety at Workplaces of 2002, R.A.A.174/2002,* d) *The Health and Safety at Work (Minimum Requirements for the Protection of People at Work from Explosion Risks) Regulations of 2002, R.A.A.291/2002,* and, e) *The Maternity Protection (Health and Safety at Work) Regulations of 2002, R.A.A.255/2002*. Most of these regulations still apply, with or without modifications. These regulations were introduced during the period of the negotiations of Cyprus for accessing EU, and therefore they had been prepared so as to be in accordance with the various EU Directives for Health and Safety at

Work, and the requirements specified by these. Their contents will be analyzed at a later stage.

In 2003, the Law 89 (I)/96 and all the regulations introduced from 1996 to 2002 were consolidated under one law, entitled *The Health and Safety at Work (Modifying) Law of 2003, L.41 (I)/2003*.

Meanwhile, between the years 1990 and 2003, various regulatory institutional organizations and obligations were established, as mentioned above, by Cyprus Law for Health and Safety at Work in order to support its implementation. Also, various similar organizations were founded and developed through private initiatives to promote the implementation of the Law its improvement. Some of these organizations were the following:

- The Cyprus Safety and Health Association (CySHA), an association, founded in 1991 by 21 volunteers coming from the Private Work Sector, in order ‘‘to contribute towards the efforts for protecting and promoting Health and Safety at Work and preventing risks concerning the public in general’’.
- The Pancyprian Safety and Health Council, a tripartite advisory body, established by the Law 89 (I)/96, in order to support the policy of the Ministry of Labour and Social Insurance of the Government of Cyprus for Occupational Health and Safety (OHS).
- The institution of appointing full-time Safety Officers (SOs), an obligation for the employers, established by the Law 89 (I)/96 and an Order issued by the Ministry of Labour and Social Insurance, so as all the matters concerning the employees’ Health and Safety to be controlled and managed under the SOs' responsibility through, for example, conducting inspections, making recommendations and organizing lectures. The obligation involved all the employers employing more than 200 employees in certain economic activity areas in Private and Public Sector, including the Construction Industry.
- The institution of appointing Safety Committees (SCs), an obligation introduced by *The Safety Committees’ at Work Regulations of 1997, R.A.A.134/97*, for advising employers employing 10 or more employees for issues regarding Health and Safety.

Despite the great importance of all the above organizations and obligations in supporting the implementation at workplaces of Cyprus Law for Health and Safety, only CySHA’s role is still satisfactorily active. The Pancyprian Safety and Health Council’s role has been unfortunately underperformed over the last years. Beside this, according to the Department of Labour Inspection Data, the obligations of the SCs’ institution had been slackened in a

very short time - its response rate in 2004 was less than 50%. According to the same EIRO report mentioned above, the low response rate was due to the employers' unwillingness to appoint SCs and to the failure of the trade unions in Cyprus to promote and support these institutions. The failure of the above organizations and institutions state that the implementation of Cyprus Law for Health and Safety at Work before the accession of Cyprus in EU was neglected indeed, and this was due mostly to the lack of Health and Safety Culture.

Cyprus Law for Health and Safety in Construction Industry after Cyprus Entering EU, and Interpretation through this of the Relevant EU Directives

Cyprus has developed relationships and agreements with EU since 1960, the year of the establishment of the Republic of Cyprus. After a series of applications through the decades for becoming a member of EU, and which were initially rejected due, mostly, to Cyprus problem with Turkey, Cyprus entered the Union and became a full member of it on 1st of May 2004. The accession negotiations started in 1998 and at the same time an effort began to 'harmonize' Cyprus Law with the EU Law and Cyprus Law for Health and Safety at Work with the EU Directives for Health and Safety at Work.

The *Harmonization* is a practice adopted by all the EU members so as the implementation of their national law to be in accordance with the EU Law and a kind of uniformity to exist in the Union. The *Interpretation* of the EU Law, the analysis of the EU Law so as this to be understood and implemented, can be done through the national law of each EU member. In this way, it is easier for the EU members to understand and follow the EU Law, and at the same time, the legislation of each nation is respected. In the case the national law is opposite to the EU Law, the second one prevails. Five of the seven EU Institutions are responsible for preparing, approving and voting the EU Law. These are the Council of the European Union, the European Commission, the European Parliament and the European Court. The EU Law consists of primary, secondary and other sources of law. These may be agreements between the EU members (*EU Treaties*), agreements between the EU members and other countries not belonging to the Union (*EU Conventions*), regulations, directives, decisions, recommendations and advices, principles (for example *The General Principles of the EU Law* that refers to various issues as the human fundamental rights) and other legal acts and instruments. Regarding the Health and Safety at Work and the Construction Industry Health and Safety, *EU Regulations/ Directives/ Decisions/ Recommendations/*

Advices are imposed under the EU Law. The first three law sources are *binding* for the EU members, something that means it is mandatory, the EU members to adopt these sources in their national law system and follow them. The other two law sources are not binding for the EU members, something that means their role is mostly consultative, for the EU members to improve their internal national law system. The main difference between the EU Regulations and the EU Directives and Decisions is in the way these are considered to be binding and how they are implemented. The first ones are binding generally and they are implemented directly for all the EU members, as they are defined by the Union. The other ones are binding only for the members to which they are addressed. The EU Directives are the most relevant to the Health and Safety Issue, and they are used more frequently than the other law sources. For these, the EU members have the option selecting the way of interpretation and implementation according their national law and some measures that they themselves define.

In 1989, the Council of the European Union introduced *The EU Directive 89/391/EEC* which includes measures for the EU members for the promotion of Health and Safety at workplaces. This and various subsequent individual EU Directives, also, have created a common legislative framework regarding OSH, known as *The EU Directives for Health and Safety at Work* or *EUSAFE PROJECT* (European Qualification for Occupational Safety and Health Professionals). EUSAFE PROJECT applies across the EU members under a common aim: to establish the Union position regarding Health and Safety at Work. This position is shaped through the agreements between the EU members and through the Union acts. Such agreements are *The Luxembourg Declaration of 1997* and the updated versions of it of 2005 and 2007. According to these the Workplace Health Promotion (WHP) is ‘‘the combined efforts of employers, employees and society to improve the Health and Well-being of people at Work’’ and it can be achieved through ‘‘a combination of improving the Work organization and the working environment, promoting the active participation of employees in Health activities and encouraging personal development’’. On the other hand, by gathering and making available information for minimizing risks at Work it is possible to support and promote the prevention of accidents and, at the same time, to share and stimulate assistant material for solving common relevant problems. For this purpose, EU has appointed various agencies and organizations, an example of which is the European Agency for Safety and Health at Work (EU-OSHA). It is an organization similar to the American organization for Occupational Safety and Health, OSHA (Occupational Safety and Health Administration) - both, they act for the promotion of the educational

prevention of accidents at workplaces. Through information-flue, educational seminars and published guides with real examples of companies/ organizations that have made interventions or have sought ways and practical solutions in preventing risks and reducing accidents at Work, EU-OSHA contributes to a successful Risk Management at workplaces. Another example is the European Network of Safety and Health Professional Organizations (ENSHPO), a group of about 50000 Safety and Health professional and practitioner organizations, coming from the EU members. It was established in 2001 to facilitate the exchange of information, experience and good practice of OSH issues.

Under the ambition of becoming an EU member, Cyprus introduced in 2002 the EU Directive 89/391/EEC in the Law 89 (I)/96. As mentioned above, the new regulations introduced through Cyprus Law the same year, and the most of which still apply today, were in accordance with the EU Directives for Health and Safety at Work that were introduced up to then, under the legislation framework of the EU Directive 89/391/EEC. For example:

- The 172/2002 Regulations were based on *The EU Directive 92/57/EEC*, the eighth individual EU Directive under the EU Directives' for Health and Safety at Work framework that generally specifies the minimum Health and Safety requirements to be implemented for construction projects and for construction sites. Such requirements comprise measures that ensure the Health and Safety of people involved in a construction project and obligations for the owners, the designers/ engineers, the contractors and the subcontractors of the project, and also for the Health and Safety Coordinator, an appropriate and qualified person of whom the role was established by the EU Directive 92/57/EEC that is appointed under specific terms by the owner or the designer/ engineer or the contractor to be responsible for all the Health and Safety matters of the project and deal with them during the project development. In the 172/2002 Regulations, the obligations of all these people are examined from the aspects of employers and self-employed persons. In addition, the obligations of the employees taking part in the project are included. In fact, it is about a combination of the Law 89(I)/96 and of the EU Directive 92/57/EEC. The major obligations included in the 172/2002 Regulations are: a) for the contractor or the owner of the project *The Construction Site Advance Notification*, and, b) for the Health and Safety Coordinator the preparation or undertaking the preparation of *The Health and Safety Plan* and of *The Health and Safety File*. The Construction Site Advance Notification is a notice which it is obligatory to be given to the Inspector of the Department of Labour Inspection before the construction works start, for construction sites where more than

20 people are employed for more than 30 working days. The Health and Safety Plan is a guide-plan which it is obligatory to be prepared during the designing/pre-construction phase of the project, be followed during the construction phase of the project, and, also, be reviewed and updated as the project grows. It includes general description of the project works and relevant potential risks, and, also, useful information and advices towards the contractor for avoiding these risks. The Health and Safety File is a summary file that is given to the owner of the project when the project is completed. It includes all the documents required for receiving the Building Permit for the development of the project, such as the architectural and engineering drawings, and, the technical description of the project. It also includes important information for Health and Safety which may be useful in the future for whole life maintenance of the project.

- The 173/2002 Regulations were composed under the EU Directive 89/391/EEC. They revise roles, responsibilities and obligations of previous legislations for employers, self employed persons and employees, through additional Health and Safety measures. These regulations give emphasis on the Risk Assessment, which must be in a written form and a part of the Health and Safety Plan, and, must include risks' recognition, analysis, evaluation, estimation, provisions and corrective plans.
- The 174/2002 Regulations were based on *The EU Directive 89/654/EEC*. They include the minimum specifications for Health and Safety for workplaces that are used for first time, or for workplaces that are going to be extended or modified, and, also, additional obligations for employers of such workplaces.
- The 291/2002 Regulations were based upon *The EU Directive 1999/92/EC*. They suggest ways for preventing accidents at workplaces that are highly exposed on explosion risks, as for example the construction sites.
- The 255/2002 Regulations were based on *The EU Directive 92/85/EEC*. They include special rules for the protection of pregnant working women and of new mothers at work.

In 2003, two months after the introduction of the Law 41 (I)/2003, this was revised to *The Health and Safety at Work (Modifying) (No 2) Law of 2003, 99 (I)/2003*, under *The EU Directive 1999/70/EC*, a framework agreement regarding part-time working persons and ''a further contribution towards achieving a better balance between flexibility in working time and security for workers''.

After 2004, additional regulations in accordance with existing and new EU Directives for Health and Safety at Work were introduced in Cyprus Law. For example, *The Health and Safety at Work (Notification of Accidents and Hazardous Incidents) Regulations of 2007, R.A.A.531/2007* were based upon an obligation of the EU Directive 89/391/EEC legislation framework according to which "the employer shall keep a list of occupational accidents resulting in a worker being unfit for work for more than three working days" and "draw up, for the responsible authorities and in accordance with national laws and/or practices, reports on occupational accidents suffered by his workers". The 531/2007 Regulations aim to reduce the workplace accidents and hazardous incidents' numbers, requiring from the employers, the self employed persons and the persons who are responsible at workplaces to pay more attention when such accidents or incidents occur, by notifying within 15 days the Department of Labour Inspection about, reserving the evidences unchanged and keeping records.

Since 2004 and Cyprus accession in EU, a continual effort for upgrading Cyprus Health and Safety System has been observed as more attention paid in the implementation of Cyprus Law and the EU Directives for Health and Safety at Work. This effort is supported by the Government of Cyprus through its various institutions and departments, the Ministry of Labour and Social Insurance and the Department of Labour Inspection which supervises the implementation of the Law, so as this to be in line with the European Strategy for Occupational Safety and Health. The upgrading effort is also supported by the non government organizations for Health and Safety exist in Cyprus, such as CySHA which today has more than 250 members, undertakes the organization of various seminars, conferences, training activities and industrial visits related to Health and Safety, promotes and organizes the information flow for related matters , it has become an active member of ENSHPO, and it has developed relationships and collaborations with similar associations across Europe, like the Greek Association of Labour Inspections, the Institution of Occupational Safety and Health (IOSH) of UK and the Associazione Professionale Italiana Ambiente e Sicurezza (AIAS) in Italy. Also, OSEOK, the Federation of Associations of Building Contractors in Cyprus, contributes in the effort for upgrading Cyprus Health and Safety System through working for the creation a Health and Safety Culture with social and professional consciousness. More specifically, aiming to reduce the number of accidents occurring in Cyprus Construction Industry, OSEOK supports the development of continual communication, cooperation and relationships between employees and employers of this Sector, and at the same time it promotes the education for Health and Safety at Work pointing out the

importance of following the relevant Cyprus Law and EU Directives in minimizing the risk in the Construction Industry. The Construction Industry accidents statistics, before and after Cyprus entering EU, are analyzed below.

Accidents' Statistics in Cyprus Construction Industry before and after Cyprus Entering EU

Work related accidents that usually occur in various Industry Sectors may result from slipping, tripping, or falling from heights, or may include injuries due to materials'/ equipment's falls, or injuries due to machineries/ vehicles, or may be affections by noise, chemical factors or burnings. Such accidents are very common in the Construction Industry and some of these may have permanent effects for the people suffering, reduce their ability for work, change their behavior and affect their life forever. In some cases, these accidents may be fatal and lead to death, with all the subsequent impacts and suffering for the families of those people who lose their life. The European Statistics on Accidents at Work (ESWA) of 1996, given by the Statistical Office of the European Union (EUROSTAT), stated that 4.5 million workplace accidents occurred every year in EU, in that time, resulting in more than 3 days absence from Work for each affected person, and total loss of 146 million working days. Furthermore, 5549 fatal workplace accidents occurred annually in EU, according to the same sources' records. Although the latest data of 2008 have decreased to 4 million and 5000 respectively, the numbers are, still, considered to be high. In Cyprus, the data for workplace accidents are recorded by the Department of Labour Inspection which in 2002 has begun an effort for sensitizing people for reporting accidents at workplaces, something that later became an obligation under the Law through the Notification of Accidents and Hazardous Incidents Regulations of 2007, as already mentioned.

Table 1 that is given below presents the annual numbers of workplace accidents and fatal workplace accidents that were reported in Cyprus to the Department of Labour Inspection before Cyprus entering EU, from 2002 up to 2004. Table 2 that follows next presents these numbers after the accession to the Union, from 2005 up to 2011. Both tables include the annual numbers of accidents and fatal accidents that were reported for the Construction Industry for the same time periods, and their percentage in relation with the given numbers of workplace accidents.

Table 1: Accidents that Were Reported in Cyprus to the Department of Labour Inspection before Cyprus Entering EU, from 2002 up to 2004

Year	Workplace Accidents	Fatal Workplace Accidents	Construction Industry Accidents	Fatal Con-struction Industry Accidents	Construction Industry Accidents Percentage	Fatal Construction Industry Accidents Percentage
2004	2172	14	598	6	27.53%	42.86%
2003	2086	8	554	1	26.56%	12.50%
2002	1670	17	477	6	28.56%	35.29%

Source: Department of Labour Inspection of Ministry of Labour and Social Insurance, (2005 - 2011), Annual Reports 2008 - 2011, Nicosia, Cyprus

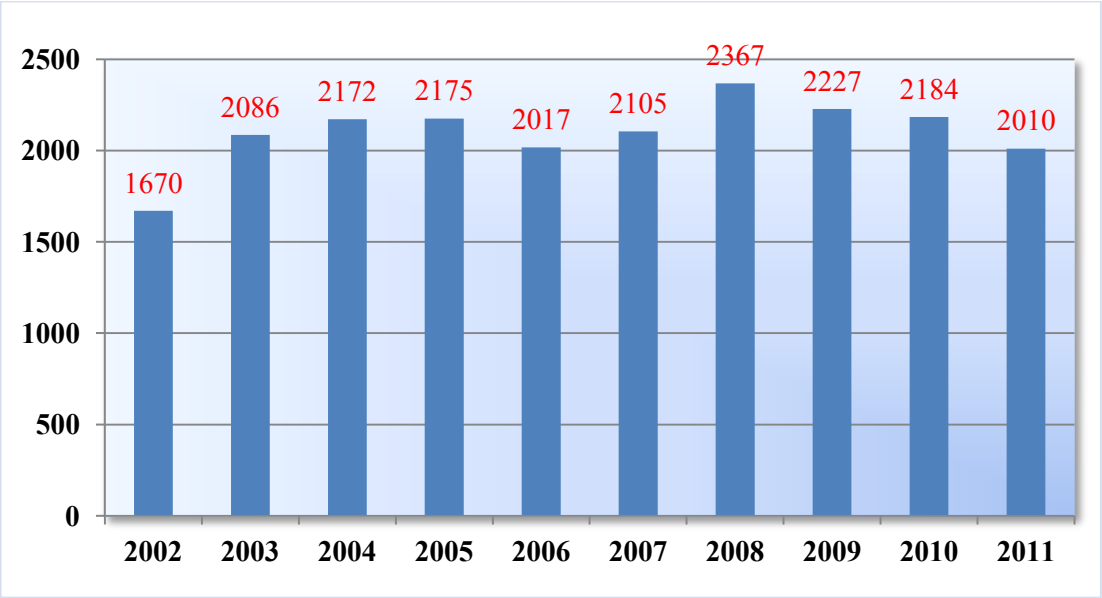
Table 2: Accidents that Were Reported in Cyprus to the Department of Labour Inspection after Cyprus Entering EU, from 2005 up to 2011

Year	Workplace Accidents	Fatal Workplace Accidents	Construction Industry Accidents	Fatal Con-struction Industry Accidents	Construction Industry Accidents Percentage	Fatal Construction Industry Accidents Percentage
2011	2010	5	418	1	20.80%	20%
2010	2184	19	540	8	24.73%	42.11%
2009	2227	9	562	2	25.24%	22.22%
2008	2367	12	649	5	27.42%	41.67%
2007	2105	15	563	4	26.75%	26.67%
2006	2017	18	543	9	25.77%	50%
2005	2175	13	579	6	26.62%	46.15%

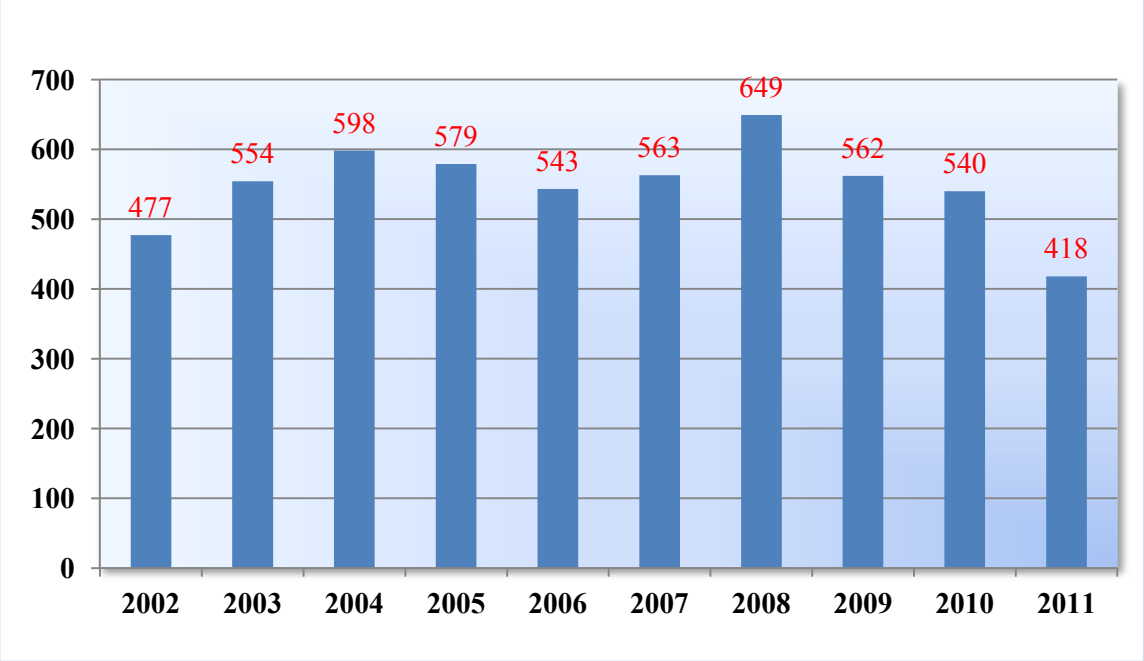
Source: Department of Labour Inspection of Ministry of Labour and Social Insurance, (2005 - 2011), Annual Reports 2008 - 2011, Nicosia, Cyprus

The following graphs show the changing rates in time of the numbers of accidents that are given in Table 1 and in Table 2. Graph 1 and Graph2 show the changing rates of work-place accidents and accidents for the Construction Industry, respectively. Graph 3 and

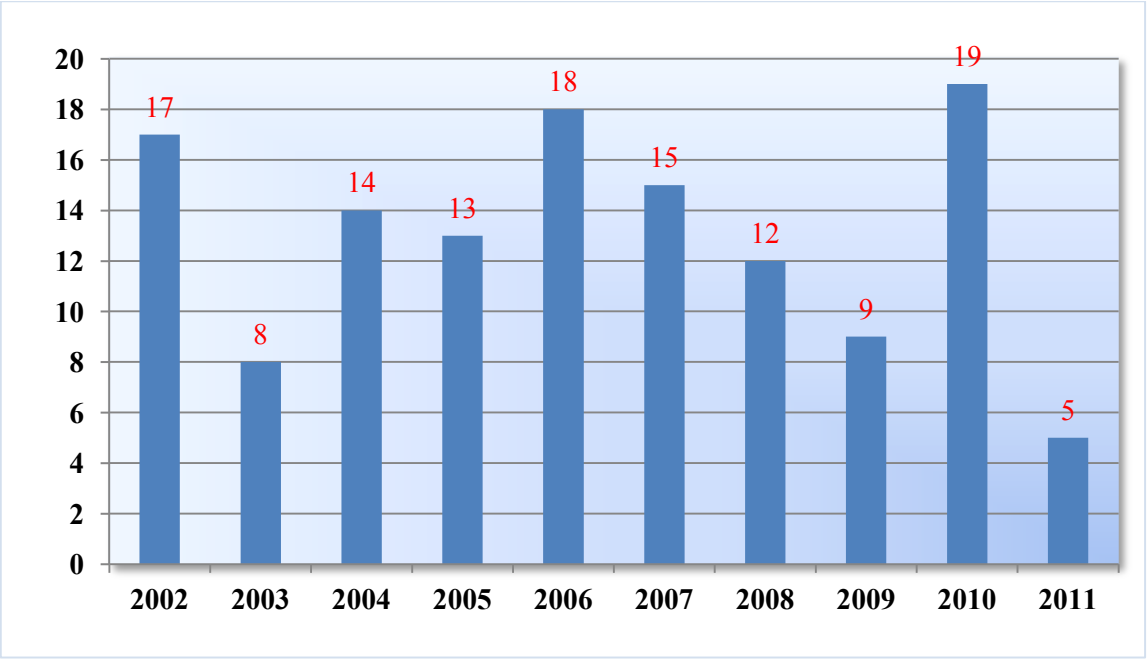
Graph 4 show the changing rates for fatal workplace accidents and fatal accidents for the Construction Industry, respectively.



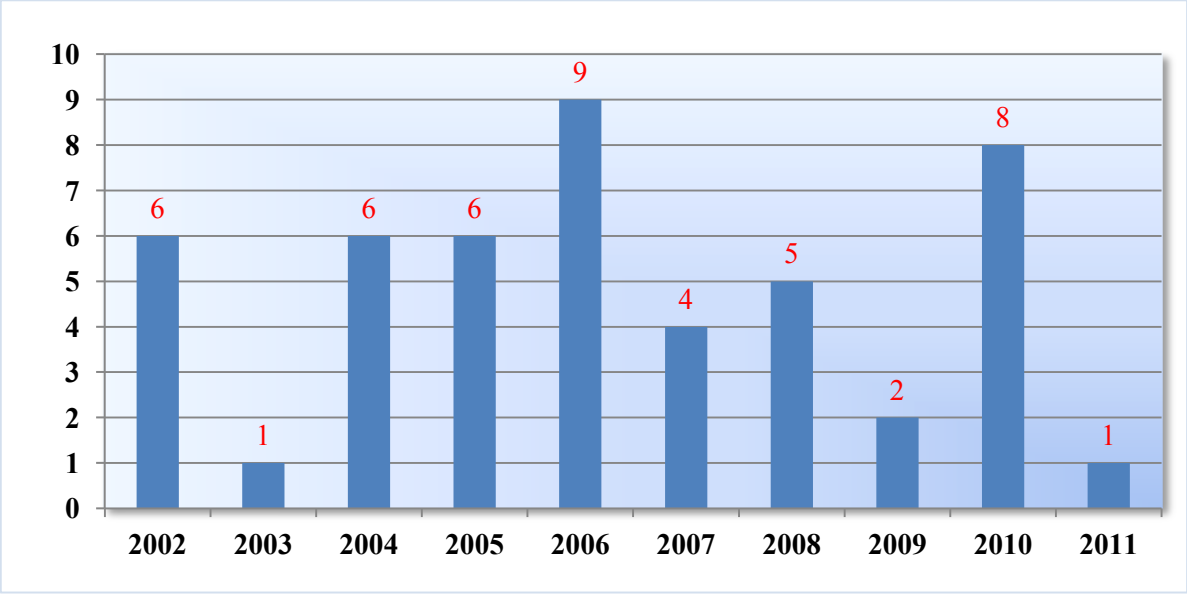
Graph 1: Changing Rate in Time of Workplace Accidents that Were Reported in Cyprus to the Department of Labour Inspection from 2002 up to 2011



Graph 2: Changing Rate in Time of Accidents that Were Reported for the Construction Industry in Cyprus to the Department of Labour Inspection from 2002 up to 2011



Graph 3: Changing Rate in Time of Fatal Workplace Accidents that Were Reported in Cyprus to the Department of Labour Inspection from 2002 up to 2011



Graph 4: Changing Rate in Time of Fatal Accidents that Were Reported for the Construction Industry in Cyprus to the Department of Labour Inspection from 2002 up to 2011

Table 3 and Table 4 show a further analysis of the numbers of accidents and fatal accidents, respectively, that were reported for the Construction Industry for years 2008-2011 (Table 2) in three construction categories: a) *The Buildings* (construction of residential or non residential buildings/ building blocks), b) *The Civil Engineer Projects* (construction of roads, bridges, tunnels, hydraulic/ harbor projects), and c) *The Specialized Construction Activities* (earthworks, plumbing/ electrical/ mechanical installations, carpenters'/ painters' works, and other similar activities).

Table 3: Accidents that Were Reported for the Construction Industry in Cyprus to the Department of Labour Inspection from 2008 up to 2011 in Three Construction Categories

Year	Construction Industry Accidents	Accidents in Buildings	Accidents in Civil Engineer Projects	Accidents in Specialized Construction Activities
2011	418	241	55	122
2010	540	317	47	176
2009	562	351	45	166
2008	649	426	60	163

Source: Department of Labour Inspection of Ministry of Labour and Social Insurance, (2008 - 2011), Annual Reports 2008 - 2011, Nicosia, Cyprus

Table 4: Fatal Accidents that Were Reported for the Construction Industry in Cyprus to the Department of Labour Inspection from 2008 up to 2011 in Three Construction Categories

Year	Fatal Construction Industry Accidents	Fatal Accidents in Buildings	Fatal Accidents in Civil Engineer Projects	Fatal Accidents in Specialized Construction Activities
2011	1	0	1	0
2010	8	4	1	3
2009	2	1	0	1
2008	5	3	0	2

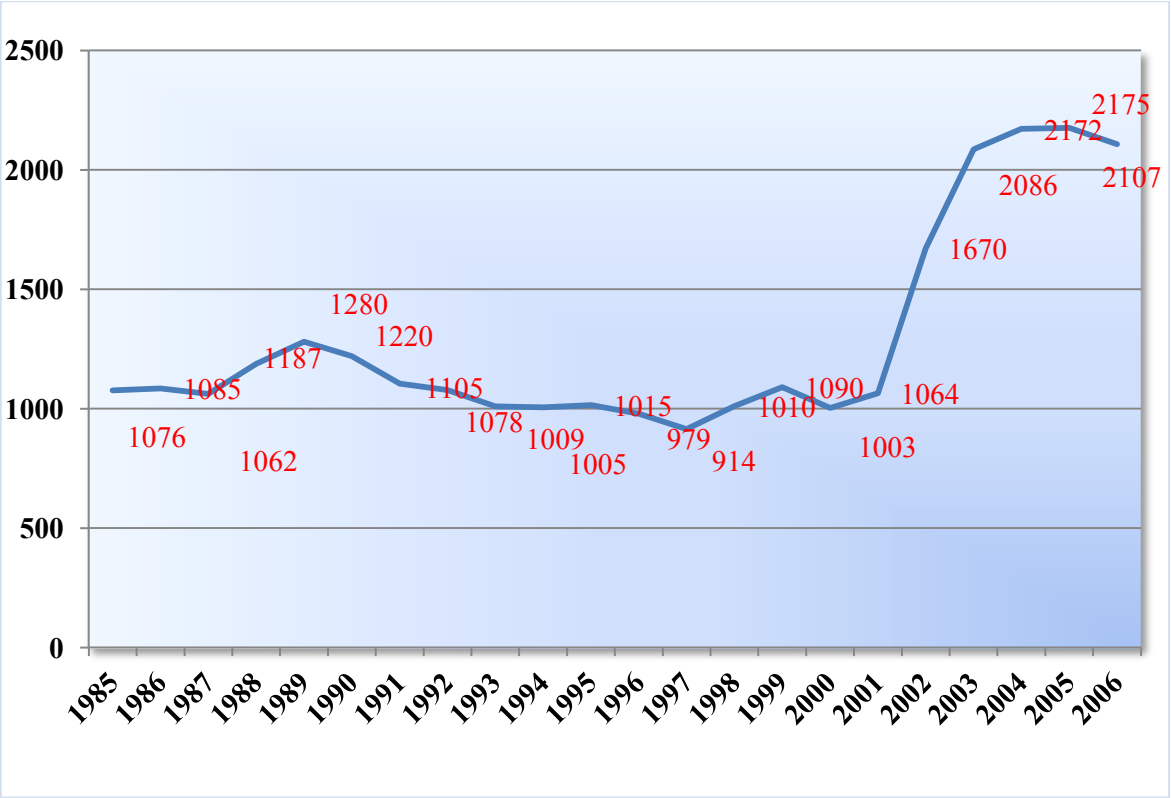
Source: Department of Labour Inspection of Ministry of Labour and Social Insurance, (2008 - 2011), Annual Reports 2008 - 2011, Nicosia, Cyprus

Table 5 is more general, and presents the annual numbers of workplace accidents and fatal workplace accidents that were recorded by Cyprus Statistical Service before and after Cyprus entering EU, from 1985 up to 2006. The changing rates of these numbers in time are shown in Graph 5 and Graph 6.

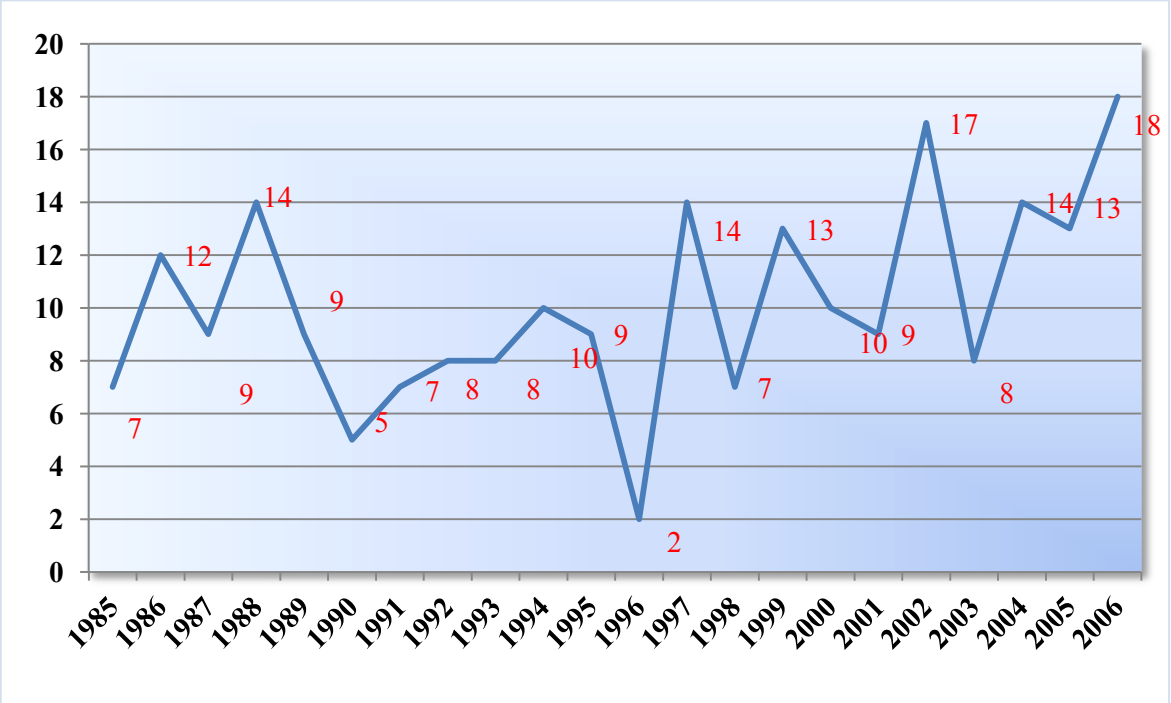
Table 5: Workplace Accidents that Were Recorded by Cyprus Statistical Service before and after Cyprus Entering EU, from 1985 up to 2006

Year	Workplace Accidents	Fatal Workplace Accidents
2006	2107	18
2005	2175	13
2004	2172	14
2003	2086	8
2002	1670	17
2001	1064	9
2000	1003	10
1999	1090	13
1998	1010	7
1997	914	14
1996	979	2
1995	1015	9
1994	1005	10
1993	1009	8
1992	1078	8
1991	1105	7
1990	1220	5
1989	1280	9
1988	1187	14
1987	1062	9
1986	1085	12
1985	1076	7

Source: Department of Labour Inspection of Ministry of Labour and Social Insurance, (2007), Recording and Processing Accidents and Hazardous Events' Data, Cyprus Statistical Service (1985 - 2006), Statistical Data (1985 - 2006), Cyprus



Graph 5: Changing Rate in Time of Workplace Accidents that Were Recorded by Cyprus Statistical Service before and after Cyprus Entering EU, from 1985 up to 2006



Graph 6: Changing Rate in Time of Fatal Workplace Accidents that Were Recorded by Cyprus Statistical Service before and after Cyprus Entering EU, from 1985 up to 2006

The comments for the previous tables and graphs are given below:

- According to the data of Table 1 and Table 2, the average annual numbers of the workplace accidents and fatal workplace accidents that were reported in Cyprus for the last decade are 2102 and 13, respectively. The average annual numbers of the accidents and the fatal accidents that were reported for the Construction Industry are 549 and 5, respectively, and the average annual percentages these, in relation with the workplace accidents and the fatal workplace accidents, are 26% and 33.95%, respectively.
- According to Table 2, the annual percentage of the fatal accidents that were reported for the Construction Industry in Cyprus, in relation with the fatal workplace accidents, for the years 2005, 2006, 2008 and 2010 - that is after Cyprus accession in EU - is quite high (nearly 50%).
- According to Table 3 and Table 4, the highest numbers of accidents and fatal accidents that occur in Construction Industry in Cyprus, occur in the construction of buildings. The main reason for this is that the construction of buildings is the most common category of construction in Cyprus Construction Industry, which involves high risk activities, as working at height.
- The increasing trend observed after 2002 for the annual numbers of workplace accidents and fatal workplace accidents, recorded by Cyprus Statistical Service and presented in Table 5, in Graph 5 and in Graph 6, is due to the effort that began the same year by the Department of Labour Inspection, for recording the workplaces accidents. Therefore, the data of the previous years (1985-2001) are not considered to be reliable since there may be some accidents which, although they had occurred they were never recorded.
- Graph 1 and Graph 2 and, furthermore but less reliably Graph 5 and Graph 6 - there is a great possibility that a lot of workplace accidents occurred then have remained unrecorded, state that the numbers of workplace accidents and accidents for the Construction Industry that occurred in Cyprus for the last decade are in the same levels, with no significant variations through the years. More specifically, there is no important reduce of the accidents' numbers before Cyprus entering EU compared to the numbers after the accession and after the introduction of the EU Directives for Health and Safety at Work.

The CDM Regulations Applying in UK and UK Law for Health and Safety in Construction Industry, and Interpretation through these of the Relevant EU Directives - Brief Approach

The CDM (Construction, Design and Management) Regulations are a part of the Health and Safety legislation applying in UK. They include regulations and requirements for projects, in general and of the Construction Industry, so as to ensured Health and Safety in all the phases of these, the inception, the design, the construction, the completion, and the management. They are in response with the EU Directives - UK is one of the EU establishing members - and more specifically with the EU Directive 92/57/EEC which, as mentioned before, specifies the minimum Health and Safety requirements for construction sites, entitled *The Minimum Health and Safety Requirements at Temporary or Mobile Construction Sites* into UK Law.

The first CDM Regulations were *The Construction (Design and Management) Regulations 1994* that were introduced in 1994 in UK Law by the Health and Safety Commission (HSC), under the guidance of the Construction Industry Advisory Committee (CONIAC). HSC was a non departmental public body established by *The Health and Safety at Work etc Act 1974, Chapter 37* in order to deal with matters for Health and Safety at Work, and it worked as an autonomous non-governmental organization up to 2008, when it was merged with a similar organization, the Health and Safety Executive (HSE). CONIAC was a body created to advise HSC for such matters. Later, its role was changed in advising HSE for the same matters. The Health and Safety at Work etc Act 1974 is considered to be the foundation of all Health, Safety and Welfare legislations which apply in employment under UK. It was born through The Robens Report, a report prepared by the Baron of Woldingham Alfred Robens who was a trade unionist, labour politician and industrialist, and who, up to his death (1999), was working for the establishment of the idea of self-regulation. In fact, it was generated under the order of a committee on Safety and Health at Work that Robens himself had set up, in order to ‘‘review the provision made for the Safety and Health of persons in the course of their employment’’. The Act of 1974 included some general requirements about Health and Safety at Work, as these are described in Table 6 below, which were qualified by the expression ‘‘so far as is reasonably practicable’’ in order to avoid risks, but did not suggest any way in order to avoid accidents, or fatal accidents, in the worst case. This created the need for searching for a more practicable way

for avoiding accidents, such as the introduction of a series of regulations to be followed in practice which finally leaded to the CDM Regulations. In 2007, the CDM Regulations 1994 were revised to *The Construction (Design and Management) Regulations 2007* and were forced into practice the same year. The basic form of the CDM Regulations 2007 applies up to nowadays, with a few latest revisions, in 2009 and 2010.



Figure 1: Alfred Robens, Baron of Woldingham, 1947

Source: National Portrait Gallery, (2012), London, UK



(1)



(2)

Figure 2: The Legislative Coat of Arms of the United Kingdom

(1) As Appeared on The Act of 1974 and (2) A More Recent Form

Sources: (1) Parliament of the United Kingdom, (1974), The Health and Safety at Work etc Act 1974 and (2) Royal Coat of Arms, HM Government.SVG, UK

Table 6: Health and Safety at Work etc Act 1974 General Requirements

 **The Health and Safety at Work etc Act 1974**
Ensuring by the employers of the employees' Health, Safety and Welfare at Work
Respecting the public by the employers and the self employed persons
Similar duties with the above for persons controlling premises
Ensuring, by the suppliers of work articles and substances, that they are safe and non harmful for health
Reasonable care by the employees of their own Health and Safety, in cooperation with the employers

The CDM Regulations have been introduced to help in reducing the number of accidents in UK Construction Industry and to make the people involved in this more responsible. They apply to most building projects, medium to large maintenance contracts, and to all demolition works. Failure to comply with the CDM Regulations is considered to be a criminal offence and therefore their application has been combined with the Approved Codes of Practice - codes of practical guidance under a special legal status, introduced in order to avoid breaches regarding the Law, and in the opposite case to provide to the courts the power of judging. Also, it is supported by guidance material published by HSE and by the various CDM Systems created through the years. The CDM Regulations comprise a series of requirements which not only are to be enforced, but also, to suggest ways of how to be implemented in practice. According to the revised CDM Regulations of 2007, under the terms of provision of OHS in a client's project ‘‘in relation to Construction Work’’- any building, civil engineering or engineering work - which is going to be executed by a group of people who are appointed or engaged for this purpose, these requirements are, in summary, the following:

- Roles and duties for the client and the above group of people, the CDM Coordinator - a person that has replaced the role of the Planning Supervisor as this was established by the CDM Regulations of 1994, and that is appointed by the client to be his, or her, consultant and to ensure the Health and Safety of the other people involved - the designer and the contractors, including the principal contractor and other contractors/ subcontractors. These roles and duties include among others: a) Notification towards HSE about the project works that are to commence on the construction site, b) Notification/ Reporting of accidents occurring or diseases observed during the project works, in accordance with *The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995* introduced for recording such events, c) the preparation under the responsibility of the CDM Coordinator of The Health and Safety File that here is a recording file which at the end of the construction phase must pass to the client containing ‘‘information relating to the project which is likely to be needed during any subsequent construction work to ensure the Health and Safety of any person’’, d) the preparation by the principal contractor of *The Construction Phase Plan*, a document that replaced the requirement of the CDM Regulations of 1994 for the preparation of The Health and Safety Plan and which records ‘‘the Health and Safety arrangements, site-rules and any special measures for construction work’’, and, finally, e) measures to be implemented and ‘‘practicable’’, ‘‘suitable and sufficient’’ steps to be followed, in order to minimize risks to Health and Safety during the project construction. All the above people must comply with their roles and duties as a part of one team, co-operate with each other so as ‘’to perform any duty or function under these Regulations’’ and co-ordinate with each other so as to ensure The Health and Safety of persons ‘’carrying out’’ or ‘’affected by’’ the Construction Work. Liabilities regarding these requirements are mostly civil liabilities resulting by the breach of duty of care. (CDM Regulations 2007, Regulations 3 (2), 5, 9-25, 26-44).

  All roles and duties need to be considered by the earliest stage of the project, the inception, and to be followed up to the completion, and then, during the management of the project.
- Ensuring by the client, as an extension of the client’s duties, that the people appointed or engaged are competent and that each one of them must ‘‘extend only to his competence’’, ‘‘perform any requirement’’ and ‘‘conduct his undertaking without contravening any prohibition imposed on him by or under the relevant statutory pro-

visions''. For this, but a checking procedure is required, since it is made clear that none is going to be appointed by anyone ''unless he has taken reasonable steps to ensure the person to be appointed or engaged is competent''. (CDM Regulations 2007, Regulation 4).

However, the timing, the terms and the way of the appointment/ engagement of these people, who not only need to be competent but also to be adequately resourced to perform the task they are charged, and, finally, the duration of their involvement, all depend on the task and on who is employing them to perform it. In order achieve and maintain competence in a construction project, the client may need to take advice by specialists and professional institutions. The selection of these persons may be done through assessment and procurement strategies that are developed, either by the clients or by the CDM Coordinator, in order to criticize the qualification and the resources of each person, as for example through using questionnaires. Then, there are rating systems that may be used for determining the appropriate person for each task, through various criteria, weighting factors and quality/ price ratios. On the other hand, the persons appointed/ engaged must read and follow the CDM Regulations, the Approved Codes of Practice and the guidance material, and also publications and journals relevant to these. In parallel, they need to attend courses organized by the CDM Systems and to establish Operating Systems at Work which to be in accordance with the CDM Regulations, as for example the documentation and recording that also are required by the CDM Regulations. Finally, they need to establish continual monitoring at Work, and through this, to get continual feedback.

- Advising the client, as an extension of the other persons' duties and mostly the CDM Coordinator's, about his/her duties and taking steps to ensure that he/she is aware of these. (CDM Regulations 2007, Regulation 20).
- Designing Risk Management (CDM Regulations 2007, Regulations 1-48).

  Risk Management builds a Construction Industry Culture which is generated by the promotion of good practice in design and planning of every construction project. It includes: a) documentation and recording, using notes, schedules and specification clauses, which allow access to HSE for supervision, b) development of Risk Management Strategies with the preparation of Risk Assessments for avoiding and compacting the risk and providing protection to people involved, and c) the continual collection of useful information regarding Health and Safety, and the continual information flow on the CDM Regulations' aspects including advising by the designers towards the contractors for how they should work, so as the Risk Management Strat-

egies to be successful. For this purpose, various expert computer programmes have been developed by the CDM Systems that make information regarding the CDM Regulations available to interested people.

As the CDM Regulations still apply under EU and the EU Directive 92/57/EEC, the Government of UK has published a set of guiding principles which specify how the CDM Regulations should implement the EU Directive the 92/57/EEC. It also gives guidance for the implementation of other EU Directives relevant to Health and Safety and the Construction Industry, but since this part of the dissertation regards mostly the CDM Regulations only the particular EU Directive is examined, as the base of these regulations. The statistics in UK have stated that since 1995 the CDM Regulations and their application have improved Health and Safety in UK Construction Industry and that accidents and fatal accidents occurring in this sector have reduced, but on the other hand, some analysts have implied that the improvement was not satisfactory enough, a further analysis, though, is out of the aim of this dissertation, for both areas. However, a statement that is included in a consulting report of CONIAC in 2012, for future revision purposes of the CDM Regulations 2007, is quite important, regarding the implementation of the CDM Regulations and the EU Directives for Health and Safety in UK Construction Industry. According this statement, ‘‘a policy of copy-out should be adopted as a starting point to avoid imposing requirements beyond those contained within the Directive’’ and ‘‘any change to existing Directive-based legislation - such as CDM 2007 - has to comply with this policy unless there are strong arguments for doing otherwise’’.

Comparison of the Interpretation of the EU Directives for Health and Safety in Construction Industry through Cyprus Law with the one through CDM Regulations Applying in UK

According to the above, EU has built a new way of thinking for its states members, under the EU Directives framework. Having completed the examination of the Interpretation of the EU Directives for Health and Safety in Construction Industry through Cyprus Law, and the one through the CDM Regulations applying in UK, a comparison is possible to be done between the two cases. The general comments on this comparison are:

- Although there are various EU Directives for Health and Safety applying in Cyprus and in UK, the EU Directive that mostly regards the Construction Industry, for both

countries, is the EU Directive 92/57/EEC which in Cyprus applies through The Health and Safety (Minimum Requirements for Temporary or Mobile Construction Sites) Regulations 172/2002, and in UK through the CDM Regulations. As far as the general contents of the EU Directive 92/57/EEC are concerned, and therefore the general contents of the 172/2002 Regulations and the CDM Regulations, various requirements are included. There are a lot common points in these, such as the obligations/ roles and duties for people involved in a construction project, the Notifications for works that are going to start and the proposed Health and Safety measures. A further analysis, though, leads to the fact that they also have some differences. These differences have to do mostly with the emphasis given on some requirements in each case, or with some requirements observed in the 172/2002 Regulations, which are not included in the CDM Regulations, or the opposite. For example, a large part of the 172/2002 Regulations emphasizes on the Health and Safety Plan. The CDM Regulations include the Health and Safety Plan only in the initial version of 1994 of the regulations and the revised version of 2007 replaces the Health and Safety Plan term with a similar term, the Construction Plan, but without including many details about it. On the other hand, the CDM Regulations emphasize on the competence, the designing of Risk Management using records, documentation and Risk Assessments, the liabilities in case of breaches, and the accident/ diseases reporting. The term of competence in the 172/2002 Regulations is implied, somehow, but no further reference is done about it. The recording, the documentation, the Risk Assessment and the liabilities are mentioned in various parts of the 172/2002 Regulations, but they are not analyzed. However, the requirements of the Risk Assessment and of the accidents/ diseases reporting are analyzed separately in other parts of Cyprus Law and more specifically in the 173/2002 Regulations and in the 531/2007 Regulations, respectively. Ending, the obligations of the people involved in the project are examined by the 172/2002 Regulations as obligations of employers and self-employed persons, and, additionally, employees' obligations are included, something that is not observed in the CDM Regulations.

- The implementation of the CDM Regulations and of the relevant EU Directives in UK is supervised by HSE and combined with the Approved Codes of Practice under UK Law, giving guidance regarding how these to be implemented and sending the offenders to court, in case of breaches. The implementation of Cyprus Law for Health and Safety in Construction Industry and of the relevant EU Directives in Cyprus is supervised by the Department of Labor Inspection, and although there are

various codes approved by Cyprus Law, such as the Regulatory Administrative Acts, these seem to lag in practical guidance.

- The implementation of the CDM Regulations and of the relevant EU Directives in UK is combined with information flow and it is supported and promoted by HSE through published guidance material, and by the various CDM Systems through innovated means, such as the technology and the expert computer programmes. The implementation of Cyprus Law for Health and Safety in Construction Industry and of the relevant EU Directives in Cyprus is also combined information flow, but it is supported and promoted by various local governmental and non-governmental organizations using traditional, but not so innovated, means, such as the educational programmes.

The above comparison shows that the Interpretation of the EU Directives for Health and Safety in Construction Industry through Cyprus Law seems to have some advantages compared to the one through the CDM Regulations, but it also have some disadvantages which seem to be more important, since these seem to affect the most important part, the implementation of the EU Directives. In order to have a more complete idea, it is good to examine how these EU Directives are interpreted at the field, in construction sites in Cyprus.

CHAPTER 3: FIELD RESEARCH

Interpretation of the EU Directives for Health and Safety in Construction Industry at the Field, in Construction Sites in Cyprus

The examination of Cyprus Interpretation of the EU Directives for Health and Safety in Construction Industry is completed with examination how these EU Directives are interpreted at the field, in construction sites in Cyprus. This includes the selection of the candidates, people that work in this field area and have knowledge and experience on the subject examined, the creation of *the sample groups*, the groups that are going to provide to the researcher the needed information for supporting the research, and to represent a larger area of the population of this field area, and, finally, the analysis and the processing of the collected information, *the data collected*. This can be done by using various types of methods and before moving into the procedure, the various possible options need to be examined, and the most appropriate, for this specific research, needs to be selected, to be *the research methodology*. Then, *the general rationale of the research methodology* needs to be prescribed, the sample groups need to be identified and the data collected need to be analyzed and processed.

Research Methodology

The most popular field research methods which can be used for academic purposes' researches are *The Interviews*, *The Focus Groups* and *The Questionnaires*. Examining these methods, it can be observed that they have some common characteristics and some differences, as far as the structure, the way and the time required to be prepared and performed, and the results provided, are concerned. For example, all of these methods suppose the development of techniques in preparation and performance, but each may require different techniques and adequate knowledge for both areas, for this to be achieved. Also, each method may have advantages and disadvantages, depending on the purpose they are going to be used. Therefore, the final selection of the most appropriate one depends on the case study for which the method is going to be used and is determined by various factors, such

as the time available, the skills of the researcher and the knowledge of the people who are going to provide the information.

All of the above methods may be considered as *surveys.* A survey is a type of a field research in which the researcher targets the candidates, approaches them and asks them to answer various questions about a specific subject relevant to the area of the research, creating in this way *the target group*. The target group is going to be the sample group and therefore it is required this to be representative. There are two main types of questions that can be used, depending on the type of answers that can be given and the data provided: a) the *closed-ended questions* which allow people to select the answer from a list of responses provided by the researcher, as for example *yes/ no answers*, or *multiple choice answers* and b) the *open-ended questions* which allow people to answer in their own words. The first case of questions provides mostly *quantitative data*, and the second *qualitative data*. The quantitative data are the data that consist of numbers and statistics, in order to be used for a testing a hypothesis, a search for a cause or an effect, or to make a prediction. The qualitative data are the data that contain words/ descriptions, images or objects, in order to uncover social interactions, attitudes, behaviors or motivations of people, so as to be understood and interpreted. The quantitative data have a more mathematical side, and the qualitative data have a more tangible/ sensitive side.

The Interviews is a method more formal than the other field research methods. Through this, the researcher takes interviews by individual persons or groups of people, the informants. The interviews are usually taken face-to face or by phone. The questions used are mostly open-ended and the data provided are qualitative. The interviews' structure may be structured with pre-determined and standardized questions, or semi-structured with non-standardized questions, of which some may be omitted and some others to be added, or unstructured/ in depth with informal and non-standardized questions, exploring in depth a general area. An academic interview is quite different from interviews given on the media and in order this to be effective, it is required the researcher to plan the interview contents, the number and the types of the informants, something that usually is time consuming. Also, it is required by the researcher to have experience in performing the interview, to use the appropriate tone for asking the questions, to have listening skills, and to transmit confidence towards the informant. The informant, on the other hand, needs to have knowledge regarding the field of the research, to be available in time and to be in a mood to answer.

The Focus Groups is a method less formal than the interviews. In this method, a group of people, the focus group, usually 8 to 14 in number, and the researcher, the moderator, are gathered in a room where a discussion is developed between them about a specific subject, as the moderator makes some questions to the focus group. The focus group is contacted by the moderator in an informal and natural manner, so as to feel comfortable to answer the questions and participate in the discussion developed. At the same time, the moderator observes the reactions of the focus group and tries to identify their attitudes regarding the subject. The discussion is usually tape-recorded or videotaped. The method is considered to be qualitative, and the questions that are usually used are open-ended. It is effective mostly in cases where a broad range of views on specific topic is required in a relatively short period of time, but it is not effective for researches that require highly personal or socially sensitive information. Furthermore, it is a method where the level of the researcher's skills needs to be high enough, especially in academic case studies which need a different approach from the marketing or the governmental ones.

The Questionnaires is a method based on the usage of questionnaires, a list of written questions on a form paper, which are to be filled in by a group of people, the respondents, identified by the researcher. The questionnaires are filled, either with the researcher being present, or in the absence of the researcher. In the second case the procedure takes the form of a structured interview. The questionnaires are relatively quick and easy to be created, and the researcher has the ability to contact with large numbers of people, quickly and easily, using electronic mailing. The type of questions that are usually used may be closed-ended, or open-ended, or both and the data provided may be quantitative, or qualitative, or both. In cases that closed-ended questions are used, the preparation and performance procedures become even quicker. Furthermore, because the open-ended questions are more descriptive and more opinion-related than the close-ended questions, and this in questionnaires is in a more limited form than in the other two methods described above, it is difficult for the researchers using open-ended questions in questionnaires to examine complex issues and gather all information needed. Nevertheless, whatever will finally be the type of the questions selected, a pre-design procedure is always required for selecting and designing the appropriate questions, so as the questionnaire to be suitable for the case study examined. Beside this, the researcher needs to be careful with the respondents and the results' processing, since in the absence of the researcher, there is always the uncertainty whether the person who has filled the questionnaire is the one that has been selected. Despite these,

the Questionnaires' method seems to be the simplest and the quickest from the three methods described.

After a careful examination of the characteristics of each method, it was selected, the field research of this dissertation to be done through the Questionnaires. The selection was based in the fact that people working in the Construction Industry Sector are usually practical, the time they have available is often limited, and in case they are willing to help in a research, they would prefer this to be done in the simplest way, with the simplest questions that can be answered quickly without demanding many details, such as the closed-ended questions which at the same time can be quite comprehensive through the multiple choice technique. The general rationale of the selected research methodology, the preparation of the questionnaire, the selection of the sample groups and the processing of the data collected during the field research, is analyzed below.

General Rationale of Research Methodology, Sample Groups and Data Collected

The questionnaire used for this specific research refers to people working in Cyprus Construction Industry, in construction sites in Cyprus, and it is in a written form. The initial questionnaire was prepared in English language, but since the majority of the respondents selected for the research are Cypriots, it was translated in Greek language. The samples of the questionnaire in English and in Greek are attached in the appendices. Before moving into the field, a preparation procedure was done, in order to determine the general rationale of the research methodology. This included the identification of the targeted people for filling in the questionnaire and the designing of the questionnaire - the selection of the type of the used questions, in relation with these people. Then, the targeted people were contacted by the researcher, and they were provided with paper forms of the questionnaire in order to fill them in. The people who finally filled in the paper forms created the sample group which in fact represented a larger area of the population working in construction sites in Cyprus. The next and final step of the whole process was the analysis and the processing of the data collected.

The questionnaire was prepared in a way so as to be possible to be filled in by people coming from various professional areas of the Construction Industry Sect and people who either work in construction sites, or visit construction sites, or come in touch with other people working in construction sites, daily. Such people may be managers of construction

projects, supervisor architects/ engineers - from the aspects of the design process - supervisors of construction works and workers (site engineers and superintendents), civil and other engineers, contractors (main contractors and subcontractors), persons responsible for the Health and Safety in construction sites (Health and Safety Officer/ Coordinator). All these people are the people who are supposed to control the construction and the development of projects on construction sites, to deal with an accident occurred or a disease appeared, to take measures to avoid accidents and diseases, to ensure Health and Safety and to face all the issues regarding Health and Safety. Therefore they are the people who need to be aware of the Law and the EU Directives for Health and Safety in Construction Industry and to keep themselves updated with the relevant revisions. Although Health and Safety in construction sites is a matter that concerns all the people who are involved and participate in the development of a project on site, the professional category of the simple construction workers has not been included in the list of the above people so as the research not to escape much from the specific legal field of the dissertation that, possibly, simple workers not to able to respond. Besides, it is the higher professional levels workers' duty to inform the simple workers about the Health and Safety Issue and the relevant legislation.

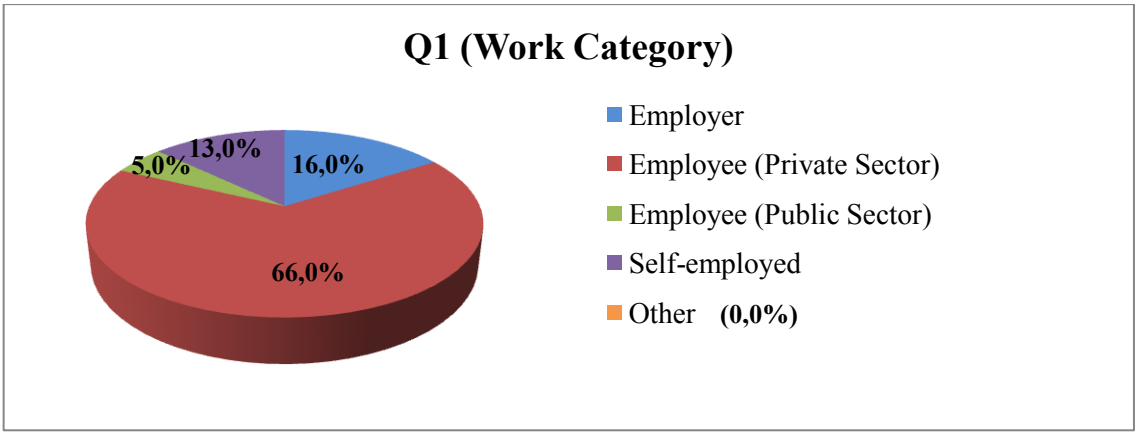
The questions that were used were mostly closed-ended questions for yes/ no and multiple choice answers as these are the simplest and quickest, but, since the Health and Safety Issue is also a social matter, some open-ended questions were also included, in order the respondents to have the chance to answer in a more free way. The structure of the questions was built in a way so as the respondents to inform, to think, to express themselves, to wonder and to seek to be informed about things that they were not aware of. The series of the questions was set in such a way, so the subject to be developed gradually, to maintain the respondents' interest and, at the end, to lead to the aim of the research. The first three questions included are considered to be more general, as the respondents' personal data are required and the professional field and experience of each one, in the Construction Industry Sector, are covered. From these three questions, Question 1 that refers to the the work category was considered necessary because Cyprus Law implies different obligations for Health and Safety for each work category and the Health and Safety Issue for each work category is managed in a different way. The next three questions included, and, also, Question 14 and Question 15 refer to the knowledge of each respondent regarding the Health and Safety legislation applying in Cyprus and UK and the relevant EU Directives. Question 7 and Question 8 provide data on the experience of each person at work in relation with important Health and Safety matters and how these must be managed. All the rest

questions included require the opinion of each respondent about the Health and Safety System in Cyprus Construction Industry, and whether this can be improved through the CDM Regulations.

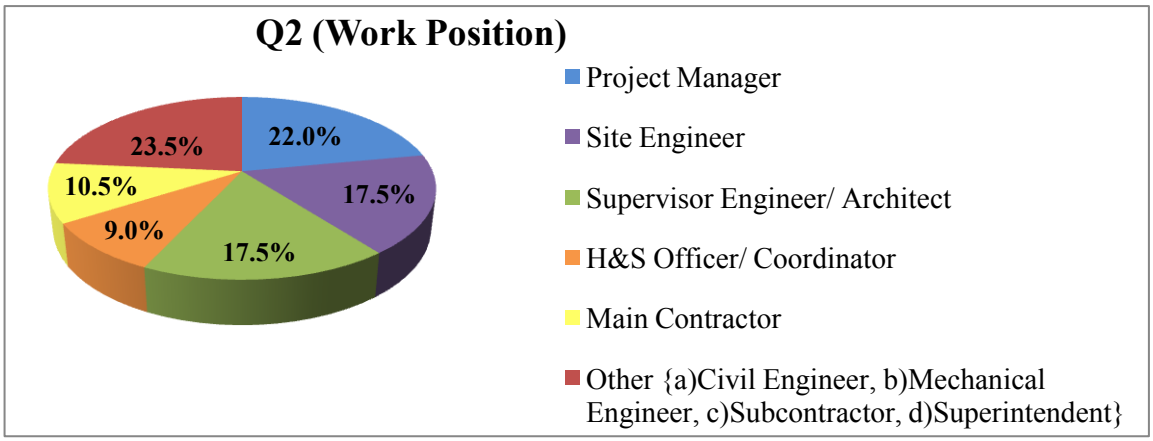
The people that were finally selected for filling in the questionnaire come from various companies/ organizations from the Private and the Public Sector of Cyprus Construction Industry, and they all fulfill the professional criteria prescribed above. The companies/ organizations of the Private Sector are mostly construction companies which vary in size in large, medium and small - as far as the number of the people employing is concerned - and in importance in high, medium and low - as far as the level of the importance of the projects dealing with is concerned. The filling in of each questionnaire was done under the permission of the top management of each company. The whole procedure was done anonymous and the data of each company were to remain confidential. In some cases, the questionnaire was given to more than one people coming from the same company, so as the researcher to have a clearer idea, from a different point of view, for the internal managing of the Health and Safety matters of each company and, also, to check the accuracy of the information collected. An effort was also made so as all the professional fields mentioned above to be covered, and companies all over Cyprus to be approached, so as the sample group to be more representative. The majority of these companies belong to the Districts of Nicosia, Pafos and Limassol. Only two companies belong in the District of Larnaca, of which only one was positive in responding. The questionnaire paper forms were sent to these companies mostly through electronic mail and the answers were received back mostly electronically. One form was filled in during a phone conversation, in an interview form. Although the majority of the responses were given in the absence of the researcher, the researcher checked the confidence of the data collected through various phone conversations with the respondents who, at the end, not only provided information, but also asked to be informed about issues out the field of their knowledge. The analysis and the processing of the data collected are given below:

- 14 different companies and 21 different people were approached.
- From the 21 people that were approached, 18 people work for Private Sector and 3 for the Public Sector.
- In two cases, 4 and 2 people came from the same company, meaning that 3 and 1 additional paper forms were filled for each company, respectively.

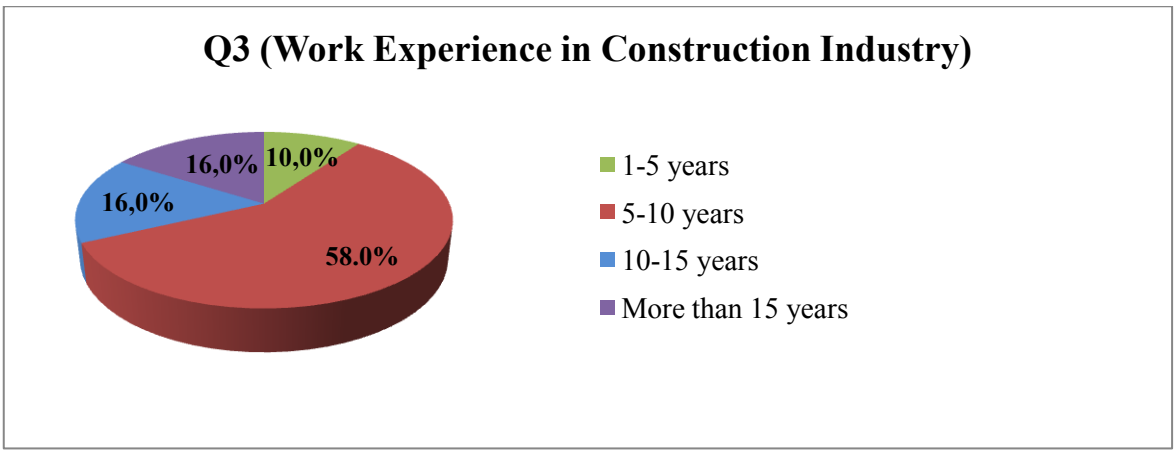
- The response rates were 19/22 (86.4%) for people, 17/18 (94.4%) for the people of the Private Sector, 2/3 (66.7%) for the people of the Public Sector and 13/14 (92.9%) for the companies.
- Graph 7- Graph 22 present the data collected for Question 1 - Question 16, respectively. Each graph presents the possible answers of each question and the percentage of the choice for each answer with a different color. The greater percentage is shown with red color. In case a color does not appear on the graph pie, the percentage is equal to 0%. Where the word other appears and some additional options of answers are included, the question is open-ended. The answer that appears in Italics in Question 10 is not included in the choices of the answers given by the researcher. It was given by one of the respondents, after the rest answers were rejected. Finally, for Question 13, one of the respondents added a proposal.



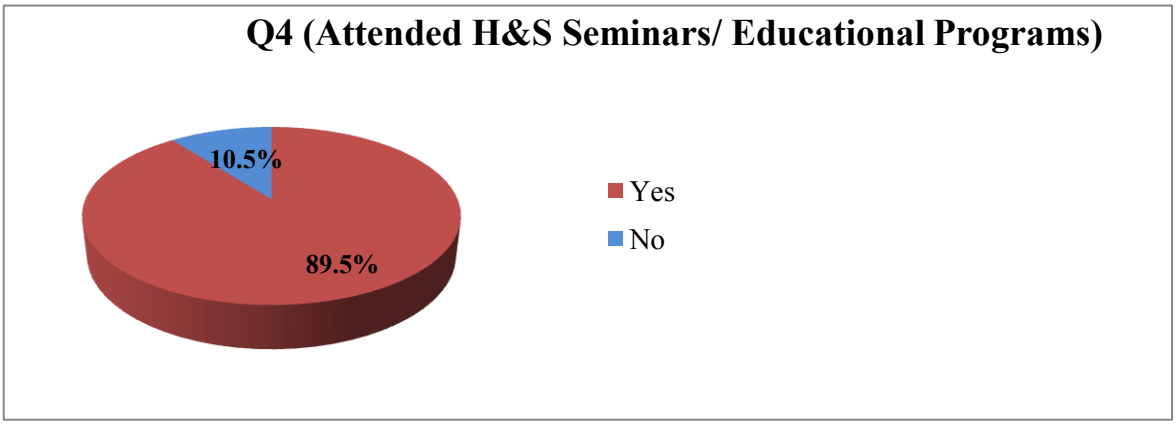
Graph 7: Distribution of Answers for Question 1, in Percentage



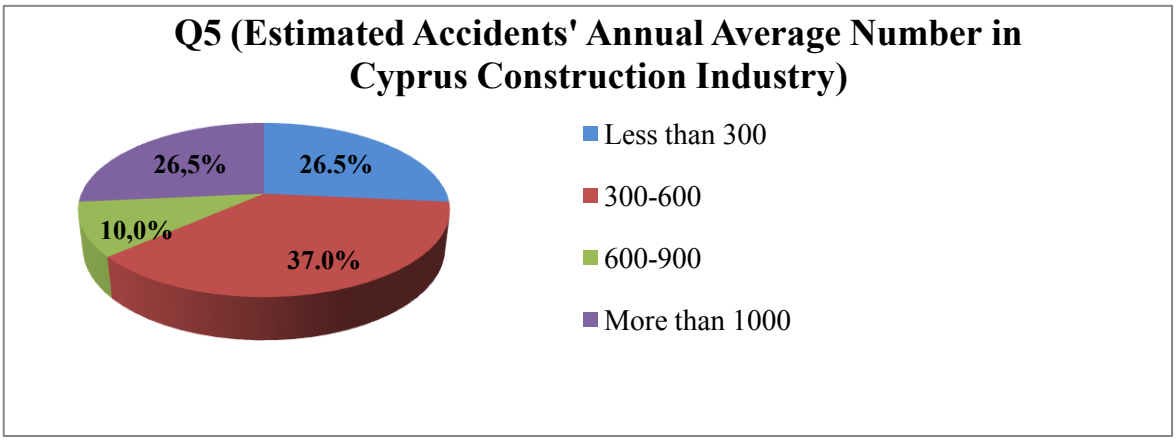
Graph 8: Distribution of Answers for Question 2, in Percentage



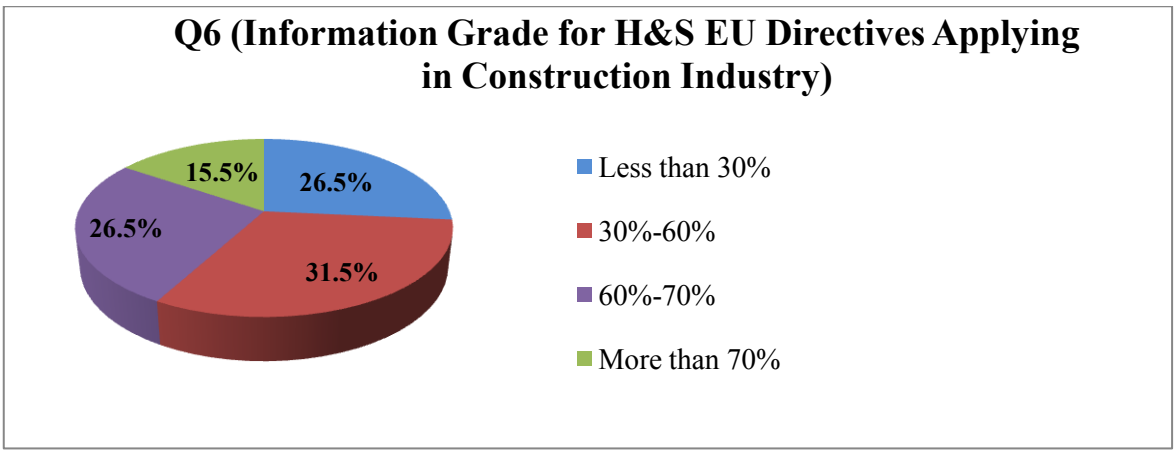
Graph 9: Distribution of Answers for Question 3, in Percentage



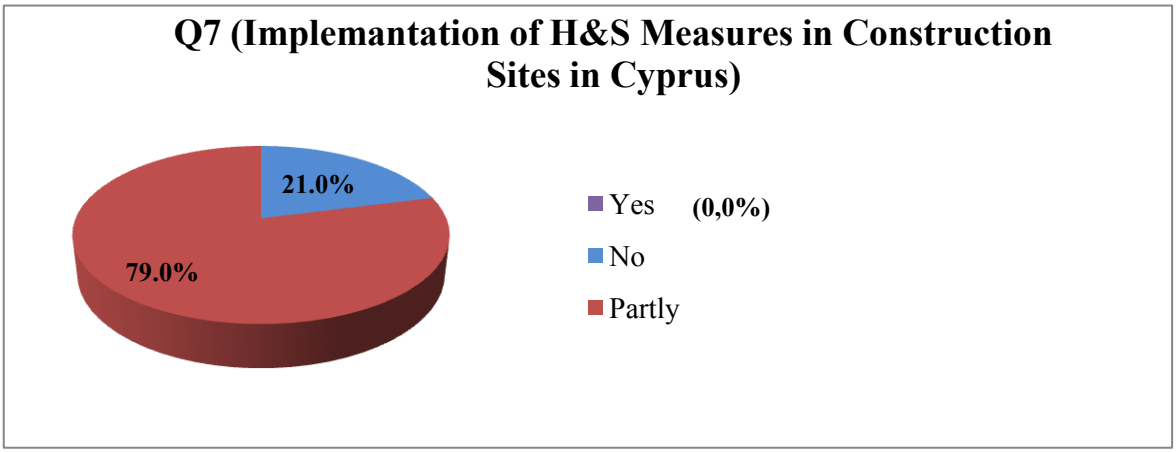
Graph 10: Distribution of Answers for Question 4, in Percentage



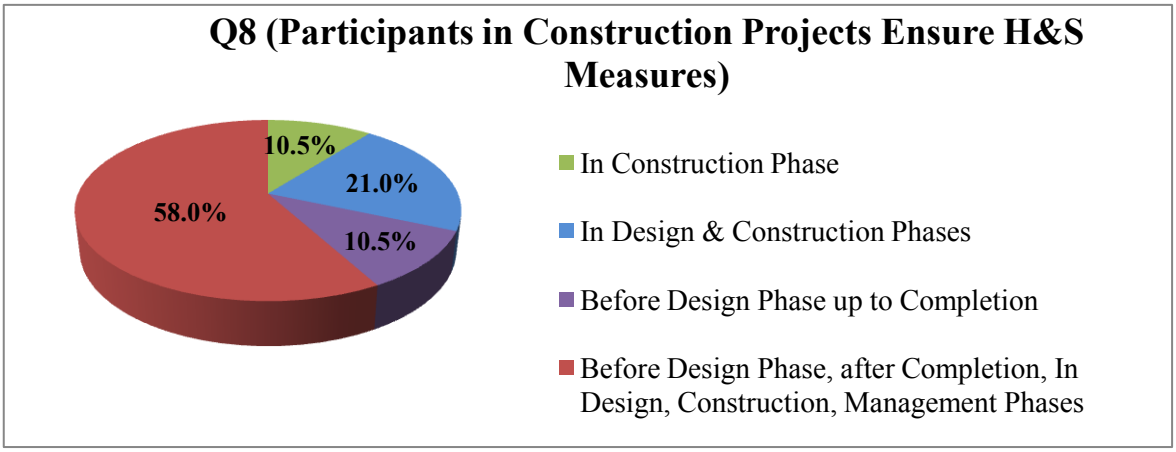
Graph 11: Distribution of Answers for Question 5, in Percentage



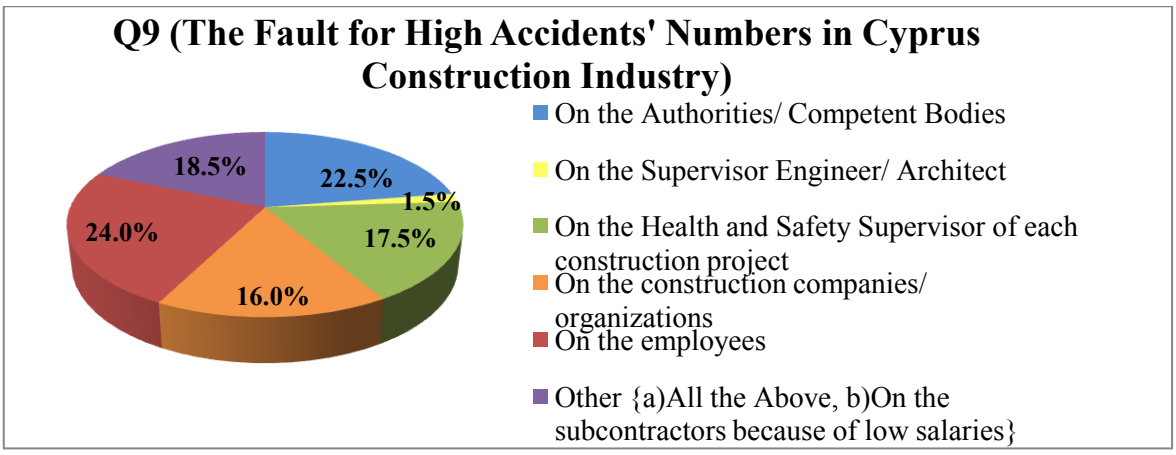
Graph 12: Distribution of Answers for Question 6, in Percentage



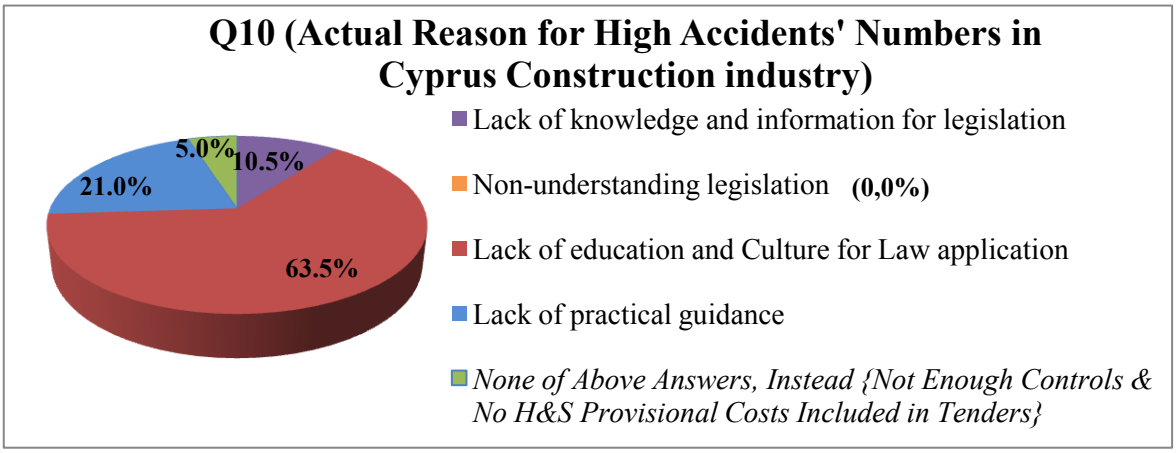
Graph 13: Distribution of Answers for Question 7, in Percentage



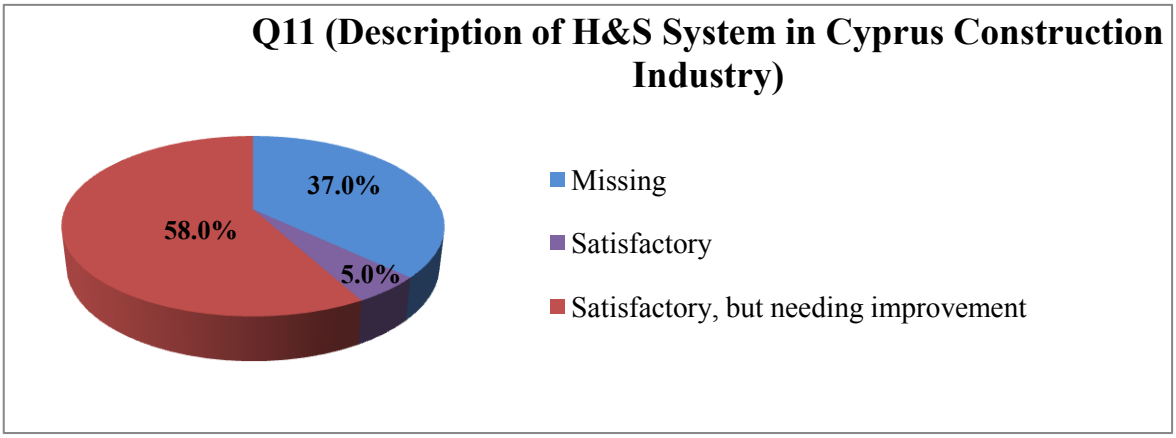
Graph 14: Distribution of Answers for Question 8, in Percentage



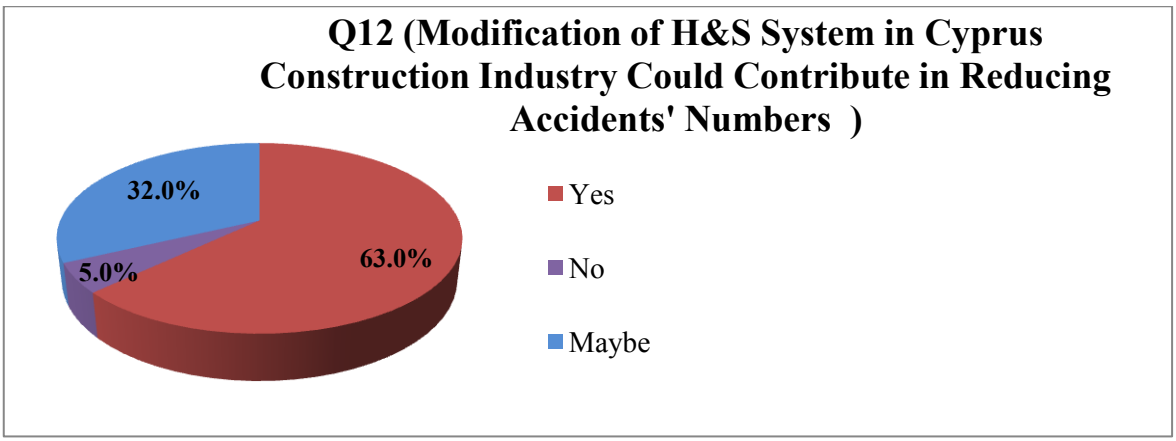
Graph 15: Distribution of Answers for Question 9, in Percentage



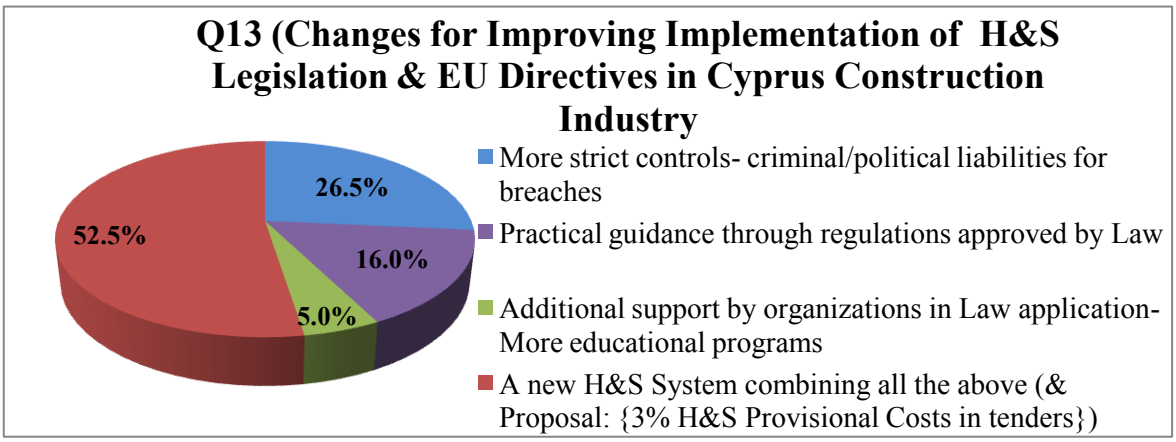
Graph 16: Distribution of Answers for Question 10, in Percentage



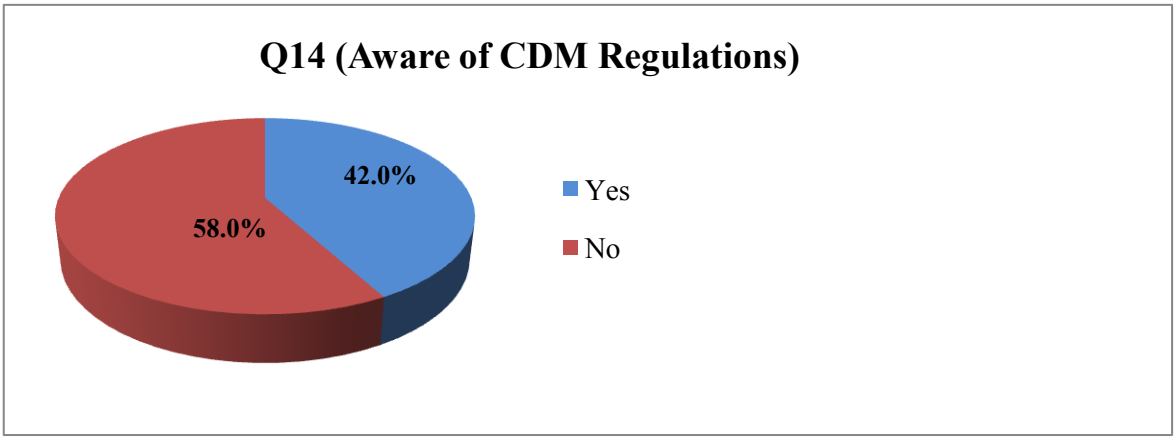
Graph 17: Distribution of Answers for Question 11, in Percentage



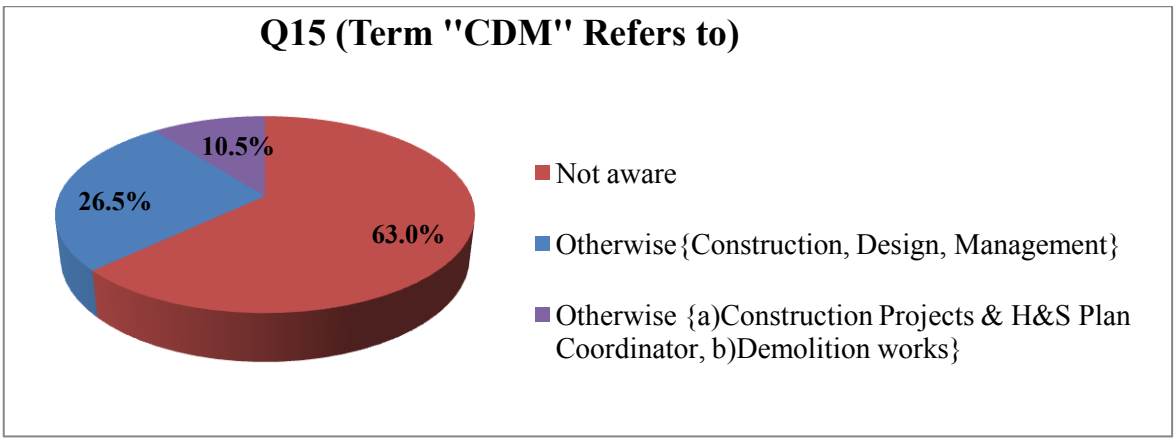
Graph 18: Distribution of Answers for Question 12, in Percentage



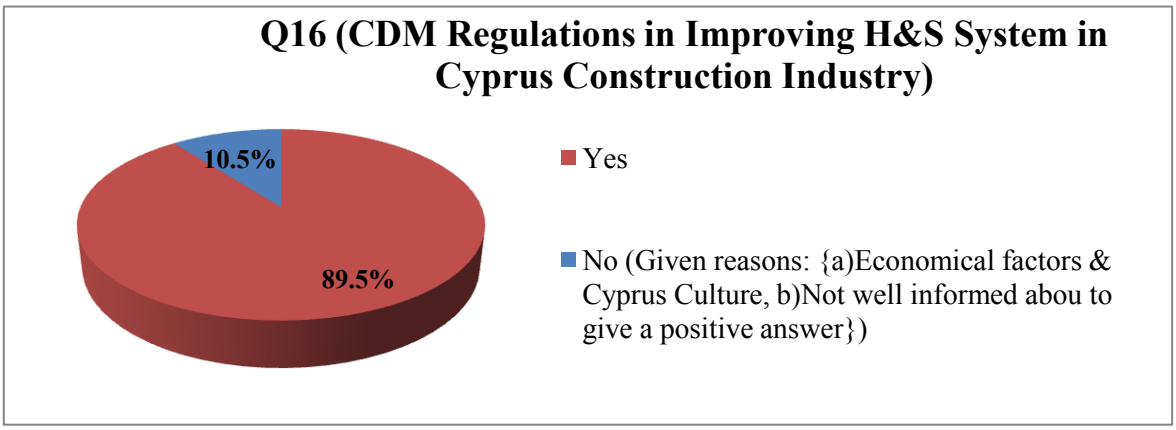
Graph 19: Distribution of Answers for Question 13, in Percentage



Graph 20: Distribution of Answers for Question 14, in Percentage



Graph 21: Distribution of Answers for Question 15, in Percentage



Graph 22: Distribution of Answers for Question 16, in Percentage

CHAPTER 4: RESEARCH FINDINGS

At this point the research has been completed. The next step is the research findings of the desk research and of the field research to be gathered and analyzed.

Desk Research Findings

The desk research has stated that, although the Interpretation of the EU Directives for Health and Safety in Construction Industry through Cyprus Law, and the one through the CDM Regulations that apply in UK have some commons, and, although in some parts the first seems to have advantages over the second, there are some other parts the importance of which seems to be high, where the first seems to lag compared to the second. More specifically, the desk research findings are the following:

- *Practical guidance:* The desk research has indicated that the Interpretation of the EU Directives for Health and Safety in Construction Industry through Cyprus Law lags in practical guidance, in the existence of codes approved by the Law.
- *Information flow, support and promotion:* The desk research has indicated that the Interpretation of the EU Directives for Health and Safety in Construction Industry through Cyprus Law lags in information flow, in supporting and in promotion, in the use of innovated means.

Field Research Findings

The field research has stated that the Interpretation of the EU Directives for Health and Safety in construction sites in Cyprus needs improvement. More specifically, the field research findings are the following:

- *Knowledge and Understanding:* The field research has indicated that, although most of the respondents, participants in projects' development in construction sites, have attended seminars or other similar educational programs relevant to Health and Safety, and, although the greatest percentage of them is aware of the real levels of the

numbers of accidents occurring every year in Cyprus Construction Industry, there are some respondents of whom the percentages are quite high who selected the answers of the lowest or of the highest number of accidents, which, both, are away from the reality. This implies: a) ineffectiveness of the relevant educational system and b) lack of awareness of the reality. Additionally, the majority of the respondents have indicated low or medium levels of knowledge regarding the Health and Safety legislation applying in Construction Industry, and specifically regarding the EU Directives. This analysis of the results identifies that the research group requires more information and clarity in order to be able implementing the relevant Law and measures effectively. Besides these, the field research has identified that most of the respondents are aware that Health and Safety is important in all the phases of the development of a construction project, the Inception Phase, the Design Phase and the Construction Phase to the completion of the project, and then to the operational Management Phase - as the CDM Regulations applying in UK require.

- *Fault and Responsibility:* The field research has indicated that the respondents, and mostly the contractors, believe that the fault for the high number of accidents in Cyprus Construction Industry is on the employees. This is due to two major characteristics of Cyprus Culture, the avoiding of the responsibilities and the passing the liabilities to the others. Fewer respondents believe that the fault is on the authorities and the competent bodies, and even fewer believe that is a matter of all the people involved. Some others believe that the fault, or better the responsibility in this case, is on the Health and Safety Supervisor/ Coordinator. Furthermore, the field research has indicated that most of the respondents believe that the high number of accidents is due to the lack of education and Culture in Law application, or in lack of practical guidance. This results the need to develop a Culture for Health and Safety from the inception of every construction project.
- *Implementation and Improvement:* The research has shown that most of the respondents believe that the Health and Safety measures partly are implemented in construction sites. The 58% of the respondents finds the Health and Safety System in Cyprus Construction Industry satisfactory, but there are areas where additional elements could be introduced. The research results suggest that these could be in the form of enforcement of the Law with additional codes of practical guidance supported by promotion systems. It is felt that these additions would improve the implementation of the relevant Law and reduce the high numbers of accidents in construction sites in Cyprus. More specifically, the research suggests that a modification of the Health

and Safety System combining more strict controls with liabilities for breaches, practical guidance approved by the Law and more support by the relevant organizations could improve the implementation of the Law and the EU Directives for Health and Safety. Despite of the fact that most of the respondents are not aware of the CDM Regulations applying in UK, after a brief description of these, the majority of the sample group believes the introduction of a new system based on the CDM Regulations could improve the existing Health and Safety System in Cyprus Construction Industry.

CHAPTER 5: CONCLUSIONS AND RECOMMENTATIONS

Evaluation of Research Findings

For every research completed, it is very important to make an evaluation of the research findings, whether these have lead to the key objectives of the research being answered. The findings for this specific research have lead to the next conclusions that could be considered as answers to the respective set objectives:

- *To examine Cyprus Law for Health and Safety in Construction Industry before and after Cyprus entering EU, and how through this the relevant EU Directives are interpreted.*
  - The desk research and literature review have identified that the legislation relating to the development of a Health and Safety Strategy Safety in Construction Industry through the relevant EU Directives has impacted on the respective legislation existing in Cyprus before Cyprus accession in EU, as after 2002, the year of the introduction of the first EU Directives in Cyprus Law, a kind of improvement of the provisions of the existing, then, Law has been observed, with more attention being given their implementation. This is evident by the Public Authorities' more active participation and more support in the application of the Law, since then. Therefore, according to the research, Cyprus Law for Health and Safety in Construction Industry has been upgraded after Cyprus accession in EU and the introduction of the relevant EU Directives, which are interpreted through the various regulations and regulatory administrative acts of this Law.

- *To analyze accidents' statistics in Cyprus Construction Industry before and after Cyprus entering EU.*
  - The analysis through the desk research of the data relating Health and Safety figures in Cyprus Construction Industry, pre and post the introduction in Cyprus Law of the EU Directives for Health and Safety, suggests that these have had little or insignificant impact upon the accidents rates in the Construction Industry. The research has

identified that the annual average numbers of accidents in Cyprus Construction Industry have remained at the same levels before and after Cyprus accession in EU.

- *To examine the CDM Regulations applying in UK and how through these the EU Directives for Health and Safety in Construction Industry are interpreted, with reference to the relevant UK Law.*
- The desk research and literature review have identified that the CDM Regulations applying in UK are consistent with the UK Law for Health and Safety, and in response with the EU Directive 92/57/EEC. The CDM Regulations combine practical guidance for Law application, approved by the Law, liabilities for breaches, and innovated methods for information flow, and they apply in all phases of the projects' development, in Construction, Design, and Management. The EU Directives apply through the CDM Regulations, under a set of guiding principles published by the Government of UK.

- *To compare the way the EU Directives for Health and Safety in Construction Industry are interpreted through Cyprus Law with the one through the CDM Regulations applying in UK*
- The desk research has identified that the Interpretation of the EU Directives for Health and Safety in Construction Industry through Cyprus Law, and the one through the CDM Regulations applying in UK have some commons, but they also have some differences. According to the research, the first has some advantages compared to the second, but it seems that it also has some important disadvantages regarding the practical guidance and the promotion of the implementation of the Law and the EU Directives.

- *To examine how the EU Directives for Health and Safety in Construction Industry are interpreted at the field, in construction sites in Cyprus.*
- The field research has clearly identified the physical existence of the new legislation of the EU Directives, but, also, that this has had little impact on the Culture towards Health and Safety in Cyprus Construction Industry. What the field research suggests is that a reduction of the accidents in the Construction Industry is more than legislation. It requires knowledge, education and a Health and Safety Culture. This is evident by the fact that in a significant number of responses, a lack of knowledge of

both, the legislation and its implementation, is considered to be the key factor in the non-compliance with the Law, and by the general conclusion which mentions the lack of education and Culture. More specifically, the research has indicated that the Interpretation of the EU Directives for Health and Safety in Construction Industry in construction sites in Cyprus appears to lag in knowledge, education and information regarding the EU Directives and in the Culture developed, regarding the implementation of the measures enforced by the EU Directives. Also, the research has indicated the Health and Safety System in Cyprus needs improvement and that a way for this to be achieved, is a modification with a new system that is based on the CDM Regulations applying in UK.

Conclusions and Recommendations - Identification of Possible Gaps in Cyprus Interpretation of the EU Directives for Health and Safety in Construction Industry, Potentiality for Improvement and Possibility for Improvement through the CDM Regulations

The aim of this dissertation was to be examined whether there are any gaps in the way in which the EU Directives for Health and Safety in Construction Industry are interpreted in Cyprus and in such case the gaps to be identified, and, also, to be checked whether there is any possibility for improvement and a way for improvement to be recommended. Recalling the Hypothesis and Proposals generated for the key objectives (Figure 3), it seems that the aim has been completed through: a) the desk research/ literature review which has examined i) the relevant Cyprus Law and how this has been modified after Cyprus accession in EU, when the relevant EU Directives were introduced, ii) the accidents' statistics of Cyprus Construction Industry and iii) the CDM Regulations applying in UK, the relevant UK Law, and how the implementation of these - under the same EU Directives - overweighs from Cyprus case, and, b) the field research that has examined how the Health and Safety Law is implemented at the field, in construction sites in Cyprus.

Are there any gaps in the way the EU Directives for Health and Safety in Construction Industry are interpreted in Cyprus, and if yes, where do these gaps appear?

Is it possible to improve the way the EU Directives for Health and Safety in Construction Industry are interpreted in Cyprus?

Could the improvement of the way the EU Directives for Health and Safety in Construction Industry are interpreted in Cyprus be achieved through the CDM Regulations?

Figure 3: Recalling Hypothesis and Proposals for the Aim of the Work

The research has indicated that it can be considered that there are some gaps in Cyprus Interpretation of the above EU Directives. The gaps identified by the research are summarized in Figure 4 below:

The Interpretation of the EU Directives for Health and Safety in Construction Industry through Cyprus Law lags

- ***in the existence of practical guidance, approved by the Law***
- ***in the use of innovated means in information flow, in support and in promotion***

The Interpretation of the EU Directives for Health and Safety in Construction Industry in construction sites in Cyprus lags:

- ***in the information and knowledge of people involved, regarding the EU Directives and the real numbers of accidents occurring every year in Cyprus Construction***
- ***in the implementation of the Health and Safety measures***
- ***in the education regarding the application of the Law and in the existence of a Health and Safety Culture***
- ***in the practical guidance to the application of the Law***

Figure 4: Identification of Possible Gaps in Cyprus Interpretation of the EU Directives for Health and Safety in Construction Industry

The research has stated that there is a potentiality for improvement of Cyprus Interpretation of the EU Directives for Health and Safety in Construction Industry. This opinion is supported by the 63% percentage of the field representants, and it is expressed as a positive answer in the question for the existence of the potentiality for reduction of the annual number of accidents in Cyprus Construction Industry, through a modification of the existing Health and Safety System.

The research has also stated that there is a possibility for improvement of Cyprus Interpretation of the EU Directives for Health and Safety in Construction Industry through the CDM Regulations by introducing a new Health and Safety System in Cyprus, based on the CDM Regulations applying in UK, where the education, the knowledge and understanding of the legislation, and the Culture for Health and Safety appear to be more developed than they are in Cyprus. This view is supported by the 89.5% of the field representants. Besides, this is not surprising considering that the CDM Regulations and the EU Directive, where these are based on, have been in place in UK since 1994. The research, actually, suggests that the full implementation and compliance with the Law is incremental. The expectation is that this soon will be reflected in the Cyprus case.

Additionally, the analysis of the literature review has identified the extend of how the European Directives have impacted on legislation in Cyprus, by improving the implementation of the already existing Law for Health and Safety, the Health and Safety Law at Work of 1996, as, since then, the participation of the Public Authorities has been more active in the support of the Law application. However, even though the EU Directives have been introduced since 2002, the analysis of the accidents statistical data has shown, no significant change in the accidents rates. This analysis would suggest that legislation is a contributing factor in bringing about a change for improving Health and Safety of construction projects in Cyprus, but there appear to be other contributing factors that need to be applied, if the desired effect of improving Health and Safety in Cyprus Construction Industry is to be realized. The evidences from the desk research have indicated that the main factors needed for improving Health and Safety are a practical guidance approved by the Law, and, the use of more innovated systems for Law information flow, support and promotion. The evidences from the field research have identified that there are a number of factors that need to be addressed to achieve an improved Safety and Health Environment in construction projects. These factors, according to the field research, are the knowledge, the education, the development of a Health and Safety Culture, the enforcement of the Law application, and, finally, additional practical guidance.

The most appropriate way for someone to close such a subject is to make some further thoughts for how the improvement through CDM Regulations could be achieved in Cyprus actually and practically. As the Construction Industry in UK is supposed to have stronger bases, historically and economically, than in Cyprus, a further research recommended is whether specific measures based on the CDM Regulations, or specific technologies used by the CDM Systems, could be suitable for the specific economic and working conditions of Cyprus Construction Industry. Also, it is very important for Cyprus people to realize that the Construction Industry Health and Safety is a matter of all those who are involved in this, from the authorities, the Health and Safety inspectors, the architects, the engineers, the construction managers, the contractors, the subcontractors, the construction supervisors, up to the last worker, and, also, the clients. All must realize that time and money loss are insignificant in front of a man's life loss and in order a life to be protected, it is not enough to keep the Law, either this is Cyprus Law, or the CDM Regulations, or the EU Directives, written in a few papers. Action is required and effective practice!

REFERENCES

Baartraaijmakers. (2009) *Workplace Health Promotion: Background, Aim and Principles*. [Online] Available from: http://www.baart-raaijmakers.nl/files/profiel/the_rationale_for_workplace_health_promotion_healthy_together__baartraaijmakers_2009.pdf [Accessed 15th July 2012].

Beal, A. (2007) CDM Regulations 12 Years of Pain but Little Gain. *Proceedings of ICE*. [Online] Vol.160 (14431), 82-88. Available from: http://www.anbeal.co.uk/cien160-082.pdf [Accessed 18th August 2012].

Council of the European Union. (1989, 1992, 1999) *Directive 89/391/EEC, Directive 89/654/EEC, Directive 92/57/EEC, Directive 92/85/EEC, Directive 1999/70/EC, Directive 1999/92/EC*.

Cyprus Safety and Health Association. (n.d.) *About*. [Online] Available from: http://www.cysha.org.cy/ENG/about.htm [Accessed 3rd May 2012].

Eiselen, R., Uys, T. & Potgieter, N. (2005), *Analyzing Survey Data Using SPSS13: A Workbook- Questionnaire Design*. University of Johannesburg.

European Agency for Safety and Health at Work. (n.d.) *About Us*. [Online] Available from: http://osha.europa.eu/en/about [Accessed 15th July 2012].

European Agency for Safety and Health at Work. (2001) *Accident Prevention in Practice - Success is No Accident - European Week for Safety and Health at Work*. [Online] Available from: http://osha.europa.eu/en/publications/reports/103 [Accessed 18th July 2012].

European Commission. (1999) *European Statistics on Accidents at Work - Methodology*. [Online] Available from: http://www.uni-mannheim.de/edz/pdf/eurostat/98/CA-19-98-908-EN-N-EN.pdf [Accessed 2nd August 2012].

European Commission. (2007) *Luxembourg Declaration on Workplace Health Promotion in the European Union*. [Online] Available at: http://www.enwhp.org/fileadmin/rs-dokumente/dateien/Luxembourg_Declaration.pdf [Accessed 14th July 2012].

European Industrial Relations Observatory On-line. (2004) *Health and Safety at Work Examined*. [Online] Available from: http://www.eurofound.europa.eu/eiro/2004/04/feature/cy0404102f.htm [Accessed 28th April 2012].

European Network of Safety and Health Professional Organizations. (n.d.) *About*. [Online] Available from: http://www.enshpo.eu/index.php?option=com_content&view=article&id=46&Itemid=53 [Accessed 19th July 2012].

European Qualification of Occupational Safety and Health Professional. (n.d.) *Home*. [Online] Available from: http://www.eusafe.org/index.php/en/ [Accessed 19th July 2012].

Goodman, G. (1999) Lord Robens of Woldingham, A Lost Labour Leader who Rules Coal Mines Delayed Their Demise and Ended His Career as a Captain of Industry. *The Guardian*. [Online] 02.28 BST. Available from: http://www.guardian.co.uk/news/1999/jun/29/guardianobituaries3 [Accessed 10th August 2012].

Government of Cyprus. (1956) *Factories,* Chapter 134 of the Laws, edition 1959, London W.1: CF. Roworth Limited.

Health and Safety Executive. (n.d.) *Construction Industry Advisory Committee (CONIAC)*. [Online] Available from: http://www.hse.gov.uk/aboutus/meetings/iacs/coniac/index.htm [Accessed 10th August 2012]

Health and Safety Executive. (n.d.) *Guidance*. [Online] Available from: http://www.hse.gov.uk/construction/index.htm [Accessed 10th August 2012]

Health and Safety Executive & Construction Industry Advisory Committee (CONIAC). (2012) *Update on the Construction (Design and Management) Regulations 2007*. [Online] Available from: http://www.hse.gov.uk/aboutus/meetings/iacs/coniac/200612/m2-2012-2.pdf [Accessed 18th August 2012]

The Stationery Office Ltd. (eds.) (2008) *The Role of the Health and Safety Commission and the Health and Safety Executive in Regulating Workplace Health and Safety*. [Online] House of Commons Work and Pensions Committee. Third Report of Session: 2007-2008 Vol. 1. Available from: http://www.publications.parliament.uk/pa/cm200708/cmselect/cmworpen/246/246i.pdf [Accessed 10th August 2012]

Macdougald - Denton, S. (1998) *Compliance with CDM Regulations - What All Designers Should Know*. [Online] A Hawksmere Report. UK: Thorogood Ltd. Available from: http://en.bookfi.org/book/1032530 [Accessed 12th August 2012]

Occupational Safety and Health Administration (n.d.) *About OSHA*. [Online] Available from: http://www.osha.gov/about.html [Accessed 15th July 2012].

Ozturk, I., Sertoglu, K. & Kaptan, E. (2006) Cyprus - EU Relations: Possible Scenarios for the Future. *Pakistan Journal of Applied Sciences.* [Online] Vol.2 (2), 237-344. Available from: http://mpra.ub.uni-muenchen.de/257/1/MPRA_paper_257.pdf [Accessed 16th May 2012].

Parliament of the United Kingdom. (1974) *The Health and Safety at Work etc. Act 1974,* Chapter 37 [Online] Available from: http://www.legislation.gov.uk/ukpga/1974/37/pdfs/ukpga_19740037_en.pdf

The Health and Safety Commission. (1994, 2007) *The Construction (Design and Management) Regulations 1994*, *The Construction (Design and Management) Regulations 2007*. [Online] Available from: http://www.legislation.gov.uk/uksi/1994/3140/made/data.pdf http://www.legislation.gov.uk/uksi/2007/320/pdfs/uksi_20070320_en.pdf [Last Accessed 14th August 2012]

Xavier University Library. (2011) *Qualitative Versus Quantitative Research*. . [Online] Available from: http://www.xavier.edu/library/help/qualitative_quantitative.pdf

Remenyi, D. (2011) Preface & Effective Interviewing for Academic Research. In: Academic Publishing International Ltd. (eds.) *Field Methods for Academic Research - Interviews, Focus Groups and Questionnaires in Business and Management Studies*. UK Reading: Academic Publishing International Ltd, pp.X-10

Sociology Central. (n.d.) *Sociological Research Skills, Research Methods*. [Online] Available from: sociology.org.uk at: http://www.sociology.org.uk/methodq.pdf [Accessed 12th September 2012].

Γρηγορίου - Κοκή, Ε. (2003) *Ασφάλεια και Υγεία στα Κατασκευαστικά Έργα.* [Online] Available from: http://www.undp-pff.org/index.php?option=com_docman&task=doc_view&gid=135&Itemid=15 [Accessed 28th April 2012].

Επιτροπή Εναρμονιστικών Υποθέσεων. (2002) *Εναρμονιστικοί Κανονισμοί που εγκρίθηκαν το 2002*. [Online] Available from: http://www.parliament.cy/parliamentGR/101/harmonization_regulation_2002.pdf [Accessed 18th May 2012].

Επιτροπή Εναρμονιστικών Υποθέσεων. (2003) *Νομοθετική Δραστηριότητα σε Σχέση με τους Εναρμονιστικούς Κανονισμούς κατά το 2003*. [Online] Available from: http://www.parliament.cy/parliamentgr/101/harmonization_regulation_2003.pdf [Accessed 18th May 2012].

Θεοδότου, Μ. (2004) *Ασφάλεια και Υγεία στην Εργασία*. [Online] Available from: http://www.eurofound.europa.eu/eiro/2004/04/feature/cy0404102f.htm [Accessed 28th April 2012].

Κυπριακή Δημοκρατία. (1964, 1973, 1996, 1997, 2002, 2003, 2007 *) Ο Περί Εργοστασίων (Τροποποιητικός) Νόμος του 1964 Ν.43/64, Οι Περί Οικοδομών και Έργων Μηχανικών Κατασκευών (Ασφάλεια, Υγεία και Ευημερία) Κανονισμοί του 1973 Κ.Δ.Π.161/73, Ο Περί Ασφάλειας και Υγείας στην Εργασία Νόμος του 1996 Ν.89(Ι)/96, Οι Περί Επιτροπών Ασφάλειας στην Εργασία Κανονισμοί του 1997 Κ.Δ.Π.134/97, Οι Περί Ασφάλειας και Υγείας στην Εργασία (Ελάχιστες Προδιαγραφές για Προσωρινά ή Κινητά Εργοτάξια) Κανονισμοί του 2002 Κ.Δ.Π.172/2002, Οι Περί Διαχείρισης Θεμάτων Ασφάλειας και Υγείας στην Εργασία Κανονισμοί του 2002 Κ.Δ.Π.173/2002, Οι Περί Ελαχίστων Προδιαγραφών Ασφάλειας και Υγείας στους Χώρους Εργασίας Κανονισμοί του 2002 Κ.Δ.Π.174/2002, Οι Περί της Προστασίας της Μητρότητας (Ασφάλεια και Υγείας στην Εργασία) Κανονισμοί του 2002 Κ.Δ.Π.255/2002, Οι Περί Ασφάλειας και Υγείας στην Εργασία (Ελάχιστες Απαιτήσεις για την Προστασία των Προσώπων στην Εργασία από Κινδύνους από Εκρήξιμες Ατμόσφαιρες) Κανονισμοί του 2002 Κ.Δ.Π.291/2002, Ο Περί Ασφάλειας και Υγείας στην Εργασία (Τροποποιητικός) Νόμος του 2003 Ν.41(Ι)/2003, Ο Περί Ασφάλειας και Υγείας στην Εργασία (Τροποποιητικός) (Αρ.2) Νόμος του 2003 Ν.99(Ι)/2003, Οι Περί Ασφάλειας και Υγείας στην Εργασία (Γνωστοποίηση ατυχημάτων και Επικίνδυνων Συμβάντων) Κανονισμοί του 2007 Κ.Δ.Π.531/2007*. [Online] Available from: http://www.mlsi.gov.cy/mlsi/dli/dli.nsf/dmllegislation_New_en?openform&p=1&t=f&e= [Last Accessed 30th July 2012]

Ομοσπονδία Συνδέσμων Εργολάβων Οικοδομών Κύπρου. (n.d.) *Home*. [Online] Available from: http://www.oseok.org.cy/en/ [Accessed 1st August 2012]

Τμήμα Επιθεώρησης Εργασίας. (2007) *Ευρωπαϊκές Οδηγίες, Κανονισμοί, Νομοθεσία - Σύντομη Προσέγγιση του Θέματος*. [Online] Available from: http://www.mlsi.gov.cy/mlsi/dli/dli.nsf/All/248B0AD129F4F64CC2257168003765BC/$file/eu_legislation.pdf [Accessed 17th May2012]

Τμήμα Επιθεώρησης Εργασίας. (2007) *Καταγραφή και Επεξεργασία Στοιχείων Ατυχημάτων και Επικίνδυνων Συμβάντων*. [Online] Available from: http://www.mlsi.gov.cy/mlsi/dli/dli.nsf/All/248B0AD129F4F64CC2257168003765BC/$file/katagrafi_epexergasia_atichimaton.pdf [Accessed 7th August 2012]

Τμήμα Επιθεώρησης Εργασίας. (2002-2011) *Ετήσια Έκθεση 2002*, *Ετήσια Έκθεση 2003*, *Ετήσια Έκθεση 2004*, *Ετήσια Έκθεση 2005*, *Ετήσια Έκθεση 2006*, *Ετήσια Έκθεση 2007*, *Ετήσια Έκθεση 2008*, *Ετήσια Έκθεση 2009*, *Ετήσια Έκθεση 2010*, *Ετήσια Έκθεση 2011*. [Online] Available from: http://www.mlsi.gov.cy/mlsi/dli/dli.nsf/dmlpublications_new_gr?openform&p=10&t=f& [Last Accessed 4th August 2012]

APPENDICES

Neapolis University Pafos

QUESTIONNAIRE

THE EU DIRECTIVES FOR HEALTH AND SAFETY IN CYPRUS CONSTRUCTION STITES

This questionnaire regards a survey under the course *Msc in Construction Management* of the Neapolis University of Paphos and refers to people working in Cyprus Construction Industry. The purpose is to identify how the European Union Directives for Health and Safety are interpreted at the field, in construction sites in Cyprus. Please answer the following questions choosing the answer that represents better your case regarding your knowledge and experience through the organization/ company you work for, and generally. Note that information is provided anonymous and the data of organizations/ companies are to remain confidential.

Question 1

Which of the following is your category regarding your work?

- ☐ Employer
- ☐ Employee (Private Sector)
- ☐ Employee (Public Sector)
- ☐ Self-employed
- ☐ Other

Please Specify _____

Question 2

Which is your position in the organization/ company you are working for?

- ☐ Project Manager
- ☐ Site Engineer
- ☐ Supervisor Engineer/ Architect
- ☐ Health and Safety Officer/ Coordinator
- ☐ Main Contractor
- ☐ Other

Please Specify _____

Question 3

How much years of experience do you have in Construction Industry;

- ☐ 1 to 5
- ☐ 5 to 10
- ☐ 10 to15
- ☐ More than 15

Question 4

Have you attended any seminars or other similar educational programs organized in various time periods by governmental or non-governmental organizations, for Health and Safety in Construction Industry?

- ☐ Yes
- ☐ No

Question 5

How much do you estimate that is the average number of accidents (fatal and non-fatal) occurring every year in Cyprus Construction Industry?

- ☐ Less than 300
- ☐ 300 to 600
- ☐ 600 to 900
- ☐ More than 1000

Question 6

Which is your information grade regarding the EU Directives for Health and Safety at Work that apply in the Construction Industry Sector?

- ☐ Less than 30%
- ☐ 30% to 60%
- ☐ 60% to 70%
- ☐ More than 70%

Question 7

The EU Directives for Health and Safety at Work, through the relevant Cyprus Law, enforce measures for ensuring Health and Safety at workplaces. Based on your experience, are such measures implemented in construction sites in Cyprus?

- ☐ Yes
- ☐ No
- ☐ Partly

Question 8

In which of the following development phases do you believe that the participants of a construction project should be concerned for ensuring Health and Safety and for the implementation of the relevant measures?

- ☐ In Construction Phase
- ☐ In Design Phase, and, in Construction Phase
- ☐ Before Design Phase, up to project completion
- ☐ Before Design Phase, in Design Phase, in Construction Phase, and, in Management Phase, after project completion

Question 9

It has been almost a decade by the introduction in Cyprus of the EU Directives for Health and Safety at Work, and despite the fact that a kind of improvement was expected, the numbers of accidents reported in Construction Industry are considered to be high. Who, according to your opinion, has the fault for this?

- ☐ The Authorities/ Competent Bodies
- ☐ The Supervisor Engineer/ Architect
- ☐ The Health and Safety Supervisor of each construction project
- ☐ The Construction Companies/ Organizations
- ☐ The Employees
- ☐ Other

Please Specify ☐

Question 10

What is the actual reason of the high numbers of accidents in Cyprus Construction Industry?

- ☐ Lack of knowledge and information regarding the legislation
- ☐ Non-understanding the legislation
- ☐ Lack of education and culture regarding the application of the Law
- ☐ Lack of practical guidance

Question 11

Which of the following could describe the Health and Safety System in Cyprus Construction Industry?

- ☐ Missing
- ☐ Satisfactory
- ☐ Satisfactory, but needing improvement

Question 12

Do you consider that a structure modification of the Health and Safety System in Cyprus Construction Industry could actively contribute in reducing the numbers of accidents?

- ☐ Yes
- ☐ No
- ☐ Maybe

Question 13

Since the already existing legislation and EU Directives for Health and Safety that apply in Cyprus Construction Industry can not be changed, what else could be changed that could improve the implementation of the Law?

- ☐ More strict controls and criminal/political liabilities for breaches
- ☐ Practical guidance through regulations approved by the Law
- ☐ Additional support by the various organizations in Law application, through more educational programs
- ☐ A new Health and Safety System that combines all the above

Question 14

Are you aware of the CDM Regulations, the Health and Safety legislation applying in Construction Industry in the United Kingdom, in accordance with the relevant EU Directives?

☐ Yes

☐ No

Question 15

Where could the term ‘‘CDM’’ refer to?

☐ Not aware

Otherwise, Please Note ☐

Question 16

The CDM Regulations combine practical guidance for the application of the Law, political and other liabilities for breaches and offenders, and, also, innovated information systems and information flow systems through the technology. Do you believe that the introduction, in Cyprus, of a system that is based on the CDM Regulations could improve the Health and Safety System in Cyprus Construction Industry?

☐ Yes

☐ No

Thank you for your cooperation and your time.

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ

ΟΙ ΕΥΡΩΠΑΪΚΕΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ & ΥΓΕΙΑΣ ΣΤΑ ΚΥΠΡΙΑΚΑ ΕΡΓΟΤΑΞΙΑ

Το παρόν ερωτηματολόγιο αφορά μία έρευνα που γίνεται στο πλαίσιο του προγράμματος *Μεταπτυχιακό στη Διοίκηση Κατασκευών* του Πανεπιστημίου Νεάπολης Πάφου και απευθύνεται σε άτομα που εργάζονται στον τομέα της Κυπριακής Κατασκευαστικής Βιομηχανία. Σκοπός είναι να προσδιοριστεί πώς οι Ευρωπαϊκές Οδηγίες Ασφάλειας και Υγείας ερμηνεύονται στην πράξη, στα Κυπριακά εργοτάξια. Παρακαλώ όπως απαντήσετε τις ακόλουθες ερωτήσεις επιλέγοντας την απάντηση που ανταποκρίνεται καλύτερα στην περίπτωσή σας για τον/την οργανισμό/ εταιρεία όπου εργάζεστε, και γενικότερα. Σημειώνεται ότι οι πληροφορίες θα παρουσιαστούν ανώνυμα, και τα στοιχεία των οργανισμών/ εταιρειών των ατόμων που συμμετέχουν θα παραμείνουν εμπιστευτικά.

Ερώτηση 1

Σε ποια από τις ακόλουθες κατηγορίες ανήκετε σε σχέση με την εργασία σας;

☐ Εργοδότης

☐ Εργοδοτούμενος (ιδιωτικός τομέας)

☐ Εργοδοτούμενος (δημόσιος τομέας)

☐ Αυτοεργοδοτούμενος

☐ Άλλο

Διευκρινείστε _____

Ερώτηση 2

Ποια είναι η θέση σας στον οργανισμό/ εταιρεία όπου εργάζεστε;

☐ Διευθυντής Έργου

☐ Μηχανικός Εργοταξίου

☐ Επιβλέπων Μηχανικός/ Αρχιτέκτονας

☐ Λειτουργός Ασφάλειας και Υγείας

☐ Κυρίως Εργολάβος

☐ Άλλο

Διευκρινείστε _____

Ερώτηση 3

Πόσα χρόνια επαγγελματικής εμπειρίας έχετε στην Κατασκευαστική Βιομηχανία;

- ☐ 1 έως 5
- ☐ 5 έως 10
- ☐ 10 έως 15
- ☐ Περισσότερο από 15

Ερώτηση 4

Έχετε παρακολουθήσει σεμινάρια ή άλλα παρόμοια εκπαιδευτικά προγράμματα που κατά καιρούς διοργανώνονται από κυβερνητικούς ή μη κυβερνητικούς οργανισμούς, για την Ασφάλεια και την Υγεία στην Κατασκευαστική Βιομηχανία;

- ☐ Ναι
- ☐ Όχι

Ερώτηση 5

Πόσος εκτιμάτε ότι είναι ο μέσος όρος των ατυχημάτων (θανατηφόρων και μη) που συμβαίνουν κάθε χρόνο στην Κατασκευαστική Βιομηχανία στην Κύπρο;

- ☐ Κάτω από 300
- ☐ 300 έως 600
- ☐ 600 έως 900
- ☐ Περισσότερο από 1000

Ερώτηση 6

Ποιος ο βαθμός ενημέρωσής σας για τις Ευρωπαϊκές Οδηγίες Ασφάλειας και Υγείας στην Εργασία που ισχύουν στον Τομέα της Κατασκευαστικής Βιομηχανίας;

- ☐ Κάτω από 30%
- ☐ 30% έως 60%
- ☐ 60% έως 70%
- ☐ Περισσότερο από 70%

Ερώτηση 7

Οι Ευρωπαϊκές Οδηγίες Ασφάλειας και Υγείας, μέσα από τη σχετική τη Κυπριακή Νομοθεσία, επιβάλλουν μέτρα για την εξασφάλιση της Ασφάλειας και της Υγείας στους χώρους εργασίας. Με βάση την εμπειρία σας, τέτοια μέτρα εφαρμόζονται στην πράξη στα εργοτάξια της Κύπρου;

- ☐ Ναι
- ☐ Όχι
- ☐ Εν μέρει

Ερώτηση 8

Σε ποιες από τις ακόλουθες φάσεις ανάπτυξης ενός κατασκευαστικού έργου πιστεύετε ότι οι συμμετέχοντες θα πρέπει να μεριμνούν για την εξασφάλιση της Ασφάλειας και της Υγείας και την εφαρμογή των σχετικών μέτρων;

- ☐ Στη φάση κατασκευής
- ☐ Στις φάσεις σχεδιασμού και κατασκευής
- ☐ Πριν αρχίσει η φάση σχεδιασμού, μέχρι ολοκλήρωση του έργου
- ☐ Πριν αρχίσει η φάση σχεδιασμού, στις φάσεις σχεδιασμού, κατασκευής και διαχείρισης (μέτα την ολοκλήρωση του έργου)

Ερώτηση 9

Σχεδόν μία δεκαετία μετά την εισαγωγή των σχετικών με την Ασφάλεια και την Υγεία Ευρωπαϊκών Οδηγιών στην Κύπρο, παρά τη βελτίωση που θα αναμενόταν, η Κατασκευαστική Βιομηχανία σημειώνει υψηλά ποσοστά ατυχημάτων. Κατά την άποψή σας, ποιος έχει τη μεγαλύτερη ευθύνη για αυτό;

- ☐ Οι Αρμόδιοι Φορείς
- ☐ Οι Επιβλέποντες Μηχανικοί/ Αρχιτέκτονες
- ☐ Ο αρμόδιος για την Ασφάλεια και την Υγεία κάθε κατασκευστικού έργου
- ☐ Οι Κατασκευαστικές Εταιρείες
- ☐ Οι εργοδοτούμενοι
- ☐ Άλλο

Διευκρινείστε ☐

Ερώτηση 10

Πού πιστεύετε ότι οφείλεται κατά βάθος το πρόβλημα των υψηλών ποσοστών ατυχημάτων στη Κυπριακή Κατασκευαστική Βιομηχανία;

- ☐ Στην άγνοια και την έλλειψη ενημέρωσης για τη σχετική Νομοθεσία
- ☐ Στη μη κατανόηση της σχετικής Νομοθεσίας
- ☐ Στην έλλειψη παιδείας και κουλτούρας ως προς την τήρηση του Νόμου
- ☐ Στην έλλειψη πρακτικής καθοδήγησης

Ερώτηση 11

Με ποια από τις ακόλουθες φράσεις θα χαρακτηρίζατε το Σύστημα Ασφάλειας και Υγείας στην Κυπριακή Κατασκευαστική Βιομηχανία;

- ☐ Ελλειπές
- ☐ Ικανοποιητικό
- ☐ Ικανοποιητικό αλλά χρείζει βελτίωσης

Ερώτηση 12

Θεωρείτε ότι μία ανακατάταξη στο Σύστημα Ασφάλειας και Υγείας στην Κυπριακή Κατασκευαστική Βιομηχανία θα συνέβαλε ενεργά στη μείωση του ποσοστού ατυχημάτων;

- ☐ Ναι
- ☐ Όχι
- ☐ Ίσως

Ερώτηση 13

Δεδομένου ότι η υπάρχουσα Κυπριακή Νομοθεσία και οι Ευρωπαικές Οδηγίες για την Ασφάλεια και την Υγεία δεν μπορούν να αλλάξουν, ποιες αλλαγές θεωρείτε ότι θα μπορούσαν να βελτιώσουν την εφαρμογή τους;

- ☐ Αυστηρότεροι ελέγχοι και επιβολή ποινών στους παραβάτες του Νόμου
- ☐ Πρακτική καθοδήγηση μέσα από κανονισμούς εγκεκριμένους από το Νόμο
- ☐ Περισσότερη υποστήριξη στην εφαρμογή του Νόμου από τους σχετικούς οργανισμούς μέσω εκπαιδευτικών προγραμμάτων
- ☐ Ένα νέο Σύστημα Ασφάλειας και Υγείας που συνδυάζει τα παραπάνω.

Ερώτηση 14

Έχετε ξανακούσει για τους Κανονισμούς CDM, τη νομοθεσία που εφαρμόζεται για την Ασφάλεια και την Υγεία στην Κατασκευαστική Βιομηχανία στο Ηνωμένο Βασιλείο, μαζί με τις Ευρωπαϊκές Οδηγίες;

☐ Ναι

☐ Όχι

Ερώτηση 15

Πού μπορεί να αναφέρεται ο όρος CDM;

☐ Δεν γνωρίζω

Σε αντίθετη περίπτωση σημείωστε

Ερώτηση 16

Οι Κανονισμοί CDM συνδυάζουν πρακτική καθοδήγηση για εφαρμογή του Νόμου για την Ασφάλεια και την Υγεία, επιβολή ποινών στους παραβάτες, και αναπτυγμένα συστήματα ενημέρωσης και διάθεσης πληροφοριών μέσω της τεχνολογίας. Θεωρείτε ότι η εισαγωγή στην Κύπρο ενός συτήματος που βασίζεται στους Κανονισμούς CDM θα βελτίωνε το Σύστημα Ασφάλειας και Υγείας στην Κυπριακή Κατασκευαστική Βιομηχανία;

☐ Ναι

☐ Όχι

Ευχαριστώ για τη συνεργασία και το χρόνο σας