SEISMIC RESISTANCE AND ENERGY EFFICIENCY IN PUBLIC BUILDINGS PROJECT

(KADEV PROJECT)

WB/CS-DESSUB-02

Hatay Mustafa Kemal University
Faculty of Arts and Sciences
Vocational School of Health Sciences
Faculty of Agriculture
Faculty of Education

OCCUPATIONAL HEALTH AND SAFETY PLAN-II

July 2024

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1. Definitions& Abbreviations

Consultant	:	NKY Architecture Engineering Construction and Trade Co. Ltd. .
Contractor	:	As a result of the tender held by the Ministry of Environment, Urbanization and Climate Change, the company responsible for implementing all renovation activities focused on structural strengthening and energy efficiency.
CPA	:	Corrective Preventive Action
ER	:	Emergency Response
ERT	:	Emergency Response Team
FE	:	Fire Extinguisher
GBVH	:	Gender-Based Violence and Harassment
KADEV	:	Seismic Resistance and Energy Efficiency in Public Buildings
LOTO	:	Lock Out Tag Out
Major	:	Big, Very Important
MKU	:	Mustafa Kemal University
MoEUCCA	:	Ministry of Environment, Urbanization and Climate Change
MSDS	:	Material Safety Data Sheet
OHS	:	Occupational Health and Safety
PAT	:	Portable Electrical Appliance Test
PPE	:	Personal Protective Equipment
Project	:	KADEV
PV	:	Photo Voltaic
Root Cause Analysis	:	When defining or assessing an incident, problem, or undesired outcome, it involves going beyond immediate causes and, upon addressing, identifying the main reasons or elements to prevent the recurrence of similar incidents or problems in the future. (Corrective actions should focus on eliminating or correcting these main causes or elements.)
SPP	:	Solar Power Plant
Subcontractor	:	The company assigned by the contractor company to carry out a determined part of the project

2. Objective

Within the scope of the Seismic Resistance and Energy Efficiency in Public Buildings (KADEV) Project,

- Statement of completion of services covering Highly Hazardous Works that must be obtained from External Agencies before the project-oriented Construction process begins.
- Determining the hazards and risks related to construction activities, as well as identifying safety measures to be taken,
- Establishing the minimum requirements for personnel involved in the construction process and preventing those who do not meet these minimum requirements from participating in the work, are the objectives.

In accordance with this objective, the following have been defined within this document;

- Construction method and risk analysis for the structural reinforcement and renovation process,
- Personnel qualification profiles,
- Control/inspection methods for before, during, and after fieldwork,
- Record forms and methods,
- Additional safety measures to be taken by beneficiary institutions
- Completion of the required operations within the External Supplier Organizations (Natural Gas Local Distribution Company, Electricity Local Distribution Company, Local Government Infrastructure and Technical Works Directorates) before the field delivery of the services in accordance with the Project and Rules in accordance with the Legislation.

It is defined within this document.

This Occupational Health and Safety Report prepared by the consultant will be notified through official channels that the Contractor company should prepare its own OHS plan, Risk Assessments and Method Statements regarding the project-based operations to be carried out by taking the Occupational Health and Safety (OHS) Plan prepared by the Consultant as reference.

3. Scope

This Plan includes structural strengthening, energy efficiency and construction works to be carried out in the Faculty of Arts and Sciences Vocational School of Health Sciences, Faculty of Agriculture, Faculty of Education buildings with a total construction area of 45,012 m2 located in MKU Tayfur Sökmen Campus.

The works to be carried out within this project are described below. This document is limited to the studies listed below.

- Strengthening the structural elements,
- Facade and façade components, mechanical and electrical system renovations within the framework of energy efficiency,
- Sustainable clean energy production (Parking lot solar power plants),

Table 1: Faculty Information

Campus	*Faculty No*	*Faculty Name*	*Number of Blocks*	*Construction Date*	*Number of Floors*	*Construction Area (m2)*
MKU Tayfur Sökmen Campus	1	Faculty of Arts and Sciences	14	1996	B+Z+2	16.972
	2	Vocational School of Health Sciences	4	1996	B+Z+1	6.737
	3	Faculty of Agriculture	8	1996	B+Z+2	12.527
	4	Faculty of Education	5	2000	B+Z+3	8.776
				TOTAL (m2)		**45.012**

4. Legal Legislation

The main national occupational health and safety legislation followed during the preparation of the plan is below.

Table 2: List Of Relevant Legal Regulations (Law)

	NO	**DATE OF APPROVAL**	**OFFICIAL GAZETTE NUMBER & DATE**
Labor Law	4857	22.05.2003	RG: 10.06.2003/25134
Labor Courts Law	7036	12.10.2017	RG: 25.10.2017/30221
Occupational Health and Safety Law	6331	20.06.2012	RG: 30.06.2012/28726
Misdemeanors Law	5326	30.03.2005	RG: 31.03.2005/25772 M.
Vocational Training Law	3308	05.06.1986	RG: 19.06.1986/19139
Law on Some Regulations Concerning the Vocational Qualifications Authority (Vocational Qualifications Authority Law)	5544	21.09.2006	RG: 07.10.2006/26312
Social Insurance and General Health Insurance Law	5510	31.05.2006	RG: 16.06.2006/26200
Law on the Preparation and Implementation of Technical Regulations for Products	4703	29.06.2001	RG: 11.07.2001/24459
European Convention on Human Rights (Universal Declaration of Human Rights)	207 A(III)	10.12.1948	RG: 27.05.1949/7217

Table 3: List Of Relevant Legal Regulations

	OFFICIAL GAZETTE NUMBER & DATE
Subcontracting Regulation	RG: 27.09.2008/27010 Değ. 25.08.2017/30165
Regulation on the Protection of Employees from Noise-Related Risks	RG: 28.07.2013/28721
Regulation on the Principles and Procedures of Occupational Health and Safety Training for Employees	RG: 15.05.2013/28648 Değ. 24.05.2018/30430
Regulation on the Principles and Procedures for Health Surveillance of Employees	RG: 20.01.2022/31725
Manual Handling Operations Regulation	RG: 24.07.2013/28717
Hygiene Training Regulation	RG: 05.07.2013/28698
First Aid Regulation	RG: 29.07.2015/29429
Regulation on Health and Safety Conditions for the Use of Work Equipment	RG: 25.04.2013/28628 Değ. 18.02.2022/31754
Regulation on the Duties, Authorities, Responsibilities, and Training of Occupational Health and Safety Specialists	RG: 29.12.2012/28512 Değ. 16.04.2020/31101
Regulation on Working Hours Related to the Labor Law	RG: 06.04.2004/25425 Değ. 25.08.2017/30165
Regulation on Overtime Work and Work with Extra Hours Related to the Labor Law	RG: 06.04.2004/25425 Değ. 25.08.2017/30165
Regulation on Occupational Health and Safety Risk Assessment	RG: 29.12.2012/28512
Regulation on the Duties, Authorities, Responsibilities, and Training of Workplace Physicians and Other Health Personnel	RG: 20.07.2013/28713 Değ. 16.04.2020/31101
Regulation on Emergency Situations in Workplaces	RG: 18.06.2013/28681 Değ. 01.10.2021/31615
Regulation on Work Stoppages in Workplaces	RG: 30.03.2013/28603 Değ. 11.02.2016/29621
Personal Protective Equipment Regulation	RG: 01.05.2019/30761
Regulation on the Use of Personal Protective Equipment in Workplaces	RG: 02.07.2013/28695
Machinery Safety Regulation (2006/42/EC)	RG: 03.03.2009/27158 Değ. 28.09.2014/29133
Regulation on Examination, Measurement, Evaluation, and Certification by the Vocational Qualifications Institution	RG: 15.10.2015/29503
Regulation on Health and Safety Signs	RG: 11.09.2013/28762
Regulation on Vocational Training for Workers Employed in Hazardous and Very Hazardous Jobs	RG: 13.07.2013/28706 Değ. 11.05.2017/30063

Dust Control Regulation	RG: 05.11.2013/28812

5. Management Commitment and OHS Objectives

5.1 Management Commitment

As the manager of the NKY Architecture Engineering Construction and Trade Co Ltd., I commit that throughout the duration of the seismic reinforcement and energy efficiency project in public buildings, covering the preparation and implementation phases until the completion of the project: The health and safety of employees and other stakeholders will be prioritized. All relevant legislation and defined requirements will be strictly adhered to. All necessary measures related to occupational health and safety will be taken promptly. Colletive protection measures will be prioritized when determining and implementing precautions. Employee training and information regarding occupational health and safety will be emphasized. Adequate resources will be provided for occupational health and safety, and necessary expenses will not be spared. Employee suggestions and ideas will be taken into consideration in occupational health and safety practices. Necessary participation, idea exchange, and collaboration in the field of occupational health and safety will be ensured between management and employees. This plan has been prepared for the conditions of this construction site, its employees, and other stakeholders. It will be implemented throughout the project and updated when necessary. Adequate information about their responsibilities under this plan will be provided to all levels of employees, including the highest-level manager involved in the project, as well as visitors. I hereby commit to these principles and responsibilities.

Date : 03.07.2024

Name&Surname : Ömer ÜNLÜ

Signature :

5.2 Occupational Health and Safety Policy

We will comply with national and international regulations, ensuring a healthy and safe working environment by;

- Promoting and fostering a culture of occupational health and safety among all stakeholders, encouraging continuous improvement.
- Taking all necessary measures within the framework of occupational health and safety regulations for all relevant parties.
- Working to prevent workplace accidents through effective risk assessment before they occur.
- Providing training for our employees in occupational health and safety that goes beyond regulatory requirements.
- Respecting the rights of our employees, including their rights related to collective bargaining and negotiations, and supporting such initiatives.
- Adopting references such as the Universal Declaration of Human Rights, International Labor Organization (ILO) conventions, United Nations Global Compact, United Nations Sustainable Development Goals, and the Organization for Economic Cooperation and Development (OECD) guidelines for multinational enterprises.
- Ensuring that visitors at all levels, our suppliers, and employees of the companies from which we purchase services comply with occupational health and safety rules.
- Creating a healthy environment where employees feel comfortable, safe, and happy to work and taking mental health issues seriously, providing support to all personnel facing such problems.

Date : 03.07.2024

Name&Surname : Ömer ÜNLÜ

Signature :

5.2.1 Key Strategies Related to OHSP

- Leadership of management teams,
- Involving all employees by seeking their opinions and suggestions to contribute to OHS requirements and problem-solving,
- Identifying hazards, planning and implementing adequate control measures before work accidents occur,
- Ensuring that all employees have sufficient awareness and motivation regarding occupational health and safety.

5.3 Targets

Within the scope of Seismic Resistance and Energy Efficiency in Public Buildings (KADEV) DES-SUB-02 Project, key performance indicators have been determined. During the project work, in the first week of each month, the OHS Monthly Activity Report for the previous month will be prepared by the Consultant according to the format deemed appropriate and submitted to the Administration.

Performance criteria are continuously monitored cumulatively throughout the project duration. The values achieved in comparison to the **planned targets** are analyzed on a monthly basis to identify deviations and initiate necessary corrective actions. Data and results related to the targets will be communicated to the consultant during the first week of each month, along with the Occupational Health and Safety (OHS) Monthly Activity Report.

Table 4: Key Performance Indicators

TARGET DEFINITION	QUANTITATIVE DATA
Number of Lost-Time Occupational Accidents (maximum)	0
Number of Lost-Time Occupational Injuries (maximum)	0
Number of Near-Miss Incidents (maximum)	2
Accident Frequency Rate (AFR[1]) (maximum)	60
Accident Severity Rate (ASR[2]) (maximum)	0
Occupational Health and Safety (OHS) Training for this Project	20 person.hour
Fire Drill for this Project	1 pcs.
Earthquake Drill for this Project	1 pcs.
Injured Worker Rescue Drill for this Project	1 pcs.

The questions that will be addressed as part of the performance measurement are as follows:

[1] $AFR = \frac{\text{Total Number of Accidents}}{\text{Total Working Time (hours)}} \times 1.000.000$

[2] $ASR = \frac{\text{Total Number of Lost Days}}{\text{(Total Working Days–Non–Working Days)}} \times 1.000$

- Are we achieving our Occupational Health and Safety (OHS) targets?
- Are we working in compliance with OHS regulations?
- Are the planned control activities resulting from risk assessments effective in reducing risks?
- Are accidents and near-miss incidents being recorded? Is accident investigation and root cause analysis conducted to prevent their recurrence?
- Are Corrective Actions planned and implemented for discrepancies/violations identified in the field (by the Contractor or Consultant)?
- Are the implemented Corrective Actions effective?
- Are necessary changes (revisions) made to the OHSP when needed?
- Do the provided training sessions effectively build OHS awareness and motivation among employees?

To enable the consultant to monitor the Contractor's OHS performance, the following records will be shared by the Contractor on a monthly basis:

- Accident and near-miss incident reports
- Records related to mandatory training (training records, certificates, etc.)
- Periodic inspection reports for machinery/equipment
- Status of OHS-related discrepancies recorded by the Contractor or Consultant (open/closed, description of corrective actions, etc.).

6. Project Information

6.1 General Information

Information about the consultant company is given in Table-5.

Table 5: Consultant Information

Consultant Information	NKY Mimarlık Mühendislik İnşaat ve Ticaret Ltd. Şti.	
Employer SSI Registration Number	27111020211685360060 7-45/000	
Address for service	Aşağı Öveçler Mah. Lizbon Cad. No:49 Çankaya-Ankara	
Telephone/Fax	03122203095 - 03124735020	
Web Address	www.nky.com.tr	
Occupational Safety Specialist	Özkan Yüksel	B/254200
Workplace Physician	Aytaç Köstem	27843

Table 6: Works Planned To Be Made

Works	General Definition of Works	Number of Personnel (Given as Average for each Faculty)	Duration of the Working Days (Given as Average for each Faculty)
Structural Strengthening	Wall Demolition & Dismantling Works	10	7
	Electrical and Mechanical Works	7	3
	Concrete Demolition and Foundation Filling	10	7
	Anchoring and Tests	13	20
	New Reinforcement Installation	13	20
	Formwork and Concrete Casting	13	20
Finishing Works	Wall Construction	8	15
	Plastering	8	10
	Painting	8	15
	Flooring	7	10
	Electrical and Mechanical Installation	10	20

Works	General Definition of Works	Number of Personnel (Given as Average for each Faculty)	Duration of the Working Days (Given as Average for each Faculty)
Energy Efficiency	Insulation of the building outer shell with 6 or 10 cm stone wool	25	120
	Laying 16-25 cm roof mat on the building roof	9	15
	Replacement of windows and joinery on the exterior of the building	15	90
	Renewal of unsuitable door systems	5	30
	Boiler room installation renovation with condensing wall-mounted boilers, ceramic tiling and painting of the boiler room	8	60
	Replacing the valves on the radiators with thermostatic radiator valves	8	30
	Renewal of EI 3 class circulation pumps during boiler room renovation, insulation of boiler room installation	8	60
	Renewal of the heater pump system	8	60
	Providing indoor lighting with LED fixtures	8	30
	PV Solar Power Plant installation	5	30

6.1.1 Buildings within the Scope of the Project

Within the scope of the project, energy efficiency, structural strengthening and finishing works will be carried out in the buildings of the Faculty of Arts and Sciences, Vocational School of Health Sciences, Faculty of Agriculture, Faculty of Education. Technical information about the faculty buildings, the number of blocks within the building group and photographs reflecting the general condition of the faculty buildings are given at the below.

Table 7: Buildings within the Scope of the Project

Campus	Faculty No	Faculty Name	Number of Blocks	Construction Date	Number of Floors	Construction Area (m2)
MKU Tayfur Sökmen Campus	1	Faculty of Arts and Sciences	14	1996	B+Z+2	16.972
	2	Vocational School of Health Sciences	4	1996	B+Z+1	6.737
	3	Faculty of Agriculture	8	1996	B+Z+2	12.527
	4	Faculty of Education	5	2000	B+Z+3	8.776
			TOTAL (m2)			**45.012**

Figure 1: Faculties Within the Scope of the Project

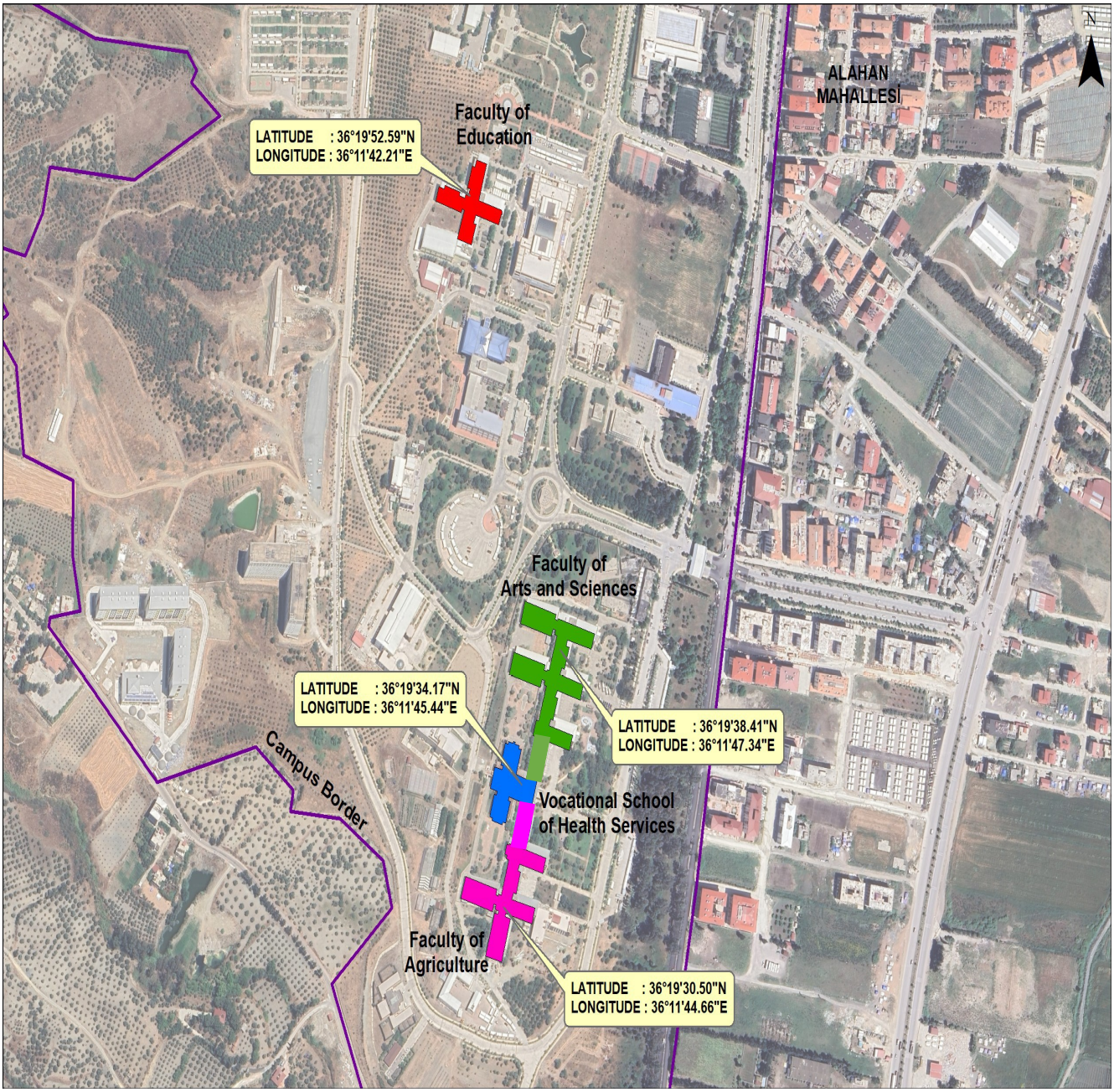
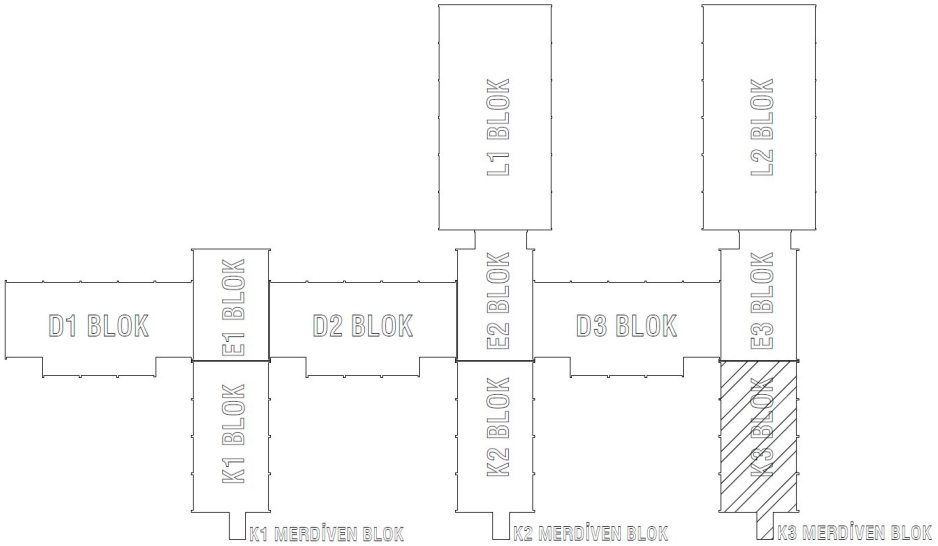


Table 8: General Information for Faculty of Arts and Sciences

BUILDING NAME	Faculty of Arts and Sciences				
BUILDING OWNER	Mustafa Kemal University				
ADDRESS	Mustafa Kemal Üniversitesi Ziraat Fakültesi, Anayazı Mah Tayfur Sökmen Kampüsü, 31001 Antakya				
CITY	HATAY		POSTAL CODE		31001
CONSTRUCTION DATE	1996		CONSTRUCTION AREA		16.972 m2
PURPOSE OF USAGE	Educaiton		NUMBER OF BLOCKS IN THE BUILDING GROUP		14
ANNUAL NUMBER OF HEATING DEGREE DAYS	2021	1011	ANNUAL NUMBER OF COOLING DEGREE DAYS	2021	614
	2022	1089		2022	563
	2023	712		2023	612
	AVERAGE	937		AVERAGE	596
HEATING/COOLING SYSTEM	Central heating, individual split air conditioning,				
HOT WATER	None				
FACADE INSULATION CONDITION	FACADE INSULATION : |☒YES |☐ NONE |☐ N/A CEILING INSULATION : |☒YES |☐ NONE |☐ N/A BASE INSULATION : ☐ YES |☐ NONE |☒ N/A				
NUMBER OF USERS	Beneficiary	2528 Students			
	Employee	119 Personnel			
	Other	-			
	TOTAL	2647			

Figure 2: Blocks of the Faculty of Arts and Sciences Building

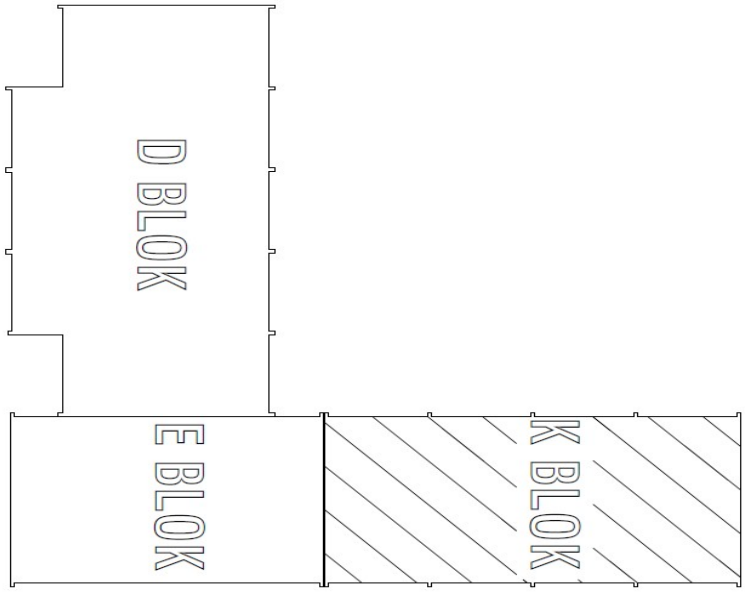


Picture 1: Top View of the Faculty of Arts and Sciences

Table 9: General Information for Faculty of Agriculture

BUILDING NAME	Faculty of Agriculture Building				
BUILDING OWNER	Mustafa Kemal University				
ADDRESS	Mustafa Kemal Üniversitesi Ziraat Fakültesi, Ana yazı Mah. Tayfur Sökmen Kampüsü, 31001 Antakya				
CITY	HATAY		POSTAL CODE		31001
CONSTRUCTION DATE	1996		CONSTRUCTION AREA		12.527 m^2
PURPOSE OF USAGE	Education		NUMBER OF BLOCKS IN THE BUILDING GROUP		8
ANNUAL NUMBER OF HEATING DEGREE DAYS	2021	1011	ANNUAL NUMBER OF COOLING DEGREE DAYS	2021	614
	2022	1089		2022	563
	2023	712		2023	612
	AVERAGE	937		AVERAGE	596
HEATING/COOLING SYSTEM	Central heating, individual split air conditioning,				
HOT WATER	None				
FACADE INSULATION CONDITION	FACADE INSULATION : |☒YES |☐ NONE |☐ N/A CEILING INSULATION : |☒YES |☐ NONE |☐ N/A BASE INSULATION : ☐YES |☐NONE |☒ N/A				
NUMBER OF USERS	Beneficiary	887 Students			
	Employee	101 Personnel			
	Other	-			
	TOTAL	988			

Figure 3: Blocks of the Faculty of Agriculture

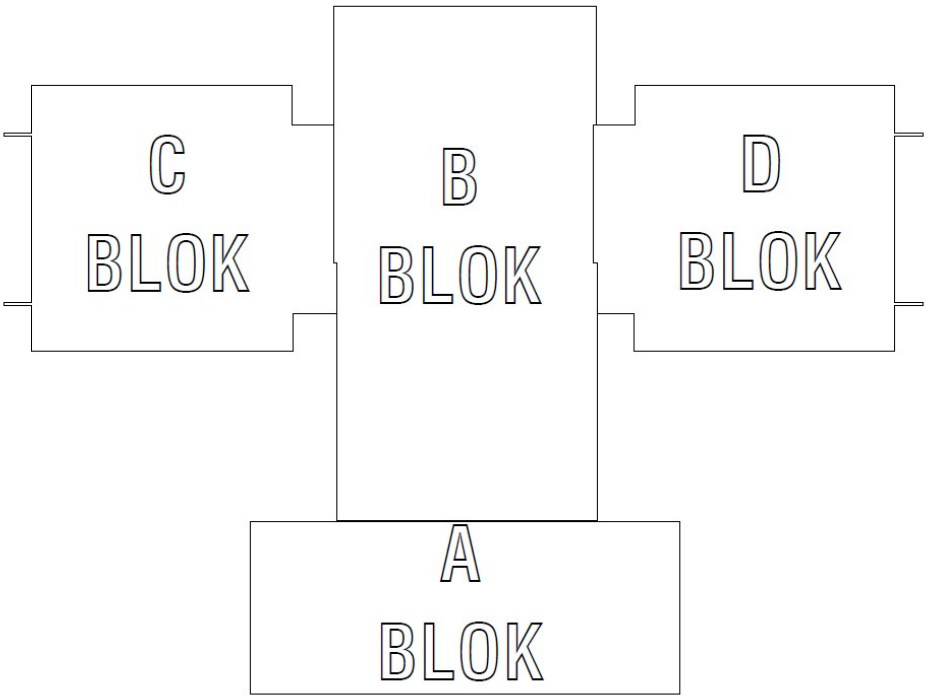


Picture 2: Top View of the Faculty Agriculture

Table 10: General Information for Vocational School of Health Sciences

BUILDING NAME	Vocational School of Health Sciences				
BUILDING OWNER	Mustafa Kemal University				
ADDRESS	Mustafa Kemal Üniversitesi Ziraat Fakültesi, Anayazı Mah Tayfur Sökmen Kampüsü, 31001 Antakya				
CITY	HATAY		POSTAL CODE		31001
CONSTRUCTION DATE	1996		CONSTRUCTION AREA		6.737 m2
PURPOSE OF USAGE	Education		NUMBER OF BLOCKS IN THE BUILDING GROUP		4
ANNUAL NUMBER OF HEATING DEGREE DAYS	2021	1011	ANNUAL NUMBER OF COOLING DEGREE DAYS	2021	614
	2022	1089		2022	563
	2023	712		2023	612
	AVERAGE	937		AVERAGE	596
HEATING/COOLING SYSTEM	Central heating, individual split air conditioning,				
HOT WATER	None				
FACADE INSULATION CONDITION	FACADE INSULATION : |☒YES |☐ NONE |☐ N/A CEILING INSULATION : |☒YES |☐ NONE |☐ N/A BASE INSULATION : ☐ YES |☐ NONE |☒ N/A				
NUMBER OF USERS	Beneficiary	1.193 Students			
	Employee	16 Personnel			
	Other	-			
	TOTAL	1209			

Figure 4: Blocks of the Vocational School of Health Sciences

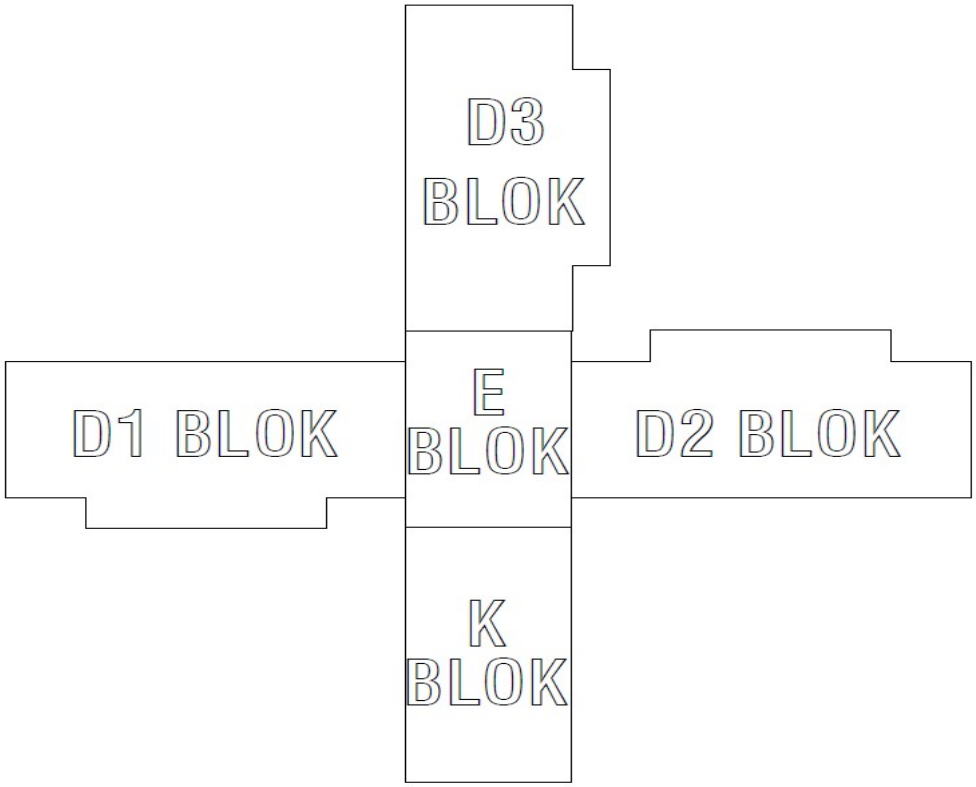


Picture 3: Top View of the Vocational School of Health Sciences

Table 11: General Information for Faculty of Education

BUILDING NAME	Faculty of Education Building				
BUILDING OWNER	Mustafa Kemal University				
ADDRESS	Mustafa Kemal Üniversitesi Ziraat Fakültesi, Anayazı Mah Tayfur Sökmen Kampüsü, 31001 Antakya				
CITY	HATAY		POSTAL CODE		31001
CONSTRUCTION DATE	2000		CONSTRUCTION AREA		8.776 m2
PURPOSE OF USAGE	Education		NUMBER OF BLOCKS IN THE BUILDING GROUP		5
ANNUAL NUMBER OF HEATING DEGREE DAYS	2021	1011	ANNUAL NUMBER OF COOLING DEGREE DAYS	2021	614
	2022	1089		2022	563
	2023	712		2023	612
	AVERAGE	937		AVERAGE	596
HEATING/COOLING SYSTEM	Central heating, individual split air conditioning,				
HOT WATER	None				
FACADE INSULATION CONDITION	FACADE INSULATION : |☒YES |☐ NONE |☐ N/A CEILING INSULATION : |☒YES |☐ NONE |☐ N/A BASE INSULATION : ☐ YES |☐ NONE |☒ N/A				
NUMBER OF USERS	Beneficiary	2.050 Students			
	Employee	82 Personnel			
	Other	-			
	TOTAL	2.132			

Figure 5: Blocks of the Faculty of Education



Picture 4: Top View of the Faculty of Education

6.2 Pre-construction Information & Site Plans

Regarding the faculties where the study will be carried out, traffic management plan and community health and safety are stated in ANNEX 1.

6.3 General Construction Site Rules

- Drinking water will be supplied to all employees in plastic bottles. It is not allowed to drink water from the toilets. Warning signs, as specified below, will be installed in all toilets.

- Employees' shower needs will be provided in the accommodations arranged by the contractor and subcontractors (hotels etc.). Indoor sinks will be used for washing hands.

- Workers will not be accommodated within the campus area. The contractor and subcontractors will arrange suitable places (hotels, motels, etc.) for the accommodation of workers.

- Employees meet their food needs from restaurants in nearby settlements. It is forbidden to use, possess and distribute alcoholic beverages, intoxicants, drugs, illegal or unauthorized drugs and drug paraphernalia in the Project. Employees will not work while under the influence of any drug/alcohol that will affect their working characteristics, reflexes, coordination or adversely affect the safety of other employees during the job.

- Smoking is prohibited inside the buildings. Warning signs, as specified below, will be installed at faculty entrances.

- Outdoor smoking areas, located at least 5 meters away from building entrance doors, can be designated. These areas should be clearly marked with the warning sign specified below, and all employees should be informed about the designated smoking areas.

- Emergency assembly areas for each building are specified below. Warning signs will be provided in these areas, and all employees will be informed about the assembly areas by the Occupational Health and Safety specialist.

- The specified emergency assembly areas will be used in all Occupational Health and Safety (OSH) drills. The responsible OHS Specialists will determine the emergency assembly times for each drill.

- The entry and exit of vehicles (including construction equipment) to the working areas and parking areas are specified in the Picture-5,6,7 and 8 (See also Annex 1).

- Temporary storage areas (outside of the buildings) are specified on a building basis. Temporary storage is not allowed in areas other than those specified in Picture-5,6,7 and 8.

- During temporary storage, the necessary precautions must be taken by the contracting company to stack materials and equipment in a way that does not create any risks, protects them from environmental conditions, and prevents the leakage of hazardous chemicals into the ground. The contracting company must describe how these issues will be addressed before the use of these storage areas. Otherwise, the use of temporary storage areas will not be allowed.

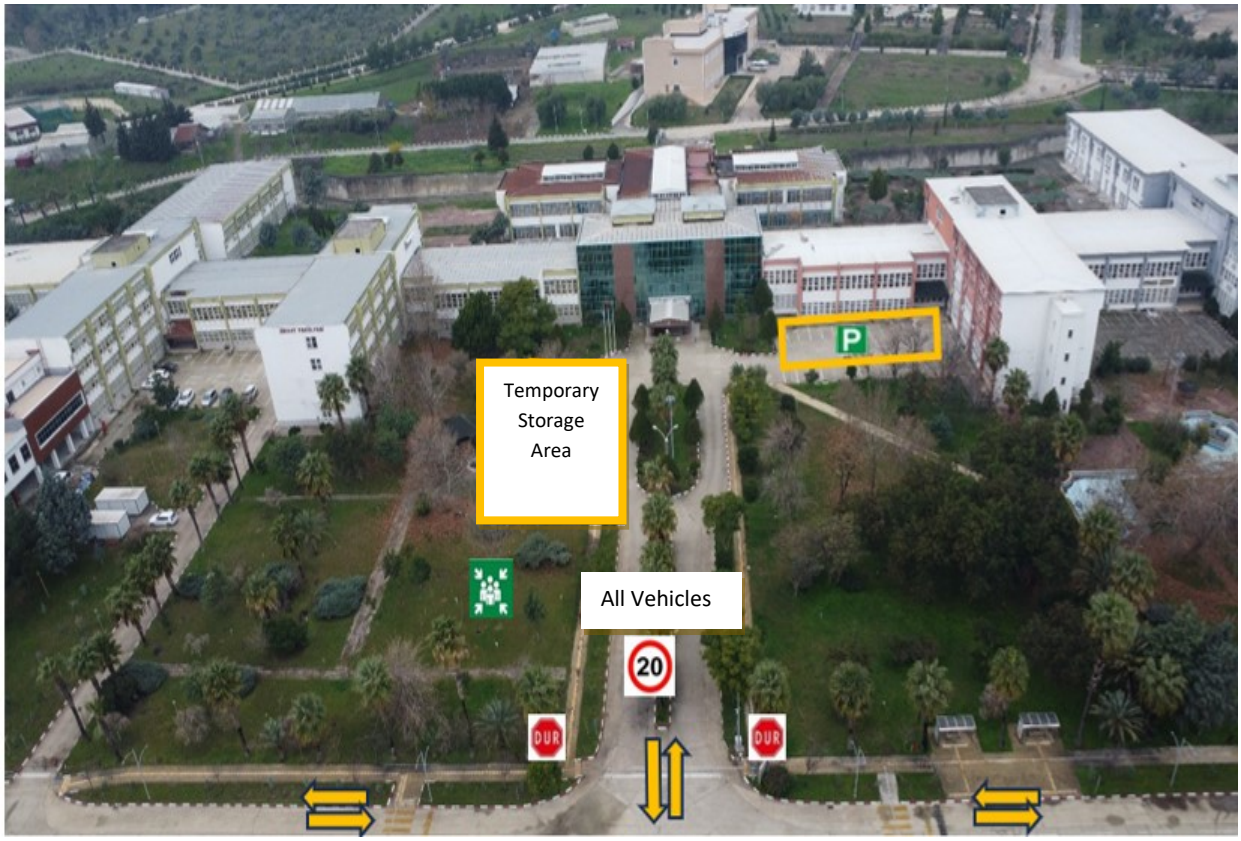
- The entrance and exit doors of the faculties are also shown on the Picture-5,6,7 and 8.

- All machinery and electrical equipment used during construction activities must bear the CE marking and comply with the relevant regulations. Products falling under the scope of the "CE" MARKING REGULATION[3] and not meeting the requirements associated with this symbol are not permitted for use.

[3] Related Directives;
- MACHINERY SAFETY DIRECTIVE (2006/42/AT)
- DIRECTIVE ON ELECTRICAL EQUIPMENT DESIGNED FOR SPECIFIC VOLTAGE LIMITS (2014/35/AB)
- PRESSURE EQUIPMENT REGULATION (2014/68/AB)
- REGULATION ON GAS APPLIANCES (2016/426/AB)
Relevant standards (must be reviewed separately for each device)
- TS EN ISO 12100 Safety in machinery - General principles for design - Risk assessment and risk reduction
- TS EN 60204-1 Safety in machinery - Electrical equipment of machinery - part 1: General rules
- TS EN 60335-1 Safety regulations - For household and similar electrical appliances - Part 1: General rules
- TS 1203 EN 286-1 Tanks - Simple - Non-flammable - Pressurised
- TS 10116 Cranes (Cranes) - Test and inspection methods
- TS ISO 9927-1 Cranes-Inspections-Part 1: General

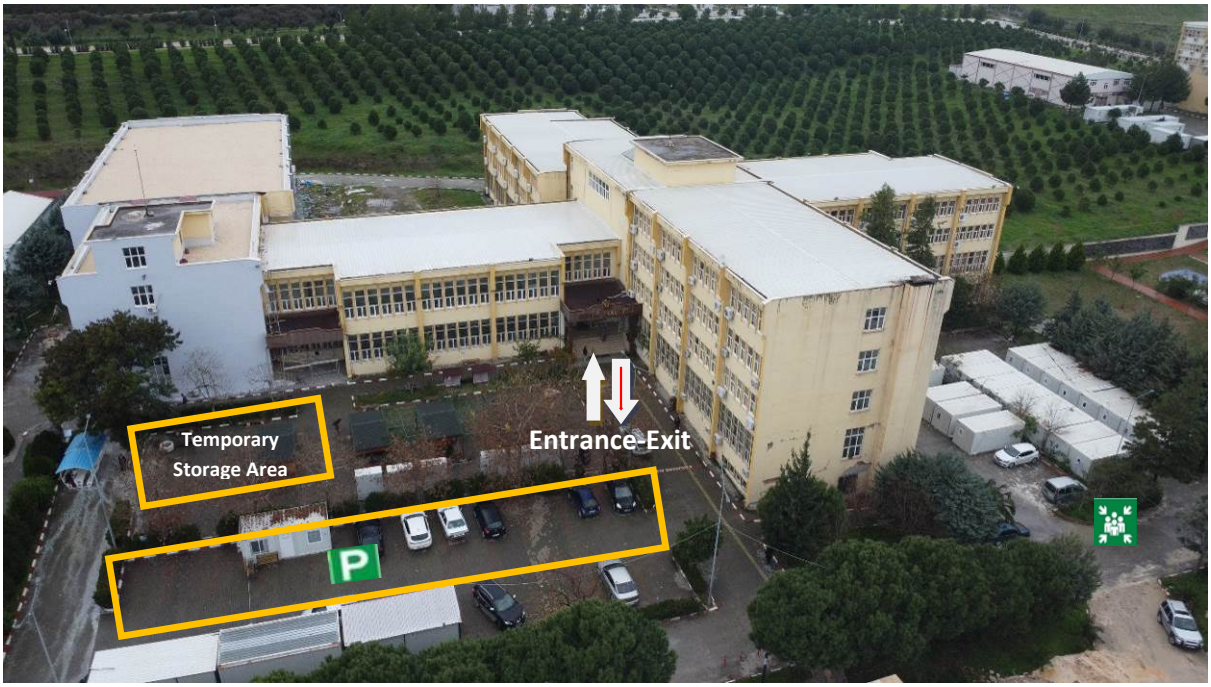
Picture 5: Faculty of Arts and Sciences

Picture 6: Vocational School of Health Sciences



Picture 7: Faculty of Agriculture

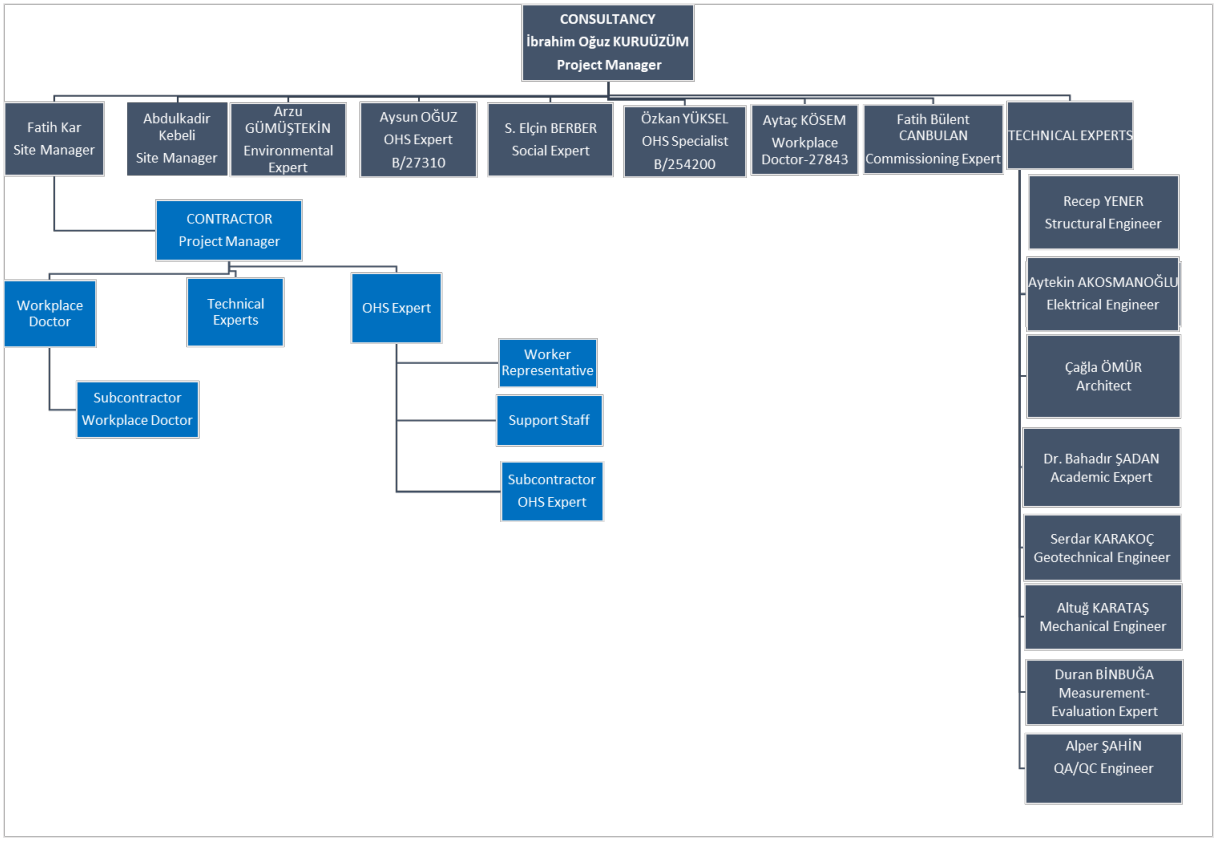
Picture 8: Faculty of Education



7. Health and Safety Organization

Figure 6 shows the organizational structure of the entire project.

Figure 6: Organizational Chart



7.1 Consultant

7.1.1 OHS Duties of the Project Manager

The Project Manager has been appointed as the employer's representative, special to this project. In this context, the employer has undertaken its duties.

1. To ensure the implementation of the Occupational Health and Safety Plan within the scope of relevant legal legislation and international good practices.

2. Construction methods and risk analyzes to be prepared by the contractor company; to examine with a technical, administrative and OHS focus. In case of inadequacy, reporting the justifications and following the revision processes.

   a) Construction methods, emergency plans and risk analyses to be prepared by the contractor company must cover the entire project. Therefore, subcontractor activities are also included in this scope.

   b) Contractor and subcontractors; To ensure control/supervision of the following issues regarding risks and precautions;

I. Properly informing all employees,

ii. Providing the necessary resources (tools, equipment, human resources),

iii. All managers and employees comply with the rules specified in this plan.

3. To ensure that the suitability and adequacy of risk assessments and emergency plans are checked through field inspections.

   a) All non-conformities detected as a result of such inspections will be recorded within the scope of corrective actions. It must be ensured that the detected nonconformities are resolved appropriately and within the deadline.

   b) Detected nonconformities or corrective actions may require risk analysis revision. In this situation; Risk analyzes should be republished by specifying the revision number, date and justifications and by performing the necessary approval procedures.

4. Providing periodic health reports of employees and ensuring that they are checked on the basis of the work they do. Not allowing those who do not have reports showing the suitability of their health status within the scope of their work to work.

5. Ensuring that the educational status of employees is checked, and not allowing those who cannot prove that they have received training in accordance with legal requirements to work.

6. Ensuring that the professional qualifications of employees are checked, Not allowing those who cannot prove that they have the appropriate professional competence within the scope of their duties to work.

7. Ensuring that the necessary PPE is identified, procured and delivered to employees appropriately.

8. To ensure that the safety equipment (protective net, guardrail, life lines, etc.) that must be kept in the work areas is determined, provided and installed appropriately.

9. To ensure that periodic checks of work machines and equipment to be used within the scope of work are carried out in accordance with the relevant legislation. Not allowing work with work machines and equipment that do not have periodic control forms.

10. To ensure that work accidents are reported in accordance with the Occupational Health and Safety Law No. 6331.

11. To fully fulfill other defined duties of the employer within the framework of Occupational Health and Safety Law No. 6331.

    a) In order to achieve this, the Project Manager must comply with the **up-to-date** law no. 6331 and other relevant regulations; It should be reviewed together with the OHS Specialist and Workplace Physician.

7.1.2 OHS Duties of the Occupational Health and Safety Specialist

The duties of OHS Experts specified in Article 9 of the REGULATION ON DUTIES, AUTHORITIES, RESPONSIBILITIES AND TRAINING OF OCCUPATIONAL SAFETY EXPERTS (Official Gazette Date: 29.12.2012 Official Gazette Number: 28512) are given below. He/she will manage occupational health and safety activities in accordance with the duties given below.

1. **Guidance;**
   a) To ensure that work is planned, organized, and implemented in accordance with occupational health and safety legislation and general occupational safety rules, including the condition, maintenance, selection of design, machinery, and other equipment used in the workplace, as well as the selection, procurement, use, maintenance, storage, and testing of personal protective equipment, and to make recommendations to the employer regarding work carried out and changes to be made in the workplace.
   b) To inform the employer in writing about the precautions that need to be taken in terms of occupational health and safety.
   c) To inform the employer in writing about the precautions that need to be taken in terms of occupational health and safety.
   d) To conduct investigations into the causes of workplace accidents and occupational diseases and make recommendations to the employer on measures to prevent their recurrence.

2. **Risk Assessment;**

   Participating in the work related to occupational health and safety risk assessment and its implementation, making recommendations to the employer regarding the health and safety measures to be taken as a result of the risk assessment, and monitoring its implementation.

3. **Workplace Surveillance;**
   a) Supervising the workplace, planning and monitoring the periodic maintenance, inspections, and measurements required by occupational health and safety legislation, and ensuring their implementation.
   b) Participating in efforts to prevent accidents, fires, or explosions in the workplace, making recommendations to the employer in this regard, monitoring the implementation of practices; participating in the preparation of emergency plans for natural disasters, accidents, fires, or explosions, ensuring that periodic training and drills related to this issue are conducted, and monitoring and controlling compliance with the emergency plan.

4. **Training, Information, and Records;**
   a) Planning the occupational health and safety training of employees in accordance with the relevant legislation, presenting it to the employer for approval, and implementing or supervising the implementation.
   b) Recording the results of occupational health and safety activities related to the workplace and workplace surveillance.
   c) Organizing informative activities for employees, presenting them to the employer for approval, and controlling their implementation.
   d) Preparing occupational health and safety instructions and work permit procedures for use in necessary locations, presenting them to the employer for approval, and controlling their implementation.

5. **Collaboration with Relevant Departments;**
   a) Conduct assessments, along with the occupational physician, related to workplace accidents and occupational diseases, prepare necessary preventive action plans to prevent the recurrence of accidents, and monitor the implementation.
   b) Prepare the annual work plan for occupational health and safety activities to be carried out in the following year in collaboration with the occupational physician.
   c) Collaborate with the occupational health and safety committee of which they are a member if available,
   d) Provide support to employee representatives and support staff and collaborate with these individuals.

Within this framework;

1. Examine construction methods and risk analyses, prepare a report regarding their suitability. Transmit the prepared report to the Project Manager and the Contractor's Project Manager.
2. During the project preparation phase, prepare weekly monitoring reports and present them to the Project Implementation Unit.
3. During the project implementation phase, ensure the preparation of monthly Occupational Health and Safety (İSG) reports by the Contractor and submit the reports to the administration in the specified format.
4. Obtaining and checking the periodic inspection reports of work machinery. (Maximum inspection frequency in the regulation is 1 year.).
5. Ensuring the delivery of personal protective equipment specified in the risk analysis to all employees. (Checking the PPE delivery records, questioning the adequacy and proper use of the equipment during field inspections.)
6. Verifying the authorization and appointments of the Contractor's and Subcontractor's Occupational Health and Safety Specialist and Workplace Doctor.
7. Improving this document and updating it based on on-site findings.
8. Checking employee personnel files.
9. Checking records and certificates related to employees' past OHS training (maximum period of 1 year).
10. Attending weekly and monthly OHS meetings and reporting them to the management.
11. Verifying the professional competence certificates of the employees.
12. Reviewing work reports from the perspective of occupational health and safety, assessing any work or equipment that may violate occupational health and safety rules.
13. Conducting daily field inspections, assessing any work or equipment that may violate occupational health and safety rules. Evaluating the adequacy of risk analyses and established measures on-site.
14. Reviewing reports of on-site inspections conducted by the Contractor and Subcontractor OHS specialists. Monitoring and controlling identified non-compliances.
15. Reviewing records of current training provided by the Contractor and Subcontractor OHS Specialists (Risk Analysis, Toolbox, etc.). Examining their adequacy (duration, content).
16. Communicating with Employee Representatives, requesting feedback. Reporting issues raised by Employee Representatives to the Project Coordinator, determining necessary actions, and implementing them.
17. Obtain accident reports prepared by Contractor and Subcontractor OHS Specialists, review them at the content and incident sequence levels, and check if notifications were made in compliance with legal requirements.

18. Checking suggestion and complaint boxes. Evaluating feedback received through printed or digital means within the framework of OHS (Occupational Health and Safety), ensuring the information of those providing feedback, assessing requests, and determining necessary actions. (Collaboration with the Social Specialist will be involved in this process).
19. Providing timely information to the Project Manager regarding field observations, feedback, information obtained from the Contractor and Subcontractor OHS specialists, and workplace accidents without delay.

7.1.3 OHS Duties of the Workplace Physician

The duties of occupational physicians are outlined below, as specified in THE REGULATION ON THE DUTIES, POWERS, RESPONSIBILITIES, AND TRAINING OF OCCUPATIONAL PHYSICIANS AND OTHER HEALTH PERSONNEL *(Official Gazette Date: 20.07.2013 Official Gazette Number: 28713)* Article 9;

1. Guidance;

a) Provide guidance to the employer regarding the health monitoring of employees and the surveillance of the work environment within the scope of occupational health and safety services.
b) Offer recommendations to the employer for ensuring that the design and organization of the workplace, including the use of substances, comply with occupational health and safety legislation and general workplace safety rules, particularly in relation to the planning, organization, and implementation of work and the selection of personal protective equipment.
c) Advise the employer on activities aimed at improving the health of employees in the workplace.
d) Participate in investigations related to occupational health and safety, as well as conduct research to ensure the harmony between work and the capabilities of employees, considering ergonomic and psychosocial risks in the workplace, and protect employees from stress factors in the work environment. Take into account the results of these investigations in guidance activities.
e) Continuously monitor and inspect the general hygiene conditions of workplace buildings and facilities, including cafeterias, dining halls, dormitories, changing rooms, showers, and toilets, and provide recommendations for ensuring that employees receive the necessary nutrition and access to suitable drinking water based on the requirements of the work being performed.
f) Investigate the causes of workplace accidents and occupational diseases and make recommendations to the employer on measures to prevent their recurrence.
g) Conduct investigations on the incidents in the workplace that, while not resulting in death or injury, have the potential to cause harm to employees, equipment, or the workplace, and provide recommendations to the employer.
h) Communicate in writing to the employer the precautions and measures that need to be taken in the field of occupational health and safety.

2. Risk Assessment;

Participate in activities related to occupational health and safety risk assessment and its implementation. Provide recommendations to the employer regarding health and safety measures that need to be taken based on the results of the risk assessment and ensure their follow-up.

3. Health Surveillance;

a) Inform and obtain the consent of employees regarding pre-employment and periodic medical examinations and tests conducted as part of health surveillance.

b) Conduct health surveillance for employees, including those working night shifts.

c) Repeat periodic medical examinations annually (unless otherwise recommended by the occupational health physician).

d) Determine if there is a correlation between health-related work absences and potential health hazards in the workplace. Plan for environmental measurements, if necessary, seek the employer's approval, and evaluate the results in terms of employee health.

e) Conduct return-to-work medical examinations for employees who have been absent from work due to health reasons. Recommend suitable tasks for those whose previous roles may pose health risks based on their current health status and seek the employer's approval.

f) Take measures to control infectious diseases, prevent their spread, and conduct immunization campaigns. Provide necessary hygiene training, ensure medical examinations and tests are performed, and promote a healthy work environment.

g) Maintain records of health surveillance activities in the workplace. Collaborate with the occupational health and safety specialist to assess workplace accidents and occupational diseases. Prepare preventive action plans to prevent the recurrence of accidents and submit an annual work plan, including these topics, to the employer for approval. Monitor the implementation of these plans and prepare an annual evaluation report.

h) Check whether health reports demonstrating the fitness of employees sent temporarily to the workplace by another employer or subcontracted workers are still valid.

4. Training, Information, and Records;

a) Plan and conduct employee occupational health and safety training in accordance with relevant regulations. Present these plans to the employer for approval and ensure their implementation or oversee the training programs.

b) Organize and provide training for first aid and emergency response services at the workplace, following the requirements of the relevant regulations.

c) Provide training to managers, occupational health and safety committee members (if applicable), and employees on general health, occupational health and safety, hygiene, the hazards of substance abuse, personal protective equipment, and collective protection methods. Ensure the continuity of these training programs.

d) Inform employees about workplace risks, health surveillance, and pre-employment and periodic medical examinations.

e) Collaborate with the occupational health and safety specialist to prepare an annual evaluation report documenting the results of occupational health and safety efforts and health surveillance.

f) Report information related to occupational health and safety topics determined by the Ministry to the General Directorate through the Occupational Health and Safety Automation System (ISG CLERK).

5. Collaboration with Relevant Departments;

a) Recommend, based on the results of health surveillance, the conduct of necessary measurements within the scope of workplace monitoring in collaboration with the occupational health and safety specialist, and evaluate the measurement results.

b) Collaborate with the occupational health and safety committee (if applicable) to work on providing information and training on occupational health and safety topics in the workplace.

c) Collaborate with relevant parties to provide information and education on workplace health and safety.

d) Participate in the development of programs aimed at improving existing practices, analyzing occupational accidents and occupational diseases, evaluating new technologies

and equipment from a health perspective, and making recommendations for the prevention of accidents.

e) Collaborate with authorized hospitals for the preparation of health board reports related to occupational diseases according to the Regulation on the Rate of Incapacity to Work and Occupational Accidents and cooperate with relevant units for the rehabilitation of employees who have suffered workplace accidents or contracted occupational diseases.

f) Contribute to the preparation of occupational health and safety instructions and work permit procedures for use in necessary areas.

g) Provide support to employee representatives and support personnel in their activities and collaborate with these individuals.

Within this framework;

1. Verify the authorization and appointments of occupational health physicians for contractors and subcontractors.
2. Develop and update this document in line with field findings,
3. Support the risk analysis control process by examining construction methods and data related to work areas provided by subcontractors and other specialists.
4. Verify employee personnel files.
5. Review employees' periodic health reports.
6. Review weekly work reports from an occupational health perspective and evaluate any inappropriate work or equipment presence.
7. Review reports of field inspections conducted by occupational health physicians from contractors and subcontractors. Track and control identified non-conformities.
8. Review records of current training provided by occupational health physicians from contractors and subcontractors. Verify their appropriateness in terms of duration and content.
9. Communicate with employee representatives, request feedback, report issues to the Social Specialist and Project Manager, determine necessary actions for occupational health, and implement them.
10. Obtain and review occupational disease reports prepared by occupational health physicians from contractors and subcontractors. Ensure compliance with legal requirements for reporting.
11. Evaluate feedback obtained through the suggestion and complaint system in terms of occupational health, based on requests from the Social Specialist, and determine necessary actions.
12. Inform the Project Manager without delay about field observations, feedback, information obtained from contractors and subcontractor occupational health physicians, and workplace accidents.

7.1.4 OHS Duties of Technical Experts

The Technical Expertise Unit, composed of disciplines in Civil Engineering, Mechanical Engineering, and Electrical Engineering, will perform the following tasks in OHS processes:

1. Inform OHS experts about the technical details and processes of the work.
2. Ensure that the work they oversee is conducted in a way that protects the health and safety of employees.
3. Examine the construction methods prepared by the contractor and evaluate their adequacy.
4. Technically evaluate the aspects mentioned in risk analyses (hazards, risks, and measures) and make evaluate their suitability.

5. If deemed necessary by the OHS expert, participate in the work permit system, respond to inquiries from the OHS expert, and assess and query documents transmitted by the OHS expert within this framework.
6. Evaluate, from a technical perspective, OHS training content provided by the contractor. Make evaluate its adequacy (e.g., LOTO systems, scaffold installation and usage, etc.)

7.1.5 OHS Duties of the Social Specialist

1. Receive and compile printed suggestion and complaint forms submitted to the OHS expert.
2. Review feedback obtained within the framework of the suggestion and complaint system. If necessary, involve the OHS expert and workplace physician in the feedback evaluation process.
3. Maintain contact with Employee Representatives and support the establishment of a healthy and strong communication between the OHS expert, workplace physician, and Employee Representatives.

7.1.6 Duties of the Support Staff

Carry out the tasks requested by the Occupational Health and Safety (OHS) Specialist and Workplace Physician.

7.2 Contractor Company

7.2.1 Duties of the Employer and Employer Representative

The Project Manager has been designated as the employer representative for this project, and as such, they are responsible for the following tasks.

1. As the employer, ensure the fulfillment of all duties specified within the Occupational Health and Safety Law No. 6331.
2. Ensure monitoring requirements, frequencies, responsibilities for the Contractor mentioned on the Table 29 OHS Monitoring Plan
3. Ensure that this document, as provided by the Consultant OHS Specialist, is communicated to all relevant units and understood.
4. Ensure that the OHSP, construction methods and risk analysis are prepared and presented to the Consultant before field work begins.
5. Promptly provide the Consultant OHS Specialist and Workplace Physician with the requested information and documents.
6. Promptly provide the requested information and documents to the Consultant Social Worker.
7. Establish and ensure the effectiveness of the recommendation and complaint system provided by the Consultant Social Worker.
8. Attend meetings and discussions requested by the Consultant Project Manager.
9. Monitor and control the performance of the appointed OHS Specialist and Workplace Physician.
10. Review and fulfill requests made by the Consultant OHS Specialist regarding the performance of the OHS Specialist and Workplace Physician (e.g., changes, warnings, etc.)

7.2.2 Duties of the OHS Specialist

1. Fulfill all responsibilities as specified in the REGULATION ON THE DUTIES, AUTHORITIES, RESPONSIBILITIES, AND TRAINING OF OHS SPECIALISTS in full compliance with the regulation.
2. Ensure the preparation of the contractor OHSP for project works in line with this OHSP, creation of a risk analysis within the framework of the construction method and submit it to the Consultant OHS Specialist before fieldwork begins.
3. Provide records and certificates of past OHS training for employees to the Consultant OHS Specialist.
4. Provide current training to employees based on this document and risk analysis within the scope of the project. Keep training records and submit them to the Consultant OHS Specialist.
5. Plan and implement additional training requested by the Consultant OHS Specialist. Keep records of training and provide them to the Consultant OHS Specialist.
6. Submit employees' Occupational Competency Certificates to the Consultant OHS Specialist.
7. Inform all employees about the recommendation and complaint system implemented specifically for this project.
8. Submit machine periodic inspection reports to the Consultant OHS Specialist.
9. Provide the lists of Personal Protective Equipment (PPE) (standard, quantity, etc.) and delivery receipts to the Consultant OHS Specialist.
10. Participate in field inspections conducted by the Consultant OHS Specialist and have the requested information and documents readily available.
11. Submit records of work accidents to the Consultant OHS Specialist.
12. Implement corrective actions communicated by the Consultant and inform the Consultant OHS Specialist and/or Workplace Physician regarding the process.
13. Plan, attend, and report on weekly and monthly OHS meetings.

7.2.3 Duties of the Contractor Workplace Doctor

1. Fulfill all responsibilities as specified in the REGULATION ON THE DUTIES, AUTHORITIES, RESPONSIBILITIES, AND TRAINING OF WORKPLACE PHYSICIANS in full compliance with the regulation.
2. Ensure the creation of a risk analysis within the framework of the construction method.
3. Submit employees' periodic occupational health reports to the Consultant Workplace Physician.
4. Provide records and certificates of past occupational health training for employees to the Consultant Workplace Physician.
5. Plan and implement additional training requested by the Consultant Workplace Physician. Keep records of training and provide them to the Consultant Workplace Physician.
6. Submit records of occupational diseases to the Consultant Workplace Physician.

7.2.4 Duties of the Technical Experts

The Contractor Technical Expertise Unit, consisting of civil engineering, mechanical engineering and electrical engineering disciplines, will perform the following duties in OHS Processes.

1. Inform OHS Specialists about the technical details and processes of the work.
2. Ensure that the work being carried out is done in a way that protects the health and safety of employees.
3. Develop construction methods and communicate them to the OHS Specialist.
4. Technically evaluate the aspects specified in risk analyses (hazards, risks, and measures) and make judgments regarding their appropriateness.
5. Participate in the work permit system if deemed necessary by the OHS Specialist, answer questions posed by the OHS Specialist, and assess and query documents provided by the OHS Specialist.
6. Ensure the technical improvement of OHS training content (e.g., LOTO system, scaffold installation and usage, etc.)

7.2.5 Duties of the Contractor Employee Representative

1. Fulfill all responsibilities and duties as specified in the 6331 Occupational Health And Safety Law (Official Gazette Date: 30.06.2012 Official Gazette Number: 28339).
2. Participate in risk analysis studies within the framework of the construction method.
3. Support the OHS Specialist in implementing the feedback from other employees through the project-specific Suggestions & Complaints system, and provide information to employees about this.
4. Establish strong communication with the Consultant OHS Specialist, Workplace Physician, and Social Specialist, and provide information about the general requests and conditions of employees.
5. Report situations related to avoiding work to the Consultant OHS Specialist without delay.
6. Inform the Consultant Social Specialist of any situations that may negatively affect the effectiveness of the suggestion and grievance system.

7.2.6 Contractor Support Personnel

An occupational health and safety worker consisting of 2 people will work regularly in the field to carry out the work requested by the OHS Specialist and the Workplace Physician.

8. Management of Works

General Work Program and Cross Communication

According to the work program, it is envisaged that construction works and energy efficiency studies will be carried out at the same time. When the construction works begin, the work plan and risk analyzes regarding works that overlap in time and space will be evaluated by the contractor and reported to the Consultant. After taking appropriate precautions for the risks, the works will be carried out simultaneously following the approval of the Consultant.

Table 12: Work Plan

	1. MONTH				2. MONTH				3. MONTH				4. MONTH				5. MONTH			
	1. Week	2. Week	3. Week	4. Week	5. Week	6. Week	7. Week	8. Week	9. Week	10. Week	11. Week	12. Week	13. Week	14. Week	15. Week	16. Week	13. Week	14. Week	15. Week	16. Week
MOBILIZATION																				
STRUCTURAL STRENGTHENING																				
WALL DEMOLITION AND DISASSEMBLY WORKS																				
ELECTRICAL AND MECHANICAL SYSTEM DISASSEMBLY																				
SUBSTRUCTURE CONCRETE DEMOLITION																				
EPOXY ANCHORS AND TESTS																				
NEW REINFORCEMENT INSTALLATION																				
FORMWORK AND CONCRETE CASTING																				
FINISHING WORKS																				
WALL CONSTRUCTION																				
SUSPENDED CEILING CONSTRUCTION																				
PLASTERING																				
PAINTING																				
FLOORING-JOINERY WORKS																				
ELECTRICAL-MECHANICAL-ENERGY EFFICIENCY																				
ELECTRICAL INSTALLATION																				
MECHANICAL INSTALLATION																				
AUTOMATION																				
FACADE INSULATION																				
PV PANEL INSTALLATION																				
TEST AND INSPECTION																				

8.1 Working Methods

The information regarding the construction processes specified below has been prepared to reveal the general working method; It was created to guide the contractor company in detailed construction method and risk analysis studies. When starting each new job, the Contractor will prepare the construction method and risk analysis and submit it to the consultant for approval, and will start the work after the approval is received.

8.1.1 Structural Reinforcement

The following works will be carried out within the scope of structural reinforcement works;

- Demolition of some interior walls in faculty buildings
- If there are electrical and mechanical installations on the interior walls planned to be demolished, dismantling them must be done.
- Concrete breaking and foundation filling in some places on the ground and basement floors
- Anchoring the curtain and column sheaths that will be newly added to the building

- Installation of new reinforcement of curtain and column sheaths to be added to the building
- Formwork and concrete casting work for new curtain and column sheaths to be added to the building

1. The Current Situation Performance Report, prepared in line with the structural surveys and findings, provides objective evidence that the structure needs strengthening. The infrastructure construction around the buildings will be carried out using traditional methods, including land measurement, route excavations, adjustment of route elevations, laying of scaffolds. The major points to be taken into consideration are listed below.

   - The use of heavy machinery is crucial. Excavation work involves the use of excavators, loaders, and trucks. It is essential to check the periodic inspection reports and operator competency certificates (operator license, Class C driver's license) for these devices before starting work.

   - In areas where the underground natural gas pipeline facility is involved, the Provider Natural Gas Company is responsible for ensuring a feasible environment by performing necessary operations before the start of Phase II (Construction Phase) of the projects. The implementation of the project must be carried out under the supervision of Infrastructure Construction Control Personnel Level 4 (National Vocational Qualifications Institution (VQI) Law No. 5544 - 12UY0042-4).

     - (*The Natural Gas Pipeline process in question will be completely ready, all controls and tests will be carried out by the Service Provider Local Distribution Company before the Site Transfer takes place in order to create the necessary environment and will ensure delivery as specified in the projects. The Property Owner must apply for the construction of the facilities in question in accordance with the relevant legislation. For this reason, it is ABSOLUTELY impossible for neither the Consultant Company nor the Contractor to intervene in these natural gas pipelines)

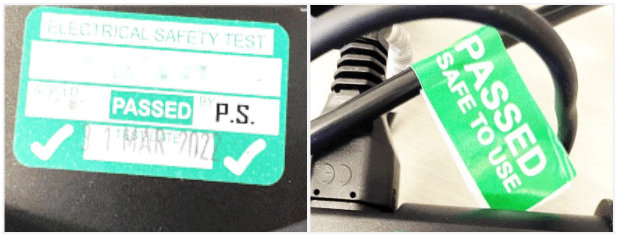
2. In the implementation of the superstructure reinforcement, dismantling processes will be carried out from upper floors to lower floors as a priority. Reinforcement curtains and column jackets on the designated axes will be demolished, starting from the top floor and using a hammer and breaker. Before the demolition of walls, items such as doors, windows, fixtures, countertops, electrical, and mechanical installations that may be damaged should be removed and protected. The major points to be considered are listed below;

   - Consideration should be given to the potential danger of the elements to be demolished containing electrical wiring. Prioritizing the interruption of power in the area; the electrical needs of tools such as breakers, drills, etc., should be supplied from alternative sources. Components such as distribution boxes, outlets, lighting element lines, switches, etc., should be inspected before demolition, and it should be verified that there is no power. During this process, the use of inspection items alone is not sufficient. Control devices such as a phase voltage detector should be used at a minimum. Functional checks of these testing devices should be performed daily (using working outlets).

Figure 7: Phase Detector Sample Image

- All electric hand tools must have undergone Portable Appliance Testing (PAT). PAT test reports will be requested and checked before work commences. During field inspections, the presence of PAT inspection and approval labels on electrical devices will be verified. Devices and equipment without compliance labels are not permitted for use. (Extension cables are also included in this scope.)

Figure 8: Pat Test Label Sample Image



- Care must be taken to prevent damage to electrical extension cables and to ensure that these cables do not come into contact with water. Extension cables and other power cables for electrical devices will be checked daily. The use of damaged cables is not allowed.

- During demolition, both sides of the walls must be inspected, and necessary precautions must be taken to prevent workers from being trapped under debris (restricting access, observing the affected areas of walls to be demolished, using warning signs and caution labels, etc.).

- In wall demolitions affecting the exterior of the building, impact zones must be identified, and entry to these areas must be prohibited.

- Prior to wall demolition, reinforced areas must be marked. It is essential to ensure that these reinforced elements (load-bearing) do not incur damage. The demolition team will be reminded of this on a daily basis.

- To prevent damage to the floor during demolition work, walls must be broken into pieces and brought down in a controlled manner. Techniques to avoid demolishing walls in their entirety should be communicated to the workers. Protective covers of appropriate thickness should be used for surfaces that need to be preserved.

- Employees involved in the transportation of debris must be informed about manual handling procedures. It is prohibited to throw debris outside from a height in an uncontrolled manner. The method for removing debris will be determined and communicated by the contracting company.

- During the demolition process, employees must use dust masks and protective goggles to protect themselves from dust.

- To protect workers from noise during the demolition process, the use of earplugs or earmuffs is mandatory.

- In the demolition process, workers must use protective goggles to shield themselves from flying debris.

3. After the dismantling process, it is necessary to break the substructure concrete and excavate the foundation fill to open up the surroundings of the reinforcement elements for their connection to the foundations. These breaking and excavation operations will be carried out manually (with the help of a breaker and a hammer) and/or with small machines that can enter the structure (such as a bobcat, etc.)

   Major points to consider are listed below.

- During maneuvers with heavy machinery in confined spaces, responsible operators should be informed in advance to prevent damage to walls and reinforced components that need protection. Construction methods for the use of such machinery inside buildings should be communicated to the consultant beforehand. (This document should specify whether there is a risk of permanent damage in terms of moving the machinery to the working area, demolishing walls to bring it inside the building, and internal maneuvers during work.)

- Warning tapes should be placed around excavated areas. If work is carried out at night, these tapes should have reflective properties.

4. After the completion of excavation processes, anchor rods are driven into the existing columns, beams, and foundations. Anchor holes are drilled into the existing elements using drilling drills according to the dimensions specified in the detailed projects. The process involves cleaning the hole with a compressed air compressor, injecting epoxy adhesive into the hole, and inserting the pre-prepared anchor rod (made of normal ribbed construction iron) into the hole.

Figure 9: Installing Anchor Rods Sample Image

The major points that need to be considered are listed below:

- Anchor rods with exposed ends carry a serious risk of injury or even death in the event of a fall. Areas with such risks should be surrounded by warning labels as long as they pose a risk, and workers should be alerted. (Care must be taken to ensure that the tips of anchor rods are not sharp or cutting.) Especially in areas with a risk of falling, warning tapes should surround them according to the principle of the impact zone.

- All electrical hand tools must have undergone Portable Appliance Testing (PAT). PAT test reports will be requested and checked before work begins. During field inspections, the presence of PAT control and approval labels on electrical devices will be verified. Devices and equipment without compliance labels are not allowed to be used. (Extension cables are also included in this scope.)

- Care must be taken to ensure that electrical extension cables are not damaged, and these cables should not come into contact with water. Extension cables and other electrical power cables will be inspected daily. Damaged cables are not allowed to be used.

- There is a risk of anchor rods falling from the building to the ground. Workers should consider this risk during the stacking and installation of these ribbed irons. The use of hard hats within the work area is a minimum requirement for all workers.

- Anchor rods are likely to be rusty. Therefore, workers must use appropriate types of protective gloves. In addition, all workers must have received tetanus vaccinations. (During occupational health and safety training, the workplace physician should inform employees about infections caused by rusty metals and tetanus.)

- Compressors used for hole cleaning must be inspected by competent mechanical engineers, and their compliance must be verified.

- MSDS (Material Safety Data Sheet) for epoxy adhesives must be checked by occupational health physicians, and employees must be informed (regarding volatile properties, eye contact, etc.).

- The necessity of eye wash stations against dust and chemical usage should be determined by the occupational health physician.

- Personnel working with reinforcement bars must hold the Level 3 Reinforcement Steelworker (11UY0012-3) certificate.

5. Carrying out the installation of strengthening element reinforcement along with anchor manufacturing.

The important points to be considered are listed below:

- During the placement of reinforcement metals, the risks of piercing and cutting should be taken into account. The ends of reinforcement metals should not be left freely in a way that poses a danger.

- Ends of reinforcement metals, which carry the risk of piercing and may be difficult to see due to reasons such as level differences, should be covered with plastic wedges and clearly marked with appropriate warning signs.

- infections caused by rusty metals and tetanus during workplace health and safety training.

- If iron bending and cutting machines are used in the shaping of reinforcement bars, these machines must have undergone Portable Appliance Testing (PAT). PAT test reports will be requested and checked before work begins. During field inspections, the presence of PAT control and approval labels on electrical devices will be verified. Devices and equipment without compliance labels are not allowed to be used. (Extension cables are also included in this scope.)

- Personnel handling reinforcement bars must have the Level 3 Reinforcement Steelworker (11UY0012-3) certificate.

6. After the testing and reinforcement samples are taken over by the control organization, plywood molds are closed, and "self-compacting concrete" (fine-aggregate, superplasticizer-enhanced concrete) is poured into the mold through a funnel made from a hole opened from the upper floor slab or a mold known as a bird's beak. The process of pouring concrete is carried out using a transit mixer and a concrete pump. In areas where the pump cannot reach within the existing structure, if necessary, mobile pipes (corrugated pipes, etc.) or manual transport of concrete may be employed. After pouring the concrete for the reinforcement element of one floor and allowing a minimum of 2 days to pass, the concrete for the next floor should be poured. Gaps that may occur due to the inability of concrete to reach between existing elements and the new reinforcement element are filled with high-strength, polymer-fiber-reinforced repair mortars. The major points to be considered at this stage are listed below.

   - All electrical hand tools (mobile concrete mixers, vibrators, concrete pumps, etc.) must have undergone Portable Appliance Testing (PAT). PAT test reports will be requested and checked before work begins. During site inspections, the presence of PAT control and approval labels on electrical devices will be verified. Devices and equipment without compliance labels are not allowed to be used. (Extension cables are also included in this scope.)

   - Care must be taken to prevent damage to electrical extension cables, and these cables must not come into contact with water. Extension cables and other power cables for electrical devices will be checked daily. The use of damaged cables is not permitted.

- MSDS (Material Safety Data Sheet) for repair mortars and similar materials must be checked by occupational health physicians, and employees must be informed (inhalation, eye contact, etc.).

- During the access of transit mixers to the working area, compliance with traffic action plan rules must be ensured. Access of unrelated employees to the vicinity of transit mixers should be prevented with warning tapes during parking and operation.

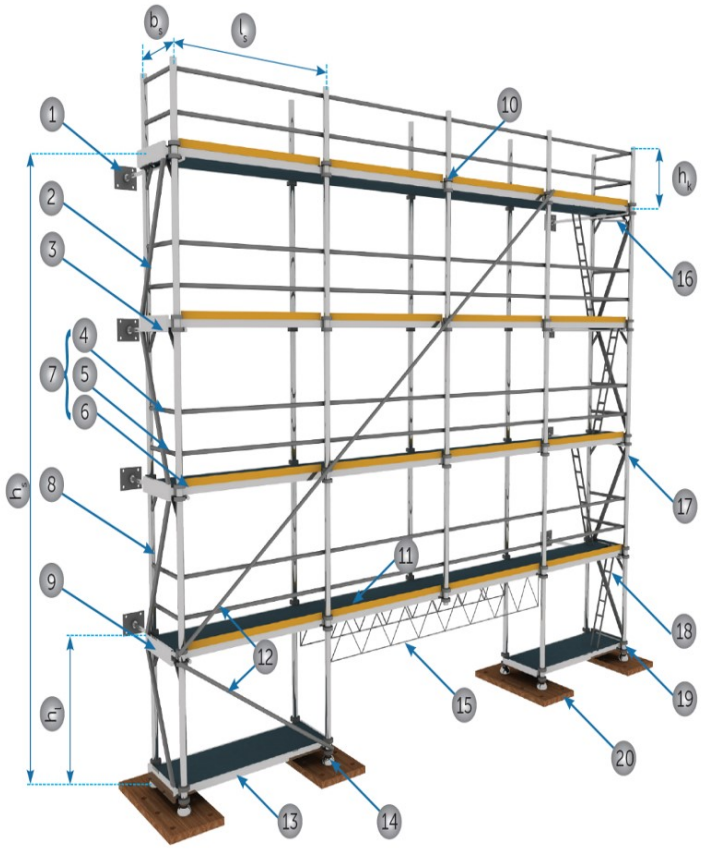
- Personnel involved in formwork tasks must have Level 3 Wood Formwork Carpenter (11UY0011-3) certification.

- Personnel involved in concrete casting tasks must have Level 3 Concrete Worker (12UY0049-3) certification.

7. After the completion of the rough construction, repair works are initiated. The application of plaster, paint, insulation, etc., on the inner and outer surfaces of strengthening walls, leveling concrete and coating material arrangements on damaged floors, electrical and mechanical installations, and if necessary, door and window manufacturing are carried out to complete the reinforcement works. The major points to be considered at this stage are listed below:

    - Necessary mobile, fixed temporary scaffolds, and precast steel and aluminum alloy component scaffolds, if required, must be designed and constructed in accordance with TS EN 12811-1 and TS EN 12810-2 standards in a manner that will not accidentally move or collapse, and the scaffold components must be designed to be safely transported, assembled, used, maintained, disassembled, and stacked. The materials used must meet the requirements given in TS EN 12810-1 and TS EN 12811-2 standards where design data is provided and must be robust and durable enough to withstand normal working conditions. It is mandatory for all personnel working on these scaffolds to have received working at heights training, and they must use full-body harnesses and fall prevention equipment.

Figure 10: Exterior Scaffolding Sample Image



hs: Scaffold Height
bs: Scaffold Outreach Width (From center to center of uprights)
ls: Scaffold Outreach Length (From center to center of uprights)
hl: Scaffold Storey Height
hk: Railing Height
1: Anchor
2: Vertical Plane Reinforcement (Transverse)
3: Node Point
4: Main Railing
5: Intermediate Railing
6: Toe Board
7: Side Protection
8: Upright
9: Transverse Intermediate Connection
10: Joint Element
11: Platform
12: Vertical Plane Reinforcement (Longitudinal)
13: Longitudinal Intermediate Connection
14: Base Plate
15: Cage Beam
16: Tie Element
17: Vertical Frame
18: Stair
19: Height-Adjustable Base Plate
20: Ground Fixing Base

- Personnel responsible for scaffold installation must have Scaffold Installation Level 3 (12UY0056-3) certification.
- Personnel working on electrical installations must have a minimum of Electrical Installer Level 3 (15UY0241-3) certification.
- Personnel assembling electrical panels and boards must have a minimum of Electrical Panel Assembler Level 3 (12UY0075-3) certification.
- Torque-controlled screwdrivers and tightening equipment should be used during the assembly of electrical panels/boards. Appropriate tightening forces should be predetermined based on the type of switchgear or the dimensions of screws and nuts and communicated to responsible personnel.
- Personnel involved in the mechanical installation process must have a minimum of Heating and Natural Gas Interior Plumbing Construction Staff Level 3 (11UY0031-3) certification.
- Personnel placing wall anchors must have a Wall Builder Level 3 (12UY0048-3) certification.
- Personnel conducting plastering work must have a Plasterer Level 3 (11UY0024-3) certification.
- Personnel conducting gypsum work must have a Gypsum Plaster Applicator Level 3 (12UY0055-3) certification.
- Personnel involved in ceramic tile work must have a Ceramic Tile Coverer Level 3 (12UY0051-3) certification.
- Personnel involved in painting work must have a Construction Painter Level 3 (11UY0023-3) certification.
- All personnel working in the field must have a minimum of Construction Worker Level 2 (16UY0253-2) certification.
- Material Safety Data Sheets (MSDS) for repair mortars, paints, etc., should be reviewed by occupational health physicians, and employees should be informed (inhalation, eye contact, etc.).
- All personnel carrying heavy loads must receive training in manual lifting and carrying.

Table 13: Building Strengthening & Superstructure Works Control Table

WORK TO DO:	Building Reinforcement & Superstructure Works
WORKING METHOD	
<u>Technical Description and Requirements</u> **Construction Technique and Technology** – It is explained in article 7 and its sub-articles under the sub-heading of Building Reinforcement and Superstructure Works. **Use of Work Equipment** – EXCAVATOR LOADER – TRANSIT MIXER – TRUCK – ROCK BREAKER – SPIRAL – MORTAR MIXER – AIR COMPRESSOR	

- MOBILE CONCRETE MIXER
- REBAR BENDING MACHINE
- REBAR CUTTING MACHINE
- CORDLESS / FIXED DRILL
- CORDLESS SCREW/NUT DRIVER
- PHASE VOLTAGE DETECTOR
- MULTIMETER
- TORQUE CONTROLLED SCREWDRIVER
- TORQUE CONTROLLED FASTENING
- INDOOR SCAFFOLDING (MOBILE / FIXED)
- HAMMER & CHISEL
- CORDLESS SCREWDRIVER
- EXTENSION CABLE

Use of Chemical Substances:

- CEMENT, PLASTER, EPOXY BINDER, PAINT, PAINT THINNER

Access to the Work Area:

- The maximum speed within the campus is limited to 20 km/h for trucks.
- The maximum speed within the campus is limited to 20 km/h for mobile cranes.

Handling & Supply of Materials

- Details regarding the removal, transportation, and unloading of consumables and related technical materials are specified and explained under the subheading "General Construction Site Rules."

PPE- GENERAL	**Need for Trained Personnel**
• HARD HAT TS EN 397+A1 • EARPLUG TS EN 352-2 • PROTECTIVE GLASSES TS EN ISO 16321-3 • GENERAL PURPOSE WORK GLOVES TS EN ISO 21420 • WORK SHOES TS EN ISO 20347 • HALF FACE MASK TS EN 140 FULL BODY SAFETY BELT EN 361 • ROPE BRAKING SYSTEM EN 353 • SAFETY HOOK EN 362 • FALL PREVENTION SAFETY ROPES EN 355	• MECHANICAL ENGINEER • ELECTRICAL ENGINEER • CONSTRUCTION ENGINEER • ARCHITECT • SCAFFOLDING ELEMENT ELEMENT LEVEL 3 (12UY0056-3) • ELECTRICAL INSTALLER LEVEL 3 (15UY0241-3) • HEATING AND NATURAL INTERNAL SYSTEM. DO IT. THU. SLOPE. 3 (11UY0031-3) • BRICKLAYER LEVEL 3 (12UY0048-3) • PLASTER LEVEL 3 (11UY0024-3) • GYPSUM PLASTER APPLICANT LEVEL 3 (12UY0055-3) • CERAMIC TILE SEATER LEVEL 3 (12UY0051-3) • CONSTRUCTION PAINTER LEVEL 3 (11UY0023-3) • CONSTRUCTION WORKER LEVEL 2 (16UY0253-2)

Table 14: Risk Analysis for Structural Reinforcement

Work	Source of Danger	Risk	Precaution
Natural Gas Line Interventions	Gas leak and explosion	Trauma Severe burn Loss of limb Death	• Prior to excavation works, it should be verified through AKSA (Hatay Gas Distribution Company) whether there is a natural gas pipeline in the relevant area. • Natural gas pipelines must be shut down before any intervention and protected using the LOTO system. • Interventions in existing pipeline systems or the establishment of new pipelines will be conducted under the supervision of a Natural Gas Infrastructure Construction Control Personnel Level 4 (12UY0042-4). • Personnel assigned to the task are required to wear work boots, protective goggles, a hard hat, a dust mask, and ear protection. • The working areas will be delineated with safety tapes, and safety signs will be displayed to communicate potential risks.
Wall Demolition	Being under heavy load Electric shock	Crush Trauma Electric shock	• The danger that the building elements to be demolished may contain electrical lines should be taken into consideration.

Work	Source of Danger	Risk	Precaution
			Cutting off the energy of the area in question; crusher, driller etc. The electrical needs of the devices must be met from other lines. • LOTO rules should be activated in case of power outage. • Before working, place sockets, switches, commutators, junction boxes, etc. on the wall. The presence of equipment should be checked and equipment and cable disassembly should be carried out in accordance with the instructions of the electrical engineer before demolition. • Before demolition, it should be verified that there is no energy via the socket, junction box and switch using a phase voltage detector. • All hammer drilling equipment to be used in crushing must pass the PAT test and be confirmed to be electrically suitable. • Necessary care must be taken to ensure that electrical extension cables are not damaged and that the cables do not come into contact with water. Extension cords and other

Work	Source of Danger	Risk	Precaution
			electrical appliance power cords will be checked daily. The use of damaged cables is not allowed. • Other sides of the walls to be demolished should be separated by a safety barrier and warning signs should be installed. • Walls should not be demolished as a whole, but in pieces in a controlled manner. • It is mandatory for the personnel on duty to wear work shoes, protective glasses, hard hat, dust mask and headphones.
Wall Demolition	Heavy objects falling from height. Employees falling from height.	Head and body traumas Death	• The building perimeter will be separated by security barriers and warning signs. • High-risk areas where parts of the wall to be demolished will fall will be determined before the work and will be monitored by responsible personnel. • Personnel involved in breaking the wall will use full body safety belts and fall arrest equipment. The equipment in question will be connected to lifelines that will be fixed to solid structures. (The personnel in question

Work	Source of Danger	Risk	Precaution
			must receive training on working at height.) • The demolished wall sections will be secured with temporary railings and warning tapes/signs until the new wall is installed. If night work is done, the tapes and signs in question must be reflective. • It is mandatory for the personnel on duty to wear work shoes, protective glasses, hard hat, dust mask and headphones.
Opening the curtain and column sheath surroundings	Construction Machinery	Injury due to impact during work machine manoeuvre. Extremities being pinched or cut during work machine adjustment and parts replacement.	• Work machine suitability should be verified with a periodic inspection report. • Before operating the work machine, it should be visually inspected by the operator and the presence of a physical defect should be evaluated. • Work machines should be checked functionally by the operator before each work. (reversing warning siren, warning/warning lights, etc.) • The work machine can only be used by an authorized Operator. Operator professional suitability documents must be checked and

Work	Source of Danger	Risk	Precaution
			verified. • Other than authorized personnel and experts (Operator, Mechanical Engineer, etc.) cannot be allowed to intervene in the work machine. • The work machine working area will be separated by safety strips and it should be stated with safety signs that it is forbidden to approach the work machine. • It is mandatory for the personnel on duty to wear work shoes, protective glasses, hard hat, dust mask and headphones.
Opening the curtain and column sheath surroundings	Hole	Injury due to falling into a hole.	• Warning tapes and signs should be installed around the excavated areas. If night work is done, the tapes and signs in question must be reflective.
Nailing anchor rods to existing columns, beams and foundations	Rusty metal Sharp, Pointed parts Power tool use	Severe trauma due to cutting, stinging Tetanus Respiratory disorders Burr/small pieces getting into the eyes. Electric shock	• It is essential that all electrical equipment used in drilling and cutting reinforcement be subjected to PAT testing and verified to be electrically safe. • Extension cables and device supply cables must be physically protected. Cables should not be left lying on the ground, and wheelbarrows and workers should not be allowed to pass over them.

Work	Source of Danger	Risk	Precaution
			Cables should not be allowed to remain in puddles of water. • Before use, electrical equipment should be visually inspected and devices with physical defects should be excluded from use. • Areas where anchor rods are installed should be posted with warning tapes and signs. If night work is done, the tapes and signs in question must be reflective. • Employees must have had their tetanus vaccination. (The Workplace Physician must inform employees about infections and tetanus caused by rusty metals during training.) • All employees must use the appropriate type of protective gloves. • The necessity of eye wash despite the use of powder and chemicals should be determined by the workplace physician. • Personnel who will process reinforcing bars must have the Reinforced Concrete Blacksmith Level 3 (11UY0012-3) certificate. • Sharp, pointed ends should be chamfered

Work	Source of Danger	Risk	Precaution
			with the appropriate type of cutter or spiral. A rubber buffer should be installed on sharp, pointed ends that cannot be corrected. • It is mandatory for the personnel on duty to wear work shoes, protective glasses, hard hat, dust mask and headphones.
Nailing anchor rods to existing columns, beams and foundations	Epoxy adhesives	Disorders due to chemical contact.	• MSDS of epoxy adhesives should be checked by workplace physicians and employees should be informed (volatile properties, eye contact, etc.). • The necessity of eyewash despite the use of powder and chemicals should be determined by the workplace physician.
Laying reinforcement element reinforcement	Metal, cutting, bending Rusty metal Sharp, pointed parts Power tool use	Severe trauma due to cutting, stinging Limb compression Tetanus Respiratory disorders Burr/small pieces getting into the eyes. Electric shock	• Personnel who will process reinforcing bars must have the Reinforced Concrete Blacksmith Level 3 (11UY0012-3) certificate. • It is essential for cutting and bending reinforcement and all electrical equipment to be subjected to PAT testing and to verify that it is electrically safe. • Extension cables and device supply cables must be physically protected. Cables should not be left lying on the ground,

Work	Source of Danger	Risk	Precaution
			and wheelbarrows and workers should not be allowed to pass over them. Cables should not be allowed to remain in puddles of water. • Before each use, electrical equipment should be visually inspected and devices with physical defects should be excluded from use. • When using an electrical reinforcement bending device, protective gloves should be removed before working near the bending heads. • Sharp, pointed ends should be chamfered with the appropriate type of cutter or spiral. A rubber buffer should be installed on sharp, pointed ends that cannot be corrected. • It is mandatory for the personnel on duty to wear work shoes, protective glasses, hard hat, dust mask and headphones.
Laying reinforcement element reinforcement	Temporary Work Scaffolding.	Falling from height Traumas due to the impact of objects falling from heights.	• It is essential that the scaffoldings to be installed meet the TS EN 12811-1 standard conditions, regardless of their size. It is mandatory for all personnel to work on these scaffolds to have received training on

Work	Source of Danger	Risk	Precaution
			working at height and to use full body safety belts and fall arrest equipment. • It is mandatory for the personnel on duty to wear work shoes, protective glasses, hard hat, dust mask and headphones.
Mold and Concrete Pouring	Scaffolding/ladder Electrical tool/equipment Chemical use	Falling from height Part/object falling from height Electrical shock Chemical exposure	• Personnel who will work in mold works must have a Wood Moulder Level 3 (11UY0011-3) certificate. • Personnel who will undertake concrete casting works must have the Concreter Level 3 (12UY0049-3) certificate. • Scaffolds must comply with TS EN 12811-1 standard • Scaffolds must be installed and labeled by scaffold installers. • There must be horizontal lifelines on the scaffolding. • Scaffold workers should use parachute type safety belts with stoppers. • Scaffold workers should attach themselves to lifelines using double lanyards. • Safety nets should be placed in the work area to prevent parts from falling.

Work	Source of Danger	Risk	Precaution
			• PAT checks and periodic checks of electrical appliances should be carried out before use. • Electrical cables must be protected against water and crushing and work must be done under suitable conditions. • PPE use is a must and should be constantly checked in the site. • MSDSs of chemicals should be kept on site and employees should be trained on chemical exposure.
Wall Construction	Heavy Load Carrying. Chemicals. Temporary Work Scaffolding.	Orthopedic disorders. Disorders due to chemical contact. Falling from height. Traumas due to the impact of objects falling from a height.	• Personnel who will build walls must have a Bricklayer Level 3 (12UY0048-3) certificate. • It is essential that the scaffoldings to be installed meet the TS EN 12811-1 standard conditions, regardless of their size. It is mandatory for all personnel who will work on the scaffolds in question to be trained to work at height and to use full-body safety belts and fall arrest equipment. • Mortar etc. MSDS of the materials should be checked by workplace physicians and employees should be informed (breathing, eye

Work	Source of Danger	Risk	Precaution
			contact, etc.). • It is mandatory for the personnel on duty to wear work shoes, protective glasses, hard hat, dust mask and headphones.
Electrical Installation	Power tools/equipment	Electric shock Falling from high	• At minimum, personnel who will work in electrical installations; Must have an Electrical Plumber Level 3 (15UY0241-3) certificate. • Personnel who will assemble electrical panels and panels must have, at a minimum, the Electrical Panel Installer Level 3 (12UY0075-3) certificate. Electrical or Electrical and Electronics Eng. is responsible for all electrical work. will be carried out under the supervision of • Torque controlled screwdrivers and tightening equipment should be used when working with electricity. Appropriate tightening forces must be determined in advance according to the type of switchgear or screw and nut dimensions and reported to the responsible personnel. • All personnel must use appropriate types

Work	Source of Danger	Risk	Precaution
			of insulated electrical gloves and work shoes according to low voltage safety limits. The suitability of the PPE in question must be specifically determined by the OHS Specialist through standards and CE markings. • It is essential that the scaffoldings to be installed meet the TS EN 12811-1 standard conditions, regardless of their size. It is mandatory for all personnel to work on these scaffolds to have received training on working at height and to use full body safety belts and fall arrest equipment. • Scaffolds must be grounded. • It is essential that the scaffoldings to be installed meet the TS EN 12811-1 standard conditions, regardless of their size. It is mandatory for all personnel working on these scaffolds to have received training on working at height and to use full-body safety belts and fall arrest equipment.
Lighting Element Installation	Temporary Work Scaffolding. Electric.	Falling from height. Traumas due to the impact of objects. falling from a height.	• The employed personnel must have an Electrical Plumber Level 3 (15UY0241-

Work	Source of Danger	Risk	Precaution
		Electric shock.	3) certificate. • Before the installation of the lighting element, the electrical energy of the line in question must be cut off via the switchgear equipment and secured with the LOTO system. • Switches, commutators, etc. where electrical energy is cut off before disassembly. It should be checked with control devices such as phase voltage detectors over equipment connections. • It is essential that the scaffoldings to be installed meet the TS EN 12811-1 standard conditions, regardless of their size. It is mandatory for all personnel who will work on the scaffolds in question to be trained to work at height and to use full-body safety belts and fall arrest equipment. • All personnel must use appropriate types of insulated electrical gloves and work shoes according to low voltage safety limits. The suitability of the PPE in question must be specifically verified by the OHS Specialist through standards

Work	Source of Danger	Risk	Precaution
			and CE markings.
Gypsum plaster application	Temporary Work Scaffolding. Chemical Matter. Electric	Falling from height. Traumas due to the impact of objects falling from a height. Electric shock. Disorders due to chemical contact.	• Personnel who will perform plaster/plaster operations must have a Gypsum Plaster Applicator Level 3 (12UY0055-3) certificate. • It is essential that the scaffoldings to be installed meet the TS EN 12811-1 standard conditions, regardless of their size. It is mandatory for all personnel who will work on the scaffolds in question to be trained to working at height and to use full-body safety belts and fall arrest equipment. • Control lighting, mixer etc. It is essential that all electrical equipment be subjected to PAT testing and verified to be electrically safe. • Extension cables and device supply cables must be physically protected. Cables should not be left lying on the ground, and wheelbarrows and workers should not be allowed to pass over them. Cables should not be allowed to remain in puddles of water. • Repair mortars, plaster, plaster etc. MSDS of the materials should be

Work	Source of Danger	Risk	Precaution
			checked by workplace physicians and employees should be informed (breathing, eye contact, etc.). • It is mandatory for the personnel on duty to wear work shoes, protective glasses, hard hat, dust mask and headphones.
Paint	Temporary Work Scaffolding. Chemical Matter Electric	Falling from height Traumas due to the impact of objects falling from a height. Electric shock. Disorders due to chemical contact	• Personnel who will work in painting works must have a Construction Painter Level 3 (11UY0023-3) certificate. • It is essential that the scaffoldings to be installed meet the TS EN 12811-1 standard conditions, regardless of their size. It is mandatory for all personnel who will work on the scaffolds in question to be trained to work at height and to use full-body safety belts and fall arrest equipment. • Control lighting, mixer etc. It is essential that all electrical equipment be subjected to PAT testing and verified to be electrically safe. • Extension cables and device supply cables must be physically protected. Cables should not be left lying on the ground, and wheelbarrows and workers should

Work	Source of Danger	Risk	Precaution
			not be allowed to pass over them. Cables should not be allowed to remain in puddles of water. • Repair mortars, paint, solvents, etc. MSDS of the materials should be checked by workplace physicians and employees should be informed (breathing, eye contact, etc.). • It is mandatory for the personnel on duty to wear work shoes, protective glasses, hard hat, dust mask and headphones.
Ceramic tile etc. flooring works.	Chemical matter Electric	Electric shock. Disorders due to chemical contact	• Personnel who will work in ceramic tile works must have the Ceramic Tile Coater Level 3 (12UY0051-3) certificate. • Mixer, crusher/driller etc. It is essential that all electrical equipment be subjected to PAT testing and verified to be electrically safe. • Extension cables and device supply cables must be physically protected. Cables should not be left lying on the ground, and wheelbarrows and workers should not be allowed to pass over them. Cables should not be allowed to remain in puddles of water. • Adhesive mortars etc. MSDS of the

Work	Source of Danger	Risk	Precaution
			materials should be checked by workplace physicians and employees should be informed (breathing, eye contact, etc.). • It is mandatory for the personnel on duty to wear work shoes, protective glasses, hard hat, dust mask and headphones.
Mechanical Installation	Electric	Electric shock.	• At a minimum, the personnel who will take part in the mechanical installation process; Heating and Natural Gas Internal Installation Construction Personnel must have a Level 3 (11UY0031-3) certificate. • It is essential that all electrical equipment be subjected to PAT testing and verified to be electrically safe. • Extension cables and device supply cables must be physically protected. Cables should not be left lying on the ground, and wheelbarrows and workers should not be allowed to pass over them. Cables should not be allowed to remain in puddles of water. • It is mandatory for the personnel on duty to wear work shoes, protective glasses, hard hat, dust mask and headphones.

8.1.2 Energy Efficiency Studies

a) Faculty of Arts and Science

The following works will be carried out within the scope of energy efficiency studies;

- Insulation of 4,783.44 m2 wall structure with 6 cm rock wool insulation material
- Replacement of 904 single-glazed existing windows (4+11+4) with a total area of 2,351 m2 with new ones with double glass and plastic joinery with a U value of 1.75
- Unused attic 16cm thick glass wool roofing mat facility with one side covered with aluminum foil (0.035 ≤ Thermal conductivity ≤ 0.040W/(m.K)) (Application area 5.910,00m2)
- Reinforcement of the insulation of the building envelope, removal of the existing boilers and replacement with 4 (550 kW 70/50 C) floor type condensing boiler cascade system, establishment of an outdoor weather compensated automation system for heating and installation (This proposal includes the replacement of 439 thermostatic radiator valves, circulation replacement of pumps with EI3-4 efficient pumps and isolation of the installation are included.)
- Building insulation reinforcement and heating system renewal
- Renewal of the building's cooling needs as a new 1,551.46 kW VRF system with SEER = 6.0 instead of the current inefficient (COP < 2.00) split air conditioners
- Replacement of 2149 inefficient lighting systems with LED fixtures
- Installation of 86 units of 1000 m3/h heat recovery VAM devices
- Replacement of 22 kW cell aspirators with EC fan motor devices and installation of a time-controlled timer system suitable for usage hours

b) Vocational School of Health Sciences

- Insulation of 2,522.42 m2 wall structure with 6 cm rock wool insulation material
- Replacement of 360 single-glazed existing windows (4+11+4) with a total area of 805.24 m2 with new ones with double glass and plastic joinery with a U value of 1.75
- Unused attic 16cm thick glass wool roofing mat facility with one side covered with aluminum foil (0.035 ≤ Thermal conductivity ≤ 0.040W/(m.K)) (Application area 2640.00m2)
- Reinforcing the insulation of the building envelope and removing the existing boilers and replacing them with 8 (150 kW 70/50 C) wall type condensing boiler cascade systems,
- Installation of outdoor weather compensated automation system of heating and hot water system and installation
- Building insulation reinforcement and heating system renewal
- Using a new 436.63 kW VRF system with SEER = 6.0 instead of the currently inefficient (COP < 2.00) split air conditioners for the building's cooling needs.
- 10-30 m3/h – 60-90 mSS and IE3-5 energy class pump renewal of existing hydrophores with IE1 and IE2 energy class pumps
- Providing ventilation by installing 11 heat recovery VAM devices and installing a time-controlled timer system by replacing 2 1.5 kW cell aspirators with devices with EC fan motors.

c) Faculty of Agriculture

- Insulation of 6.370,17 m2 wall structure with 6 cm rock wool insulation material
- Replacement of 834 single-glazed existing windows (4+11+4) with a total area of 1,890.48 m2 with new ones with double glass and plastic joinery with a U value of 1.75
- Replacement of 3 pieces of 26.23 m2 with metal insulated doors with U=4.0 and 5.9 m2 with new ones with automatic transition or good thermal insulation with a U value of 2.5
- Unused attic 10 cm thick glass wool roofing mat facility with one side covered with aluminum foil (0.035 ≤ Thermal conductivity ≤ 0.040W/(m.K)) (Application area 4.660,50m2)
- Reinforcement of building envelope insulation and removal of existing boilers and replacement with 3 (550 kW 70/50 C) floor type condensing boiler cascade system.
- Installation of outdoor weather compensated automation system of heating and installation
- Building insulation reinforcement and heating system renewal
- Renewal of the building's cooling needs as a new 1,123.97 kW VRF system with SEER = 6.0 instead of the current inefficient (COP < 2.00) split air conditioners
- Replacement of 1760 inefficient lighting systems with LED fixtures
- 26 units of 1,000.00 m3/h capacity devices (VAM) will be used, and a new ventilation system will be built where heating and cooling demand will be provided by package devices and radiators located in the spaces.
- Replacement of 16 kW cell aspirators with EC fan motor devices and installation of a time-controlled timer system suitable for usage hours.

d) Faculty of Education

- Insulation with 6 cm rock wool insulation material in a 4,066.09 m2 wall structure
- Suggestion to eliminate 645 double-glazed window hinge deteriorations and wick leaks and to cover the outer glass with a film
- Unused attic 15 cm thick glass wool roof mat facility with one side covered with aluminum foil (0.035 ≤ Thermal conductivity ≤ 0.040W/(m.K)) (Application area 2.545,00m2)
- Recommendation to strengthen the insulation of the building envelope, remove the existing boilers and replace them with a cascade system of 11 (150 kW 80/60 C) wall-type condensing boilers, and install an outdoor weather-compensated automation system for the heating system and installation.
- Building insulation reinforcement and heating system renewal
- Renewal of the building's cooling needs as a new 920 kW VRF system with SEER = 6.0 instead of the current inefficient (COP < 2.00) split air conditioners
- Replacement of 1159 inefficient fluorescent fixtures with LED fixtures
- 10-30 m3/h – 60-90 mSS and IE3-5 energy class pump renewal of existing hydrophores with IE1 and IE2 energy class pumps
- Providing ventilation by installing 1000 m3/h heat recovery VAM devices for 45 classrooms with a capacity of 75 m² and 64 people.

OHS Precautions to be Taken in Energy Efficiency Studies

Occupational health and safety measures that must be taken during the execution of energy efficiency studies are but not limited to listed below,

- In cases where there is a possibility of material falling from above, when the isolation team is working below and other teams continue to work on top, work will not be started without taking the necessary precautions and making a correct work planning of the teams.
- No work will be done on wet surfaces. Daily zone cleaning will be carried out in the work area.
- Material suitable for the job to be done will be selected and used.
- PPE suitable for the job to be done will be selected and used.
- Adequate lighting will be provided in the working environment.
- Hand tools and electrical cables will not be left scattered in the work environment.
- Electrical devices that are finished work will be unplugged.
- The three-point rule will be applied when working on the stepladder (two feet and one hand or two hands and one foot should be on the ladder). Ladders with anti-slip pads will be used to prevent the stairs from slipping.
- Ladders shall be undamaged, non-slip and of equal height.
- If the hand tools, scaffolds and ladders used are suitable for use, they will be labelled, and those that are not suitable will be labelled red and removed from the field.
- Ergonomic rules will be followed during manual material handling.
- The traffic route specified in this plan will be used during material transportation by vehicle.
- The hand tools to be used will be in good condition, with no breaks or cracks, and no insulation defects.
- Pressure cylinders will not be kept in heat. At the site, where a cylinder storage area will be created, will have a porch on top, it will be surrounded and the cylinders will be chained to prevent them from falling over.
- Compressed gas cylinders will be separated as empty/full in the storage area.
- There will be clamps on the hose connections of the tubes.
- Compressed gas cylinders will not be crushed or damaged, and hoses, valves and torches will be checked before use.
- There will be fire extinguishers and first aid kits ready on site.
- Emergency contact information and emergency assembly areas will be announced to all personnel through training.
- PAT checks and periodic checks of electrical appliances and equipment will be carried out.
- Electrical devices and cables will be checked and appropriate ones will be labelled.
- Chemicals will not be left open in the field, the chemicals that require use will be placed in the chemical cabinet.
- MSDS Forms for chemicals will be kept on site.

- Periodic checks of the equipment crane, manlift etc. will be made. The area around the site will be limited when using lifting tools.
- A slinger will be kept on site during material shipment.
- Damaged eye bolts, slings and ropes will be marked in red and removed from the field.
- All work on solar power plants will be carried out under the supervision of an authorized Electrical or Electrical and Electronics Engineer.
- It is mandatory for all personnel to work in solar power plant construction to have received training on working at height.
- Horizontal lifeline installation on roofs is required for the connection of fall arrest equipment.
- It is essential that the truck and mobile crane used to transport all the panels and carry them to the site must act in accordance with the traffic action plan.
- In mobile crane lifting and transport operations, the transport line will be secured (preventing entry to areas that pose a risk of falling).
- Mobile crane, eye bolt and sling inspection reports will be checked and their suitability will be verified.
- Personnel who install guiding ropes and carrier slings must have a Pointer Level 2 (15UY0218-2) Slinger Training certificate.
- During site inspections, the presence of PAT control and approval labels on electrical devices will be checked. The use of devices and equipment without a conformity label is not allowed. (Extension cables are also included in this scope.)
- Personnel who will work in electrical installations must have at least; Must have an Electrical Plumber Level 3 (15UY0241-3) certificate.
- Personnel who will assemble electrical panels and panels must have, at a minimum, the Electrical Panel Assembler Level 3 (12UY0075-3) certificate.
- Torque controlled screwdrivers and tightening equipment should be used during electrical panel/table assembly. Appropriate tightening forces must be determined in advance according to the type of switchgear or screw and nut dimensions and reported to the responsible personnel.
- The electrical system grounding line must be reported by authorized Electrical or Electrical and Electronics Engineers.
- Insulated work gloves (suitable for low voltage conditions) and insulated work shoes should be used against electric shock.
- Safety net is a network system used to prevent human or material falls in construction sites.

CASCADE sectional condensing premix floor type boiler plant.

The existing boilers will be dismantled, removed from the building, and transported. The process of transporting the new boilers, moving them into the building, and assembling them will be outlined in a work method prepared by the contractor and submitted for approval by the consultant. After approval of the method, work can commence. The main elements and considerations for the boiler installation process are listed below.

- All work must be carried out under the supervision of a qualified Mechanical Engineer.
- A method for the dismantling and removal of the existing boiler and its delivery to the university must be defined.
- Relevant checks will be carried out by an authorized Asbestos Removal Specialist before starting the installation work.
- Observation and/or sampling by Asbestos Removal Specialist. If there is no asbestos material, work will be done.
- In case of asbestos material as a result of the checks made by Asbestos Removal Specialist;
    - Asbestos risk analysis,
    - Asbestos removal worker training,
    - Asbestos action plans, and,
    - Asbestos awareness training,
    - Environment and Personal exposure measurements will be made.
- The truck used in the transport process of the new boiler must adhere to the traffic action plan.
- The route to be used in the removal of the dismantled boiler and the installation of the new boiler must be specified in the construction method. (If wall demolition and reconstruction are required, personnel involved should have a Bricklayer Level 3 (12UY0048-3) certificate.)
- Personnel involved in the mechanical installation process must have a minimum of Heating and Natural Gas Internal Installation Construction Personnel Level 3 (11UY0031-3) certificate.
- The suitability of the equipment to be used in lifting and transporting the boiler in the indoor environment must be verified through periodic inspection reports (issued by authorized Mechanical Engineers).
- The surroundings of the heat center during the renovation process must be enclosed with caution tape to prevent unauthorized personnel entry.
- Personnel performing electrical installation and panel assembly tasks must have a minimum of an Electrical Panel Assembler Level 3 (12UY0075-3) certificate.
- The grounding line of the electrical system must be reported by authorized Electrical or Electrical Electronics Engineers.
- For protection against electrical shocks, insulated gloves (suitable for low-voltage conditions) and insulated work shoes must be used.
- All personnel handling heavy loads must receive training in manual lifting and carrying.

Table 15: Boiler Plant Control Table

Work to do:	Natural gas boiler plant.

WORKING METHOD

Technical Description and Requirements

Construction Technique and Technology

- The existing boiler will be dismantled, and in its place, a smaller-sized boiler will be securely fixed to the floor. Subsequently, the burner, natural gas pipeline connections, as well as the supply and return hot water connections, will be established.

Use of Work Equipment

- Truck
- Mobile crane
- Load carrying equipment (eyebolt, sling, hook, chain)
- Torque wrench
- Cordless drill
- Screwdriver set
- Multimeter
- Cable cutting and stripping hand equipment (chisel, pliers, needle nose, etc.)
- Mechanical assembly equipment (pipe cutting, bending)

Use of Chemical Substances

- Cleaning chemicals
- Mechanical system oils

Access to Workspace

- The access road is given in plan form under the title of General Construction Technique.
    - The maximum speed for trucks within the campus is limited to 20 km.
    - The maximum speed for mobile cranes within the campus is limited to 20 km.

PPE - GENERAL	Need for Trained Personnel
1. EN 397 HARD HAT 2. EN 420 GENERAL PURPOSE GLOVES 3. EN 345 SAFETY SHOES 200J 4. EN 420 INSULATED GLOVES 5. EN 345 INSULATED WORK SHOES 200J 6. EN 340 GENERAL WORK CLOTHES	1. MECHANICAL ENGINEER 2. TRUCK DRIVER WITH CLASS C DRIVER'S LICENSE 3. MOBILE CRANE OPERATOR (AUT. C.: 13UY0172-3 | LEVEL 3) 4. MARKER (AUT. C.: 15UY0218-2 | LEVEL 2) 5. HEATING AND NATURAL GAS DOMESTIC CONTACT. THU. LEVEL 3 (11UY0031-3) 6. ELECTRICAL PANEL INSTALLER (AUTHORITY: 12UY0075-3 | LEVEL 3)

Table 16: Risk Analysis For Boiler Installation

WORK TO DO	DANGER	RISK	PRECAUTION
Material Handling	Truck	Injury, death as a result of traffic accident	▪ The truck will be used by employees with a class C driver's license. ▪ City speed limit will not be exceeded. (50km/h) ▪ The speed limit of the building campus area is limited to 20 km/h. Movements and maneuvers on the field will be observed by an OHS specialist.
Material Handling	PV panels and mounting parts		▪ All materials will be placed balancedly in the center of the truck bed, taking into account the center of gravity. ▪ The unit will be fixed with straps. ▪ Assembly parts will be transported packaged on pallets. ▪ Truck side and rear covers will be closed and fixed

WORK TO DO	DANGER	RISK	PRECAUTION
Material Handling and Unloading	Mobile Crane and lifting equipment	Injury or death due to PV panels or parts falling over	▪ The crane can be used by a Mobile Crane Operator (Auth. ID: 13UY0172-3 | Level 3). ▪ Slinging and guidance will be carried out by signalmen with authorization certificates. ▪ The crane periodic inspection report will be checked and verified by an OHS expert before work. (It will be requested to be provided within a maximum period of 6 months.) ▪ Periodic inspection report of slings, chains, eye bolts and hooks will be checked and verified by the OHS expert before the work. (It will be requested to be provided within a maximum period of 6 months.) ▪ Slings, eye bolts and hooks will be visually checked before work. Carrying capacity and physical condition will be verified. ▪ Mobile crane hydraulic fixing legs will be fixed to the ground. ▪ Before the lifting operation, the mobile crane boom angle and the lifting capacities related to that angle will be checked. ▪ The load will be directed by the pointer over the control rope. ▪ Access to the work area will be restricted throughout the lifting and transport operation. Passing under load is prohibited. ▪ Warning signs will be installed. ▪ Work will be subject to the WORK PERMIT SYSTEM.

WORK TO DO	DANGER	RISK	PRECAUTION
Cutting off the Natural Gas Line	Natural gas		▪ Before dismantling, the natural gas line must be cut and secured with LOTO. ▪ It should be checked with gas detection devices that there is no shortage of natural gas. ▪ After the new line connections are completed, gas must be re-introduced in accordance with LOTO rules. After opening the gas valves, it should be checked for leaks with gas detection devices.
Cutting off the electrical power through the electrical panel, re-energizing	Power board, line cable	Injury or death as a result of the load falling during lifting, carrying and lowering	▪ Panel intervention will be carried out by the Electrical Panel Installer (Auth. C.: 12UY0075-3 | Level 3). ▪ During electrical work, 1kV insulated gloves in accordance with EN 60903:2003 standard, insulated electrician work shoes in accordance with EN 344 standard will be used, and an insulated mat (EN 60243-1) or stand (EN 60243-1) will be placed on the floor. ▪ Work will be carried out by at least two technical employees. These people will not come into contact with each other during work. ▪ Technical personnel who will carry out the work in question will be trained on the effects of electric shock and first response and a drill will be carried out.

- Along with the spare parts of the existing motor & pump elements in the circulation system; replacement with integrated frequency controlled high efficiency systems.
    - Personnel responsible for motor line and panel switchgear connections must have a minimum certification of Electrical Panel Assembler Level 3 (12UY0075-3).
    - Torque-controlled screwdrivers and tightening equipment should be used during electrical panel/board assembly. Appropriate tightening forces should be predetermined based on the type of switchgear or nut and bolt sizes and communicated to the responsible personnel.
    - Insulated gloves (suitable for low voltage conditions) and insulated work boots should be worn to protect against electrical shocks.
    - LOTO system should be used for panel safety.
    - All personnel involved in carrying heavy loads must undergo manual lifting and carrying training.

Table 17: Installation of Motor Pump Combinations With Integrated Frequency Control Work Control Table

Work to do:	Installation of motor pump combinations with integrated frequency control.

WORKING METHOD

Technical Description and Requirements

Construction Technique and Technology

- The current engine energy will be cut off, first the electrical connections will be removed using a screwdriver with a suitable head, and then the fixing connections will be removed and stacked on the floor. Pumps will be removed with appropriate hand equipment and stacked on the floor. Combined motor pump elements will be fixed to the line pipe in accordance with the project and electrical connections specified by the manufacturer will be made.
- During panel assembly, a ferrule of appropriate size will be used and the live end will not be left exposed.

Use of Work Equipment

- Electrical tools (Pliers, control pen, screwdriver, etc.)
- Multimeter

Use of Chemical Substances

- It is not intended to use any chemicals.

Access to Workspace

- The heat center is inside the building.

Transportation of Materials

Materials will be carried manually. (Manual handling training should be given.)

PPE - GENERAL	Need for Trained Personnel
1. EN 397 HARD HAT 2. EN 420 INSULATED GLOVES 3. EN 345 INSULATED WORK SHOES 4. EN 340 GENERAL WORK CLOTHES	1. Electrical Panel Installer (Auth. C.:12UY0075-3 | Level 3)

Table 18: Risk Analysis for Installation of Motor Pump

WORK TO DO	DANGER	RISKS	PRECAUTION
Cutting off line energy via electrical panel	Power board, line cable	Injury or death due to electric shock due to unauthorized switching on of the energy by other people or technical problems	▪ Panel intervention will be carried out by a minimum Electrical Panel Assembler Level 3 (12UY0075-3) under the supervision of an Electrical or Electrical Electronics Engineer. ▪ After the power is cut off, it will be verified with a multimeter that there is no energy in the neutral and ground lines. ▪ The panel will be labeled and locked in accordance with LOTO rules. ▪ Before disconnecting device connections and making new connections, it will be verified again with a multimeter that there is no energy.

WORK TO DO	DANGER	RISKS	PRECAUTION
Assembly, re-energization	Power board, line cable	Electric shock during motor and panel connection.	▪ Motor connections will be carried out by a minimum Electrical Panel Assembler Level 3 (12UY0075-3) under the supervision of an Electrical or Electrical Electronics Engineer. ▪ Panel intervention will be carried out by a minimum Electrical Panel Assembler Level 3 (12UY0075-3) under the supervision of an Electrical or Electrical Electronics Engineer. ▪ During electrical work, 1kV insulated gloves compliant with EN 60903:2003 standard and insulated electrician work shoes compliant with EN 344 standard will be used. An insulated mat (EN 60243-1) or table will be placed on the ground. ▪ The work will be carried out by a minimum of two technical workers. These individuals will not come into contact with each other during the work. ▪ Technical personnel performing the work will be provided with training on the effects of electric shock and initial intervention, and practical exercises will be conducted.

- Replacement of luminaires that have not been converted to LED with high-efficiency LED luminaires of the same size.
    - Personnel working on fixture replacement must have a minimum of Electrical Installer Level 3 (15UY0241-3) certification.
    - Insulated gloves (suitable for low voltage conditions) and insulated work shoes must be used to prevent electric shocks.
    - Personnel making connections inside the panel must have Electrical Panel Assembler (certification: 12UY0075-3 | Level 3).
    - LOTO system must be used for panel safety.
    - If the protection fuse of the lighting line is not labeled, labeling will be done.
    - Mobile work scaffolds must comply with TS EN 12811-1 standards. All personnel working on these scaffolds must have received working at heights training and must use full-body safety harnesses and fall prevention equipment.
    - Personnel responsible for scaffold installation must have Scaffold Installation Operator Level 3 (12UY0056-3) certification.

Figure 11: Mobile Scaffolding Sample Demonstration

Table 19: Completing The LED Conversion Of Existing Lighting Elements Works Control Plan

Work to do:	Completing the LED Conversion of Existing Lighting Elements

WORKING METHOD

Technical Description and Requirements

Construction Technique and Technology

- The power supply to the lighting fixture will be cut off from the column and line connection, and this will be verified using a multimeter.
- Existing lighting fixtures will have their securing screws removed. The fixture will be detached, and terminal connections will be exposed by removing any cover.
- Cable power connections at the terminals will be removed using appropriate screwdrivers. Visual inspections will be conducted on the cable, and adjustments will be made to prepare it for the connection of the new fixture.
- The new fixture will be connected via the terminals. The connection integrity will be manually checked, and the fixture will be secured to the ceiling using the connection elements provided by the manufacturer.

Use of Work Equipment

- - Electrical tools (Pliers, control pen, screwdriver, etc.), H or L type mobile scaffolding

Use of Chemical Substances

- - It is not intended to use any chemicals.
    - Newly supplied LED luminaire will be installed.

Access to Workspace

- The work area is at various points within the building. Internal transportation routes will be used.

Transportation of Materials

- Materials will be carried manually.

PPE – GENERAL	Need for Trained Personnel
1. EN 397 HARD HAT 2. EN 420 INSULATED ELECTRICAL GLOVES 3. EN 345 INSULATED WORK SHOES 4. EN 340 GENERAL WORK CLOTHES 5. FULL BODY SEAT BELT (EN 361) 6. ROPE BRAKING SYSTEM (EN 353) 7. SAFETY HOOK (EN 362) 8. FALL PREVENTOR (EN 355)	1. ELECTRICAL INSTALLER LEVEL 3 (15UY0241-3) 2. ELECTRICAL PANEL INSTALLER (ADJ. C.:12UY0075-3 | LEVEL

Table 20: Risk Analysis for Lighting Appliances System Change

WORK TO DO	DANGER	RISKS	PRECAUTION
Cutting off line energy via electrical panel	Power board, line cable	Injury or death due to electric shock due to unauthorized switching on of the energy by other people or technical problems	▪ Panel intervention electrical or Electrical and Electronics Engineering. It will be carried out under the supervision of at least an Electrical Panel Installer (Author. K.: 12UY0075-3 | Level 3). ▪ After the power is cut off, it will be verified that there is no energy in the neutral and ground lines by using a multimeter. ▪ The panel in question will be locked and labeled in accordance with LOTO rules. ▪ Before disconnecting the device onnections and making new connections, it will be verified that there is no power again by using a multimeter.
Disassembly and assembly	Scaffolding	Falling from height,	▪ H or L type mobile scaffolding will be installed. The scaffolding in question must comply with TS EN 1004-1 standards. Scaffolding installation will be carried out by personnel with a Scaffolding Installation Personnel certificate. (Qualification Code: 12UY0056-3 | Level 3) ▪ The installed mobile scaffolding must be fixed with the fixing elements provided by the manufacturer before work. Working in a mobile position is strictly prohibited. ▪ The completed scaffoldings will be checked and approved by the Field OHS Specialist. The use of unapproved mobile scaffolding is prohibited. ▪ Maximum carrying capacity information and warning signs will be on the pier. ▪ There will be kickplates on the scaffolding against material falls.

WORK TO DO	DANGER	RISKS	PRECAUTION
Disassembly, Assembly, re-energization	Power board, line cable	Material fall	▪ Luminaire disassembly and assembly; It will be carried out by technical personnel with ELECTRICAL INSTALLER LEVEL 3 (15UY0241-3) qualification certificate. ▪ Before disassembly, it will be verified that there is no electric current using a multimeter. In the meantime, not only phase lines but also grounding and neutral lines will be checked. ▪ Panel intervention electrical or Electrical and Electronics Engineering. It will be carried out at least by an Electrical Panel Installer (Author. K.: 12UY0075-3 | Level 3) under the supervision of an Electrical Panel Installer. ▪ During electrical work, 1kV insulated gloves in accordance with EN 60903:2003 standard, insulated electrician work shoes in accordance with EN 344 standard will be used, and an insulated mat (EN 60243-1) or stand (EN 60243-1) will be placed on the floor. ▪ Work will be carried out by at least two technical employees. These people will not come into contact with each other during work. ▪ Technical personnel who will carry out the work in question will be trained on the effects of electric shock and first response and a drill will be carried out.

- Thermal insulation installation for uninsulated installation elements and heat exchanger.
    - At a minimum, the personnel who will take part in the mechanical installation process; Must have Heating and Natural Gas Internal Installation Construction Personnel Level 3 (11UY0031-3) certificate.

Table 21: Plumbing Insulation Works Control Plan

Work to do:	Plumbing Insulation
WORKING METHOD	
Technical Description and Requirements **Construction Technique and Technology** Insulation jackets installed in appropriate sizes will be placed on the installation element to which they will be applied and the jacket will be fixed using fastening ropes / velcro. **Use of Work Equipment** – No equipment use is anticipated. **Use of Chemical Substances** – It is not intended to use any chemicals. **Access to Workspace** – Working area is in the basement of the building and existing access roads will be used. **Transportation of Materials** – It will be carried by hand.	
PPE - GENERAL	**Need for Trained Personnel**
1. EN 397 HARD HAT 2. EN 420 GENERAL PURPOSE GLOVES 3. EN 345 SAFETY SHOES 200J 4. EN 340 GENERAL WORK CLOTHES	1. Heating and Natural Gas Internal Installation Per. Level 3 (11UY0031-3)

*A job spesific risk analysis is not deemed necessary for this work. General risk analysis rules apply.

- Establishing the energy monitoring system and automation system in accordance with EN ISO 50001 Energy Management System conditions and ensuring its effectiveness.
    - Personnel who will work in the installation of energy monitoring systems and automation systems must have, at a minimum, the Automation Systems Installer Level 4 (12UY0076-4) certificate.
    - Insulated work gloves (suitable for low voltage conditions) and insulated work shoes should be used against electric shock.
    - LOTO system should be used for panel security.

Table 22: Electronic Building Management System & Automation System Works Control Plan

Work to do:	Electronic Building Management System & Automation System General Construction Technique

WORKING METHOD

Technical Description and Requirements

Construction Technique and Technology

- Control cables and flowmeter cables of central air conditioning systems such as boilers and heat pumps will be pulled to the floor MCC & DCC panel.
- Motor pump control cables will be pulled to the floor MCC & DCC panel and frequency inverter inputs will be made.
- Line pressure difference and temperature sensors will be connected to the installation in accordance with the project and signal cables will be drawn to floor MCC & DCC panels.
- Floor MCC & DCC cables will be pulled to the central panel and connected to switches etc. connections will be made.

Use of Work Equipment

- Electrical tools (Pliers, control pen, screwdriver, etc.), cable cutting/stripping accessories, multimeter

Use of Chemical Substances

- It is not intended to use any chemicals.

Access to Workspace

- Work will be carried out throughout the building and existing transportation routes will be used.

Transportation of Materials

- It will be carried by hand.

PPE - GENERAL	Need for Trained Personnel
1. EN 397 HARD HAT 2. EN 420 INSULATED WORK GLOVES 3. EN 345 INSULATED WORK SHOES 200J 4. EN 340 GENERAL WORK CLOTHES	1. ELECTRICAL PANEL INSTALLER (AUTHORITY: 12UY0075-3 | LEVEL 3) 2. AUTOMATION SYSTEMS INSTALLER (12UY0076-4 | LEVEL 4)

WORK TO DO	DANGER	RISK	PRECAUTION
Cutting off line energy via electrical panel	Power board, line cable	Electric shock	▪ The intervention in the electrical panel will be carried out by a minimum Electrical Panel Assembler (Certification: 12UY0075-3 | Level 3) under the supervision of an Electrical or Electrical Electronic Engineer. ▪ After cutting off the power supply, the absence of energy in the neutral and ground lines will be confirmed using a multimeter. ▪ The panel will be locked and tagged according to LOTO (Lockout/Tagout) rules. ▪ Before removing and establishing new connections, it will be ensured again through a multimeter that there is no energy. ▪ The tasks will be performed by a minimum of two technical workers. During the work, these individuals will not make physical contact with each other. ▪ Technical personnel performing the task will receive training on the effects of electrical shock and first aid, including practical exercises.

*****The risk analysis lists are prepared for example purposes. The contractor must conduct detailed risk analyses for each work under its responsibility by taking these lists into consideration. The risk analyses should be prepared in accordance with the Occupational Health and Safety Risk Assessment Regulation (Official Gazette: 29.12.2012/28512) and revised as necessary.

9. Determination of Risks & Control Measures

9.1 Determination of Risks and Control Measures Affecting the General Construction Site

Site visits were made to identify risks and the due diligence was assessed on-site. Risks and control measures were determined by taking into account the findings of the structural strengthening and energy efficiency team and the data obtained from their site studies. Objective evidence for these items is provided under the "Pre-Construction Information & Site Plans" heading in this report.

- The areas mentioned below must be inspected by the Contractor's OHS Specialist, and if necessary, additional safety measures must be taken by communicated to the workers.
- Site risks may not be limited to these findings; if the Contractor encounters risky areas beyond these findings, they must immediately report this to the Main Contractor's OHS Specialist,

9.2 Determining Possible Business-Related Risks and Control Measures and Evaluating the Impact on Third Parties

As part of the project, risks related to the structural feasibility process are presented under the heading "General Construction Rules ". Apart from these risks; the following points should be considered regarding accidents that may occur when workers access the buildings within the project;

- Actions must be taken in accordance with the traffic action plans specified in the report.
- All individuals inside the vehicle, including rear seat passengers, are required to wear seat belts.
- Vehicle drivers must strictly adhere to traffic regulations and speed limits.
- Visual checks, such as fuel, oil leakage, tire treads, and pressure status, must be performed by the driver before vehicle operation. The use of faulty or defective vehicles is prohibited. Identified defects will be immediately reported to the Subcontractor's OHS Specialists.
- Passengers should not refrain from warning the drivers if they encounter any behavior by the drivers that violates traffic rules. This should be immediately reported to the Subcontractor's OHS Specialists.
- The maneuvers of trucks, drilling machines, and other construction machinery, especially around the building, inherently involve risks. The areas where work will be conducted, road elevations and slopes, road width, and approach limits should be evaluated.
- Pedestrian movements should be taken into account when cars, vans, trucks, and construction machinery are used in the vicinity of the building. Pedestrian crossings should always be given priority. The proper functioning of the reversing warning sirens on trucks, vans, and construction machinery should be checked before using any vehicle.
- Except in necessary cases, the use of trucks and construction machinery is not permitted during nighttime hours. In urgent situations, the permit to work system will be activated, and permission will be requested from the OHS specialist with a justification.
- Third parties and stakeholders should not be allowed to approach within 20 meters of drilling operations and machinery operations. For this purpose, safety barriers should be placed around the work area, and warning signs should be installed.

9.3 Risks Resulting from Overlapping Work in Terms of Time and Location

According to the work program, it is envisaged that construction works and energy efficiency studies will be carried out at the same time. When the construction works begin, the work plan and risk analyzes regarding works that overlap in time and location will be evaluated by the contractor and reported to the Consultant. After taking appropriate precautions for the risks, the works will be carried out simultaneously following the approval of the Consultant.

10. Determination of Work Equipment Needs and Specifications

Contractor companies will use all kinds of devices and equipment during the work; the safety directives* (CE marking Regulation) must determine the relevant standards**, list them together with the periodic inspection reports and submit them to the Consultant. All electrical devices and equipment must be subjected to PAT testing and their electrical conformity must be shown with PAT approval labels. It is essential to comply with the following legislative provisions regarding devices and equipment subject to periodic control;

*Relevant Directives;
- MACHINERY SAFETY REGULATION (2006/42/EC)
- REGULATION ON ELECTRICAL EQUIPMENT DESIGNED FOR CERTAIN VOLTAGE LIMITS (2014/35/EU)
- PRESSURE EQUIPMENT REGULATION (2014/68/EU)
- REGULATION ON GAS-BURNING DEVICES (2016/426/EU)

**Relevant standards (must be reviewed separately for each device.)
- TS EN ISO 12100 Safety in machinery - General principles for design - Risk assessment and risk reduction
- TS EN 60204-1 Safety in machines – Electrical equipment of machines – part 1: General rules
- TS EN 60335-1 Safety rules - For electrical devices used in homes and similar places - Part 1: General rules
- TS 1203 EN 286-1 Tanks – Simple – Non-flammable – Pressurized
- TS 10116 Cranes – Test and inspection methods
- TS ISO 9927-1 Cranes-Inspections-Part 1: General

10.1 Determination of Protective Equipment Needs

10.1.1 Collective Protection Systems

Table 23: List of Collective Protection Systems

TYPE OF PROTECTION	PLACE OF USE	DURATION OF USE	STANDARDS
SAFETY STRIP	RISKY WORK AREAS (PIECES FALLING FROM HEIGHT, USE OF WORK MACHINE, RISK OF FALLING, WORKING WITH ELECTRICITY, CARRYING HEAVY LOAD)	Until the local work is completed.	-
ACCESS / FALL RESTRICTOR RAILWAY	DRILLING AREAS, DEMOLISHED EXTERIOR WALL EDGES.	Until the local work is completed.	TS EN 13374+A1
LIFELINE	WORKS ON SCAFFOLDINGS, WORKS ON THE ROOF, WORKS CLOSE TO DEMOLISHED FACADE WALLS.	Until the local work is completed.	TS EN 795
SAFETY NET	THE DEEP SPACE CREATED BY THE ELEVATED HEIGHT BETWEEN THE OUT OF SCOPE BUILDING AND THE DINING HALL.	Until the exterior works in the dining hall are completed.	TS EN 1263-2

10.1.2 Personal Protective Equipment

Table 24: PPE Table

DEFINITION	CATEGORY	MAINTENANCE/ RENOVATION PERIOD	MAX USAGE TIME	STANDARDS	COLOR CODE
SAFETY HELMET	II	1 YEAR	CONTINUALLY	TS EN 397+A1	White: Engineer Yellow: Employee Red: OHS Specialist. Green:ERT
EARPLUG	I	DAILY	DURING NOISY OPERATION (³80dB)	TS EN 352-2	-
PROTECTIVE GOGGLES	I	3 MONTHS	DURING ANY WORK DURING THE RISK OF OBJECTS INTO THE EYES AS SPECIFIED IN THE RISK ANALYSIS	TS EN ISO 16321-3	-
GENERAL PURPOSE WORK GLOVES	I	3 MONTHS	CONTINUALLY	TS EN ISO 21420	-
WORK SHOES	II	1 YEAR	CONTINUALLY	TS EN ISO 20347	-
HALF FACE MASK	I	DAILY	DUSTY WORK	TS EN 140	-
FULL-BODY SAFETY HARNESS	II	1 YEAR	ALL KINDS OF WORKING AT HEIGHT	TS EN 361	-
FALL PREVENTIVE EQUIPMENT AND LIFE LINES	II	1 YEAR	ALL KINDS OF WORKING AT HEIGHT	EN 355	-
INSULATED GLOVES AND WORK SHOES	I	3 MONTHS	ELECTRICAL WORKS	TS EN ISO 21420	-

11. Permit to Work System

Permit to work system will be carried out according to the attached Permit to Work Form, but not limited to the defined content. If desired, separate permission forms can be created for each job.

Permit to work forms are filled in for the jobs listed below;

- Electrical work
- Working at height
- Excavation work
- Working in Confined Spaces
- All types of night work

Within the scope of this project, working in enclosed spaces, welding, plasma cutting, and similar works are not anticipated. However, if there is a need for hot works, even in partial and simple tasks, the permit to work system will be implemented.

According to the permit to work system, the person who has the work done is the site manager and the work cannot be started unless his approval is received. This system will be implemented to ensure that works requiring work permits are constantly monitored and controlled, and to determine methods for reducing risks in terms of occupational health and safety. The permit to work form to be used during the project is presented in Annex-2.

12. Log Out Tag Out (LOTO) Procedure

During project works, there are high-risk electrical works. Therefore, the lockout and tagout procedure will be applied. The lockout and tagout application to be applied in electrical work will be carried out as follows;

Electrical Locking

- All parties are informed about the work to be carried out
- The operating point switch of the machine/equipment to be worked on is turned off.
- The main disconnect switch of the machine to be worked on is turned off.
- Lock the main disconnect switch and attach a hazard label.
- Insulation is tested by operating the operating point switch to ensure that the power is off and stored energy is discharged when necessary
- Lockouts and tag outs are removed only by the person who placed them and this responsibility cannot be delegated

Process Lockout

- The neutral and ground lines of the devices should also be disconnected from the bus/connection point. This helps prevent electrical shocks from other systems/devices.
- Valves feeding the section that will be worked on to release energy due to pressure must be closed and locked. Existing pressure should be vented with pressure relief valves or discharged safely.
- All relevant parties are informed about the work to be carried out
- Necessary isolation is carried out
- Required valves are locked (using locking devices, padlocks and chains)
- Blind flanges installed for insulation purposes are labelled.

Figure 12:Sample Log Out Tag Out Station

13. Observation and Inspection

A minimum checklist, as presented below, will be used for routine site inspections. Inspection forms will also be prepared by the contractor as per the nature of the work.

Table 25: Occupational Health And Safety (OHS) Control Checklist

NO	CONTROL SUBJECT	SCORE	DEADLINE	RESPONSIBLE	ACTION
01	Have the necessary OHS trainings been provided to the employees?				
02	Is the continuity of measures taken regarding OHS observed?				
03	Is regular information obtained from employee representatives and support staff about the workplace?				
04	Are employees' entry examinations and periodic examinations conducted regularly?				
05	Are health records stored in accordance with the principle of confidentiality?				
06	Is harmony between work and employees ensured, and guidance provided to protect them from stress factors in the working environment?				

NO	CONTROL SUBJECT	SCORE	DEADLINE	RESPONSIBLE	ACTION
07	Are potential occupational diseases in the sector identified, and workplace observations regarding these diseases conducted?				
08	Are measures identified for controlled entry and exit to the workplace, and is the employer informed?				
09	Are near-miss records evaluated?				
10	Are records of work accidents and occupational diseases evaluated?				
11	Is regular participation ensured in the Occupational Health and Safety Board, and board decisions monitored?				
12	Are occupational health and safety instructions prepared, submitted to the employer for approval, and controlled for implementation?				
13	Are work permit procedures prepared, submitted to the employer for approval, and controlled for implementation?				
14	Are hygiene and safety conditions evaluated for suitable living areas (cafeteria, dormitory, shower, WC, etc.) meeting the legal requirements?				
15	Are environmental physical-chemical-biological factors taken into consideration?				
16	Is the employer informed about the determination of first aid, firefighting, search-rescue-evacuation teams, and the training they receive?				
17	Is the emergency action plan prepared according to the field?				
18	Are escape routes and assembly points determined and marked for emergencies?				
19	Have precautions against fire been taken?				
20	Are emergency drills conducted, monitored, and evaluated?				
21	Is the risk assessment prepared suitable for the field?				
22	Is the risk assessment carried out with the team specified in the legislation?				
23	Are control steps followed after the risk assessment?				

NO	CONTROL SUBJECT	SCORE	DEADLINE	RESPONSIBLE	ACTION
24	Is the risk assessment renewed in cases specified in the legislation?				
25	Is work done for special groups requiring specific policies?				
26	Are suitable Personal Protective Equipment (PPE) selections made for employees, and on-site training provided about their usage?				
27	Are necessary environmental measurements determined at the workplace, and information provided to the employer?				
28	Is information given about the compliance of equipment used in the workplace with standards?				
29	If pedestrian paths and vehicle use are involved, are vehicle paths determined appropriately?				
30	Are suitable storage areas determined for products or equipment to be stored, or parking areas for machinery?				
31	Are periodic inspections of work equipment followed?				
32	Are the competencies of employees using work equipment checked?				
33	Are approved ledger copies kept regularly by the occupational safety specialist and workplace physician during each workplace visit?				
34	Has a realistic annual work plan for the workplace been prepared?				
35	Is the work calendar in the prepared annual work plan followed?				
36	Is there a realistic annual evaluation report for the workplace?				

Inspections carried out by the Consultant and Contractor similar with a form in Table 25 and will be reported to the Project Implementation Unit. The Contractor will submit the reports in the specified format to the Consultant, and the Consultant will submit the final version of the reports to Ministry of Environment, Urbanization and Climate Change.

Monitorings will be made according to a plan given in Table 26.

Table 26: OHS Monitoring Plan

What parameter to monitor?	**Where** to monitor parameters?	**How** will parameters be monitored?	**When** will the parameter be monitored (measurement frequency)?	**Why** will the parameter be monitored?	**Reporting**	**Responsibility**
Community health and safety management and implemented protection measures	Around the project site	Visual checks Field Control Availibility of active Community Safety and Traffic Management Plan	At the beginning of the renovation/reinforcement works (first day) Every working day during project activities	Ensuring that health and safety risks and mechanical injuries to local residents are minimized	• Weekly	• Consultant • The Contractor
OHS protection measures applied for workers on construction sites	Project site and buildings near the project site	Visual checks Field Control Availibility of OHS plan	Every working day during the project activities	To minimize risks related to occupational health and safety of workers, especially protective equipment and clothing for workers who will remove asbestos-containing roof coverings. Compliance with the Occupational Health and Safety Law, relevant regulations, communiqués, circulars and other regulations.	• Weekly	• Consultant • The Contractor
Avoiding and minimizing safety and health risks for Project Affected Persons	In the building and at the project site	Visual checks	At the beginning of the renewal/strengthening work and continuously every working day	Prevent Post Activation Potential (PAP) injury due to inhalation of asbestos fibers or other construction dust	• Weekly	• Consultant • The Contractor

What parameter to monitor?	**Where** to monitor parameters?	**How** will parameters be monitored?	**When** will the parameter be monitored (measurement frequency)?	**Why** will the parameter be monitored?	**Reporting**	**Responsibility**
Start and completion time of renovation/reinforcement works and especially dismantling of existing parts containing asbestos	At the project site	Field inspection Review of document records Visual checks	Every day (In case asbestos is detected)	Avoiding environmental, health and safety risks Compliance with the Regulation on Health and Safety Measures in Working with Asbestos	• Weekly	• Consultant • The Contractor • Asbestos Removal Expert
OSH protection measures applied for workers in the field (*working at height, working with hazardous substances, working with rotating equipment, working with electrical devices, etc.)*	Project site Buildings near the project site	Checking documents regarding relevant OSH Certificates and trained workers Visual checks for the use of protective equipment Implementation of the OSH Plan and site specific Health and Safety instructions Field inspection Control of records	Before starting demolition work Every working day during the project activities	Minimizing risks to workers' occupational health and safety Compliance with the Occupational Health and Safety Law, relevant regulations, communiqués, circulars and other regulations	• Monthly	• Consultant • The Contractor

What parameter to monitor?	**Where** to monitor parameters?	**How** will parameters be monitored?	**When** will the parameter be monitored (measurement frequency)?	**Why** will the parameter be monitored?	**Reporting**	**Responsibility**
Job and working conditions	Project site	Final OHS Plan control Field inspection Complaint mechanism (feedbacks)	Every working day during the project activities	Compliance with the Occupational Health and Safety Law, relevant regulations, communiqués, circulars and other regulations	• Monthly	• Consultant • The Contractor
Manufacturing, Operation and Delivery (pipeline manufacturing& construction)	In Manufacturing and Building Fields	Visual checks Field Control Records Required Tests Control of Personnel Qualifications Adequacy by the relevant authority	During the relevant manufacturing process in the project and when the manufacturing is completed	Confirming that pipeline construction is complete before delivery. To prevent a possible disaster after production and delivery to the end user.	• Reporting	• Beneficiary Institution • Service Provider Institution OHS Department • Consultant • Contractor
Health and Safety records	Project site	Health and Safety construction site documentation control	Weekly	Ensuring that necessary Occupational Health and Safety records are kept at construction sites	• Monthly	• Consultant • The Contractor

What parameter to monitor?	**Where** to monitor parameters?	**How** will parameters be monitored?	**When** will the parameter be monitored (measurement frequency)?	**Why** will the parameter be monitored?	**Reporting**	**Responsibility**
Identifying asbestos-containing waste, packaging it properly, labeling it as hazardous waste	At project construction sites Before starting removal/dismantling work	Identification of asbestos-containing waste according to the waste list Field inspection Review of document records	Throughout the project lifecycle/Daily If detected	Regulation on Health and Safety Measures in Working with Asbestos	• Immediately (if detected) • Monthly	• Consultant • The Contractor
Vehicle and Pedestrian Safety	Project sites and access roads	Visual inspection Using appropriate signs and signals Site inspection Implementation of Community Safety and Traffic Management Plan	Daily	Protecting construction workers, their beneficiaries' employees, and local communities from injuries and deaths related to traffic accidents.	• Weekly	• Contractor • Consultant
Health and Safety	Renovated/Reinforced buildings	Check the roof, windows, doors, leaks, etc. regular checks and maintenance	Regularly (throughout the life of the project)	Ensuring the health and safety of building residents/users	• Within 1 week after detection	Mustafa Kemal University

What parameter to monitor?	**Where** to monitor parameters?	**How** will parameters be monitored?	**When** will the parameter be monitored (measurement frequency)?	**Why** will the parameter be monitored?	**Reporting**	**Responsibility**
Community health and safety management and implemented protection measures	Around the project site	Visual checks Field Control	At the beginning of the renovation/reinforcement works (first day) Every working day during the project activities	Ensuring that health and safety risks and mechanical injuries to local residents are minimized	• Weekly	• Consultant • The contractor
OSH protection measures applied for workers on construction sites	Project site and buildings near the project site	Visual checks Field Control	Every working day during the project activities	To minimize risks related to occupational health and safety of workers, especially protective equipment and clothing for workers who will remove asbestos-containing roof coverings Compliance with the Occupational Health and Safety Law, relevant regulations, communiqués, circulars and other regulations	• Weekly	• Consultant • The contractor
Avoiding and minimizing safety and health risks for Project Affected Persons	In the building and at the project site	Visual checks	At the beginning of the renewal/strengthening work and continuously every working day	Prevent Post Activation Potential (PAP) injury due to inhalation of asbestos fibers or other construction dust	• Weekly	• Consultant • The contractor

14. Employee Training

- It is essential that all employees have been trained at a level that meets the minimum requirements specified in the REGULATION ON THE PROCEDURES AND PRINCIPLES OF OCCUPATIONAL HEALTH AND SAFETY TRAINING OF EMPLOYEES (Official Gazette Date: 15.05.2013 Official Gazette Number: 28648) and HYGIENE TRAINING REGULATION (Official Gazette Date: 05.07.2013 Official Gazette Number: 28698). In this context, training records and certificates of Subcontractor personnel will be requested and checked.
- OHS trainings should be listed including personnel name, position, date of employment, training names, duration and dates and should be forwarded to the consultant OHS Specialist.
- For this project, all employees will be trained for a minimum of 2 person/day within the framework of this document and risk analysis. The training in question will be given by the Contractor and subcontractor OHS Experts, and the training records will be forwarded to the Consultant.
- It is mandatory for employees to have received Rope Access Training in Working at Height before starting work. These trainings will be given at least by experts with IRATA (Industrial Rope Access Trade Association) International Level 2 Certificate.

14.1 Monitoring Personnel Health Conditions

- Periodic health reports of employees will be checked, and their fitness for the tasks will be verified through these reports.
- Health reports must list the personnel's name, position, start date, occupational health training titles, and dates. These records should be listed and sent to the Consultant Occupational Health Physician.

14.2 Personnel Professional Competence

- The required professional competence qualifications are specified in this document. The Contractor company must list all employees, including the personnel's name, position, start date, professional competence certificate, certificate date, and validity period. This list must be submitted to the Consultant Occupational Safety Specialist.

15. Emergency Preparedness

The emergency plan will be prepared by the Contractor in the form of a job-specific report in accordance with the Occupational Health and Safety Law 6331 and relevant regulations. The prepared emergency plan may vary or be applicable depending on the anticipated emergency situations. As an annex to emergency response plan, emergency teams, evacuation and settlement plans, and emergency contact information will be created in accordance with the legislation.

All contractors are obliged to have the appropriate type and number of fire extinguishing equipment in their work areas. In addition to the fire extinguishing equipment they must have in the work area, they must also have a full and appropriate number of fire extinguishing equipment in their construction machines and vehicles.

MKU Tayfur Sökmen Campus management purchased 2 fire trucks with its own resources. Two firefighter personnel who have the authority and competence to use these vehicles and intervene in an emergency are also on duty among the Campus employees. For this reason, in case of a possible fire within the Campus borders, the first response will be made by the Campus fire team.

In addition, the first public stakeholder to contact in case of a possible fire is the Fire Brigade. If the 112 Emergency Call Center is called, the fire station closest to the Campus will arrive at the scene as soon as possible.

There are full and usable fire extinguishers in the faculty buildings within the scope of the plan. The numbers and locations of these fire extinguishers are presented in Table 27.

Table 27: FE Locations at the Faculty Buildings

VOCATIONAL SCHOOL OF HEALTH SCIENCES	
Ground Floor	1
Basement	4
First Floor	4
Second Floor	3
Third Floor	2
FACULTY OF EDUCATION	
Ground Floor	2
Basement	6
First Floor	6
Second Floor	5
Third Floor	3
FACULTY OF AGRICULTURE	
Basement	2
First Floor	6
Second Floor	6
Third Floor – A-B Blocks	2
FACULTY OF ARTS AND SCIENCES	
Basement	8
First Floor	9
Second Floor	5
Third Floor – A-B Blocks	3

The distance between Mustafa Kemal University Research and Application Hospital and the nearest Faculty building is 470 meters. For this reason, Mustafa Kemal University Research and Application Hospital is the closest health stakeholder in emergency situations. In case of emergency, first aid will be provided by the hospital, and there is no infirmary within the Rectorate.

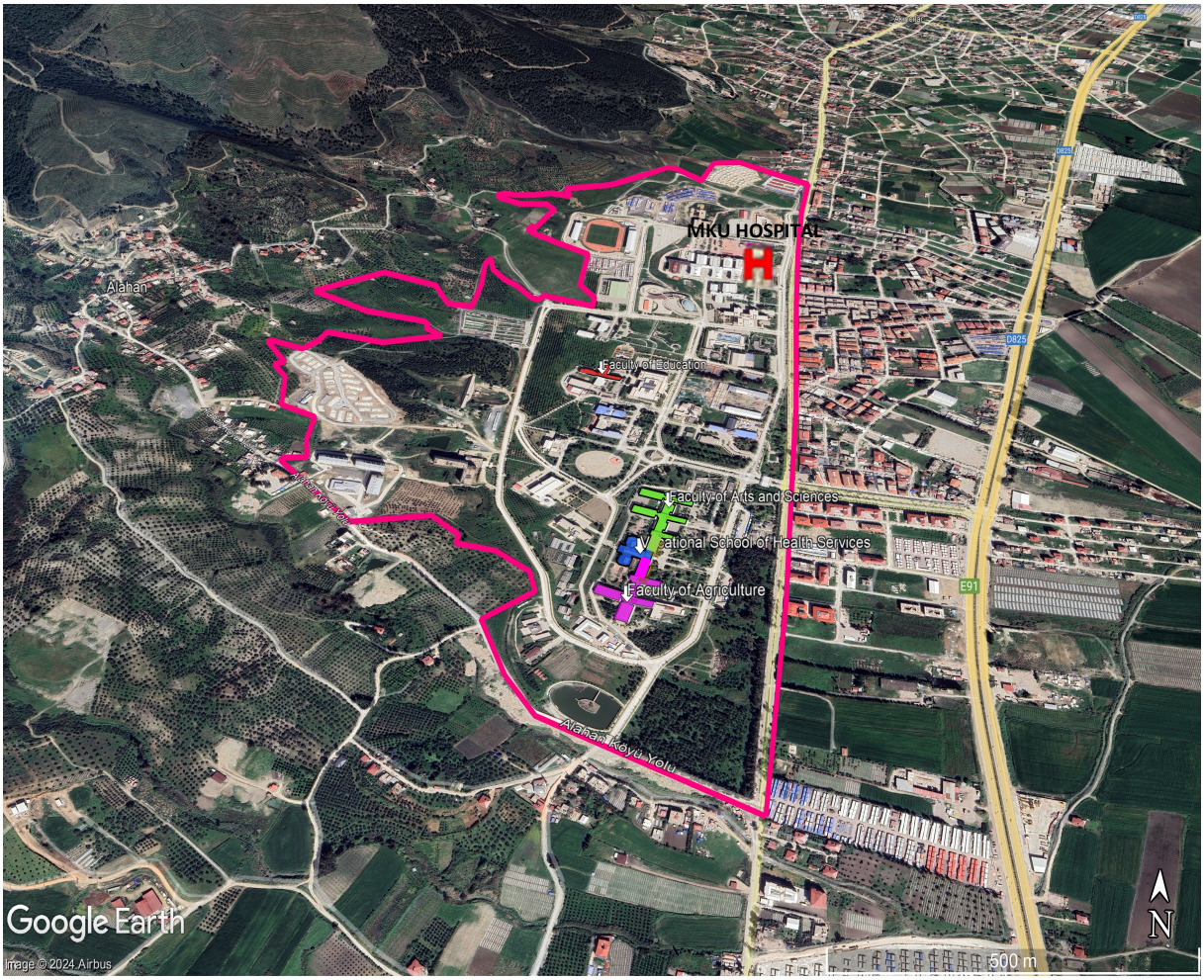
Figure 13 shows the plan showing the locations of Mustafa Kemal University Research and Application Hospital and the subjected Faculties.

The contractor and subcontractors are obliged to conduct fire, earthquake and casualty rescue drills at least once during the work. These drills will be recorded through photographs and camera footage, and all participants will sign their participation forms at the end of the drill.

Emergency teams will be trained on possible emergencies, and these trainings will be recorded. During the trainings to be held, emergency teams, emergency contact information and emergency meeting areas will be announced in the work areas and announced to all employees.

Within the scope of the project, fire, work accident, earthquake, terrorism, sabotage, flood, etc. There is a single number for public stakeholders to contact in case of emergency. If 112 Emergency Line can be called, the necessary guidance regarding any type of emergency will be provided as soon as possible.

Figure 13: Hospital Layout Plan



During structural reinforcement and renovation works, potential emergencies and preventive measures that may be encountered are provided in the Table-28 at the below:

Table 28: Potential Emergencies

EMERGENCY	PREVENTIVE AND LIMITING MEASURES
Fire and Explosion	• Periodic maintenance and checks of electrical and grounding installations, lightning protection installations, generators, fire extinguishing, and fire detection and warning systems. • Restricting areas where smoking is allowed and marking these areas. • Removing dry grass and tree branches that can catch fire. • Having fire detection and warning systems (alarm, gas, smoke detectors, etc.) and keeping them in continuous working condition. • Periodic checks of the heating system and preventing unauthorized access to boiler rooms. • Proper labeling and storage of chemicals used. • Proper labeling and storage of chemicals. • Proper storage of flammable, combustible, and explosive materials away from heat sources. • Designating the locations of accessible installations such as gas valves and electrical panels for authorized personnel to intervene immediately

	in case of energy cuts. • Conducting environmental measurements.
Spread from Hazardous Chemicals	• Proper storage of chemicals according to their properties and hazards, preventing situations that may cause leaks, and ensuring adequate ventilation. • Preventing unauthorized personnel from entering chemical storage areas. • Providing employees with appropriate personal protective equipment according to standards and ensuring correct usage. • Posting Safety Data Sheets (SDS) in visible locations where chemicals are present in the workspace. • Having an intervention card for hazardous substances. • Conducting environmental measurements.
Food Poisoning	• Checking the expiration dates of food products. • Preparing meals under hygienic conditions. • Keeping materials such as plates, forks, trays, etc., clean. • Taking witness samples from meals. • Providing training to personnel serving meals. • Providing general hygiene training to all personnel. • Meal servers using appropriate gloves, caps, work clothes, etc.
Epidemic Disease	• Vaccination. • Preventive medications. • Pest control and disinfection. • Ensuring hygiene. • Establishing a First Aid Team and providing necessary training. • Regular checks of drinking water and water coolers. • Taking witness samples from meals.
Sabotage	• Establishing a security unit. • Installing security cameras in necessary locations for continuous monitoring. • Controlled entry and exit. • Keeping records of external persons, checking identities at entry, and issuing visitor cards. • Controlled opening of incoming shipments. • Checking of transport vehicles. • Restricting unauthorized access to high-security areas. • Adequate indoor and outdoor lighting.
Natural Disasters	• Strengthening the ground. • Securing cabinets and shelves, placing large tools and equipment in safe positions. • Checking the earthquake resistance of buildings. • Providing training to all employees on what to do in an earthquake. • Having an earthquake bag ready with first aid supplies, flashlight, batteries, radio, etc. • Checking and maintaining rainwater channels. • Prioritizing afforestation. • Portable obstacles for windows and doors in enclosed workplaces. • Using emergency valves for rapid and safe disconnection of electricity (electricity, gas, etc.) and assigning competent individuals.

	• Having equipment ready for use during and after disasters.
Occupational Accidents	• Providing occupational health and safety training. • Conducting health surveillance (periodic examinations and tests, etc.). • Providing additional training for tasks requiring special skills, such as working at heights, working in confined spaces, etc., and having reports demonstrating fitness for these jobs. • Keeping the Risk Assessment up to date and continuously monitoring the measures taken. • Investigating near-miss incidents and taking necessary measures to prevent their recurrence. • Conducting accident investigation and root cause analysis. • Not assigning personnel to tasks they are not qualified for. • Implementing an incentive/warning system for occupational health and safety and working on workplace safety culture. • Implementing an effective inspection mechanism. • Monitoring the correct and active use of Personal Protective Equipment. • Avoiding working alone. • Ensuring that personnel employed through service procurement are employed in compliance with occupational health and safety legislation. • Establishing a First Aid Team and providing necessary training.
Cyber Attacks	• Providing employees with training on cyber risks and security. • Installing and keeping antivirus and anti-spyware software up-to-date. • Using a firewall for internet connections. • Updating operating systems and applications. • Regularly backing up data and information. • Controlling physical access to computers and servers. • Ensuring the security and privacy of Wi-Fi and LAN networks. • Assigning individual usernames and passwords to each employee. • Creating authorization levels for accessing information within the network.
General	• Posting evacuation plans, entrance and exit of workplace buildings and extensions, floors, and evacuation paths at heights visible to employees. • Indicating the locations of fire extinguishing equipment and first aid materials and evacuation routes on the evacuation plan. • Determining the meeting place after evacuation and showing it on the plan. • Having suitable emergency escape routes and emergency exit doors with appropriate signs. • Placing appropriate signs indicating escape routes in visible places. • Establishing emergency response teams and providing necessary training. • Posting visible contact numbers for emergencies. • Parking vehicles in a way that allows forward movement. • Informing employees about possible emergencies and emergency plans. • Conducting regular emergency drills and ensuring the participation of all employees. • Informing customers, visitors, and other individuals present in the workplace about emergencies and emergency plans. • Keeping emergency plans up-to-date. • Keeping the equipment that emergency teams will use ready for use at all times. • Using a sound and/or light alarm system to alert employees in emergencies.

- Marking the location of the First Aid kit, ensuring it is accessible to all employees, ensuring that it contains the necessary number and competence of materials, and continuously checking their expiration dates.
- Providing accompaniment for the evacuation of the elderly, disabled, or pregnant individuals.

Emergency Response Teams, First Aid Personnel and Assembly Areas

The contractor and subcontractors must list the names, duties, starting dates, dates of emergency preparedness training, and the expiry dates of the first aid certificates of the emergency response teams (ERT) and first aid personnel they have designated, considering legal requirements.

- All these teams must participate in emergency drills at least once, and the participation reports must be submitted to the Consultant OHS Specialist and the Occupational Health Physician.
- Emergency assembly areas are showing in the Pre-construction Information & Site Plans Section of this Plan.

16. Accident Incident Investigation

In case of a work accident during the works carried out within the scope of the project, legal regulations will be followed. On the same day that the accident occurs, notification will be made to the Consultant and the Administration via the form in Annex-3. Within one month from the date of the accident, the root-cause analysis of the accident will be conducted and submitted to the Administration. Legally, notification will be made to the Social Security Institution within the following periods:

- ✓ Work accidents within three working days after the accident,
- ✓ Occupational diseases reported to health care providers or workplace physicians within three business days from the date.
- ✓ Workplace physicians or health service providers refer cases with a preliminary diagnosis of occupational disease to health service providers authorized by the Social Security Institution. Health service providers report work accidents reported to them, and authorized health service providers report cases diagnosed with occupational diseases to the Social Security Institution within ten days at the latest.

- The report form to be used for investigating and reporting accidents, incidents, and near misses that can occur in the field is given below.

- Major environmental accidents and workplace accidents (such as injuries resulting in death, environmental spills such as spills, etc.) that may occur during construction activities will be shared with the Consultant and PIU on the same day; it will be reported to the Ministry of Labor and Social Security within 3 working days. PIU will inform the World Bank about the accident within 48 hours. The contractor will send the accident report to PIU within 30 working days along with the root cause analysis. PIU will share information with the World Bank simultaneously.

- Care must be taken to fill out all sections of the accident report completely
- Two personnel who witnessed the accident must be identified in the Accident Report
- Witnesses must describe and sign the accident report
- Incident site photos, photos of the injured, photos of the device causing the accident, equipment, etc., objective evidence must be provided and attached to the Report.
- The PPE used by the personnel during the accident must be specified on the report.. The report appendix will contain the minutes related to the PPE delivered to the personnel.
- Measures to be taken immediately after the accident and measures to prevent the accident from recurring.
- If possible, the personnel who directly experienced the accident must fill out the accident record. If this is not possible, selected personnel among the witnesses specified in the report must fill out this section in their own handwriting. If there are no witnesses to the accident, the employer or employer representatives will be asked to fill out this section in their own handwriting.
- The prepared report must be signed by the OHS Specialist, Occupational Health Physician, Employer/Employer Representative.
- The following documents must be included in the prepared Accident Report appendix:
    - PPE delivery report,
    - Participation forms and certificates regarding the training given until the accident date,
    - Orientation training form,
    - Certificates, diplomas regarding professional competence,
    - Health report showing suitability for the job,
    - Records prepared regarding occupational health and safety,
    - SSI occupational accident notification form,
    - Health report obtained after the accident,
    - Physician's report indicating work disability,

It should not be forgotten that accidents can happen no matter what kind of precautions are taken. It is important to act calmly during and after the accident, both for the injured person and for the company. Therefore, it is recommended to conduct EMERGENCY RESCUE drills with dignity before fieldwork related to WORK ACCIDENTS/RESCUE OF INJURED PERSONS.

Post-accident measures: corrections that need to be made urgently and corrections aimed at eliminating the ROOT cause that caused the accident should be evaluated in two separate categories. After a work accident, it is essential to eliminate the elements that caused the accident in a way that will not be repeated.

Post-Accident Considerations;

- During inspections, necessary arrangements will be made in the field to facilitate inspectors' access to the site. All information and documents related to the injured person will be readily available. It should be noted that the access time to the information and documents requested by the inspector is crucial.
- The occupational accident notification to the Social Security Institution (SSI) will be made within a maximum of 3 days from the accident date. (Together with the visit report)
- If available, control reports of the machinery and equipment causing the accident and regular maintenance records will also be kept in the accident report for inspections.
- All documents kept in the Accident Report appendix will be copies. However, necessary preparations will be made to provide access to the original documents to the inspectors if requested.

17. OHS Budget

The OHS Budget presented below has been created for general information purposes. It is assumed that the tender offer submitted by the Contractor has been prepared to include the budget required to take measures regarding occupational health and safety.

Table: OHS Budget

	Quantity	Unit	Unit Price	Amount
Category II hard hat (TS EN 397+a1)	600	Adet	₺200,00	₺120.000,00
Category I earplug (TS EN 352-2)	20.000	Adet	₺50,00	₺1.000.000,00
Category I protective glasses (TS EN ISO 16321-3)	500	Adet	₺140,00	₺70.000,00
General purpose work gloves (TS EN ISO 21420)	500	Adet	₺100,00	₺50.000,00
Work gloves for electricity (low voltage) (TS EN ISO 21420)	70	Adet	₺1.000,00	₺70.000,00
Work shoes (TS EN ISO 20347)	600	Adet	₺1.000,00	₺600.000,00
Insulated work shoes (low voltage) (TS EN ISO 20347)	70	Adet	₺1.700,00	₺119.000,00
Dust mask	20.000	Adet	₺8,00	₺160.000,00
Half face mask (TS EN 140)	125	Adet	₺800,00	₺100.000,00
Category II full body safety belt (TS EN 361)	250	Adet	₺600,00	₺150.000,00
Fall stopper (TS EN 355)	275	Adet	₺350,00	₺96.250,00
Lifelines (TS EN 355)	350	m.	₺550,00	₺192.500,00
Safety tape	2.000	m.	₺5,00	₺10.000,00
Safety net (TS EN 355)	300	m^2	₺500,00	₺150.000,00
			TOTAL:	**₺2.287.750,00**
			VAT:	**₺577.550,00**
			SUM:	**₺2.865.300,00**

18. ANNEXES

Annex 1 Traffic Plan, Community Health and Safety

Traffic Management

The campus area is 430 meters away from Alahan District. For this reason, the settlement that will be most affected by the project traffic risks has been determined as Alahan District.

In addition, Mustafa Kemal University Research and Application Hospital is located 470 meters away north of the Campus. Since it is the only public hospital in the region, the hospital has its own traffic load.

Besides that, container cities were established within the University campus area since campus employees losing their homes in the earthquake disaster in Türkiye on 06.02.2023. In these container cities, MKU personnel stay with their families. The settlement plans of container cities are presented in Figure-15. Necessary traffic precautions will be taken in the campus to ensure that the personnel and their families staying in these container cities are minimally affected by the traffic risks arising from the Project, and the traffic route specified in this plan will be followed during transportation to the site.

Student dormitories are far away from the impact areas (See Figure 16). Dormitories are empty because face-to-face training has not started yet. For this reason, dormitories are in a low-risk location in terms of traffic risks.

In order for stakeholders to be least affected by the traffic risks arising from the Project, an alternative traffic route has been determined in the south of the Campus. This designated alternative road is allocated only for the use of project employees, and throughout the project period, all vehicle traffic will be carried out on this road, shown in Figure 14.

Figure 14: Traffic Route Plan

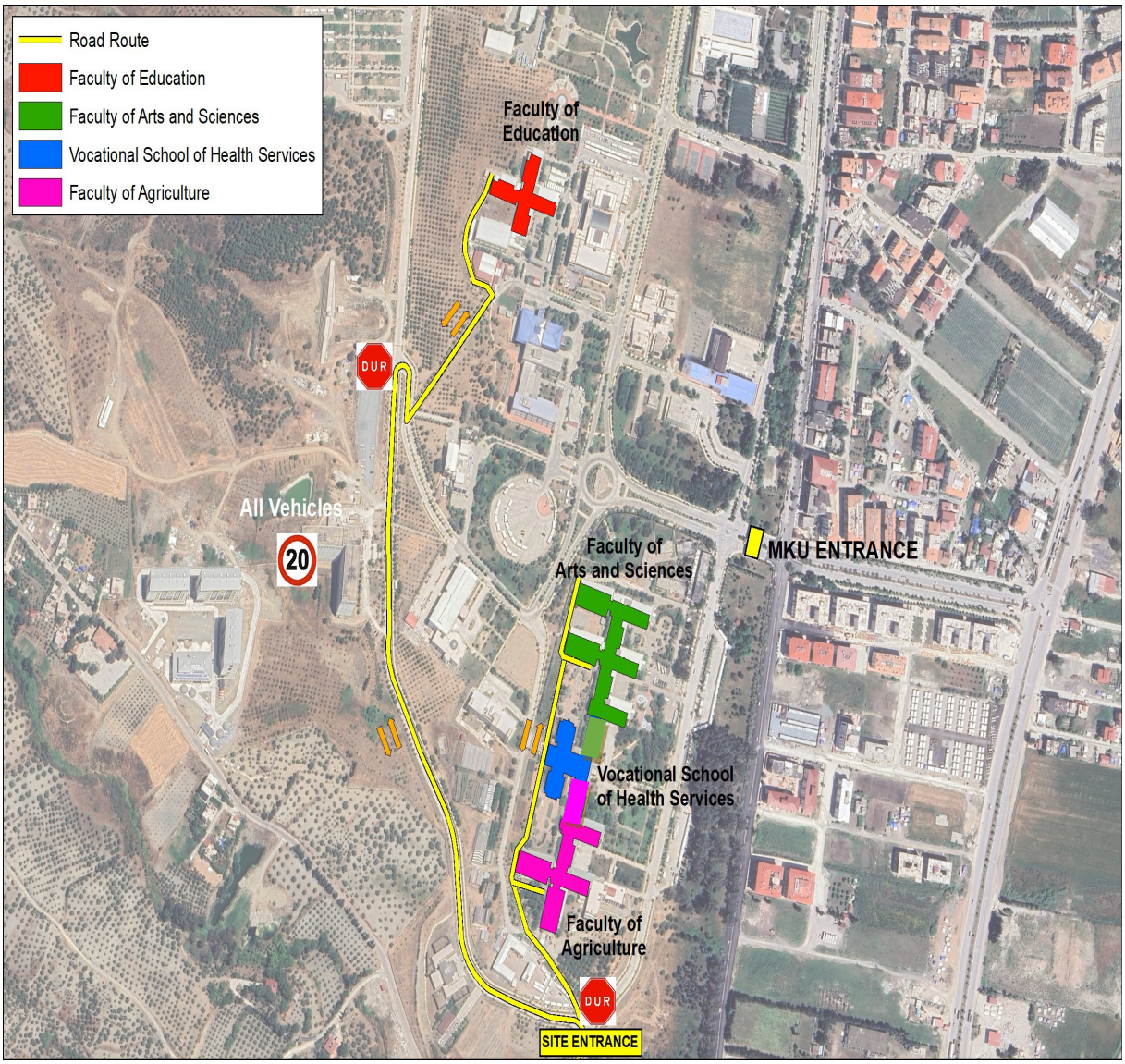
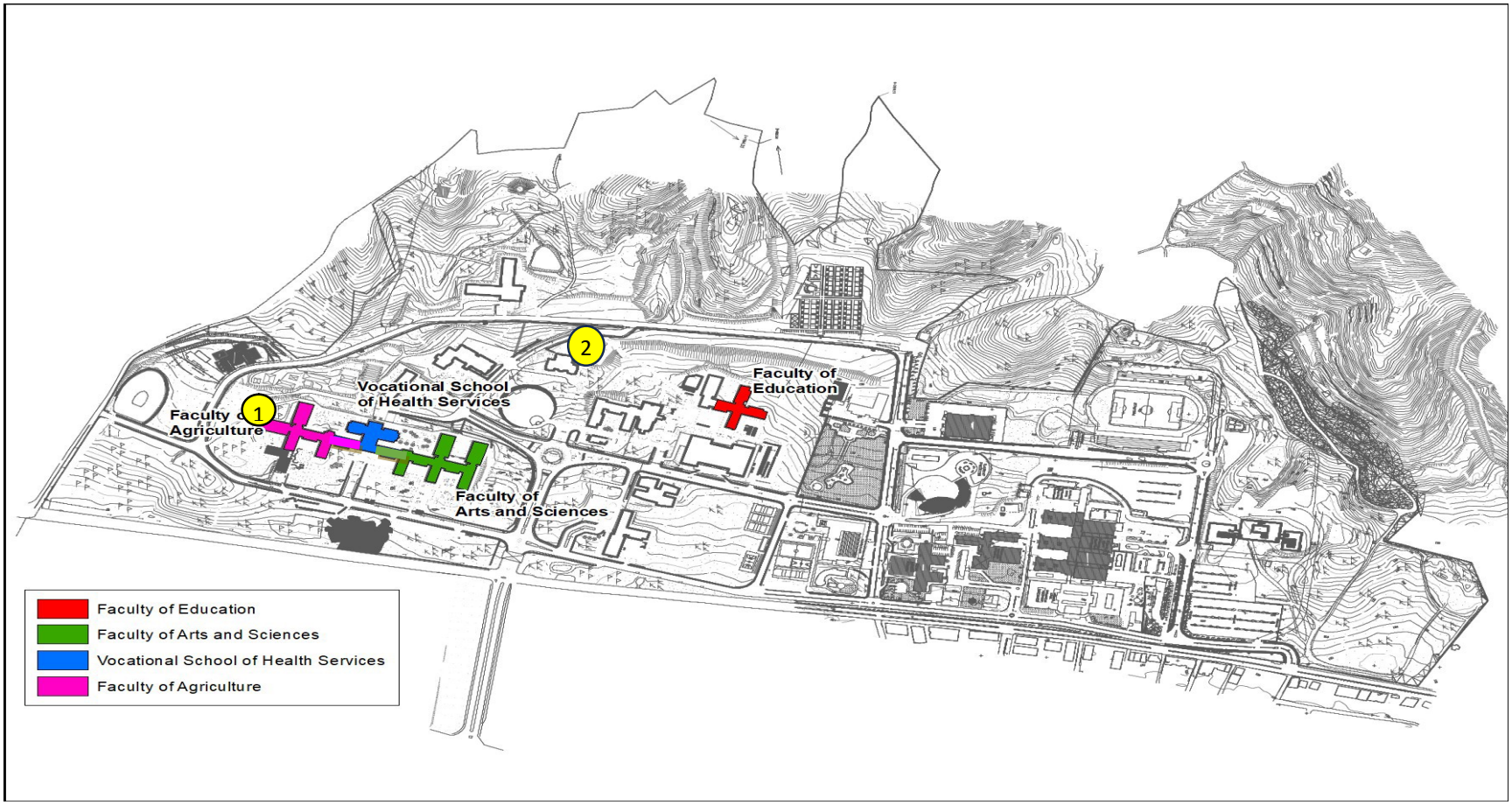
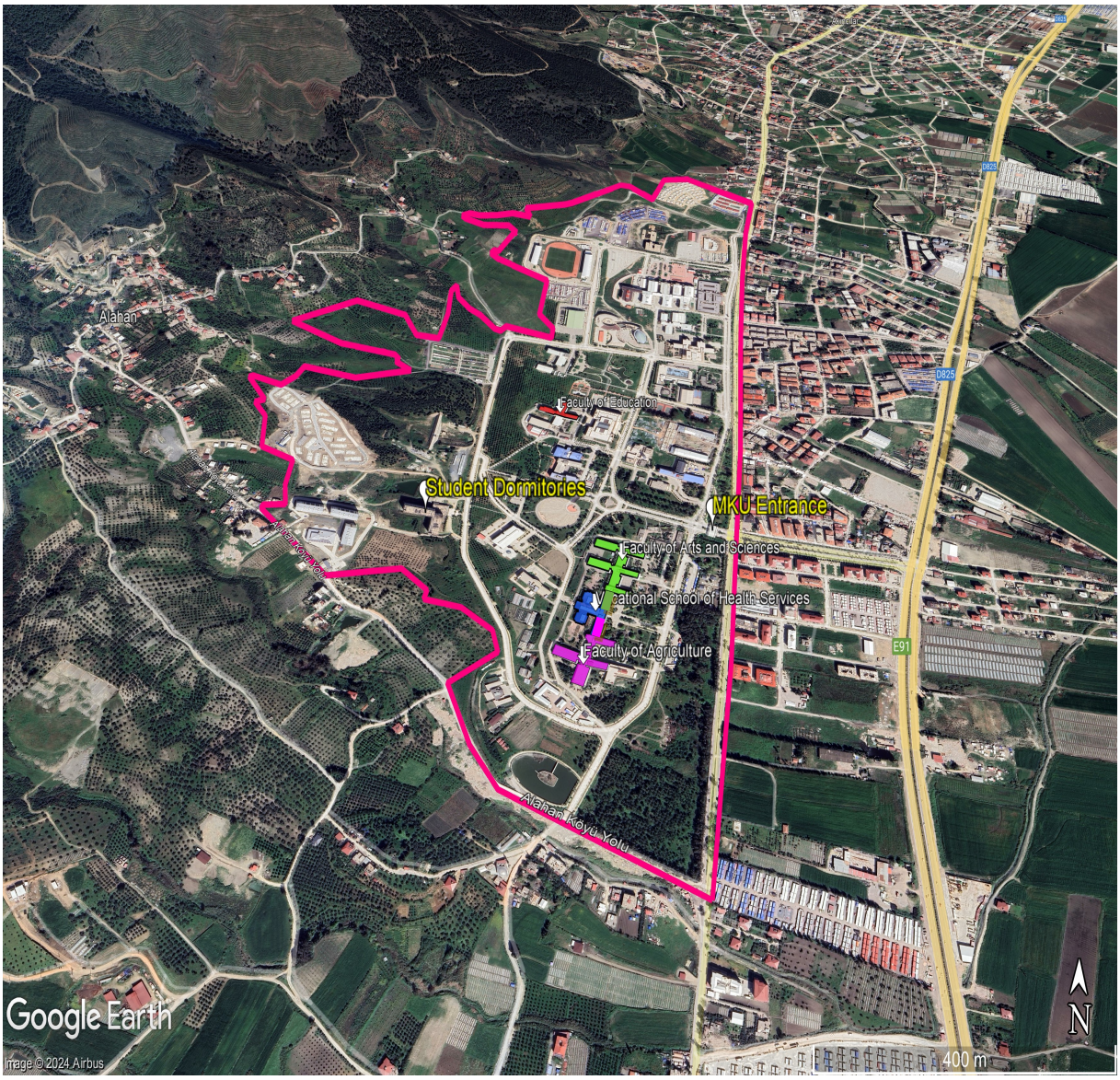


Figure 15: Container Cities Layout Plan



Container no. 1: 45 people
Container no. 2: 180 people
Container Cities

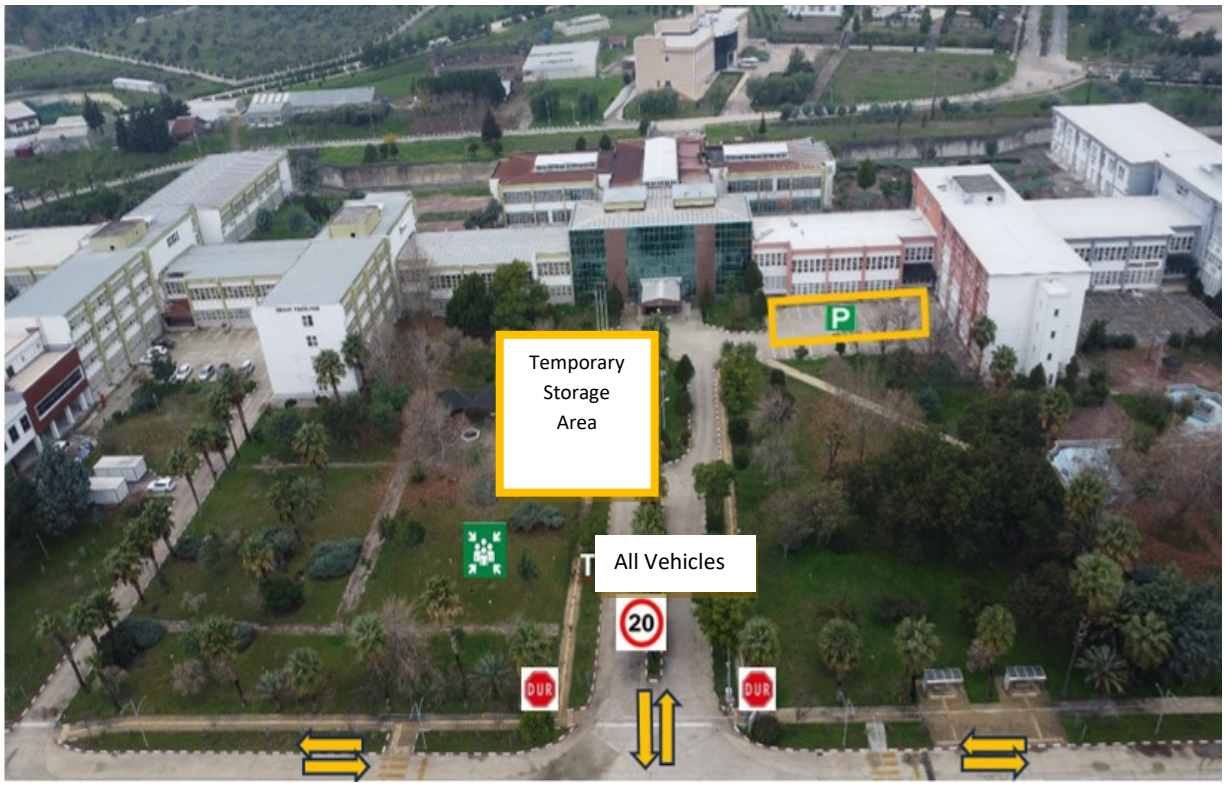
Figure 16: Student Dormitories Layout Plan



Regarding the faculties within the scope of the Project; sections of the construction site traffic plan, are at the below;

Picture 9: Traffic Plan for Faculty of Arts and Sciences Building

Picture 10: Traffic Plan for Vocational School of Health Sciences



Picture 11: Traffic Plan for Faculty of Agriculture

Picture 12: Traffic Plan for Faculty of Education

Traffic measures to be taken during the execution of the project are summarized at;

Traffic Measurements

- All drivers will comply with speed limits. The speed of vehicles within the Campus will be 20 km/hour. The urban speed limit of 50km/hour will not be exceeded.
- Security and traffic warning signs will be placed visibly near and around the project site.
- Vehicles carrying loads will not exceed the legal load limit determined specifically for that vehicle.
- There is a parking lot in front of each faculty building. Vehicles will be parked in these parking lots in the direction of the exit.
- Construction vehicles and machines with defects accoring to their standard equipment will not be used and will be sent for maintenance without delay.
- In settlements, traffic rules determined for the highways will be followed.
- Unauthorized people will not be allowed to get into vehicles and work machines.
- Vehicles will not be used without the appropriate driver's license and construction equipment will not be used without the operator's license.
- In case of snowfall, it is mandatory to wear winter tires and have towing ropes, chains and chocks in the vehicles.
- Everyone in the vehicle must wear their seat belt.
- It will be checked that the reversing warning sirens and lights of trucks, pickup trucks and construction equipment are working in order before each vehicle is used.
- It is forbidden to approach the drilling machine more than 20 meters, except for the operator. Area limitation will be made accordingly and warning signs will be placed.
- Vehicle drivers and operators will have appropriate driver's license and operator certificates to be shown during the audits during the work.
- If the traffic rules specified in the project are not followed, CPA will be opened and action will be taken within the specified deadline.
- Local settlements and campus employees will submit their grievances about traffic arising from the project through the complaint mechanism.

Community Health and Safety

Seismic Resistance and Energy Efficiency in Public Buildings (KADEV) DESSUB-02 Project is located in Hatay Province, Antakya District, Alahan Neighbourhood. Therefore, the closest settlement that is likely to be affected during the execution of the Project is Alahan District, 419 meters away from the campus (See Figure-18).

In addition, the impact area of the Faculty of Arts and Sciences, Vocational School of Health Sciences, Faculty of Agriculture and Faculty of Education buildings, where structural strengthening and energy efficiency works will be carried out, within the Campus area is the library and cafe, which are 100 meters away, as seen in Figure 17.

The distances of the faculty buildings where the project work will be carried out to the nearest residential area, Alahan neighborhood, are shown in Figure 18.

Figure 17: Impact Area Map

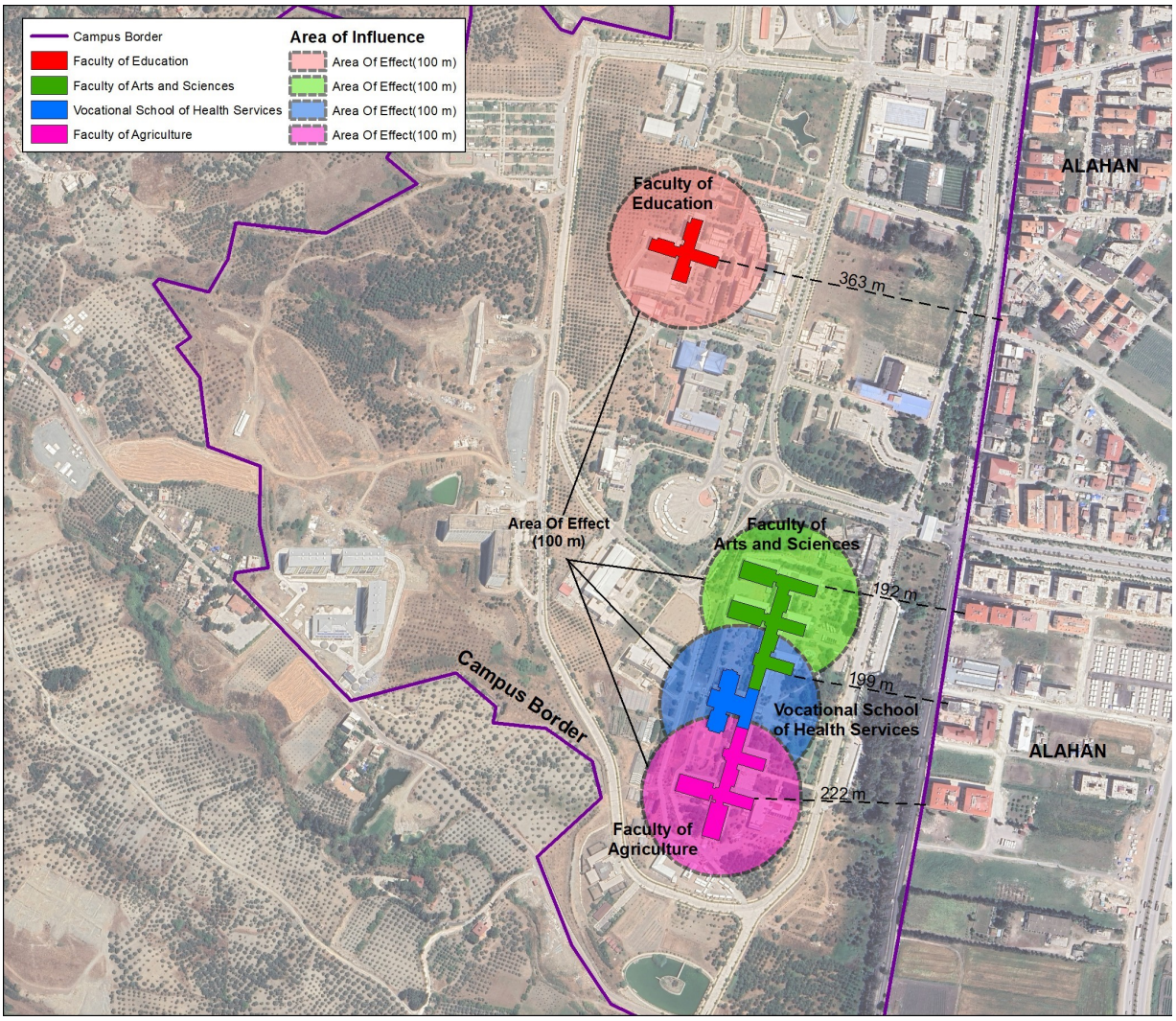
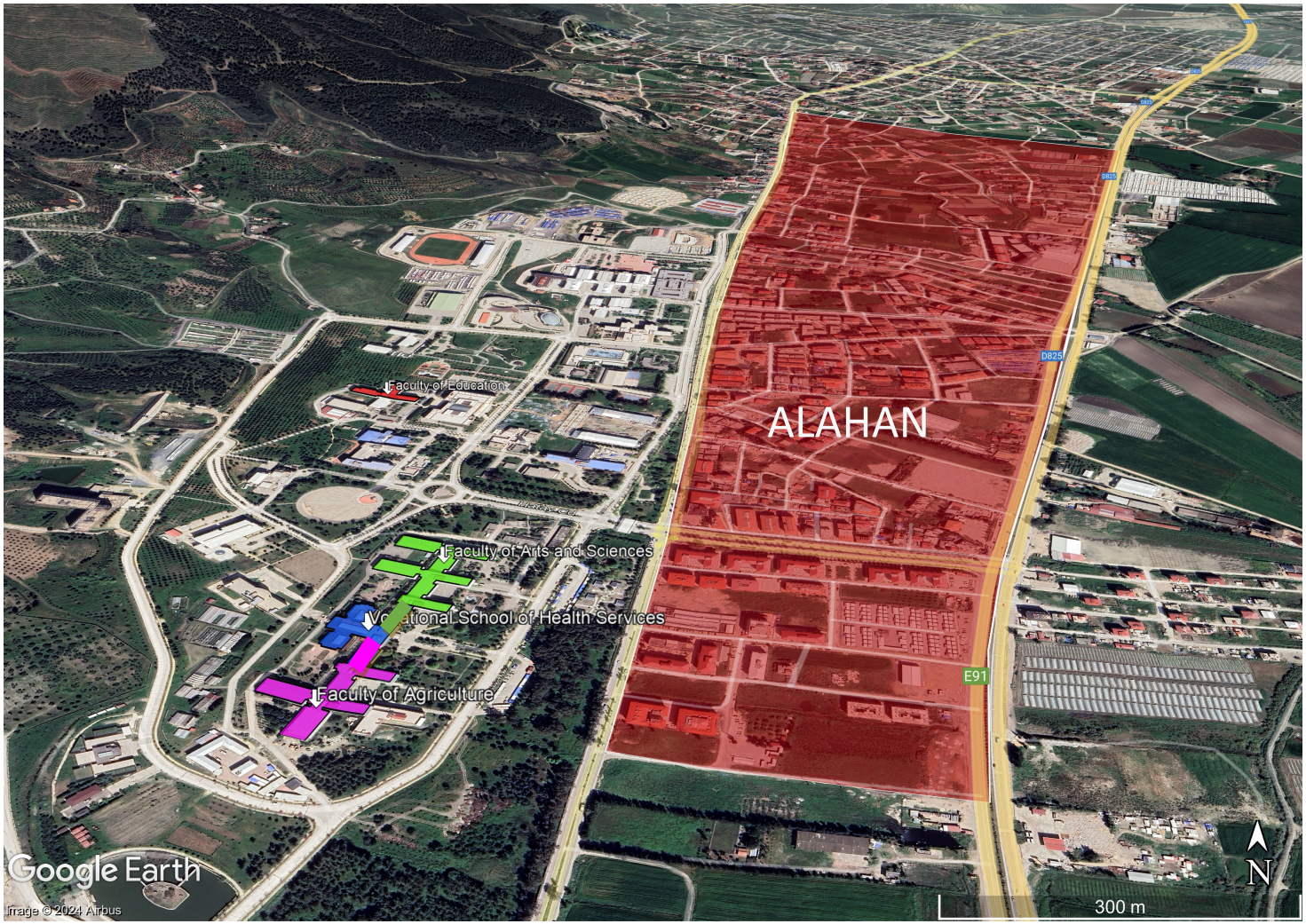


Figure 18: Local Settlement Map



Annex 2 Permit to Work Form

KADEV DESSUP-02	PERMIT TO WORK FORM

WORKING LOCATION:	Start of the Work Date-Hour	
	Completion of the Work Date-Work	

Works	
Electrical Works	Confined Space
Excavation	Hot Works
Heavy Lifting	Night Shift
Working at Height	

Name/Surname of the Personnel			
1		3	
2		4	

Name/Surname of the Safety Watcher:

No	Have the Necessary Precautions Been Taken to Start Working?	Yes	No
1	Does the staff have and use appropriate PPE?		
2	Have warning signs been placed where necessary?		
3	Are the weather conditions suitable?		
4	Are the Emercency Assembly Points known?		
5	Are gas and water pipelines suitably dicconnected?		
6	Has the electrical power been cut off by authorities?		
7	Is fire-fighting equipment available and in working order?		
8	Are working conditions working at height met?		
9	Are scaffolding, stairs, railings and PPE suitable?		
10	Is there the sufficient lighting?		
11	Are the electrical cables and hand tools used suitable?		
12	Have any flammable, flammable or explosive materials in the work area been removed?		
13	Is the mobile platform suitable to work?		
14	Has material falling been prevented?		
15	Are communication devices available?		
16	Has the area where the material could fall been secured?		
17	Is there a lifeline / safety rope?		
18	Other:		

SITE RESPONSIBLE	OHS OFFICER
Necessary precautions were/were not taken before starting the work.	Necessary precautions were/were not taken before starting the work.
Date: Signature:	Date: Signature:

Annex 3 Accident Notification Form

ACCIDENT INVESTIGATION REPORT					
WORKPLACE					
Name/Title		Number of Workers Working			
Regional Directorate Registration Number		Male		Former Convict	
Address		Woman		Disabled	
The area where the accident occurred		Intern			
Working hours on the day of the accident		Accident Date			
Subcontractor name		Accident Time			
Subcontractor Dept. Reg. Registration Number					
Personnel who had an accident					
Name and surname		Age/Educational Status			
Starting date of work		Insurance Registration Number			
Job Title		Working Duration			
Job during the accident		Has he/she received OHS trainin	☐ YES	NO ☐	
		Has he/she received occupational training?	☐ YES	NO ☐	
During time of the incident					
General activity being carried out					
Specific activity carried out by the victim					
Tools and equipment used during activity					
Incident causing injury					
Tools that cause injury					
What did the insured do after the accident?					
Disability from work due to accident					
RESULT OF ACCIDENT		**TYPE OF ACCIDENT**			
Near Miss ☐		FALLING FROM HEIGHT ☐		BURNING, EXPLOSION ☐	
Material Damage ☐		ELECTRIC SHOCK ☐		CHEMICAL EXPOSURE ☐	
Injury ☐		MATERIAL FALL ☐		POISONING ☐	
Temporary Incapacity of Wo ☐		CRASH, SPILL ☐		SUFFOCATION ☐	
Permanent Disability ☐		JAMMING, CRUSHING ☐		LIMP LOSS ☐	
Occupational Disease ☐		COLLAPSE ☐		EMERCENCY ☐	
Death ☐		BURNING, EXPLOSION ☐		OTHER (TRAFFIC ACCIDENT) ☐	