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# **OPERATION & MAINTENANCE OF THE LEBANESE UNIVERSITY CAMPUS - HADATH**



## **VOLUME 2: TECHNICAL DOCUMENTS**

### **Section 2.6 – Work Package 5 – Special Technical Equipment and Systems**

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## **Lebanese University Campus - Hadath**

### **Work Parcel 5: Special Equipment & Systems**

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### 5.1.1 - Work Parcel 5 - Kitchens Equipment

#### Central Catering (Bldg X)

Equipment	Qty	Model No.
GAS COMBISTEAM OVEN	4	FCV202G3
TROLLEY FOR COMBISTEAM OVEN	1	FCVCSS22
HEATED BANQUET TROLLEY	10	CCB20
TROLLEY FOR COMBISTEAM	1	FCVCSS22
STAINLESS STEEL PASTRY HOOD	1	SOLARCO
WALL TYPE HOOD	1	SOLARCO
ADDITIONAL DOOR FOR COLD ROOM	1	
WALL TYPE HOOD	1	SOLARCO
WORKING TABLE WITH BACKSPLASH	3	TG2010
PREF. WALK IN COOLER	2	
PREF. WALK IN FREEZER	3	
PREF. WALK IN FREEZER	2	
PREF. WALK IN COOLER	3	
MOBILE ROUND BIN	8	CVR100
WORKING TABLE WITH BACKSPLASH	27	TG2010S
CENTRAL WORKING TABLE	37	TG2000S
DOUBLE SINK UNIT	11	LG1826
DOUBLE SINK UNIT	2	LG1826
SHELVING UNIT	6	SC2010
VEGETABLE PROCESSING TABLE	4	TLV1810S
FISH AND POULTRY PROCESSING TABLE	2	TLP1810S
DOUBLE SINK UNIT	1	LG2826SS
SINK UNIT	1	LG716S
WASH HAND BASINS	4	LP55
VEGETABLE AUTOMATIC WASHER	1	265N +V500
VEGETABLE DRYER	1	IDROVER50
POTATO PEELER	1	TI25
VEGETABLE CUTTER	2	TRS
CHOPPING BLOCK	4	CP9103
PLATFORM SCALE	1	GM/150
MEAT MINCER	2	TC32SF
FOOD PROCESSOR	4	K180
BEATER MIXER	3	MC40S
AUTOMATIC SCALE	1	GM100/24BB
BONE SAW	1	SO1800
AUTOMATIC FRYER	2	HFRG810 (5)
ISLAND TYPE HOOD	1	
GAS RANGE COOKER	3	HCFG1610
GAS SOLID TOP	6	HTFG800
ISLAND TYPE HOOD	1	
ISLAND TYPE HOOD	1	
ISLAND TYPE HOOD	1	
GAS TILTING BRATT PANS	12	HBRG815
GAS RECTANGULAR BOILING PANS	10	HPNG1255
ROUND INGREDIENT BIN	4	CVR100
(LAMINOIR) ELECTRIC ROLLER WITH BELT	4	L6/12
BEATER MIXER	1	BMXE80S
MODULAR ELECTRIC PASTRY OVEN	4	FPS32+ZCBD12LE
SLICER	2	AGATA 350
MOBILE PASTRY RACK	1	SCB172
ELECTRIC COOKER	1	HCE800 + V800

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**5.1.2 - Work Parcel 5 - Kitchens Equipment**

**Restaurant (Bldg U2)**

Equipment	Qty	Model No.
2 DOORS FREEZER	1	AEF220
REFRIGERATED TABLE 3 DOORS	1	MRG200
URN STAND	1	TL1410SS
REFRIGERATED TABLE 2 DOORS	1	MRG150
WORK TABLE	1	TG1400S
SHELVING UNIT	1	SC1210
WORK TABLE WITH UPSTAND	1	TG1910
WORK TABLE	1	TG1110
WORK TABLE	1	TG2000S
URN STAND	1	TL1410SS
GAS FRY TOP SMOOTH/RIBBED	1	HRG811
WORK TABLE WITH UPSTAND	1	TG2010
REFRIGERATED TABLE	1	MRG250
SPREADER	2	HN400
GAS FRYER	3	HFRG810
REFRIGERATED UNIT	3	CM15F
TRAY DISPENSER	2	CMT
AMBIENT UNIT - OPEN TYPE	2	CM11N
AMBIENT UNIT - OPEN TYPE	1	CM07N
CORNER UNIT	3	CMA
HOOD FOR DISHWASHER	1	SOLARCO
SELF SERVICE AMBIENT UNIT	1	CM15N
FAST FOOD DISPLAY WARMER	1	GRSDS52D
GAS FRY TOP	2	HRG811
6BURNERS GAS RANGE ON OVEN	1	HCFG1210
PREWASHING TABLE	1	TV12DS
AUTOMATIC DISHWASHER	1	LS12
SORTING TABLE	1	TAM6S
SHELVING UNIT	1	SC2010
SHELVING UNIT	1	SC1410
ICE CUBE MAKER	1	ACM225AS
HOT CUPBOARD	1	TC1400S
SHELVING UNIT	1	SC1410
DOUBLE SINK UNIT	1	LG1826DS
GAS RANGE COOKER	1	HCFG810
BAIN MARIE	1	HME800
DEEP FRYER	1	HFRG410
WALL TYPE HOOD	1	
PREFABRICATED WALK IN COOLER	1	
DOUBLE SINK UNIT	1	LG1826SS
PREFABRICATED WALK IN COOLER	1	
PREFABRICATED WALK IN FREEZER	1	
PREFABRICATED WALK IN COOLER	1	
DOUBLE SINK UNIT	1	LG1826SS
SHELVING UNIT	1	SC2010
WORKING TABLE W/UPSTAND	1	TG1410S
WORKING TABLE W/UPSTAND	8	TG2010S
HEATED BAIN MARIE TROLLEY	10	DBG31
TRAY AND CULTERY DISPENSER	1	CMT
REFRIGERATED UNIT	3	CM15F
AMBIENT UNIT	3	CM11N
BAIN MARIE UNIT	2	CM15C
CASHIER UNIT	3	CMC
WORKING TABLE	4	TG2000S
WALL TYPE HOOD	1	
SHELVING UNIT	6	SC2010
SCRAPPING TABLE	1	TS2x/RT
PREWASHING TABLE	1	TV12RTSX
DISHWASHER	1	RT140E
SORTING TABLE	1	TAM6S
WORKING TABLE	1	TG2000S

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### 5.1.3 - Work Parcel 5 - Kitchens Equipment

#### Male & Female Dormitories (Bldg R)

Equipment	Qty	Model No.
GAS CONVECTION STEAMER	1	FCV 102 G3
WALL TYPE HOOD	1	SOLARCO
TROLLEY FOR COMBISTEAM	1	FCV CSS
WORK TABLE WITH UPSTAND	1	TG1510SS
WORK TABLE WITH UPSTAND	1	TG1610S
SHELVING UNIT	1	SC2010
SERVICE TROLLEY	3	CP123
SHELVING UNIT	1	SC2010
SHELVING UNIT	10	SC1410
REFRIGERATED TABLE 2 DOORS	1	MRG150
FRY TOP	1	HRG811
REACH IN FREEZER	1	AEF220
UNIT WITH REFRIGERATED WELL	3	CM15F
CORNER UNIT	1	CMA
AMBIENT UNIT - OPEN TYPE	4	CM07N
TRAY DISPENSER	1	CMT
BAIN MARIE UNIT	1	CM15C
CASHIER UNIT WITH PROTECTION	1	CMC
SHELVING UNIT	1	SC1410
SHELVING UNIT	1	SC1210
R/H SCRAPPING TABLE W/BASKET SHELF	1	TS2X/RT
90° LOADING CHAIN CONVEYOR CLOCKWISE	1	ACMA90CS
RACK TYPE ELECTRIC DISHWASHER	1	RT140E
HOOD FOR DISHWASHER	1	SOLARCO
STATIONARY ROLLER CONVEYOR	1	ARF11
TRAY SLIDE - CUSTOM MADE	1	SOLARCO
SPRAY UNIT	1	DC
WORK TABLE WITH BOWL AND UPSTAND	1	TL1410SS
UNLOADING CONVEYOR MOTORIZED	1	ACMA90SS
DOUBLE SINK UNIT	1	LG1826DS
WORKING TABLE	1	TG1000S
WORKING TABLE WITH B	1	TG2000S
SINK UNIT	1	LG716S
REACH IN COOLER	1	ASN220
WORKING TABLE WITH B	1	TG2010S
WORKING TABLE WITH B	1	TG2010S
WORKING TABLE WITH B	1	TG2010S
BAIN MARIE 80 x 90 x 85	1	HME800
FRYMAT	1	
DEEP FRYER	1	HFRG810
FRY TOP	1	HRG811
GAS RECTANGULAR BOILING PANS	1	HPNGI816
GAS RANGE COOKER	1	HCFG1210
ISLAND TYPE HOOD	1	
PREF. WALK IN COOLER	1	
PREF. WALK IN FREEZER	1	
SHELVING UNIT	1	SC1410
PREWASHING TABLE	1	TV12DS
CASHIER UNIT	1	CMC
REFRIGERATED UNIT	1	CM15F
BAIN MARIE UNIT	1	CM15C
TRAY AND CUTLERY DISPENSER	1	CMT

## Lebanese University Campus - Hadath

### 5.2.1- Work Parcel 5 - Cafeteria Equipment & Self Services

#### Faculty of Fine Arts (Bldg B)

Equipment	Qty	Model No.
WORKING TABLE	3	TG1000S
SHELVING UNIT	2	SC2010
DOUBLE SINK UNIT	1	LG1826SS
STOVE	1	PCFE700
PRESS SANDWICH	1	PDR
AMBIANT FOOD DISPLAY	1	HNR100
COLD FOOD DISPLAY	1	HNA75B
WORKING TABLE	1	TG1610
TABLE TOP REFREGIRATED	1	MRG200
WORKING TABLE	2	TG1010
URN STAND	1	TL1410DS

#### Faculty of Law & Political Sciences (Bldg D)

Equipment	Qty	Model No.
S/S WORKING TABLE	1	TG1400
SHELVING UNIT	1	SC1410
WORK TABLE	1	TG1610
TABLE TOP REFRIGERATED	1	MRG200
WORK TABLE WITH SINK	1	TL1410DS
STOVE	1	PCFE700
WORK TABLE WITH SINK	1	TL1810SS
SHELVING UNIT	1	SC1410
WORK TABLE	1	TG1610
TABLE TOP REFRIGERATED	1	MRG200
WORK TABLE WITH SINK	1	TL1410DS
STOVE	1	PCFE700
WORK TABLE	1	TG2010

#### Conference Center (Bldg F)

Equipment	Qty	Model No.
SINK UNIT WITH 1 BOWL	1	LG1216 DS
WORK TABLE WITH UPSTAND	2	TG1010
SMOOTH TYPE WALL SHELF	1	MS164
TABLE TOP REFRIGERATED	1	MRG150
SMOOTH TYPE WALL SHELF	1	MS144
WORK TABLE WITH UPSTAND	1	TG1410
SMOOTH TYPE WALL SHELF	1	MS104
WORK TABLE WITH UPSTAND	3	TG1610
GLASS WASHER FOR BARS	1	LB2
COLD FOOD DISPLAY	1	HNA75B
AMBIENT FOOD DISPLAY	1	HNR100
PRESS SANDWICH	1	PDR
URN STAND	2	TL1410DS
ICE CUBE MAKER	1	B65A
WORKING TABLE	1	TG1600S
STOVE	1	PCFE700

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### 5.2.1- Work Parcel 5 - Cafeteria Equipment & Self Services

#### Faculty of Pharmacy (Bldg H)

Equipment	Qty	Model No.
WORKING TABLE	1	TG2010
SHELVING UNIT	1	SC2010
URN STAND	2	TL1410DS

#### Extension of the Faculty of Sciences (Bldg J)

Equipment	Qty	Model No.
STOVE	1	PCFE700
WORK TABLE	1	TG1210
SHELVING UNIT	2	SC2010
BOTTLE COOLER	1	BE200I
ICE CUBE MAKER	1	B65A
SINK UNIT	1	LG716S
SANDWICH UNIT	1	
TABLE TOP REFRIGERATOR	1	MRG150
S/S WORKING TABLE	1	TG1400S

#### Sport Complex (Bldg K)

Equipment	Qty	Model No.
WORK TABLE	1	TG1210
WORK TABLE	1	TG1610
WORK TABLE	1	TG1410
PRESS SANDWICH	1	PDR
URN STAND	1	TL1410DS
ICE CUBE MAKER	3	B65A
URN STAND	2	TL1410SS
ICE CUBE MAKER	2	B65A
SANDWICH UNIT	1	
BOTTLE COOLER	1	BE200I

#### Faculty of Medicine (Bldg M1.1 & M1.2)

Equipment	Qty	Model No.
STOVE	1	PCFE700
REFRIGERATED TABLE	1	MRG150
WORKING TABLE	1	TG1600S
URN STAND	1	TL1410DS
UPRIGHT REFRIGERATOR	2	
SHELVING UNIT	2	SC1610
SHELVING UNIT	1	SC1810
ICE CREAM CONSERVATOR	1	

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**Lebanese University Campus - Hadath****5.2.1- Work Parcel 5 - Cafeteria Equipment & Self Services**

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**Faculty of Public Health (Bldg Q)**

Equipment	Qty	Model No.
WORKING TABLE	2	TG1000S
PRESS SANDWICH	1	PDR
STOVE	1	PCFE700
URN STAND	1	TL1410SS
WORKING TABLE WITH BACKSPLA	1	TG2000S
SANDWICH UNIT	1	

**Faculty of Dentistry (Bldg M1.3 & M1.4)**

Equipment	Qty	Model No.
STOVE	1	PCFE700
REFRIGERATED TABLE	1	MRG150
WORKING TABLE	1	TG1600S
URN STAND	1	TL1410DS
UPRIGHT REFRIGERATOR	2	
ICE CREAM CONSERVATOR	1	



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**Lebanese University Campus - Hadath****5.3.1 - Work Parcel 5 - Laundry Equipment****Technical Area (Bldg T)**

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Equipment	Qty	Technical description
Washer Extractor	1	70 Kgs capacity
Washer Extractor	2	120 Kgs capacity
Tumbler Dryer	2	50 Kgs capacity
Cart	8	
Sink Unit	1	
Working Table	7	
Flatwork Ironer	1	
Working Table	2	
Sewing Machine	1	
Shleving Unit	2	
Hanging Rail	2	
Unipress	1	

## Lebanese University Campus - Hadath

### 5.4.A.1 - Work Parcel 5 - Swimming Pools Treatment

#### Olympic & Diving Pools (Bldg K3)

Equipment		Qty	Technical description
Pumps		4	193 m <sup>3</sup> /hr at 15 m Head
		3	124 m <sup>3</sup> /hr at 15 m Head
Butterfly valves		-	63 mm to 200 mm DN
Sand fliters		3	193m <sup>3</sup> /hr - 260 cm diameter
Pressure PVC pipes		-	63 mm to 225 mm DN
Floor inlet fittings		78	50 mm DN
Vacuum fittings		6	50 mm DN
Main pool drains		2	frame & grate 45cm/45cm
Port hole window		4	-
Neutralization system	Gas detector with sensors	-	-
	Polyethylene tank (4m <sup>3</sup> )	-	-
	Circulator pump	-	-
	Alarm siren	-	-
	Sprinklers head	-	-
	Emergency shower	-	-
Gas masks with canisters		-	-

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**Lebanese University Campus - Hadath****5.4.A.2 - Work Parcel 5 - Swimming Pools Treatment****Therapeutic Pool (Bldg Q)**

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Equipment	Qty	Technical description
Pumps	3	15 m <sup>3</sup> /hr at 15 m Head
Ball valves	-	50 mm to 110 mm DN
Sand filters	2	15 m <sup>3</sup> /hr - 75 cm diameter
Pressure PVC pipes	-	63 mm to 225 mm DN
Floor inlet fittings	78	50 mm DN
Vacuum fittings	6	50 mm DN
Main pool drains	2	frame & grate 45cm/45cm
Port hole window	4	-

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## Lebanese University Campus - Hadath

### 5.4.B - Work Parcel 5 - Swimming pools treatment - Scope of Work

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#### Technical Scope of works: Operation

- 1- Compliance with the requirements of the Contract documents.
- 2- The Contractor shall be responsible for the coordination with the Lebanese University managements in order to operate the swimming pools treatment systems as per the planned times schedules.
- 3- The Contractor shall be responsible for keeping treatment systems satisfactory to perform their designed functions, such as:
  - a- Perfect attainment of treatment system with acceptable operation of the system and reasonable consumption of consumables (chlore, SODA, Water, etc...) and power.
  - b- Possibility to operate the treatment system on the emergency power supply using the available resources in case of swimming competitions.
  - c- Monitoring and control of the water quality (checking the outputs of the chlorination chart recorders), filters status and cleanliness, etc..., in order to fit the given technical requirements.
  - d- Control of the electro mechanical equipment via the building management system by keeping the key parameters (equipment, monitoring, etc...) effective.
- 4- The Contractor shall be responsible to provide regular reports (quarterly) showing the consumption of main consumables (such as chemicals, water, chlore,...).
- 5- The Contractor shall be responsible to separate the systems taking into account the energy saving measures as for and non restricted to the following:
  - a- Planning and updating the schedules for operation of the treatment system according to the results of the reports mentioned in paragraph (3) above.
  - b- Other energy saving measures as for water consumptions, chemicals consumptions, etc... should be taken into consideration for efficient operation.
- 6- The Contractor shall be responsible to provide consumables for the proper operation of the treatment system (such as chlore, SODA, Aluminum, Charts for the recorder, Canisters for the gas masks, agents for the neutralizing system, etc...).

#### Technical Scope of works: Maintenance

- 1- The Contractor shall be responsible to perform all the preventive (routine) and corrective maintenance (emergency) in order to keep the treatment system properly operational and as defined also in the operation and maintenance manuals. Contractor is responsible also on the cleaning and restoration (painting, welding, minor repairs, corrosion protection) of equipment and accessories which are defined in the contracts documents.
- 2- All maintenance works shall be performed in accordance with the manufacturers recommendations and/ or as stipulated in the operation and maintenance manuals.
- 3- Reporting:
  - a- The Contractor shall be responsible to provide regular (quarterly) reports showing the maintenance works executed, along with suggestions for future maintenance tasks, status of equipment, frequency and analysis of trouble shooting.
  - b- The Contractor shall be responsible to provide emergency reports for problems that may occur. These reports shall contain description of the problem, corrective studies, and all necessary corrective actions and budgeting.
- 4- The Contractor shall be responsible to provide a regular maintenance and preventive checking on the safety systems and its stand by situation (such as Neutralizing system, Emergency shower, Gas masks, etc...).
- 5- The Contractor shall be responsible on verifying the Expiry dates of some agents such as chemicals, gas masks canisters, etc..

## Lebanese University Campus - Hadath

### 5.5.A.1 - Work Parcel 5 - Lift

#### Faculties

Building	Equipment	Capacity	Qty	Technical Description
<b>B</b>	Car	1×800Kg	3	
	Motor	2×630Kg	3	
	Control Panel		3	
<b>D</b>	Car	3×630Kg	3	
	Motor		3	
	Control Panel		3	
<b>G</b>	Car	3×630Kg	3	
	Motor		3	
	Control Panel		3	
<b>H</b>	Car	1×1000Kg	2	
	Motor	1×630Kg	2	
	Control Panel		2	
<b>J</b>	Car	2×630Kg	2	
	Motor		2	
	Control Panel		2	
<b>M11,M12</b>	Car	1×1000Kg	2	
	Motor	1×630Kg	2	
	Control Panel		2	
<b>M13,M14</b>	Car	1×1000Kg	2	
	Motor	1×630Kg	2	
	Control Panel		2	
<b>Q</b>	Car	3×1000Kg	4	
	Motor	2×630Kg	4	
	Control Panel		4	
<b>FOS Main Building</b>	Car	6x1600Kg	6	
	Motor		6	
	Control Panel		6	

#### Supporting Building

Building	Equipment	Capacity	Qty	Technical Description
<b>F</b>	Car	7×630Kg	7	
	Motor		7	
	Control Panel		7	
<b>M2</b>	Car	1×630Kg	2	
	Motor	1×300Kg	2	
	Control Panel		2	
<b>R01</b>	Car	5×630Kg	6	
	Motor	1×300Kg	6	
	Control Panel		6	
<b>R02</b>	Car	2×630Kg	2	
	Motor		2	
	Control Panel		2	
<b>T1,T2&amp;T3</b>	Car	1×450Kg	2	
	Motor	1×1000Kg	2	
	Control Panel		2	
<b>U2</b>	Car	3×630Kg	4	
	Motor	1×1000Kg	4	
	Control Panel		4	
<b>U3</b>	Car	1×1000Kg	1	
	Motor		1	
	Control Panel		1	
<b>FOS Library</b>	Car	2x1000Kg	5	
	Motor	3x800Kg	5	
	Control Panel		5	
<b>FOS Old Cafeteria</b>	Car	1x800Kg	1	
	Motor		1	
	Control Panel		1	

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## **Lebanese University Campus - Hadath**

### **5.5.B - Work Parcel 5 - Lifts - Scope Of Work**

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#### **Technical Scope of Work: Maintenance**

- 1- Contractor shall comply with the requirements of the Contract documents.
- 2- Contractor shall be responsible for keeping installed lifts satisfactory to perform their desired functions and performance.
- 3- Contractor shall be responsible to provide regular report (quarterly) showing the consumption of main consumables (such as lamps, fuses, etc....) as described in O&M manuals.
- 4- Contractor shall be responsible to perform all the preventive (routine) and corrective maintenance (emergency), (as defined in the O&M manuals), cleaning and restoration (painting, welding, minor repairs, corrosion protection) of equipment and accessories which are defined in the contracts documents.
- 5- All maintenance works shall be performed in accordance with the provided manufacturer's recommendations and /or as stipulated in the appendices.
- 6- Reporting:
  - a- The contractor shall be responsible to provide regular (quarterly) reports showing the maintenance works executed, along with suggestions for future maintenance tasks, status of equipment, frequency & analysis of trouble shootings.
  - b- The contractor shall be responsible to provide emergency reports for problems that may occur. These reports shall contain description of the problem, corrective studies all necessary corrective actions, and budgeting.

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**Lebanese University Campus - Hadath****5.6.A.1 - Work Parcel 5 - Fire Fighting System****All Buildings**

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Equipment	Qty	Technical description
Fire Extinguisher FE-1		4.5 Kg dry powder type
Fire Extinguisher FE-2		4.5 Kg carbon dioxide type
Fire Extinguisher FE-3		9.5 pressurized water type
Fire Hose Cabinet		Exposed type or recessed type FHC, heavy gauge steel body complete with 33m polyflex hose and one 4.5 Kg dry powder extinguisher
Automatic Sprinklers (Library of Medical Sciences only - Bldg M2)		Pendant type automatic sprinkler water spray type, fusible link
Deluge type sprinklers (Conference Center only - Bldg F)		Pendant type automatic sprinkler water spray type

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## **Lebanese University Campus - Hadath**

### **5.6.B - Work Parcel 5 - Fire fighting system - Scope Of Work**

#### **5.6.B.1 - General Scope of Work**

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<b>Technical Scope of Work: Maintenance</b>
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- 1- Contractor shall comply with the requirements of the Contract documents.
- 2- Contractor shall be responsible for keeping installed fire fighting systems satisfactory to perform their desired functions and performance.
- 3- Contractor shall be responsible to provide regular report (quarterly) showing the consumption of main consumables (such as fire fighting agents, hoses, etc....) as described in O&M manuals.
- 4- Contractor shall be responsible to perform all the preventive (routine) and corrective maintenance (emergency), (as defined in the O&M manuals), cleaning and restoration (painting, welding, minor repairs, corrosion protection) of equipment and accessories which are defined in the contracts documents.
- 5- All maintenance works shall be performed in accordance with the provided manufacturer's recommendations and /or as stipulated in the appendices.
- 6- Reporting:
  - a- The contractor shall be responsible to provide regular (quarterly) reports showing the maintenance works executed, along with suggestions for future maintenance tasks, status of equipment, frequency & analysis of trouble shootings.
  - b- The contractor shall be responsible to provide emergency reports for problems that may occur. These reports shall contain description of the problem, corrective studies all necessary corrective actions, and budgeting.
- 7- For fire hose cabinets and potable fire extinguishers, refer to the detailed description overleaf



## **Lebanese University Campus-Hadath**

### **5.6 – Work Parcel 5 – Scope of Work**

#### **5.6.B.2 - Particular scope for Fire Hose Cabinets, Potable Fire Extinguishers**

##### **Specific Precautions**

Before any powder extinguisher is opened it should be ascertained that, during inspection and maintenance, the following precautions can and will be observed:

- Extinguishing powder extinguishers should be opened only in a dry room, and for the minimum time necessary for examination, to minimize the effect of atmospheric moisture on the powder.
- Only extinguishers containing the same type of extinguishing powder should be opened and examined at any one time, and the examination should be carried out in a clean room using clean dry receptacles. All traces of extinguishing powder should be removed before using the receptacle again.
- Hydrostatic proof pressure testing must only be performed with the container suitably bunkered to prevent damage to equipment and bodily injury in the event of container failure. Observe all safety precautions, regulations and practices when working with pressurized equipment. Testing should be performed by qualified personnel in accordance with NFPA-10.
- Before servicing and recharging, ensure cylinder is completely depressurized by activating cylinder valve and then slowly opening discharge valve.
- The charging system must be used and inspected frequently to ensure that all components function properly and accurately. Use of any other charging system can cause property damage, serious bodily injury, or both.

##### **Monthly**

- Initiate a field survey on all fire hose cabinets, to visually inspect obvious damages. Report and repair defects. Repair as necessary.
  - Ensure that fire extinguishers are located in their proper position, and are not discharged, lost pressure, or suffered obvious damage, by checking the following:
-

## **Lebanese University Campus-Hadath**

### **5.6 – Work Parcel 5 – Scope of Work**

#### **5.6.B.2 - Particular scope for Fire Hose Cabinets, Potable Fire Extinguishers**

- Hose and nozzle for obstruction.
- Tamper seal to be intact.
- Extinguisher body externally for corrosion.
- Pressure gauge reading, or alternatively weigh the unit and compare weight with the data on extinguisher label.
- Replace defective fire extinguishers.

#### **Bi-annually**

- Carry out tasks as detailed for Monthly
  - Examine and report on the condition of each hose and rack assembly. Repair as needed.
  - Check and report on the condition of unit, ensuring stability and security of fixings, advising on the necessity to replace any faulty components.
  - Inspect and report on nozzle conditions, ensure correct operation, advise on units damaged or requiring replacement.
  - Pull out the hose to its full extension, ensure correct operation of valve, check for and rectify any leaks, report condition.
  - Flush through the discharge a quantity of water, check and report flow rate. Ensure that flow rate is adequate and equals or exceeds design criteria.
  - Check operation of pressure restricting angle valve. Check for leakage. Adjust or repack valve as necessary.
  - Check operation of flow switches, repair or adjust any faulty operation.
  - Test all manually operated valves for full and free travel. Check for leakage. Adjust and repack valve glands or replace valve seals as required. Clean and remove all deposits. Lubricate as necessary.
-

## **Lebanese University Campus-Hadath**

### **5.6 – Work Parcel 5 – Scope of Work**

#### **5.6.B.2 - Particular scope for Fire Hose Cabinets, Potable Fire Extinguishers**

- Reset valves and hose rack. Leave in full working order. Indicate on each hose rack label date of test.
- Clean and inspect surface and door of the fire hose cabinet. Report on condition.
- Check glass for cracks. Replace any damaged door.

#### **Annually**

- Carry out tasks as detailed for Bi-annually.

#### **Portable Fire Extinguishers**

- Examine the extinguisher body externally using an illuminating probe. A corroded or damaged extinguisher should be taken out of service and replaced by a serviced extinguisher.
  - Examine and verify that the pressure-indicating device is reading the internal pressure correctly.
  - Examine the nozzle and hose for blockage and clean if necessary.
  - Examine the hose for wear and replace if not in good condition.
  - Check the operating and discharge mechanism. Rectify or replace if necessary. Replace the safety clip or fit new wire seal.
  - Examine and unblock the vent holes in the cap, if necessary.
  - Examine condition of all washers, replace if not in good condition.
  - Complete date and sign record card on cylinder.
  - Check charge date. If more than five years have elapsed, dispose contents in an appropriate manner. Perform a hydrostatic test on cylinder. Recharge extinguisher in accordance with the manufacturer's recommendations.
-

**Lebanese University Campus - Hadath**

**5.7.A.1 - Work Parcel 5 - Sound System**

**Faculties**

Building	Equipment	Capacity	Qty	Technical Description	Manufacturer
<b>B</b>	Speaker		61	6W Ceinling Mounted Speakers	RCF
	Normal Microphone		9		RCF
	Wireless Microphone		9	Including Transmission System	RCF
	Amplifier & Control system		9		RCF
<b>D</b>	Speaker		214	6W Ceinling Mounted Speakers	RCF
	Normal Microphone		17		RCF
	Wireless Microphone		17	Including Transmission System	RCF
	Amplifier & Control system		17		RCF
<b>G</b>	Speaker		93	6W Ceinling Mounted Speakers	RCF
	Normal Microphone		10		RCF
	Wireless Microphone		10	Including Transmission System	RCF
	Amplifier & Control system		10		RCF
<b>H</b>	Speaker		25	6W Ceinling Mounted Speakers	RCF
	Normal Microphone		5		RCF
	Wireless Microphone		5	Including Transmission System	RCF
	Amplifier & Control system		5		RCF
<b>J</b>	Speaker		67	6W Ceinling Mounted Speakers	RCF
	Normal Microphone		7		RCF
	Wireless Microphone		7	Including Transmission System	RCF
	Amplifier & Control system		8		RCF
<b>M1.1,M1.2</b>	Speaker		81	6W Ceinling Mounted Speakers	RCF
	Normal Microphone		13		RCF
	Wireless Microphone		13	Including Transmission System	RCF
	Amplifier & Control system		11		RCF
<b>M1.3,M1.4</b>	Speaker		18	6W Ceinling Mounted Speakers	dB tech
	Normal Microphone		2		dB tech
	Wireless Microphone		2		dB tech
	Amplifier & Control system		3		dB tech / Toa Pa Amplifiers
<b>Q</b>	Speaker		67	6W Ceinling Mounted Speakers	RCF
	Normal Microphone		14		RCF
	Cassette player-AM/FM Tuner Control		1		RCF/AKG
	CD Player / Changer		1		TASCAM
	Wireless Microphone		15	Including Transmission System	RCF
	Amplifier & Control system		15		
<b>Faculty of Science Main Building, Library, &amp; Old Cafeteria</b>	Speaker		293	6W Ceinling Mounted Speakers	Merlaud
	Dynamic Microphone		2		Giel
	Wireless Microphone		7		Shure / Mipro / Gemini
	Amplifier & Control system	240W	9		Merlaud / Giel / Sony
	Cassette Player-AM/FM Tuner Control		-		-
	Public Address Audio Cabinet		1		Merlaud
	Desk Microphone		1		Giel

## Lebanese University Campus - Hadath

### 5.7.A.1 - Work Parcel 5 - Sound System

#### Supporting Building

Building	Equipment	Capacity	Qty	Technical Description	Manufacturer
R01	Speaker		18	6W Ceinling Mounted Speakers	RCF/AKG
	Microphone desk 6 zones		1		RCF/AKG
	Cassette player-AM/FM Tunner Control Amplifier		1		RCF/AKG
	Control Panel		1		RCF/AKG
	Amplifier&Control system	160W	2		RCF/AKG
U2	Speaker		35	6W Ceinling Mounted Speakers	RCF/AKG
	Microphone desk 6 zones		1		RCF/AKG
	Cassette player-AM/FM Tunner Control Amplifier		1		RCF/AKG
	Control Panel		1		RCF/AKG
	Commutation Unit		1		RCF/AKG
	Amplifier&Control system	160W	2		RCF/AKG

#### Sound System (Cafeteria)-Building F

Building	Equipment	Capacity	Qty	Technical Description	Manufacturer
Building F	Speaker		18	6W Ceinling Mounted Speakers	RCF/AKG
	Microphone desk 6 zones		1		RCF/AKG
	Cassette player-AM/FM Tunner Control		1		RCF/AKG
	Control Panel		1		RCF/AKG
	Commutation Unit		1		RCF/AKG
	Amplifier&Control system	160W	6		RCF/AKG

#### Sound Reinforcement System (Auditorium)-Building F

Building	Equipment	Capacity	Qty	Technical Description	Manufacturer
Building F	Speaker type A	250W	10		dB tech
	Speaker type B	400W	2		dB tech
	Power amplifier	2*350W at 8 Ohm	8		dB tech
	Digital controller		2		dB tech
	Stage monitor	350W	4		dB tech
	Mixer		1		Mackie
	Proximity monitor	70W	2		dB tech
	CD reader/writer/recordable		1		TASCAM
	Double cassette recorder		1		TEAC
	Fixed type microphone for stage		3		dB tech
	Dynamic microphone		15		dB tech
Wireless microphone and system emitter & receiver		2		dB tech	

#### Conference system-Building F

Building	Equipment	Capacity	Qty	Technical Description	Manufacturer
Building F	Control amplifier	up to 30 microphone	1		DI.CO
	Chairman's desk stand microphone		1		DI.CO
	Participants desk stand microphone		12		DI.CO

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## **Lebanese University Campus - Hadath**

### **5.7.B - Work Parcel 5 - Sound system - Scope Of Work**

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#### **Technical Scope of Work: Maintenance**

- 1- Contractor shall comply with the requirements of the Contract documents.
- 2- Contractor shall be responsible for keeping installed sound system satisfactory to perform their desired functions and performance, as for uniformity of sound and the designed sound pressure.
- 3- Contractor shall be responsible to provide regular report (quarterly) showing the consumption of main consumables (such as fuses, etc....) as described in O&M manuals.
- 4- Contractor shall be responsible to perform all the preventive (routine) and corrective maintenance (emergency), (as defined in the O&M manuals), cleaning and restoration (painting, welding, minor repairs, corrosion protection) of equipment and accessories which are defined in the contracts documents.
- 5- All maintenance works shall be performed in accordance with the provided manufacturer's recommendations and /or as stipulated in the appendices.
- 6- Reporting:
  - a- The contractor shall be responsible to provide regular (quarterly) reports showing the maintenance works executed, along with suggestions for future maintenance tasks, status of equipment, frequency & analysis of trouble shootings.
  - b- The contractor shall be responsible to provide emergency reports for problems that may occur. These reports shall contain description of the problem, corrective studies all necessary corrective actions, and budgeting.

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**Lebanese University Campus - Hadath****5.8.A.1 - Work Parcel 5 - Video Projector**

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**Faculties**

<b>Building</b>	<b>Equipment</b>	<b>Capacity</b>	<b>Qty</b>	<b>Manufacturer</b>	<b>Technical Description</b>
<b>B</b>	Video Projector / Projector Screen		9		DLP projection system
<b>D</b>	Video Projector / Projector Screen		16		DLP projection system
<b>G</b>	Video Projector / Projector Screen		18		DLP projection system
<b>H</b>	Video Projector / Projector Screen		6		DLP projection system
<b>J</b>	Video Projector / Projector Screen		17		DLP projection system
<b>M1.1,M1.2</b>	Video Projector / Projector Screen		16		DLP projection system
<b>M1.3,M1.4</b>	Video Projector / Projector Screen		3		DLP projection system
<b>Q</b>	Video Projector / Projector Screen		10		DLP projection system
<b>FOS Main Building</b>	Video Projector / Projector Screen		32	OPTOMA	DLP projection system

**Supporting Building**

<b>Building</b>	<b>Equipment</b>	<b>Capacity</b>	<b>Qty</b>	<b>Manufacturer</b>	<b>Technical Description</b>
<b>F</b>	Data/Video LCD projection system		1	ASK	
	Visualizer presenter system		1	MEGAPOWER	
	VGA amplifier		1	P/2 DA2 plus	
	Projection screen	5.2×3.9m	1	Da-Lite	Electrical screen with housing
<b>FOS Library</b>	Video Projector / Projector Screen		4	OPTOMA	DLP projection system

**Lebanese University Campus - Hadath**

**5.8.A.1.a - Work Parcel 5 - Video Projector**

*(Excluding Faculty of Science Main Building, Library, & Old Cafeteria)*

<b>Lebanese University Campus-Hadath</b>					
<b>Video projectors location</b>					
<b>(Excluding Faculty of Science Main Building, Library, &amp; Old Cafeteria)</b>					
<b>Bldg</b>	<b>Zone</b>	<b>Floor</b>	<b>Room name</b>	<b>Room number</b>	
Fine arts institute	B1	1st floor	Audio visual class	19	
		B3	Ground floor	Amphi 120	31
				45	
				50	
				53	
	Amphi 200		25		
			Audio visual class	1.24	
			Audio visual class	4.18	
		Audio visual class	4.25		
Faculty of law, political sciences & administration	D	Ground floor	Amphi 300	31	
				45	
			Amphi 450	68	
			Class	3.1	
			Class	3.19	
			Class	3.20	
		1st floor	Class	3.32	
			Class	3.33	
			Class	4.27	
			Class	4.28	
			Class	4.29	
			Class	4.30	
			2nd floor	Class	5.7
			2nd floor	Class	5.29
			3rd floor	Class	6.9
			3rd floor	Class	6.90
Conference center	F	Ground floor	Stage	7	



**Lebanese University Campus - Hadath**

**5.8.A.1.a - Work Parcel 5 - Video Projector**

*(Excluding Faculty of Science Main Building, Library, & Old Cafeteria)*

<b>Lebanese University Campus-Hadath</b>				
<b>Video projectors location</b>				
<b>(Excluding Faculty of Science Main Building, Library, &amp; Old Cafeteria)</b>				
<b>Bldg</b>	<b>Zone</b>	<b>Floor</b>	<b>Room name</b>	<b>Room number</b>
Faculty of engineering	G	Ground floor	Amphi 120	18
				20
			Amphi 300	121
			Class	3.19
			Class	3.61
			Class	3.89
			Class	3.119
		Class	3.120	
		1st floor	Class	4.19
		1st floor	Class	4.45
		1st floor	Class	4.46
		1st floor	Class	4.47
		1st floor	Class	4.49
		1st floor	Class	4.50
1st floor	Class	4.52		
1st floor	Class	4.64		
1st floor	Class	4.112		
1st floor	Class	4.136		
Faculty of pharmacy	H	Ground floor	Amphi 200	70
			Class	3.1
			Class	3.74
			Class	3.75
			Class	3.20
		2nd floor	Class	5.19
Extention of the faculty of sciences	J	Garden level	Amphi 200	7
				8
				56
			Class	1.10
			Class	1.11
			Class	1.12
			Class	1.14
			Class	1.24
			Class	1.25
			Class	1.26
			Class	1.27
			Class	1.30
			Class	1.40
			Class	1.33
			Class	1.77
		1st floor	Class	2.5
1st floor	Class	2.6		

**Lebanese University Campus - Hadath**

**5.8.A.1.a - Work Parcel 5 - Video Projector**

*(Excluding Faculty of Science Main Building, Library, & Old Cafeteria)*

<b>Lebanese University Campus-Hadath</b>				
<b>Video projectors location</b>				
<b>(Excluding Faculty of Science Main Building, Library, &amp; Old Cafeteria)</b>				
<b>Bldg</b>	<b>Zone</b>	<b>Floor</b>	<b>Room name</b>	<b>Room number</b>
Faculty of medical sciences	M11	1st floor	Amphi 112	39
			Amphi 120	42
		Ground floor	Class	40
			Class	3.64
			Class	3.65
		2nd floor	Class	3.66
			Amphi 112	39
		1st floor	Amphi 300	42
			Class	45
			Class	4.2
	M12	2nd floor	Class	4.3
			Class	4.85
		Ground floor	Class	64
			Class	66
Class			3.32	
3rd floor	Class	5.20		
Faculty of dentistry	M14	2nd floor	Class	6
		Class	7	
Faculty of public health	Q	Ground floor	Class	3.1
			Amphi 120	29
			Amphi 60	30
			Class	48
			Class	54
			Class	3.22
			Class	3.36
			Class	3.46
			Class	3.47
Class	3.50			
Class	3.55			

**Lebanese University Campus - Hadath**

**5.8.A.1-b - Work Parcel 5 - Video Projector**

*Faculty of Science Main Building, Library, & Old Cafeteria*

<b>Lebanese University Campus-Hadath</b>				
<b>Video projectors location</b>				
<b>Faculty of Science Main Building, Library, &amp; Old Cafeteria</b>				
<b>Bldg</b>	<b>Zone</b>	<b>Floor</b>	<b>Room name</b>	<b>Room number</b>
<b>Main Building</b>	C2	5B	Amphi A	A
	C2	5B	Amphi B	B
	C2	5B	Amphi C	C
	C2	5B	Amphi D	D
	C2	5B	Amphi E	E
	C2	5B	Amphi F	F
	C2	5B	Amphi G	G
	C1	4B	Class45	45
	C2	4B	Class 44	44
	C1	4B	Class 47	47
	C2	4B	Class40	40
	C2	3B	Class32	32
	C2	3F	Class34	34
	C1	3B	Class 33	33
	C1	3B	Class31	31
	C2	2B	Class 20	20
	C2	2B	Class24	24
	C1	2B	Class25	25
	C1	1B	Class 13	13
	C1	1B	Class15	15
	C1	1B	Class 17	17
	C1	1B	Class 11	11
	C2	1B	Class 10	10
	A2	2F	Lab cysco	218
	A1	1F	Lab Physics	127
	A1	1F	Lab	126
	A1	1F	Lab	117
	A2	3F	Conference	324
	A2	2F	LAB	251
	A2	2F	Lab	231
A2	2F	Math lab	252	
A1	4F	Conference	422	
<b>Library</b>	LIB	GF	Conference 1	*
	LIB	GF	Conference 2	*
	LIB	1B	AMPHI B	B1
	LIB	1B	AMPHI B	B2

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## **Lebanese University Campus - Hadath**

### **5.8.B - Work Parcel 5 - Video Projector - Scope Of Work**

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#### **Technical Scope of Work: Maintenance**

- 1- Contractor shall comply with the requirements of the Contract documents.
- 2- Contractor shall be responsible for keeping installed audio-visual systems satisfactory to perform their desired functions and performance.
- 3- Contractor shall be responsible to provide regular report (quarterly) showing the consumption of main consumables (such as lamps, fuses, etc....) as described in O&M manuals.
- 4- Contractor shall be responsible to perform all the preventive (routine) and corrective maintenance (emergency), (as defined in the O&M manuals), cleaning and restoration (painting, welding, minor repairs, corrosion protection) of equipment and accessories which are defined in the contracts documents.
- 5- All maintenance works shall be performed in accordance with the provided manufacturer's recommendations and /or as stipulated in the appendices.
- 6- Reporting:
  - a- The contractor shall be responsible to provide regular (quarterly) reports showing the maintenance works executed, along with suggestions for future maintenance tasks, status of equipment, frequency & analysis of trouble shootings.
  - b- The contractor shall be responsible to provide emergency reports for problems that may occur. These reports shall contain description of the problem, corrective studies all necessary corrective actions, and budgeting.

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**Lebanese University Campus - Hadath****5.9.A.1-Work Parcel 5- CRANES**

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**Supporting Building**

<b>Building</b>	<b>Equipment</b>	<b>Capacity</b>	<b>Qty</b>	<b>Technical Description</b>
V3	MONORAIL crane	3 Ton	1	NITCHI
T	Overhead crane	25 Ton	1	DEMAG
T	Overhead crane	8 Ton	1	BALCAN CAR 8 m weidth 6.5 m height low speed 1.5 m/min high speed 10m/min

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## Lebanese University Campus - Hadath

### **5.9.B - Work Parcel 5 - cranes - Scope Of Work**

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#### **Technical Scope of Work: Maintenance**

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- 1- Contractor shall comply with the requirements of the Contract documents.
- 2- Contractor shall be responsible for keeping installed overhead cranes satisfactory to perform their desired functions and performance.
- 3- Contractor shall be responsible to provide regular report (quarterly) showing the consumption of main consumables (such as lamps, fuses, etc....) as described in O&M manuals.
- 4- Contractor shall be responsible to perform all the preventive (routine) and corrective maintenance (emergency), (as defined in the O&M manuals), cleaning and restoration (painting, welding, minor repairs, corrosion protection) of equipment and accessories which are defined in the contracts documents.
- 5- All maintenance works shall be performed in accordance with the provided manufacturer's recommendations and /or as stipulated in the appendices.
- 6- Reporting:
  - a- The contractor shall be responsible to provide regular (quarterly) reports showing the maintenance works executed,
  - b- The contractor shall be responsible to provide emergency reports for problems that may occur. These reports shall contain description of the problem, corrective studies all necessary corrective actions, and budgeting.

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**Lebanese University Campus - Hadath****5.10.A.1 -Work Parcel 5 - Flow meters**

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<b>Supporting Building</b>
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<b>Building</b>	<b>Equipment</b>	<b>Capacity</b>	<b>Qty</b>	<b>Technical Description</b>
Z	Fuel Meter 2 "	24m3/hr	1	Traditional SATAM ZC 17-24 , 8 Bar
T	Fuel Meter 2 "	10m3/hr	4	Digital TUTHILL 3.5 Bar
T	Fuel Meter 1 "	5m3/hr	2	Digital TUTHILL 3.5 Bar
V3	Water flow meter 4"	120 m3/h	4	Flow meter OMEGA-WE-SDC

**Lebanese University Campus - Hadath**

**5.11.1- Work Parcel 5 - List of Operation And Maintenance Manuals**

DIVISION	DESCRIPTION	VOLUME No.
<b>SET NO.1 – CENTRAL SERVICES</b>		
0	FIRST AID INSTRUCTIONS STRUCTURE OF O&M MANUALS	1 of 1
1	CHILLED WATER SYSTEM	1 of 2 2 of 2
2	COOLING WATER SYSTEM	1 of 1
2A	CHEMICAL WATER TREATMENT	1 of 1
2B	NALCO Stress Management for Cooling System (3D TRASAR)	1 of 1
3	HOT WATER SYSTEM AND STEAM SYSTEM	1 of 2 2 of 2
4	GENERATOR SET	1 of 2 2 of 2
4A	FUEL OIL SYSTEM	1 of 1
5	LPG GAS SYSTEM	1 of 1
6	MAIN PUMPING STATION • WATER WELLS • DOMESTIC SYSTEM • POTABLE SYSTEM • RO SYSTEM • CHLORINATION SYSTEM	1 of 5
7	IRRIGATION SYSTEM	1 of 2 2 of 2
8	FIRE FIGHTING SYSTEM	1 of 1
9	DRAINAGE SYSTEM	1 of 1
10	POOLS AND FOUNTAINS	1 of 2 2 of 2
11	KITCHEN EQUIPMENT	1 of 2 2 of 2
12	LAUNDRY EQUIPMENT	1 of 1
13	MV SYSTEM	1 of 5 TO 5 of 5
14	TELEPHONE SYSTEM	1 of 1
15	SOUND SYSTEM	1 of 1
16	CLOCK SYSTEM	1 of 1
17	CCTV SYSTEM	1 of 1
18	BUILDING MANAGEMENT SYSTEM, SECURITY SYSTEM AND INTERFACE WITH FAS	1 of 13 TO 13 of 13
19	LIFTS	1 of 12 TO 12 of 12
20	THEATER LIGHTING AND DIMMING	1 of 1
<b>SET NO. 2 –NATIONAL SCHOOL OF FINE ARTS BUILDING B</b>		
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 2 2 of 2
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3



**Lebanese University Campus - Hadath**

**5.11.1- Work Parcel 5 - List of Operation And Maintenance Manuals**

<b>DIVISION</b>	<b>DESCRIPTION</b>	<b>VOLUME No.</b>
	<b>SET NO. 3 –FACULTY OF LAW AND POLITICAL SCIENCES BUILDING D</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 2
2	HVAC SYSTEM	2 of 2
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3
	<b>SET NO. 4 –CONFERENCE CENTER – BUILDING F</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 2 2 of 2
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3
	<b>SET NO. 5 –SCHOOL OF PHARMACY – BUILDING H</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 2 2 of 2
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3
	<b>SET NO. 6- EXTENSION OF EXISTING FACULTY OF SCIENCES</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 2 2 of 2
3	ELECTRICAL SYSTEMS	1 of 2 2 of 2
	<b>SET NO. 7- SPORTS COMPLEX BUILDINGS K1, K2,K3</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 1
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3
	<b>SET NO. 8- FACULTY OF MEDICINE, BUILDING M1 SET NO.9- FACULTY OF DENTISTRY, BUILDING M2</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 2 2 of 2
2	HVAC SYSTEM	1 of 2 2 of 2
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3
	<b>SET NO. 10- FACULTY OF PUBLIC HEALTH – BUILDING Q</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 2 2 of 2
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3

**Lebanese University Campus - Hadath**

**5.11.1- Work Parcel 5 - List of Operation And Maintenance Manuals**

<b>DIVISION</b>	<b>DESCRIPTION</b>	<b>VOLUME No.</b>
	<b>SET NO. 11- MALE DORMITORIES, BUILDING R1 SET NO.12- FEMALE DORMITORIES, BUILDING R2</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 2 2 of 2
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3
	<b>SET NO. 13- TECHNICAL BUILDINGS T1, T2&amp;T3</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 2 2 of 2
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3
	<b>SET NO. 14-UNDERGROUND PARKING, BUILDING U3 EASTERN PARKING, BUILDING V1</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 1
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3
	<b>SET NO. 15- RESTAURANT &amp; FUNCTIONAL HOUSING BUILDING U2</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 2 2 of 2
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3
	<b>SET NO. 16- CENTRAL CATERING AND WESTERN PARKING, BUILDING X</b>	
1	PLUMBING/MECHANICAL SYSTEM	1 of 1
2	HVAC SYSTEM	1 of 1
3	ELECTRICAL SYSTEMS	1 of 3 TO 3 of 3
	<b>SET NO. 17- FACULTY OF SCIENCES (FOS, LIBRARY &amp; CAFETERIA)</b>	
1	HVAC SYSTEM	1 of 1
2	ELECTRICAL SYSTEMS	1 of 1

# Lebanese University Campus - Hadath

## 5.11.2 - Work Parcel 5 - List of As-Built Drawings

02	B 0 1	R 2 1	1 3 2	B			
IRN	Trades	Block/Zone	Subzone or Scale	Type of Document	Level of Plans	Running Number	Revision
Internal Revision Number		Zone defining the Building Examples: R2: Female Dorm R1: Male Dorm TS: Type Spaces OO: Whole Project	0= (Whole Zone) 1,2,3,4,5,6 (Parts of zone or whole zone) 7= Miscellaneous 8=Typical Spaces	1= Plans 2=Sections 3=Elevations 4=Details on A0 5=General Details on A3 6=Particular Details on A3 7=Schedules 8=Miscellaneous	0=Foundation 1=2nd Basement 3=Ground Floor 4=1st Floor 5=2nd Floor 6=3rd Floor 7=4th Floor 8=5th Floor 9=Roof	To facilitate diff documents of the same type and the same location	A, B, C, D

Trades (As needed for Drawing Numbering)

Trade A		Trade B		Trade C		Trade D		Trade E	
Site Works		Structures & OutBoards		Technical Equipment		Technical Equipment		Finishes	
A05	Main Pumping Station	B00	General Structure Drawings	C00	General M+E Drawings	D02	Swimming Pool Treatment equipment & accessories	E00	Architectural Executive Drawings
A06	Water Supply	B01	Concrete Works	C10	HVAC	D04	Decorative Fountains		
A07	Waste Water	B02	Frame Works & Canopies	C20	Plumbing	D08	Scientific Lab Equipment		
A11	External Signs & Boards	B03	Waterproofing & Joints	C30	High Voltage Installation				
A13	Electrical Network	B05	External Aluminum & Glazing	C31	General Transformer Substat				
A14	Low Current (Refer to C04)	B09	Reinforcement	C32	Static UPS System				
A15	Chilled & Heating Water	B10	Precast Elements	C33	Lighting layout				
		B11	Concrete Drawings with Reinforcement	C34	Miscellaneous				
				C35	Earthing System & Lightning Project				
				C40	Low Current Installation General				
				C41	Telephone Systems				
				C42	Computer Network				
				C43	Sound System				
				C44	Fire Alarm System				
				C45	Clock System				

## Lebanese University Campus - Hadath

### 5.11.3 - Work Parcel 5 - List of Suppliers and Subcontractors

#### Kitchens & Cafeteria Equipment

	Equipment	Subcontractor /Supplier	Contact(Tel)	Manufacturer	Concerned Bldg
1	Working tables with back splash	Solarco	01/489104	Zanussi	All faculties and bldgs: X, U2, R, K and F
2	Bottle Cooler			Exfri	
3	Pref.Walk in Cooler			Land/Friga	
4	Ice Cube Maker			Scotsman	
5	Bottle Cooler			Coreco	
6	Press Sandwich			Sirman	
7	Platform scale			Euromec	
8	Batch Freezer			Cattabriga	
9	Ice Cream Conservator			Koxka	
10	Prefabricated walk in cooler			Mecter/Copland	
11	Two cylinder Machine Grinder			Cook Star	
13	Food Processor			Dito Sama	

#### Swimming Pools Treatment Equipment

	Equipment	Subcontractor /Supplier	Contact(Tel)	Manufacturer	Concerned Bldg
1	Pumps	Water Master	01/422905	KSB	Bldgs K and Q
2	Pumps			Astral	
3	Pressure PVC pipes			Future Pipes	

#### Laundry Equipment

	Equipment	Subcontractor /Supplier	Contact(Tel)	Manufacturer	Concerned Bldg
1	Washer Extractor	Solarco	01/489104	Rinzacci	Bldg T3
2	Tumbler Dryer			Rinzacci	
3	Unipress			Rinzacci	
4	Sink Unit			Zanussi	
5	Laundry truck			Alvi	
6	Mobile Hanging Rails			Rinzacci	

#### Fire Fighting System

	Equipment	Subcontractor /Supplier	Contact(Tel)	Manufacturer	Concerned Bldg
1	Fire extinguisher FE-1	SOS	01/315593	SOS	All Bldgs and faculties
2	Fire extinguisher FE-2				
3	Fire extinguisher FE-3				
4	Fire Hose Cabinet				
5	Sprinklers	Pyroguard	01/824591	Victaulic	Library of Medical Sciences/ Conference Center

## Lebanese University Campus - Hadath

### 5.11.3 - Work Parcel 5 - List of Suppliers and Subcontractors

**Lifts**  
(Excluding Faculty of Science Main Building, Library, & Old Cafeteria)

	Equipment	Subcontractor /Supplier	Contact(Tel)	Manufacturer	Concerned Bldg
1	Lift	Trust for Elevators & General Trading Co.	01/348986	Thyssen	All other Bldgs
		Ottis	01/685804	Ottis	Faculty of Engineering-Bldg(G)

**Lifts**  
Faculty of Science Main Building, Library, & Old Cafeteria

	Equipment	Subcontractor /Supplier	Contact(Tel)	Manufacturer	Concerned Bldg
1	Lift	COMAT s.a.r.l.	01/877197 01/877198	OTIS	FOS

#### Sound System

	Equipment	Subcontractor /Supplier	Contact(Tel)	Manufacturer	Concerned Bldg
1	Sound System	Solarco	01/364336	RCF/AKG	All other Bldgs
		Solarco	01/364336	dB tech	Conference Center-Bldg(F)
		Solarco	01/364336	Mackie	Conference Center-Bldg(F)
		Solarco	01/364336	TASCAM	Conference Center-Bldg(F)
		Solarco	01/364336	TEAC	Conference Center-Bldg(F)
		Solarco	01/364336	DI.CO	Conference Center-Bldg(F)
		Automation & Control	04/487726	RCF/AKG	Faculty of Engineering-Bldg(G)

#### Video Projector

	Equipment	Subcontractor /Supplier	Contact(Tel)	Manufacturer	Concerned Bldg
1	Video Projector	Solarco	01/364336	ASK	Conference Center-Bldg(F)
		Solarco	01/364336	MEGAPOWER	Conference Center-Bldg(F)
		Solarco	01/364336	P/2 DA2 plus	Conference Center-Bldg(F)
		Solarco	01/364336	Da-Lite	Conference Center-Bldg(F)
		Impact Electronics	01/685985	Benq	All Bldgs

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**Lebanese University Campus-Hadath****5.11.4 - Work Parcel 5 - List of Consumables**

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	<b>Consumable</b>	<b>Systems/Location</b>	<b>Form</b>
1	Chlorine Gas	Diving Pool / Olympic Pool	Gas
2	Soda Ash		Powder
3	Aluminum Sulphite		Powder
4	Hypochlorite	Therapeutic Pool	Powder
5	Acid		Liquid
6	Agent for Fire Extinguishers	Fire Extinguishers	CO2/Powder/ Foam/Water
7	Grease	Lift	Liquid
8	Oil		Liquid
9	Indication lamp		Pcs
10	Lamp		Pcs
11	Push Buttons	Video Projector	Pcs
12	Projector lamp		Pcs